Georgia Department of Public Health
J. Patrick O'Neal, MD, Commissioner
Nathan Deal, Governor
2 Peachtree St. NW, 15th Floor
Atlanta, Georgia 30303-3142
dph.ga.gov

April 18, 2018

MEMORANDUM

TO: District Health Directors
District Program Managers
District Administrators
District Immunization Coordinators

FROM: Sheila Lovett, Director
Georgia Immunization Section

SUBJECT: Georgia Immunization Program Manual Updates

In the interest of saving resources and space, the complete manual as well as the manual updates are on the Immunization Office website - http://dph.georgia.gov/immunization-publications. Below is a listing of those documents included in the update as well as guidance for adding, deleting, or replacing the same:

Cover page **(REPLACE)**

Manual Memorandum-- use this to assist in adding and replacing documents, then place in Chapter 11, Transmittal Memos.

Manual Transmittal Memo Update Documentation page---Immunization Coordinators are to complete this, send a copy to the state immunization program attention nurse consultant by the deadline noted on the form, and place it in Chapter 11, Transmittal Memos.

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- Department of Public Health Policy and Procedure Approval
- Georgia Immunization Program Central Staff and Immunization Regional Consultants
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- Request for Immunization Forms --- Form 3184

Chapter 2 Recommended Schedule and Standards

- Table of Contents Page **(REPLACE)**
- DPH Physician Signature Approval Sheet (**ADD**) (**Do Not Remove Previous Sheets**)
- Immunization Standards for DPH Clinics **(REPLACE)**
- Eligibility Criteria for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults **(REPLACE)**
- U.S. Vaccines (**REPLACE**)
- Georgia Department of Public Health, Immunization Program Vaccine Standards **(REPLACE ALL)**
  - Combination Vaccines
  - Vaccines to Prevent Diphtheria, Tetanus, and Pertussis
  - Vaccines to Prevent Haemophilus influenzae Type B
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  - Vaccines to Prevent Polio
  - Vaccines to Prevent Rotavirus Gastroenteritis
  - Vaccines to Prevent Varicella
- Recommended Immunization Schedule for Children and Adolescent Aged 18 Years or Younger, United States, 2018 **(REPLACE)**
- Recommended and Minimum Ages and Intervals Between Vaccine Doses, 2017 (Table1) **(REPLACE)**
- Suggested Intervals between Administration of Antibody-containing Products and Measles Containing and Varicella Vaccines (Table 4)
- Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2018 **(REPLACE)**
- Screening Questionnaires for Child and Teen Immunization (English/Spanish) **(REPLACE)**
- Screening Questionnaires for Adult Immunization (English/Spanish) **(REPLACE)**
- Standards For Adult Immunization Practices

Chapter 3 Informed Request Policies (REPLACE ALL)

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- Vaccine Information Statements - **(VIS's can be downloaded from the CDC and IAC websites)**
- After The Shot (English)
- Después de las vacunas (After The Shots -Spanish
- Georgia Vaccine Administration Record
- Refusal to Vaccinate Form (English)
- Refusal to Vaccinate Form (Spanish)

Chapter 4 Adverse Events Following Immunizations

- Policy for Reporting Vaccine Adverse Events Following Immunizations **(REPLACE)**
- Handling of Emergencies Following the Administration of Vaccines **(REPLACE)**
- Vaccine Adverse Event Reporting System- Form VAERS (FDA) **(REPLACE)**
- Frequently Asked Questions About VAERS (**Update go to Link http://vaers.hhs.gov/about/faqs**)
- National Vaccine Injury Compensation Program Vaccine Injury Table
- Vaccine Injury Compensation Program (VICP) **(Remove from manual) (Update go to Link http://www.hrsa.gov/vaccinecompensation/index.html)**

Chapter 5 Requirements of School/Child Care Law

- Summary of Immunization Policies Relative to Georgia Law **(REPLACE)**
- Official Code of Georgia, Annotated **(REPLACE ALL)**
  - Section 20-2-771
  - Section 49-4-182
  - Section 49-4-183
  - Section 31-12-3.1
- DPH Rules, Chapter 511-2-2 **(Formerly DPH Rules Chapter 290-5-4)**
- Historical Statement Listing Dates of Immunization Requirements **(REPLACE)**
- School Certificate of Immunization Form 3231 (Rev. 7/14)
- Policy Guide 3231INS: Standards for Issuing and Filing Certificates of Immunization **(Rev. 12/17) (REPLACE)**
- Policy Guide 3231REQ: Vaccine Requirements for Attending Child Care Facilities and Schools in Georgia Relative to the Certificate of Immunization
- DPH Form 2208 Religious Objection to Immunization **(ADD ENGLISH/SPANISH)**
- Summary of Georgia Immunization Requirements for Child Care and School Attendance
- Immunization Requirements and Recommendations for University System of Georgia Students **(REPLACE)**
- University System of Georgia Required Certificate of Immunization **(REPLACE)**

Chapter 6 Surveillance and Reporting

- Procedure for the Investigation and Reporting of Vaccine Preventable Diseases **(REMOVE)**
- Contact Persons for VPD Surveillance at the District Health Office **(REMOVE)**
- Vaccine Preventable Disease Fact Sheets
  - Diphtheria Fact Sheet **(REPLACE)**
  - Hepatitis A Fact Sheet and Q & A **(REPLACE)**
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  - Haemophilus influenzae Invasive Disease Fact Sheet and Q & A **(REPLACE)**
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  - Mumps Fact Sheet **(REPLACE)**
  - Pertussis Fact Sheet and Q & A **(REPLACE)**
  - Polio Fact Sheet and Q & A **(REPLACE)**
  - Rubella Fact Sheet and Q & A **(REPLACE)**
  - Streptococcus pneumoniae Fact Sheet and Q & A **(REPLACE)**
  - Tetanus Fact Sheet **(REPLACE)**
  - Neisseria Meningitidis Fact Sheet **(ADD)**
  - Varicella Fact Sheet **(ADD)**

Chapter 6 Surveillance and Reporting (Cont.)

- Resources for Influenza Prevention and Control **(REPLACE)**
- Influenza Outbreak Control in a Long-Term Care Facility **(REPLACE)**
- Georgia Notifiable Disease Report, Form 3095 **(Rev. 2-16) (REPLACE)**
- Diphtheria Checklist for Assessing a Patient with Suspect Diphtheria **(ADD)**
- Diphtheria Worksheet **(REPLACE)**
- Diphtheria Close Contacts Worksheet **(ADD)**
- Measles Surveillance Worksheet (Case Report Form) **(REPLACE)**
- Measles Post-Exposure Algorithm **(ADD)**
- Measles Specimen Collection and Submission Guidelines **(ADD)**
- Measles: Minimizing Measles Transmission in Healthcare Settings **(ADD)**
- Mumps Surveillance Worksheet **(REPLACE)**
- Mumps Laboratory Testing Guidance **(ADD)**
- Pertussis Surveillance Worksheet **(REPLACE)**
- Pertussis Specimen Collection and Submission Guidelines **(ADD)**
- Polio Surveillance Worksheet **(ADD)**
- Rubella Surveillance Worksheet **(REPLACE)**
- Tetanus Surveillance Worksheet **(REPLACE)**
- Bacteriology Submission Form **(ADD)**
- GPHL Specimen Submission Form **(REPLACE)**
- GPHL Molecular Biology Submission Form **(REMOVE)**
- Varicella Reporting and Case Investigation Form **(REPLACED)**
- Varicella Outbreak Reporting Recommendations **(ADD)**
- Varicella Specimen Collection and Submission Guidelines **(ADD)**
- Virology Culture Submission Form (Rev. 1/10) **(REMOVE)**

Chapter 7 Hepatitis

- Perinatal Hepatitis B Prevention Program Guidelines **(REPLACE)**
- **Appendix Table (REPLACE All Appendix)**
  - A---Perinatal Hepatitis B Prevention Case Management Activities
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  - F---HIPAA Information for Perinatal Hepatitis B Prevention Program
  - G---Delivery Hospital Resources

        - G-1---Guidance for Developing Admission Orders in Labor & Delivery and Newborn Units to Prevent Hepatitis B Virus Transmission (6/17)
        - G-2---Give the Birth Dose…Hepatitis B at Birth Saves Lives! (9/09) (**REMOVE)**
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        - J-2---Hepatitis B Vaccine Information Sheet **(7/16)**
    - K---Georgia Public Health Laboratory
        - K-1---Lab Service Manual Excerpt
        - K-2---GPHL submission Form **3583 (7/16)**

Protocol for Perinatal Hepatitis Contacts

- State Hepatitis Program **(REPLACE)**
- Hepatitis B Vaccination in STD, HIV and Family Planning Clinics, Guidelines for Public Health **(REPLACE)**

Chapter 8---Recall of Patients

- Recall of Immunization Patients Policy Statement **(REPLACE)**
- Immunization Documentation, "Moved or Gone Elsewhere" (MOGE) Categories **(REPLACE)**

Chapter 9---Vaccine for Children & Adult Vaccine Program Policies and Procedures

- Accountability Policy **(REPLACE)**
- Adult Vaccine Program Provider Agreement 2015 E-form **(ADD)**
- Blank Incident Report **(ADD)**
- Centralized Distribution Information and Instruction for VFC Providers **(REPLACE)**
- Temperature Log Sheet **(REMOVE)**
- Provider Agreement For Public Health Providers **(REPLACE)**
- Distribution of Vaccines **(ADD)**
- Georgia Provider Agreement **(ADD)**
- Handling of Vaccine During Inclement Weather **(ADD)**
- Title X Log **(REPLACE)**
- Unaccompanied Minor Comp Tally **(ADD)**
- Unaccompanied Minor Report **(ADD)**
- VFC Provider Profile Underinsured **(ADD)**
- VFC Routine and Emergency Vaccine Handling Plans **(REPLACE)**
- Vaccine Loss Policy For Public Health Providers **(REMOVE)**
- Fraud and Abuse Policy **(REMOVE)**
- Temperature Conversion Chart **(REMOVE)**
- Vaccine Storage & Handling Guide (December 2011) **(REPMOVE)**
- Vaccine Storage and Handling Interim Guidance **(REMOVE)**

- Chart of Refrigerated /Frozen Pack Needs **(REMOVE)**
- Transporting Refrigerated Vaccine (This replaces Maintaining the Cold Chain during Transport) **(REMOVE)**
- McKesson Vaccine Return Instructions (This replaces the Guidelines for Returning Vaccine Products to the Manufacturer for Disposal) **(REMOVE)**
- McKesson Form for Return of Outdated, Unused, or Overstocked Drugs **(REMOVE)**

Chapter 10---District/County Inserts

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Chapter 12---Travel Information

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- Travel and Yellow Fever Vaccination Clinics in Georgia **(REPLACE)**
- Vaccines and Biologics Used in U.S. and Foreign Markets (**REMOVE**)
- Translation of Foreign Vaccine-Related Terms into English **(REPLACE)**

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- Appendices
  - Attachment A - Immunization Reference Video Information and Resources, Training Sessions (**REPLACE**)
  - Attachment B - Post Test **(REPLACE)**
  - Attachment C - Post Test Answers **(REPLACE)**
  - Attachment D – Injections: IM/SC (Intramuscular), (Subcutaneous) Injections **(REPLACE)**
  - Attachment E - Vaccine Administration Techniques Post Test **(REPLACE)**
  - Attachment F - Vaccine Administration Techniques Post Test Answer Key **(REPLACE)**
  - Attachment G - Clinical Skills Checklist **(REPLACE)**
  - Attachment H - Guidelines for Student Nurses Administering Immunizations for Clinical Experience in Public Health Settings **(REPLACE)**
  - Attachment I - Influenza Vaccine Administration Routes (**REMOVE)**

Chapter 14—Standard Operating Guidelines for Mass Vaccination Clinics

  - Standard Operating Guidelines for Conducting Mass Vaccination Clinics **(REPLACE)**
  - Mass Vaccinations April 8, 2014 **(REMOVE)**
  - Appendix A: Sample Vaccination/Administration Site Flowchart
  - Appendices B1, B2, B3, B4: Sample Vaccination Site Command Charts
  - Appendices C1, C2, C3: Sample Clinic, District and State Vaccination Reports

As always, this transmittal as well as an updated version of the complete Immunization Program Manual will be posted on the Immunization Program website at dph.georgia.gov/immunization-publications. If you have any questions about this update, please contact the Georgia Immunization Office at 404-657-3158.

Attachment
cc: J. Patrick O'Neal, MD
Sheila Lovett

Georgia Department of Public Health

J. Patrick O'Neal, M.D., Commissioner | Nathan Deal, Governor

2 Peachtree Street NW, 15th Floor
Atlanta, Georgia 30303-3142
dph.ga.gov

DISTRICT _____

MANUAL UPDATE: IMMUNIZATION PROGRAM MANUAL

TRANSMITTAL DATE: June 28, 2018

Manual update(s) have been completed at the following sites on the indicated dates:

(Site)	(Date)	(Person responsible for update)

Please submit one (1) form for your District. Or, if individual counties/clinics complete a form, please collect all and combine on (1) form before submitting to State office. Fax document to Immunization Education Section Nurse Consultant Janet McGruder, Thank you.

DUE: July 31, 2018

FAX 404-657-1463

_____
District Immunization Coordinator

_____
Date

Georgia Department of Public Health

IMMUNIZATION PROGRAM MANUAL

VOL. 17-12 December 2017

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Vaccines to Prevent Hepatitis A (includes use of Immune Globulin [IG])
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Vaccines to Prevent Herpes Zoster (Shingles)
Vaccines to Prevent Human Papillomavirus Infection
Vaccines to Prevent Influenza
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http://www.cdc.gov/vaccines/pubs/vis/default.htm. VIS's in English and different languages can be found at http://www.immunize.org/vis/

After The Shots (simplified version)	English	3199	(07/14)
Después de las vacunas (After The Shots simplified version)	Spanish	3196	(07/14)
Georgia Vaccine Administration Record	English	25-IMM-002E	(11/17)
Refusal to Vaccinate Form	English	25-IMM-012E	(11/16)
Refusal to Vaccinate Form	Spanish	25-IMM-012S	(11/16)

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National Vaccine Injury Compensation Program Vaccine Injury Table

Vaccine Injury Compensation Program (VICP) **(Go to Link http://www.nvic.org/faqs/vaccine-injury-compensation.aspx)**

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C-3---Hepatitis B & Moms-to-Be Pamphlet (2006)

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D-1---Example Hepatitis B Interviewing/Counseling Format

D-2---Sample Perinatal Hepatitis B Interview Questions

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10. DISTRICT/COUNTY INSERTS
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INTRODUCTION TO THE MANUAL

The Georgia Immunization Manual is intended to provide District and County personnel with up-to-date information and guidance. The Georgia Immunization Program Manual is based primarily on the Recommendations of the Advisory Committee on Immunization Practices (ACIP). The ACIP Recommendations are located at http://www.cdc.gov/vaccines/hcp/acip-recs/index.html . The Georgia Immunization Program Manual and ACIP recommendations should be utilized together as the basis for formulating policies and procedures for administering vaccines and providing immunization services. The Department of Public Health also recognizes the Red Book (Report of the Committee on Infectious Diseases) of the American Academy of Pediatrics. Another important reference is the package insert supplied by the manufacturer of the vaccine.

This manual and the ACIP recommendations represent official state policies and standards, and the recommended policies and procedures for administering vaccines, providing immunization services, and documenting and evaluating quality assurance. In addition, the Georgia Immunization Program Manual and ACIP Recommendations serve as an annex to the Standard Operations Procedures (SOP) of the Department of Public Health (DPH), and Emergency Operations Plan (EOP). Districts should utilize the Georgia Immunization Program Manual and the ACIP recommendations as the district's written Policies and Procedures for Administering Vaccines by Registered and Licensed Practical Nurses. Each district is responsible for having written policies and procedures for the administration of travel vaccines that have been reviewed and signed annually by the health director or their designee if applicable. In addition, districts may utilize the Quality Assurance (QA) document included in this manual as a tool to document and evaluate the credentialing, policies, training, administration of vaccine and provision of immunization services. If a district chooses to utilize their own QA instrument, it should include all elements in the QA document in this manual. Constructive criticism, questions and notification of apparent error will be welcomed, but deviation from state policy should not be undertaken lightly. Statements made in this manual take precedence over contradictory policy statements or memos that predate the manual pages.

Occasionally, due to ongoing research and evaluation, ACIP recommendations may differ from the manufacturer's package insert or the information in the Red Book, which is published every three years. When this occurs, the State Immunization Program utilizes the most current ACIP recommendations.

Frequently, the ACIP publishes provisional guidelines prior to receiving final approval from the Director of the CDC and the Secretary of the Department of Health and Human Services (HHS). To facilitate the administration of newly licensed vaccines, the Georgia Immunization Program will utilize these provisional recommendations when necessary in developing guidelines.

From time to time, children present at DPH clinics with requests or orders from private physicians to administer vaccines under unusual circumstances. When the request clearly falls outside the ACIP Recommendations, such as using reduced dosage schedules, it simply should not be honored. When a child has a history or condition which calls for careful judgment as to whether it might be a contraindication and the physician assures that vaccine may be given safely, the District Health Director must make a decision whether to immunize or refer the child back to the physician.

Each subject in the manual is dated. When changes are made, appropriately indexed pages will be made available on the program website to replace outdated material. Transmittal letters should be logged and filed in the Memo section in the manual. When recommendation changes occur between the annual manual updates, health districts will be notified by memos from the State Immunization Program. The Immunization Program Manual will be updated at least annually to include the recommended changes. Health districts are responsible for developing and implementing

a plan to ensure that all memos and manual revisions are distributed, discussed, and implemented within a month of receipt with all appropriate clinics and staff. When questions arise that are not covered adequately anywhere in the manual, the Immunization Program personnel are eager to field them and provide or obtain clarification. A staff person is available for on-call questions Monday through Friday, from 8:00 A.M. until 5:00 P.M. The Immunization Program telephone numbers may be found in Section 1 of this manual.

Georgia Department of Public Health

J. Patrick O'Neal, M.D., Commissioner | Nathan Deal, Governor

2 Peachtree Street NW, 15th Floor
Atlanta, Georgia 30303-3142
dph.ga.gov

Department of Public Health
Policy and Procedure Approval

This publication, in combination with the Recommendations of the Advisory Committee on Immunization Practices, represents the official Policies and Procedures for the Administration of Vaccines and Provision of Immunization Services of the Georgia Department of Public Health. In addition, this manual and the ACIP recommendations serve as an Annex to the Standard Operating Procedures (SOP) of the Department of Public Health (DPH) Emergency Operations Plan (EOP).

The purpose of this manual is to serve as the official Policies and Procedures for the Administration of Vaccines and Provision of Immunization Services by a health district. Each district is responsible for having written policies and procedures for the administration of travel vaccines that have been reviewed and signed annually by the health director or their designee if applicable. District Health Directors should review and sign manuals annually.

We encourage District Health Directors, Clinical Coordinators and Immunization Coordinators, as well as other providers, to review this manual and ensure that their district's policies are in conformance with those outlined in this document. Secondly, the purpose is to delineate the responsibilities and working relationships of state, district and county personnel in matters that concern the Immunization Program.

Any discrepancies or errors found in the manual should be brought to the attention of the Immunization Office at (404) 657-3158 or email dph-immunization@dph.ga.gov. Thank you for your support of the Georgia Immunization Program.

Signed by, _____
Department of Public Health

Date 6/27/2018

IMMUNIZATION
Sheila Lovett
Director
Atlanta Central Office
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Administration
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(404) 232-1507
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(Database Administrator)

Saron Ephraim
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(404) 651-5666
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Toll Free Fax: 1-800-372-3627
VFC Fraud and Abuse Hotline:
(404) 657-5950

DPH-13-390 Conf. Room
(404) 463-0813

Program Website: https://dph.georgia.gov/immunization-section

Revised: November 19, 2018

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Program Website: https://dph.georgia.gov/immunization-section

Revised: November 19, 2018

IMMUNIZATION DISTRICT COORDINATOR'S
&
ADDITIONAL DISTRICT CONTACTS DIRECTORY
REVISED 11/20/2018 @ 8:13 A.M

Company Name:	**Northwest GA. Public Health (District 1-1)**
Immunization Coordinator:	**Janet Eberhart** (Janet.Eberhart@dph.ga.gov)
Title:	District Immunization Coordinator
Address Line:	1309 Redmond Rd NW, Rome, GA 30165-1391
Phone/Fax/Alt:	(706) 802-5623(w), (706) 802-5681(f)
Bulk Mail Address:	Same As Above
Additional Contact *	**Cheryl Bandy** (Cheryl.Bandy@dph.ga.gov)
Title:	District Director of PH Nursing PH/Clinic Service
Address Line:	1309 Redmond Rd NW, Rome, GA 30165-1391
Phone/Fax:	(706) 802-5219(w) (706) 802-5681(f)
IRC – Region 1:	**Jamie Henley – (470) 249-4160 (M)** Bartow, Catoosa, Chattooga, Dade, Floyd, Gordon, Haralson, Polk, Walker
	Toni Jackson – (470) 522-6723 (M) Paulding

Company Name:	**North Georgia Health District (District 1-2)**
Immunization Coordinator:	**Ashley Deverell** (Ashley.Deverell@dph.ga.gov)
Title:	District Immunization Coordinator
Address Line:	1710 Whitehouse Ct., Dalton, GA 30720-8523
Phone/Fax/Alt:	(706) 529-5741(w), ext. 11220 (706) 529-5752(f), (706) 483-9562(alt)
Bulk Mail Address:	Same As Above
Additional Contact *	Marie Smith (Marie.Smith@dph.ga.gov)
Title:	Director of Nursing
Address Line:	1710 Whitehouse Ct., Dalton, GA 30720-8523
Phone/Fax:	(706) 529-5741(w), ext. 12301 (706) 529-5740(f), (706) 936-2111(alt)
IRC – Region 1:	**Jamie Henley – (470) 249-4160 (M)** Fannin, Gilmer, Murray, Pickens, Whitfield
	Toni Jackson – (470) 522-6723 (M) Cherokee

Company Name:	**District 2 Public Health (District 2)**
Immunization Coordinator:	**Sophie Xie** (Sophie.Xie@dph.ga.gov)
Title:	District Immunization and Infectious Disease Coordinator
Address Line:	1280 Athens St, Gainesville, GA 30507-7000
Phone/Fax/Alt:	(770) 535-5886 (w), (770) 535-5958 (f), (770) 268-0728 (al
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Additional Contact *	**VACANT** (@dph.ga.gov)
Title:	Immunization LPN
Address Line:	1280 Athens St, Gainesville, GA 30507-7000
Phone/Fax:	(770) 535-5886(w), (770) 535-5958(f)
IRC – Region 2:	**Farrah Machida – (470) 891-0511 (M)** **Banks, Dawson, Forsyth, Franklin, Habersham, Hall, Hart, Lumpkin, Rabun, Stephens, Towns, Union, White**

Company Name:	**Cobb & Douglas Public Health (District 3-1)**
Immunization Coordinator:	**Priti Kolhe** (Priti.Kolhe@dph.ga.gov)
Title:	District Immunization Director
Address Line:	1650 County Services Pkwy, Marietta, GA 30008-4009
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Bulk Mail Address:	Same As Above
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Title:	Nurse Supervisor
Address Line:	1650 County Services Pkwy, Marietta, GA 30008-4009
Phone/Fax:	(770) 514-2409(w), (770) 428-3855(f), (770) 514-2485(alt)
IRC – Region 3:	**Toni Jackson – (470) 522-6723 (M)** **Cobb, Douglas**

Company Name:	**Fulton County Board of Health (District 3-2)**
Immunization Coordinator:	**Georgia Goseer** (georgia.goseer@fultoncountyga.gov)
Title:	District Immunization Coordinator
Address Line:	1920 John E. Wesley Ave., Rm 281 Atlanta, GA 30337
Phone/Fax/Alt:	(404) 612-1677(w), (404) 612-1522(f)
Bulk Mail Address:	Same As Above
Additional Contact *:	**Dr. Gloria Beecher** (gloria.beecher@fultoncountyga.gov)
Title:	Director of Nursing
Address Line:	10 Park Place Atlanta, GA 30303
Phone/Fax:	(404) 612-1677(w), (404) 612-1522(alt)
IRC – Region 4:	**Tiffany Rosemond – (470) 426-4514 (M)** Fulton

Company Name:	**Clayton County Board of Health (District – 3-3)**
Immunization Coordinator:	**Janna McWilson** (Janna.McWilson@dph.ga.gov)
Title:	Child Health/Immunization Coordinator
Address Line:	685 Forest Parkway, Forest Park, GA 30297 (**Temporary**)
Phone/Fax/Alt:	(678) 610-7361(w), (770) 603-4022 (f), (404) 276-4412(alt)
Bulk Mail Address:	Same As Above
Additional Contact *:	**Nina Posley** (Nina.Posley@dph.ga.gov) (**Acting DIC**)
Title:	CoCasa/Immunization Audit Nurse
Address Line:	685 Forest Parkway, Forest Park, GA 30297
Phone/Fax:	(470) 572-4781(w), () -(f), () -(alt)
IRC – Region 4:	**Tiffany Rosemond – (470) 426-4514 (M)** Clayton

Company Name:	**East Metro Health District (District 3-4)**
Immunization Coordinator:	**Gloria Melvin** (gloria.melvin@gnrhealth.com)
Title:	District Immunization Coordinator
Address Line:	455 Grayson Hwy, Ste. 500, Lawrenceville, GA 30046-6387
Phone/Fax/Alt:	(770) 277-1235(w), (770) 339-4280(f)
Bulk Mail Address:	Same As Above
Additional Contact *:	**Debbie Crowley** (Debbie.Crowley@gnrhealth.com)
Title:	District Program Manager
Address Line:	2570 Riverside Pkwy, Lawrenceville, GA 30046-3339
Phone/Fax:	(678) 376-3212(w), (770) 339-2334(f)
IRC – Region 5:	**Dionne Hansey – (404) 620-7222 (M)** Gwinnett
	Tarasita Merritt– (470) 382-0466(M) Newton, Rockdale

Company Name:	**Dekalb County Board of Health (District 3-5)**
Immunization Coordinator:	**Janet Kelly** (Janet.Kelly@dph.ga.gov)
Title:	Immunization Program Supervisor
Address Line:	440 Winn Way Suite 3133, Decatur, GA 30030
Phone/Fax/Alt:	(404) 294-3794(w), (404) 270-2400(f), (470) 925-8486(alt)
Bulk Mail Address:	Same As Above
Additional Contact *:	**Stefani Carter** (Stefani.Carter@dph.ga.gov)
Title:	Health Care Programs Manager
Address Line:	440 Winn Way, Decatur, GA 30030
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IRC – Region 6:	**Tarasita Merritt– (470) 382-0466(M)** Dekalb

Company Name:	**District Four Public Health Services (District 4)**
Immunization Coordinator:	**Amy Fenn** (Amy.Fenn@dph.ga.gov)
Title:	Assistant Director of Nursing/Immunization Coordinator
Address Line:	301 Main Street, LaGrange, GA 30240-5754
Phone/Fax/Alt:	(706) 298-7712(w), 223 (706) 845-4094(f), (706) 845-4035(alt)
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Additional Contact *	**Tina Arnold** (Tina.Arnold@dph.ga.gov)
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IRC – Region 7:	**Tina Dempsey – (404) 277-6442 (M)** Butts, Carroll, Coweta, Fayette, Heard, Henry, Lamar, Meriwether, Pike, Spalding, Troup
	Kelly Seegmueller – (404) 277-3179 (M) Upson
	Lisa Jenkins – (404) 615-2427 (M) Atkinson, Clinch, Coffee

Company Name:	**South Central Health District (District 5-1)**
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Address Line:	2121-B Bellevue Rd, Dublin, GA 31021-2952
Phone/Fax/Alt:	(478) 275-6545(w), (478) 275-6575(f), (478) 275-6560(alt)
Bulk Mail Address:	Same As Above
Additional Contact *	**Kelly Knight** (Kelly.Knight@dph.ga.gov)
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Address Line:	2121-B Bellevue Rd, Dublin, GA 31021-2952
Phone/Fax:	(478) 275-6564(w),(478) 275-6575(f),(478) 275-6564(alt)
IRC – Region 8 :	**Kelly Duke – (404) 277-9414 (M)** Bleckley, Dodge, Johnson, Laurens, Montgomery, Telfair, Treulen, Wheeler
	Kelly Seegmueller – (404) 277-3179 (M) Pulaski, Wilcox

Company Name:	**North Central Health District (District 5-2)**
Immunization Coordinator:	**Judy McChargue** (Judy.Mcchargue@dph.ga.gov)
Title:	Immunization Coordinator
Address Line:	201 Second St, Ste. 1100, Macon, GA 31201-2144
Phone/Fax/Alt:	(478) 751-4151(w), (478) 314-3877(f), (478) 951-9740(alt)
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Additional Contact *	**Anita Barkin** (Anita.Barkin@dph.ga.gov)
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Address Line:	201 Second St, Ste. 1100, Macon, GA 31201-2144
Phone/Fax:	(478) 751-6045(w)
IRC – Region 8:	**Kelly Duke – (404) 277-9414 (M)** **Baldwin, Bibb, Crawford, Hancock, Houston,Jasper, Jones, Monroe, Peach, Putnam, Twiggs,Washingon, Wilkinson**

Company Name:	**East Central Health District (District 6)**
Immunization Coordinator:	**Susan Edmunds** (Susan.Edmunds@dph.ga.gov)
Title:	Child Health/District Immunization Coord.
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Phone/Fax/Alt:	(706) 667-4286(w), (706) 667-4555(f),(706) 691-7530 (alt)
Bulk Mail Address:	Same As Above
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Phone/Fax:	(706) 667-4400(w), (706) 667-4555(f)
IRC – Region 9:	**Shelia Fultz – (404) 387-5476 (M)** **Burke, Columbia, Emanuel, Glascock, Jefferson, Jenkins, Lincoln, McDuffie, Richmond, Screven, Taliaferro, Warren, Wilkes**

Company Name:	**West Central Health District (District 7)**
Immunization Coordinator:	**Cathy Henderson** (Cathy.Henderson@dph.ga.gov)
Title:	Public Health Nurse Coordinator
Address Line:	2100 Comer Ave, Columbus, GA 31904
Phone/Fax/Alt:	(706) 321-6137(w) (706) 321-6126(f)
Bulk Mail Address:	Same As Above
Additional Contact *	**Tori Endres** (Tori.Endres@dph.ga.gov)
Title:	District Nursing/Clinical Director
Address Line:	2100 Comer Ave, Columbus, GA 31904
Phone/Fax:	(706) 321-6136(w) (706) 321-6126(f)
IRC – Region 10:	**Kelly Seegmueller – (404) 277-3179 (M)** **Chattahoochee, Clay, Crisp, Dooly, Harris, Macon, Marion, Muscogee, Quitman, Randolph, Schley, Stewart, Sumter, Talbot, Taylor, Webster**

Company Name:	**Lowndes County Health Department (District 8-1)**
Immunization Coordinator:	**Reomona Thomas** (Reomona.Thomas@dph.ga.gov)
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Address Line:	206 S. Patterson St., 3rd Fl, Valdosta, GA 31601
Phone/Fax/Alt:	(229) 293-6290(w), (229) 293-6292(f),(229) 293-6286(alt)
Bulk Mail Address:	Same As Above
Additional Contact *	**Lisa Thomas** (Lisa.Thomas@dph.ga.gov)
Title:	District Clinical Nursing Director
Address Line:	325 W. Savannah Av, Valdosta, GA 31602
Phone/Fax:	(229) 333-5290(w), (229) 333-7822(f)
IRC – Region 11:	**Lisa Jenkins – (404) 615-2427 (M)** **Ben Hill, Berrien, Brooks, Cook, Echols, Irwin, Lanier, Lowndes, Tift, Turner**

Company Name:	**Baker County Health Department (District 8-2)**
Immunization Coordinator:	**Rebecca Snow** (Rebecca.Snow@dph.ga.gov)
Title:	District Immunization Coordiantor
Address Line:	327 Sunset Blvd, Newton, GA 39870-7343
Phone/Fax/Alt:	(229) 734-5226(w), (229) 734-6023(f), (229) 344-3193(alt)
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Additional Contact *	**Sandra Palmer** (Sandra.Palmer@dph.ga.gov)
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IRC – Region 10:	**Kelly Seegmueller** – (404) 277-3179 (M) Calhoun, Early, Lee, Terrell
	Lisa Jenkins – (404) 615-2427 (M) Baker, Colquitt, Decatur, Dougherty, Grady, Miller, Mitchell, Seminole, Thomas, Worth

Company Name:	**Coastal Health District (District 9-1)**
Immunization Coordinator:	**Paige Lightsey** (Paige.Lightsey@dph.ga.gov)
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Address Line:	150 Scranton Connector, Brunswick, GA 31525
Phone/Fax/Alt:	(912) 262-2346(w), (912) 262-2315(f)
Bulk Mail Address:	Same As Above
Additional Contact *	**Betty Dixon** (Betty.Dixon@dph.ga.gov)
Title:	Clinical and Nursing Services Director
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Phone/Fax:	(912) 644-5208(w), (912) 349-5691(f), (912) 660-2819(alt)
IRC – Region 12:	**John Sheahan – (404) 323-5668 (M)** Bryan, Camden, Chatham, Effingham, Liberty, Long, McIntosh

Company Name:	**Southeast Health District (District 9-2)**
Immunization Coordinator:	**Kay Davis** (Kay.Davis@dph.ga.gov)
Title:	Assistant Clinical Coordinator
Address Line:	PO Box 430, Reidsville, GA 30453-0430
Phone/Fax/Alt:	(912) 557-7172(w), (912) 557-7954(f), (912) 237-2166(alt)
Bulk Mail Address:	200 B South Main St, Reidsville, GA 30453-4602
Additional Contact *	**Cindi Hart** (Cindi.Hart@dph.ga.gov)
Title:	District Nursing & Clinical Coordinator
Address Line:	200 B South Main St., Reidsville, GA 30453-0426
Phone/Fax:	(912) 557-7193(w), (912) 557-7954(f)
IRC – Region 8:	**Kelly Duke – (404) 277-9414 (M)** Jeff Davis, Toombs
	Shelia Fultz – (404) 277-3179 (M) Bulloch, Candler
	Lisa Jenkins – (404) 615-2427 (M) Atkinson, Clinch, Coffee
	John Sheahan – (404) 323-5668 (M) Appling, Bacon, Brantley, Charlton, , Evans, Glynn, Pierce, Tattnall, Ware, Wayne

Company Name:	**Northeast Health District (District 10)**
Immunization Coordinator:	**Cheyenne Candelario** (Cheyenne.Candelario@dph.ga.gov)
Title:	Immunization Coordinator
Address Line:	220 Research Dr., Athens, GA 30605
Phone/Fax/Alt:	(706) 227-5332(w), (706) 552-2951(f)
Bulk Mail Address:	Same As Above
Additional Contact *	**Pam Smith** (Pam.Smith@dph.ga.gov)
Title:	District Nursing and Clinical Director
Address Line:	220 Research Dr., Athens, GA 30605
Phone/Fax:	(706) 583-2777(w), (706) 369-6374 (f), (706) 540-1012(alt)
IRC – Region 13:	**Angie Webster – (404) 277-8923 (M)** Barrow, Clarke, Elbert, Greene, Jackson, Madison, Morgan, Oconee, Oglethorpe, Walton

Georgia Immunization Program
3184 Immunization Materials Request Form

SEND TO:
2 Peachtree Street, NW,
Atlanta, GA 30303, 13-276
Office: (404) 657-3158
Fax To: (404) 657-1463

PLEASE TYPE REQUESTOR INFORMATION:		STAMP OFFICE ADDRESS HERE
Date Requested:		
Person Ordering Materials Name:		
Office Name:		
Office Address:		
Office City, State, Zip code:		
Office Phone:		

NOTE: Please order by number of forms needed (example: 50, 100 etc.)

All current VIS's are on the internet and can be downloaded and printed at Immunization Action Coalition: http://www.immunize.org or CDC website: http://www.cdc.gov/vaccines/pubs/vis/default.htm

DESCRIPTION		
Certificates For School / Child Care Attendance:	**FORM #**	**QTY**
Certificate of Immunization (**Online see GRITS website below**)	3231	
Vaccine Requirements For Form 3231 (**Online see website below**)	3231 REQ	
Instructions On How To Complete Form 3231 (**Online see website below**)	3231 INS	
Parent & Client Education:	**FORM #**	**QTY**
Give 'Em Your Best Shot (GA. Requirement For School/Child Care) (Infant & Child) (***English***)	3193	
Hay que Vacunarlos (GA. Requirement For School/Child Care) (Infant & Child) (***Spanish***)	3194	
Be There For Your Child During Shots (***English & Spanish***) (**Online see website below**)	3227	
Hop to It! (Infant,Child & Adolescent) (***English***)	3116	
Hop to It! (Infant,Child & Adolescent) (***Spanish***)	3116-S	
Word to the Wise: Immunize (Adult) (***English***)	3110	
Word to the Wise: Immunize (Adult) (***Spanish***)	3110-S	
After the Shots (Infant & Child) (***English***) (**Online see website below**)	3199	
After the Shots (Infant & Child) (***Spanish***) (**Online see website below**)	3196	
GRITS (Keeping Georgians Healthy) (***English***)	25-IMM-005	
Records & Request Forms:	**FORM #**	**QTY**
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Georgia Department of Public Health
Immunization Program Vaccine Standards

These vaccine standards represent a summary of the pertinent information on each vaccine found in the most current ACIP Recommendations statements, Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th (The Pink Book), the 2015 Red Book: Report of the Committee on Infectious Diseases, and in the most recent Vaccines for Children Program resolutions.

These standards have been developed for use by RNs and LPNs and are intended to be used as a quick but accurate source of standards for practitioners giving immunizations or providing information about vaccines. For more specific details about any portion of these guidelines, the above-named references should be consulted.

These vaccine standards will be updated at least on a yearly basis, and more often as circumstances dictate. In addition to staff members of the Georgia Immunization Program, the following physician(s) have reviewed and approved the information provided therein:

Pamela Logan, MD
Pamela Logan, M.D.
District Health Director, District-2

10/13/17
Date Signed

Immunization Standards For DPH Clinics

A. Standards for Administration

The Georgia Immunization **Program** recommends that all DPH clinics follow the current Recommended Childhood Immunization Schedule that is developed and published annually by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP) and the American Academy of Family Physicians (AAFP). A copy of the most current schedule, including the footnotes, is inserted in this section of the manual. Additional charts and tables are included to provide assistance in further defining and clarifying the recommended schedule. Also included is a recommended infant/child screening questionnaire to assist providers in identifying possible contraindications and precautions for administering vaccines.

The Recommended Adult Immunization Schedule and a Screening Questionnaire for Adults are also included in this section.

The charts and tables are meant to serve as **standards** and provide quick references for individuals assessing immunization records and administering vaccines. Detailed information regarding vaccines and vaccine administration policies should be obtained from the most current ACIP Recommendations. These recommendations may be accessed from CDC's web site (see Immunization Resources in Section 13, Attachment A of this manual).

It is imperative that all those who administer vaccines follow the **standards** put forth in the General Recommendations on Immunization ACIP statement[1], the Epidemiology and Prevention of Vaccine-Preventable Diseases (the "Pink Book"),[2] as well as those found in this manual in Chapter 13, Quality Assurance. The following principles are merely a summary of these recommendations and are not meant to be all-inclusive:

1. Ascertain the client's need for the recommended immunizations to avoid drawing up vaccine that will not be used.
2. Select correct needle size for vaccine, route, and size of client.
3. Double-check the vial label and expiration date before AND after drawing up vaccine.
4. If preparing multiple vaccinations, label each syringe or use labeled tray in order to correctly identify vaccines before administration.
5. Use aseptic technique throughout vaccine preparation, administration, and disposal of syringes and other materials.
6. Avoid prefilling syringes because of the risk for administration errors. Other problems that could be associated with this practice are vaccine wastage and possible bacterial growth in vaccines that do not contain a preservative. In addition, syringes other than those that are prefilled by the manufacturer are designed for immediate administration, not for vaccine storage.
7. If it is necessary to reconstitute more than one vaccine dose, as for a large influenza clinic, only prefill a FEW syringes at a time, which you can administer while someone else is prefilling a few syringes they will administer. Any syringes left at the end of the clinic day **should be discarded**.
8. Under NO CIRCUMSTANCES should MMR, MMRV, Zoster or varicella vaccine ever be reconstituted and drawn prior to the immediate need for the vaccines. These live virus vaccines are unstable and begin to deteriorate as soon as they are reconstituted with diluent.

9. All providers who administer vaccinations should be aware of the potential for syncope (fainting) after vaccination and take appropriate measures to prevent it. Thus, clinicians should (1) make sure that people who are being vaccinated are always seated; (2) be aware of symptoms that precede fainting (weakness, dizziness, pallor, etc.); and (3) take appropriate measures to prevent injuries if such symptoms occur.[3] Vaccine providers should strongly consider observing vaccinated people for 15 minutes after vaccination.[4] This is particularly important when vaccinating adolescents and young adults.
10. **When children present at DPH clinics with requests or orders from private physicians to administer vaccines under unusual circumstances and the request clearly falls outside the ACIP Recommendations it simply should not be honored. When a child has a history or condition which calls for careful judgment as to whether it might be a contraindication and the physician assures that vaccine may be given safely, the District Health Director must decide whether to immunize or refer the child back to the physician.**

B. Guidelines for Eligibility for VFC and State-Supplied Vaccines

Eligibility criteria are outlined in each of the Immunization Program Vaccine Guidelines in this section. In addition, the table following this document outlines the eligibility criteria for vaccines provided by the Vaccines for Children Office (VFC) and by the Georgia Immunization Program. All clinics are responsible for screening and documenting a person's eligibility for receiving state supplied vaccines. For the purposes of these documents, a child is defined as a person from 0 through 18 years of age. An adult is anyone 19 years of age or older. The following mandates should be utilized when conducting eligibility screening for either group:

I. Eligibility Criteria for Children

A. All children 0 through 18 years of age should be screened to determine VFC eligibility using the following terms and definitions:
   1. Medicaid---is eligible for Medicaid services.
   2. American Indian/Alaska Native---self-reported by the patient.
   3. Uninsured children---have no health insurance.
   4. Underinsured children---have insurance but vaccines are not a covered benefit.[5]
      - Example: An insurance company may not cover certain vaccines, such as the pneumococcal conjugate vaccine. The child will qualify for VFC for that particular vaccine only.
      - Example: An insurance company may cover immunizations up to a certain age. Up to that age, the child is fully insured. After that age, the child is considered underinsured (has insurance but vaccines are not a covered benefit).
      - Example: An insurance company may only provide $100.00 per year to cover the costs of immunizations. The child is fully insured up to $100.00. Once this amount is exhausted, the child is then eligible to receive VFC vaccine.
   5. PeachCare for Kids---has a current PeachCare for Kids card at the time of service.[5]

B. Any child who has insurance coverage for immunizations is not eligible to receive state-supplied vaccines. This is the case even when the insured has a high deductible --- the child is considered fully insured. These children should be:
   1. referred to their private provider; or
   2. administered vaccine purchased by the district.

II. Eligibility Criteria for Vaccines Supplied by VFC for minors presenting for services without proof of insurance. Please use the following guidance:

A. Unaccompanied minors through the age of 18 who are being seen in a public health STD or Family Planning clinic, and who present without proof of insurance, may be immunized using VFC vaccine.
   1. Hep A, Hep B, and HPV are the only vaccines that may be administered to someone under the age of 18 **based on their own consent.**
   2. Be aware that you may come across an 18-year-old patient who is still covered by their parent's insurance, but is unable to access it. Because the patient is 18 she or he may legally consent for additional vaccines, all of which should be included on the Title X form.

B. To document eligibility screening, records should reflect 'Uninsured' for this population.

C. Complete Title X log sheet for any minor receiving vaccine in this category.

III. Eligibility Criteria for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults (Refer to table on following pages.)

C. Standards for Documentation

All public health clinics should be utilizing the Georgia Registry of Immunization Transactions and Services (GRITS) for reviewing and documenting the immunization status of all clients. Public health clinics should have the technological capability and staff trained to ensure that, regardless of the individual software system used, immunizations administered will be entered into the GRITS system within 2 business days.

[1] General Recommendations on Immunization, *MMWR*, December 1, 2006, Vol. 55, RR-15, pg. 13.
[2] Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Atkinson W, Hamborsky J, McIntyre J, Wolfe S, eds. 10th ed. Washington DC: Public Health Foundation, 2007, Appendix D.
[3] "Medical Management of Vaccine Reactions in Children and Teens" at http://www.immunize.org/catg.d/p3082a.pdf and "Medical Management of Vaccine Reactions in Adult Patients" at http://www.immunize.org/catg.d/p3082.pdf
[4] General Recommendations on Immunization, *MMWR*, January 28, 2011, Vol. 60, RR-2, pg. 12.
[5] Vaccines provided for these groups come from state or federal funding sources other than VFC.

Eligibility Criteria for Vaccines Supplied by the GA Immunization Program for Children, Adolescents, and Adults seen in GA Public Health Clinics

The Georgia Immunization Program (GIP) manages vaccines funded by:

- Federal Vaccines for Children (VFC) program
- Federal Section 317 immunization grant
- State CHIP (PeachCare for Kids®) program

The following tables indicate which vaccines:

- are available for VFC, 317, & CHIP eligible children
- are available for other clients seen in Georgia public health clinics.

The intent of these tables:

- **IS NOT to determine which children, adolescents and/or adults should be immunized, but**
- **IS to define which groups can be immunized with federally funded VFC, federally funded Section 317, or CHIP purchased vaccines.**

For specific vaccine guidelines refer to Section 2, Recommended Schedules and Guidelines, of the Georgia Immunization Program Manual. The vaccine must be provided at no cost to the patient. Vaccine administration fees for self-pay clients are capped at $21.93 per injection for both non-Medicaid VFC and Section 317 funded vaccine. No client should be refused vaccination with VFC, Section 317, or CHIP vaccine due to inability to pay the administration fee. **If a client meets at least one eligibility criterion for each component of a combination vaccine** (e.g., Pediarix, MMRV, Twinrix), they are eligible to receive that combination vaccine if the state supplies it.

Eligibility	Diphtheria, Tetanus, Pertussis vaccines	Hib vaccine	Influenza vaccine	Meningococcal vaccines
Supplied for : **VFC- eligible children** VFC eligibility criteria[1] • Age 0 through 18 years and • No insurance or • Medicaid Recipient or • American Indian or Alaska native **317/CHIP eligible children** • Underinsured • PeachCare Enrolled	Yes; Eligible children: **DTaP**--Children less than 7 years of age **Tdap** • One dose for children 7 to 10 years with an incomplete DTaP primary series • One dose for unvaccinated adolescent males and non-pregnant females • For pregnant adolescents for each pregnancy irrespective of past history of Tdap receipt **Td**-- Children 7 years through 18 years of age **Pediatric DT- not VFC supplied**	Yes: eligible children: • 6 weeks through 4 years of age	Yes: eligible children: • 6 months through 18 years of age	Yes: eligible children: **MCV4** • Series for children at highest risk for meningococcal infection[3] • primary and/or booster dose(s) for adolescents aged 11 through 18 years **MenB** • series for children ≥ 10 yrs. at highest risk for meningococcal infection[3] • series for adolescents aged 16 through 18 years
Federal funded Section 317 immunizations for other groups seen in GA public health clinics[1]	Yes; Uninsured and underinsured adults 19 years or older: **Tdap**- • One dose for unvaccinated males and non-pregnant females • For pregnant women for each pregnancy irrespective of past history of Tdap receipt **Td** - for boosters or to complete primary series	Yes: • For unvaccinated individuals who are uninsured, or underinsured and older than 59 months of age with a high-risk condition[3]	No	Yes; Uninsured or underinsured individuals: **MCV4** • primary dose and/or booster dose(s) for college students 19 through 21 yrs. • primary and/or booster dose(s) for adults at highest risk for meningococcal infection[3] **MenB** • Series for college students 19 through 23 yrs. • Series for adults at highest risk for meningococcal infection[3]
Groups in Georgia NOT covered by VFC, Federal Section 317, nor CHIP immunization funds[2]	• Insured clients with immunization coverage • Refugees[1] ≥ 19 years of age	• Insured clients with immunization coverage		• Insured clients with immunization coverage • Refugees[1] ≥ 19 years of age

Eligibility Criteria for Vaccines Supplied by the GA Immunization Program for Children, Adolescents, and Adults seen in GA Public Health Clinics

Eligibility	Hepatitis B vaccine[4]	Hepatitis A vaccine[4]	Measles, Mumps, and Rubella vaccine	Inactivated Polio vaccine
Supplied for : **VFC- eligible children** VFC eligibility criteria[1] • Age 0 through 18 years and • No insurance or • Medicaid Recipient or • American Indian or Alaska native **317/CHIP eligible children** • Underinsured • PeachCare Enrolled	Yes: VFC eligible children birth through 18 years of age	Yes: VFC eligible children 12 months through 18 years of age	Yes: VFC eligible children 12 months through 18 years of age	Yes: VFC eligible children 6 weeks through 18 years of age
Federal funded Section 317 immunizations for other groups seen in GA public health clinics[1]	Yes; (pediatric formulations for persons <20 yrs and adult formulations for persons ≥ 20 yrs) Uninsured, or underinsured individuals • Men having sex with men • Illegal drug users • Persons seeking STD/HIV clinic services, including HIV testing and counseling and HIV care services • Individuals with multiple partners (more than 1 partner in 6 months) • Persons recently diagnosed with an STD • Homeless adults • Persons seeking Family Planning clinic services • Sexual partners of persons with acute or chronic hepatitis B virus infection and household contacts of persons with acute and chronic HBV infection (includes contacts to perinatal hepatitis B case investigations) • Hemodialysis/transplant patients • Diabetics (Type I or Type II) • Persons who began the series using VFC or 317 funded vaccine and still need to complete the series • Any unvaccinated adult who wants to be protected against hepatitis B virus	Yes; Uninsured, or underinsured individuals • Men having sex with men • Illegal drug users • Female partners of MSM • Persons who engage in sexual practices that could facilitate fecal-oral transmission of hepatitis A • Person with chronic liver disease, including hepatitis C • HIV-infected persons seeking HIV care services • American Indians and Alaska natives • Persons who began the series using VFC or 317 funded vaccine and still need to complete the series • Persons 19 through 40 years of age (and persons over aged 40 years, if IG cannot be obtained) designated by district or state epidemiology personnel as eligible contacts to a documented case of hepatitis A disease [5] • Any unvaccinated adult who wants to be protected against hepatitis A virus	Yes; Uninsured, or underinsured individuals meeting one of the following criteria: • Persons born during or after 1957 and who specifically request it • One dose for persons born before 1957 without evidence of immunity and who specifically request it • College students of any age • HIV-infected persons[3] • Persons seeking Family Planning clinic services • Women who could become pregnant regardless of age • Persons 19 years of age and older with negative serology results for measles, mumps, or rubella immunity	No
Groups in Georgia NOT covered by VFC, Federal Section 317, nor CHIP immunization funds[2]	• Insured clients with immunization coverage • Refugees[1] ≥ 19 years of age	• Insured clients with immunization coverage • Refugees[1] ≥ 19 years of age	• Insured clients with immunization coverage • Refugees[1] ≥ 19 years of age	

Eligibility Criteria for Vaccines Supplied by the GA Immunization Program for Children, Adolescents, and Adults seen in GA Public Health Clinics

Eligibility	Pneumococcal vaccines	Varicella vaccine	Rotavirus Vaccine	IG
Supplied for : **VFC- eligible children** VFC eligibility criteria[1] • Age 0 through 18 years and • No insurance or • Medicaid Recipient or • American Indian or Alaska native **317/CHIP eligible children** • Underinsured • PeachCare Enrolled	Yes: VFC eligible children • PCV13 for children 6 weeks through 59 months of age • One PCV13 dose for children 6 yrs through 18 yrs with high risk conditions[3] • One or Two doses of PPSV23 for high-risk children 2 years through 18 years[3]	Yes: VFC eligible children • 12 months through 18 years of age are eligible for 2 doses of vaccine	Yes: VFC eligible children • 6 weeks through 32 weeks of age	No
Federal funded Section 317 immunizations for other groups seen in GA public health clinics[1]	Yes; PCV13 and PPSV23 for uninsured, or underinsured individuals • 19 years of age and older with high-risk criteria. (See "Pneumococcal Vaccine Guidelines" in the GIP Manual)	Yes; Uninsured, or underinsured individuals • 19 years of age and older without evidence of varicella immunity	No	Yes: • Hepatitis A contacts who fall within specific guidelines. See "Vaccines to Prevent Hepatitis A" guidelines in the GIP Manual To obtain IG, contact the Hepatitis Program Director at (404) 657-3171.
Groups in Georgia NOT covered by VFC, Federal Section 317, nor CHIP immunization funds[2]	• Insured clients with immunization coverage • Individuals wanting more than 3 documented doses of PPSV23 • Refugees[1] ≥ 19 years of age	• Insured clients with immunization coverage • Refugees[1] ≥ 19 years of age		• International travelers • Pre-exposure vaccination for persons with occupational exposure

Eligibility Criteria for Vaccines Supplied by the GA Immunization Program for Children, Adolescents, and Adults seen in GA Public Health Clinics

Eligibility	HBIG	HPV	Zoster vaccine	
Supplied for : **VFC- eligible children** VFC eligibility criteria[1] • Age 0 through 18 years and • No insurance or • Medicaid Recipient or • American Indian or Alaska native **317/CHIP eligible children** • Underinsured • PeachCare Enrolled	No	Yes; Routine vaccination for VFC eligible males and females • HPV9 for females or males 9 through 18 years of age	No	
Federal funded Section 317 immunizations for other groups seen in GA public health clinics[1]	Yes: • Infants of HBsAg positive mothers, if HBIG was not received at birth in the hospital, and if it can be administered within 7 days of birth • Unvaccinated infants whose primary caregiver has **acute** hepatitis B • Persons not previously immunized with hepatitis B vaccine who have had recent sexual exposure (in the past 14 days) to a person who is **acutely** infected with the hepatitis B virus • Household contacts of any age in direct contact with the blood of an **acutely** infected person within 7 days of exposure To obtain HBIG, contact the Hepatitis Program Director at (404) 657-3171.	Yes; Uninsured, or underinsured • HPV9 for females and males 19 through 26 years who began the series using VFC or state-supplied vaccine and still need to complete the 3 doses series • HPV9 for unvaccinated females and males 19 through 26 years	Yes; Uninsured, or underinsured individuals • 60 yrs and older	
Groups in Georgia NOT covered by VFC, Federal Section 317, nor CHIP immunization funds[2]	• International travelers • Persons exposed to needle sticks • Persons with occupational exposure	• Insured clients with immunization coverage • Refugees[1] ≥ 19 years of age		

[1] Children aged 0 through 18 years of age who are in "refugee" status **and** meet VFC eligibility criteria are considered VFC eligible. Medicaid should be billed for the administration fee and for vaccines given to refugees in the 19-20 year old age group. Reimbursement for vaccine administration and county purchased vaccine for refugees aged ≥ 21 years of age should be billed to and paid by the Refugee Health Program (initial dose only). *(Note: US citizenship is not required to receive any federal funded vaccine.)*
[2] Persons in these groups are not eligible to receive VFC or Federal 317 funded vaccine as described above.
[3] For guidance on specific conditions, refer to www.cdc.gov/vaccines/hcp/acip-recs/index.html
[4] A person under 19 years of age who may have insurance but because of the circumstances for seeking services does not have access to that insurance coverage is uninsured for the purposes of the VFC program.
[5] Such persons would be eligible for both doses of the hepatitis A vaccine series.

U.S. Vaccines: Table 1

(For Combination Vaccines, See Table 2)

Vaccine	Trade Name	Abbreviation	Manufacturer	Type / Route	Approved	Comments
Adenovirus	Adenovirus Type 4 & Type 7		Barr Labs Inc.	Live Viral / Oral (tablets)	2011	Approved for military populations 17 through 50 years.
Anthrax	BioThrax®	AVA	Emergent BioSolutions	Inactivated Bacterial / IM	1970	Age range 18 through 65 years
Cholera	Vaxchora®		PaxVax	Live Bacterial / Oral	2016	Age range 18 through 64 years.
DTaP	Daptacel®	DTaP	sanofi	Inactivated Bacterial / IM	2002	Age range 6 weeks through 6 years.
	Infanrix®	DTaP	GlaxoSmithKline	Inactivated Bacterial / IM	1997	Age range 6 weeks through 6 years.
DT	Generic	DT	sanofi	Inactivated Bacterial Toxoids / IM	1978	Age range 6 weeks through 6 years.
Haemophilus influenzae type b (Hib)	ActHIB®	Hib (PRP-T)	sanofi	Inactivated Bacterial / IM	1993	3-dose primary series
	Hiberix®	Hib (PRP-T)	GlaxoSmithKline	Inactivated Bacterial / IM	2009	3-dose primary series
	PedvaxHIB®	Hib (PRP-OMP)	Merck	Inactivated Bacterial / IM	1989	2-dose primary series
Hepatitis A	Havrix®	HepA	GlaxoSmithKline	Inactivated Viral / IM	1995	Pediatric & adult formulations. Minimum age = 1 year
	Vaqta®	HepA	Merck	Inactivated Viral / IM	1996	Pediatric & adult formulations. Minimum age = 1 year
Hepatitis B	Engerix-B®	HepB	GlaxoSmithKline	Recombinant Viral / IM	1989	Pediatric & adult formulations. Minimum age = birth
	Recombivax HB®	HepB	Merck	Recombinant Viral / IM	1986	Pediatric & adult formulations. Minimum age = birth
Herpes Zoster (Shingles)	Zostavax	HZV	Merck	Live Attenuated Viral / SC	2006	Minimum age = 50 years.
Human Papillomavirus (HPV)	Gardasil® 9	9vHPV	Merck	Inactivated Viral / IM	2014	Approved for males and females 9 through 26 years.

Vaccine	Trade Name	Abbreviation	Manufacturer	Type / Route	Approved	Comments
Influenza	Afluria®	IIV3 IIV4	Seqirus	Inactivated Viral / IM	2007 2016	Minimum ages: 5 years (trivalent) 18 years (quadrivalent)
	Fluad®	IIV3	Sequiris	Inactivated Viral / IM	2015	Adjuvented Minimum age = 65 years
	Fluarix®	IIV3 IIV4	GlaxoSmithKline	Inactivated Viral / IM	2005 2012	Minimum age = 3 years
	Flublok®	RIV3 RIV4	Protein Sciences Corp.	Recombinant Viral / IM	2013	Minimum age = 18 years
	Flucelvax®	ccIIV3 ccIIV4	Seqirus	Cell-culture Viral / IM	2012 2016	Minimum age = 4 years
	FluLaval®	IIV3 IIV4	GlaxoSmithKline	Inactivated Viral / IM	2006 2013	Minimum age = 6 months
	FluMist®	LAIV4	Medimmune	Live Attenuated Viral / Intranasal (spray)	2003	Age range 2 through 49 years
	Fluvirin®	IIV3	Seqirus	Inactivated Viral / IM	1988	Minimum age = 4 years
	Fluzone®	IIV3 IIV4	sanofi	Inactivated Viral / IM	1980 2013	Minimum age = 6 months
	Fluzone® High-Dose	IIV3	sanofi	Inactivated Viral / IM	2009	Minimum age = 65 years
	Fluzone® Intradermal	IIV4	sanofi	Inactivated Viral / Intradermal	2011	Age range 18 through 64 years
Japanese encephalitis	Ixiaro®	JE	Valneva	Inactivated Viral / IM	2009	Minimum age = 2 months
Measles, Mumps, Rubella	M-M-R® II	MMR	Merck	Live Attenuated Viral / SC	1978 (First MMR – 1971)	Minimum age = 12 months
Measles, Mumps, Rubella, Varicella	ProQuad®	MMRV	Merck	Live Attenuated Viral / SC	2005	Age range 1 through 12 years
Meningococcal	Menomune®	MPSV4	sanofi	Inactivated Bacterial / SC	1981	Minimum age = 2 years
	Menactra®	MCV4 MenACWY	sanofi	Inactivated Bacterial / IM	2005	Age range 9 months through 55 years
	Menveo®	MCV4 MenACWY	GlaxoSmithKline	Inactivated Bacterial / IM	2010	Age range 2 months through 55 years
	Trumenba®	MenB	Pfizer	Recombinant Bacterial / IM	2014	Age range 10 through 25 years
	Bexsero®	MenB	GlaxoSmithKline	Recombinant Bacterial / IM	2015	Age range 10 through 25 years

Vaccine	Trade Name	Abbreviation	Manufacturer	Type / Route	Approved	Comments
Pneumococcal	Pneumovax® 23	PPSV23	Merck	Inactivated Bacterial / SC or IM	1983	Minimum age = 2 years
	Prevnar 13®	PCV13	Pfizer	Inactivated Bacterial / IM	2010 (PCV7 – 2000)	Minimum age = 6 weeks
Polio	Ipol®	IPV	sanofi	Inactivated Viral / SC or IM	1990 (IPV-1955)	Minimum age = 6 weeks
Rabies	Imovax® Rabies		sanofi	Inactivated Viral / IM	1980	All ages
	RabAvert®		GlaxoSmithKline	Inactivated Viral / IM	1997	All ages
Rotavirus	RotaTeq®	RV5	Merck	Live Viral / Oral (liquid)	2006	3-dose series 1st dose 6 through 14 weeks 3rd dose max age 8 months 0 days
	Rotarix®	RV1	GlaxoSmithKline	Live Viral / Oral (liquid)	2008	2-dose series 1st dose 6 through 14 weeks 2nd dose max age 8 months 0 days
Tetanus, (reduced) Diphtheria	Tenivac®	Td	sanofi	Inactivated Bacterial Toxoids / IM	2003	Minimum age 7 years
	(Generic)	Td	Massachusetts Biological Labs	Inactivated Bacterial Toxoids / IM	1967	Minimum age 7 years
Tetanus, (reduced) Diphtheria, (reduced) Pertussis	Boostrix®	Tdap	GlaxoSmithKline	Inactivated Bacterial / IM	2005	Age range 10 through 64 years
	Adacel®	Tdap	sanofi	Inactivated Bacterial / IM	2005	Age range 10 through 64 years
Typhoid	Typhim Vi®		sanofi	Inactivated Bacterial / IM	1994	Minimum age = 2 years
	Vivotif®		PaxVax	Live Attenuated Bacterial / Oral (4 capsules)	1989	Minimum age = 6 years
Varicella	Varivax®	VAR	Merck	Live Attenuated Viral / SC	1995	Minimum age = 12 months
Vaccinia (Smallpox)	ACAM2000®		sanofi	Live Attenuated Viral / Percutaneous	2007	All ages
Yellow Fever	YF-Vax®	YF	sanofi	Live Attenuated Viral / SC	1978	Minimum age = 9 months

U.S. Vaccines: Table 2
(Combination Vaccines)

Vaccine	Trade Name	Abbreviation	Manufacturer	Type / Route	Approved	Comments
DTaP, Polio	Kinrix®	DTaP-IPV	GlaxoSmithKline	Inactivated Bacterial & Viral / IM	2008	Approved for 5th (DTaP) and 4th (IPV) booster at 4-6 years
	Quadracel™	DTaP-IPV	sanofi	Inactivated Bacterial & Viral / IM	2015	Approved for 5th (DTaP) and 4th (IPV) booster at 4-6 years
DTaP, hepatitis B, Polio	Pediarix®	DTaP-HepB-IPV	GlaxoSmithKline	Inactivated Bacterial & Viral / IM	2002	Age range 6 weeks through 6 years
DTaP, Polio, *Haemophilus influenzae* type b	Pentacel®	DTaP-IPV/Hib	sanofi	Inactivated Bacterial & Viral / IM	2008	Age range 6 weeks through 4 years
Haemophilus influenzae type b, Meningococcal	MenHibrix®	Hib-MenCY	GlaxoSmithKline	Inactivated Bacterial / IM	2012	Age range 6 weeks through 18 months
Hepatitis A, Hepatitis B	Twinrix®	HepA-HepB	GlaxoSmithKline	Inactivated/Recombinant Viral / IM	2001	Pediatric HepA + Adult HepB Minimum age = 18 years

Abbreviations

The abbreviations on this table (Column 3) were standardized jointly by staff of the Centers for Disease Control and Prevention, ACIP Work Groups, the editor of the *Morbidity and Mortality Weekly Report* (*MMWR*), the editor of *Epidemiology and Prevention of Vaccine-Preventable Diseases* (the *Pink Book*), ACIP members, and liaison organizations to the ACIP.

These abbreviations are intended to provide a uniform approach to vaccine references used in ACIP Recommendations and Policy Notes published in the *MMWR*, the *Pink Book*, and the American Academy of Pediatrics *Red Book*, and in the U.S. immunization schedules for children, adolescents, and adults.

In descriptions of combination vaccines, dash (-) indicates: products in which the active components are supplied in their final (combined) form by the manufacturer; slash (/) indicates: products in which active components must be mixed by the user.

Georgia Department of Public Health
Immunization Program Vaccine Standards

COMBINATION VACCINES

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards were developed from the pertinent Vaccine Resolutions from the Vaccines for Children Program and the references below and will be updated as needed. These standards should serve as a quick reference for clinics administering currently available combination vaccines which include: (A) TwinRix® (Hepatitis A Inactivated [Havrix®] & Hepatitis B (Recombinant) Vaccine [Engerix B®]); (B) Pediarix® (Diphtheria and Tetanus Toxoids and Acellular Pertussis Adsorbed, Hepatitis B Recombinant] and Inactivated Poliovirus Vaccine Combined); and *(C) Kinrix™ (Diphtheria, Tetanus, acellular pertussis [DTap] and inactivated poliovirus vaccine [IPV]); (D)* Pentacel® (DTap-IPV and ActHIB®); (E) ProQuad® (Measles, Mumps, Rubella and Varicella vaccines combined) and (F) MenHibrix® (Meningococcal groups C and Y and *Haemophilus* b tetanus toxoid conjugate vaccine .

The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- "Notice to readers: Licensure of a Combined Live Attenuated Measles, Mumps, Rubella and Varicella Vaccine", *MMWR*, December 2, 2005, Vol. 4, No. RR-46
- "Notice to Readers: FDA Licensure of Diphtheria and Tetanus Toxoids and Acellular Pertussis
- Absorbed, Hepatitis B (Recombinant), and Poliovirus Vaccine Combined, (PEDIARIX™) for Use in Infants," *MMWR*, March 14, 2003, Vol. 52, No. RR-10
- "Notice to Readers: Updated Recommendations for Use of Haemophilus influenzae Type b (Hib) Vaccine: Reinstatement of the Booster Dose at Ages 12-15 Months", *MMWR*, June 26, 2009, Vol. 58, No. RR-24
- The VFC Resolution "Vaccines to Prevent Diphtheria, Tetanus and Pertussis," Resolution No. 10/12.1
- "License of a Diphtheria and Tetanus Toxoids and acellular Pertussis Absorbed Inactivated Poliovirus vaccine and Guidance for use as a Booster Dose," *MMWR,* October 3, 2008, Vol. 57, No. RR-39
- The 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- Epidemiology and Prevention of Vaccine Preventable Diseases, *13th* ed, 2015
- "General Recommendations on Immunization: Recommendations of the ACIP", *MMWR,* January 28, 2011, Vol. 60, No. RR-2
- "Use of Combination Measles, Mumps, Rubella, and Varicella Vaccine Recommendations of the ACIP", *MMWR,* May 7, 2010, Vol. 59, No. RR-3
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- "Infant Meningococcal vaccination: Advisory Committee on Immunization Practices (ACIP) Recommendations and Rationale', MMWR, January 25, 2013, Vol.62, No. RR-3

General Standards for the Use of Combination Vaccines[1]

- To minimize the number of injections children receive, parenteral combination vaccines should be used, if licensed and indicated for the patient's age, instead of their equivalent component vaccines.
- Recommended intervals and ages for single antigen vaccines, when used in combination series, should be observed.
- Hepatitis A, hepatitis B, and *Haemophilus influenzae* type b vaccines, in either monovalent or combination formulations from the same or different manufacturers, are interchangeable for sequential doses in the vaccination series.
- Using the same acellular pertussis vaccine product from the same manufacturer is preferable for at least the first three doses. However, if the brand is not known, ACIP recommends to vaccinate the child using the DTaP vaccine that is available.
- When patients have already received the recommended vaccinations for some of the components in a combination vaccine, administering the extra antigen(s) in the combination is often permissible if doing so will reduce the number of injections required and if the other components are not contraindicated.
- To avoid recording errors and ambiguities in the names of vaccine combinations, extra care should be taken to record exactly what was given.

[1] General Recommendations on Immunization, *MMWR*, January 28, 2011, Vol. 60, No. RR-2

A. TWINRIX®

Vaccine Description

- **TwinRix®** is a bivalent inactive vaccine containing the antigenic components used in producing Havrix® (Hepatitis A Vaccine, Inactivated) and Engerix-B® [Hepatitis B Vaccine (Recombinant)].
- A 1 mL dose contains 720 ELISA Units (ELU) of inactivated hepatitis A virus (pediatric dose of Havrix®) and 20 mcg. of recombinant HBsAg protein (adult dose of Engerix-B®).
- The advantage of using this vaccine over single antigen vaccines is that it reduces the number of shots. The time to complete the series is the same.
- **TwinRix Junior®** is licensed in other countries but not in the United States and consists of 360 ELU hepatitis A antigen and 10 mcg. of hepatitis B antigen usually given in a 3 dose series at 0,1, and 6 months for children <18 years of age.

Brand Name & Manufacturer

VACCINE	MANUFACTURER
TwinRix® (Hepatitis A/Hepatitis B)	GlaxoSmithKline
TwinRix Junior® (Pediatric Hepatitis A/Hepatitis B)	GlaxoSmithKline

Eligible Groups for State Supplied Vaccine

TwinRix® is provided by the Georgia Immunization Program for use by certain populations age 18 years and older. Refer to "Eligibility Criteria for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" for those persons eligible for hepatitis A and hepatitis B vaccines.

Recommended Schedule

The recommended schedules for TwinRix® and TwinRix Junior® are the same as for single antigen hepatitis B vaccine.

Dose 1	Dose 2	Dose 3
--------	1 month	6 months

Single antigen Hepatitis A and Hepatitis B vaccine may be used to complete a series begun with Twinrix® and vice versa. Follow one of the schedules below using recommended dose intervals:[1]

Dose 1	Dose 2	Dose 3[2]
Twinrix®	Adult hepatitis A vaccine **and** Adult hepatitis B vaccine	Twinrix® **OR** Adult hepatitis A vaccine **and** Adult hepatitis B vaccine
Twinrix®	Twinrix®	Adult hepatitis A vaccine **and** Adult hepatitis B vaccine
Adult Hepatitis A **and** Adult Hepatitis B	Twinrix®	Twinrix® **OR** Adult hepatitis A vaccine **and** Adult hepatitis B vaccine

[1] Pink Book, January, 2012, pg. 109
[2] The minimum time interval between doses 2 and 3 should be 5 months or longer.

Minimum Age & Dose Intervals

TwinRix® may only be administered to persons ≥18 years of age.

DOSE	MINIMUM AGE	MINIMUM INTERVAL BETWEEN DOSES
Dose 1	18 years of age and older	--------
Dose 2	----------	4 wks. after 1st dose
Dose 3	----------	5 months after 2nd dose

Accelerated Schedule for Administration of Twinrix® [1,2]

Dose 1	Dose 2	Dose 3	Dose 4
Now	7 days after Dose 1	21-**30** days after Dose 1	12 months after Dose 1

[1] This schedule may be preferable for individuals at imminent risk for hepatitis A and hepatitis B. These include travelers to countries endemic for hepatitis A and hepatitis B, prison inmates, military personnel, emergency care first responders to disaster areas, persons with high-risk sexual behavior, and intravenous drug users.
[2] Refer to "Eligibility Criteria for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" for those persons eligible for hepatitis A and hepatitis B vaccines.

Recommended Dosage and Route

1 mL administered intramuscularly

NOTE: Do not give in gluteal area. Use only deltoid or vastus lateralis (antero-lateral aspect of thigh).

Contraindications and Precautions

CONTRAINDICATIONS:

- Severe allergic reaction (e.g., anaphylaxis) after a previous dose of any hepatitis A-containing or hepatitis B-containing vaccine, or to any component of TWINRIX, including yeast and neomycin, is a contraindication to administration of TWINRIX

PRECAUTIONS

- Latex- The tip caps of the prefilled syringes may contain natural rubber latex which may cause allergic reactions in latex-sensitive individuals.

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines: Tdap, Td, MMR, IPV, Varicella, PPSV23, MCV4, MPSV4, HPV, Zoster and Influenza

B. PEDIARIX®

Vaccine Description

- Pediarix® is a combined diphtheria and tetanus toxoids and acellular pertussis adsorbed (DTaP), hepatitis B (HepB) (recombinant), and inactivated poliovirus vaccine (IPV).
- It contains Infanrix®, Engerix-B®, and the same strains and quantity of inactivated poliovirus Types 1, 2, and 3 as IPV from a different manufacturer (IPOL®, Sanofi Pasteur).

Brand Names & Manufacturer

Vaccine	Manufacturer
Pediarix®	GlaxoSmithKline

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section.

Recommended Vaccine Schedule[1]

- Pediarix® is recommended for the primary series of DTaP, hepatitis B, and IPV vaccination (Doses 1-3).
- It should not be given before 6 weeks of age or after the child turns 7 years old.
- This vaccine is not approved for booster doses. To complete the DTaP and IPV series, use those individual vaccines.
- Pediarix® is not approved for hepatitis B vaccine doses given at birth or at 1 month of age. Consequently, for those infants born to mothers whose HBsAg status is positive or unknown and who should therefore receive the first 2 doses of hepatitis B vaccine at birth and age 1 month, this vaccine would be inappropriate. It may be used for the 3rd dose of hepatitis B if given at the recommended 6 months of age.

Dose 1	Dose 2[2]	Dose 3	Booster
2 months of age	4 months of age	6 months of age	Not approved for booster doses

[1] This reflects the routinely recommended schedule. However, the vaccine may be administered as a primary series (Doses 1, 2, and 3) at any time between 6 weeks and 7 years of age.

Conditional Pediarix Vaccine Schedule for Infants

This conditional Pediarix schedule only validates the Pediarix dose given as the 3rd dose in the series at age 4 months. This allows the series to be completed in 4 doses starting with a routine single antigen hepatitis B vaccine birth dose and the 2nd and 4th dose being any Hepatitis B antigen containing vaccine. This Pediarix hepatitis B series is considered acceptable as long as the last dose of hepatitis B vaccine is given at or after age 6 months. The Hepatitis B series algorithm highlights are listed below.

Dose 1*	Dose 2	Dose 3	Dose 4
Birth dose	**2 months of age**	**4 months of age**	**6 months of age**

Highlights:

Doses given at 0*, 2M, 4M, 6M

Dose 3 given at age 4M must be Pediarix and the trade name must be entered to be valid

Dose 4 given on or after age 6M will be valid if there is at least a 28 day interval from Dose 3; 56 day interval from Dose 2; and 112 day interval from Dose 1.

*This special series is conditional on the use of Pediarix after that routine birth dose

Minimum Age and Dose Intervals[1]

Dose	Minimum Age	Time Interval to Dose 2	Time Interval to Dose 3[2]
1	6 weeks	4 weeks[3]	8-12 weeks[3]

[1] If the Pediarix® series is not completed until after age 4, the IPV series would be considered to be complete. However, an additional dose of DTaP would still be needed.

[2]Though Pediarix® cannot be used for a 4th or 5th booster dose, the intervals to the 4th or booster

doses of any of the component vaccines (DTaP, hepatitis B, and IPV) should reflect the minimum interval for each of those vaccines.
(Refer to individual Vaccine Guidelines for DTaP, hepatitis B, and IPV found in this section.)

Recommended Dosage and Route

0.5 mL administered intramuscularly

NOTE: Do not give in gluteal area. Use only deltoid or vastus lateralis (antero-lateral aspect of thigh).

Contraindications and Precautions

A. Contraindications

- Anaphylactic reaction to a previous dose of vaccine or to a dose of any of the component vaccines, or to a vaccine component including yeast, neomycin, and polymyxin B. (See "Contraindications and Precautions" section for each component vaccine under that Vaccine Guideline found in this section.)
- Administration at age less than 6 weeks or 7 years and older
- Encephalopathy within 7 days of administration of a previous dose of DTP or DTaP
- Progressive neurologic disorder. Defer DTaP until neurologic status is clarified and stabilized.
- Do not give for birth dose or at age 1 month for any infant. Infants born to mothers who are HBsAg positive or whose status is unknown should receive single antigen hepatitis B vaccine for the birth dose and for Dose 1 when it is given at 1 month of age.

A. Precautions:

- Fever of ≥105°F (≥ 40.5° C.) 48 hours after vaccination with a previous dose of DTP or DTaP, or a combination vaccine that contains DTP or DTaP
- Collapse or shock like state in same circumstances as #1
- Seizure occurring 3 days after receiving a previous dose of DTP or DTaP or combination vaccine that contains DTP or DTaP
- Persistent, inconsolable crying lasting 3 hours and occurring 48 hours after vaccine containing DTP or DTaP
- Moderate or severe acute illness with or without fever
- Guillain-Barre' syndrome (GBS) within 6 weeks after a previous dose of tetanus toxoid-containing vaccine
- Apnea following intramuscular vaccination has been observed in some infants born prematurely. Decisions about when to administer to infants born prematurely should be based on consideration of the individual infant's medical status and the potential benefits and possible risks of vaccination
- Latex Allergy

Simultaneous Vaccine Administration
May be administered simultaneously with any of the following routinely recommended vaccines: RV, MMR, Hib, Varicella, Influenza, and PCV13

C. KINRIX™

Vaccine Description
• Kinrix ™ is a combined diphtheria and tetanus toxoids and acellular pertussis adsorbed (DTaP) and inactivated poliovirus vaccine (IPV). • It contains Infanrix® and the same strains and quantity of inactivated poliovirus types 1, 2, and 3 as IPV from a different manufacturer (IPOL®, Sanofi Pasteur). • Kinrix™ is the first combination vaccine to offer protection against diphtheria, tetanus, pertussis and polio diseases in one shot.

Brand Names & Manufacturer	
Vaccine	**Manufacturer**
Kinrix™	GlaxoSmithKline

Eligible Groups for State Supplied Vaccine
For Adults, children, and adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section.

Indications and Usage
Kinrix ™ is approved for: • 5th dose in the DTap series, and • 4th dose in the IPV series • children 4 through 6 years of age • previous DTaP vaccine doses were Infanrix® and/or Pediarix® for the first three doses and Infanrix® for the fourth dose. Use of Kinrix™ for any dose except the 5th dose of DTaP and 4th dose of IPV should be considered a vaccine administration error.

Minimum Age and Dose Intervals

Minimum age for first dose	Minimum interval between doses 3 to 4 (IPV)
4 years of age[1]	6 months[2]
	Minimum interval between doses 4 to 5 (DTaP)
4 years of age	6 months[3]

[1]Kinrix™ is not approved for use in persons < 4 years of age or ≥ 7 years of age. If Kinrix™ is inadvertently administered as an earlier dose in the series, the dose may be counted as valid and does not need to be repeated if the minimum age and minimum interval since the prior dose are met.
[2]The fourth dose is not necessary if the third dose was given on or after the fourth birthday.
[3]The fifth dose is not necessary if the fourth dose was given on or after the fourth birthday.

Contraindications and Precautions

A. Contraindications

- Anaphylactic reaction to a previous dose of vaccine or to a dose of any of the component vaccines, or to a vaccine component including neomycin, and polymyxin B. (See "Contraindications and Precautions" section for each component vaccine under that Vaccine Guideline found in this section.)
- Administration at age less than 6 weeks or or 7 years or older
- If Guillain-Barre´ syndrome occurs within 6 weeks of receipt of a prior vaccine containing tetanus toxoid, the decision to give Kinrix™ should be based on potential benefits and risks.
- Encephalopathy within 7 days of administration of a previous dose of DTP or DTaP

- Progressive neurologic disorder. Defer DTaP until neurologic status is clarified and stabilized.

B. Precautions:

- Fever of ≥ 105° F, 48 hours after vaccination with a previous dose of DTP or DTaP, or a combination vaccine that contains DTP or DTaP
- Collapse or shock like state in same circumstances as #1
- Seizure occurring 3 days after receiving a previous dose of DTP or DTaP or combination vaccine that contains DTP or DTaP
- Persistent, inconsolable crying lasting 3 hours and occurring 48 hours after vaccine containing DTP or DTaP
- Moderate or severe acute illness with or without fever
- Latex sensitivity (needleless prefilled syringes contain dry natural latex rubber)

Simultaneous Vaccine Administration
May be administered simultaneously with any of the following routinely recommended vaccines: MMR, Hib, Varicella, Hepatitis B, Influenza, PCV13, PPSV23, and Hepatitis A

D. PENTACEL®

Vaccine Description
Pentacel® consists of Diphtheria and Tetanus Toxoids and Acellular Pertussis Adsorbed and Inactivated Poliovirus (DTaP-IPV) component and an ActHIB® vaccine component. ActHIB® vaccine (Haemophilus b Conjugate Vaccine [Tetanus Toxoid Conjugate]), consists of Haemophilus influenzae type b capsular polysaccharide (polyribosyl-ribitol-phosphate [PRP]) covalently bound to tetanus toxoid (PRP-T). The DTaP-IPV component is supplied as a sterile liquid used to reconstitute the lyophilized ActHIB® vaccine component to form Pentacel vaccine.

Brand Names & Manufacturer	
Vaccine	**Manufacturer**
Pentacel®	sanofi pasteur

Eligible Groups for State Supplied Vaccine
For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section

Recommended Vaccine Schedule[1] [2]

The recommended schedule for Pentacel® is similar to those for DTaP and ActHib®.

Dose 1	Dose 2	Dose 3	Dose 4
2 months	4 months	6 months	15-18 months

[1] Pentacel® is approved for the primary series and first booster dose (Doses 1-4) of DTaP, Hib, and IPV vaccination. Four doses of Pentacel® vaccine constitute a primary immunization course against pertussis. Three doses of Pentacel® vaccine constitute a primary immunization course against diphtheria, tetanus, *H influenzae* type b invasive disease, and poliomyelitis; the fourth dose constitutes a booster vaccination against diphtheria, tetanus, *H influenzae* type b invasive disease, and poliomyelitis.
[2] Licensed combination vaccines can be used whenever any components of the combination are indicated and its other components are not contraindicated and if licensed by the Food and Drug Administration (FDA) for that dose in the series.

Recommended Doses & Intervals[1]

Parameter	Age/ Interval
Minimum age for any dose	6 weeks
Minimum interval for doses 1 and 2	4 weeks
Minimum age for dose 2	10 weeks
Minimum interval for doses 2 and 3	4 weeks
Minimum age for dose 3	14 weeks
Minimum interval for dose 3 and 4	6 months (determined by DTaP component; minimum interval for dose 3-4 is two months for Hib and four weeks for IPV)
Minimum age for dose 4	12 months (determined by DTaP and Hib components). Note that both the minimum interval AND age must be met for the fourth dose of DTaP or Hib (as Pentacel® or any other formulation) to be counted as valid
Maximum age for any dose	4 years, 364 days (do not administer at age 5 or older)

[1] The schedule, minimum intervals, and minimum ages are determined by the individual components.

Recommended Dosage and Route

0.5 ml administered intramuscularly

Contraindications and Precautions

A. Contraindications

- Anaphylactic reaction to a previous dose of vaccine or to a dose of any of the component vaccines, or to a vaccine component including neomycin, and polymyxin B. (See "Contraindications and Precautions" section for each component vaccine under that Vaccine Guideline found in this section.)
- Administration at < 6 months of age or 5 years of age or older
- Encephalopathy within 7 days of administration of a previous dose of DTP or DTaP
- Progressive neurologic disorder. Defer DTaP until neurologic status is clarified and stabilized.

B. Precautions:

- Fever of ≥105°F (≥ 40.5° C.) 48 hours after vaccination with a previous dose of DTP or DTaP, or a combination vaccine that contains DTP or DTaP
- Collapse or shock like state in same circumstances as #1
- If Guillain-Barre´ syndrome occurs within 6 weeks of receipt of a prior vaccine containing tetanus toxoid, the decision to give Pentacel™ should be based on potential benefits and risks.
- Apnea following intramuscular vaccination has been observed in some infants born prematurely. Decisions about when to administer to infants born prematurely should be based on consideration of the individual infant's medical status and the potential benefits and possible risks of vaccination
- Seizure occurring 3 days after receiving a previous dose of DTP or DTaP or combination vaccine that contains DTP or DTaP
- Persistent, inconsolable crying lasting 3 hours and occurring 48 hours after vaccine containing DTP or DTaP
- Moderate or severe acute illness with or without fever

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:

MMR, Varicella, Hepatitis B, Hepatitis A, RV, Influenza, PPSV23, and PCV13

E. Pro-Quad®

Vaccine Description

- ProQuad® (MMRV) is a live virus vaccine containing measles, mumps, rubella, and varicella viruses. In September, 2005 it was licensed by the FDA for use in children ages 12 months through 12 years.
- It is a lyophilized preparation of the components of M-M-R II® (measles, mumps and rubella

combination vaccine); and Varicella (Oka/Merck) Virus Vaccine Live.

- This vaccine contains no preservative and comes packaged as single dose vials with separate vials of sterile water diluent.
- Special storage and handling guidelines include:
  - MMRV must be transported and stored at temperatures of 5^0 F. or colder.
  - It cannot be stored at refrigerator temperatures and must be used within 30 minutes of being reconstituted and cannot be refrozen.
- Guidance is provided in the December 2, 2005 *MMWR* article, "Notice to Readers: Licensure of Combined Live Attenuated Measles, Mumps, Rubella, Varicella Vaccine," and in the VFC Resolution "Vaccines to Prevent Measles, Mumps, Rubella, and Varicella," Resolution No. 6/09-3.
- "Use of Combination Measles, Mumps, Rubella, and Varicella Vaccine Recommendations of the ACIP", *MMWR,* May 7, 2010, Vol. 59, No. RR-3

Brand Name & Manufacturer

Vaccine	Manufacturer
ProQuad®	Merck

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see "Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" located in the front of this section.

Recommended Vaccine Schedule[1]

Dose 1	Dose 2
12-15 months	4-6 years
12-47 months [2]	15-12 years [3]
48 months and older [3]	

[1] MMRV should only be used when both of the component vaccines (MMR and varicella) are indicated and the child is 12 months through 12 years of age. Routinely recommended ages for measles, mumps, rubella and varicella vaccination are 12 through 15 months of age for dose 1 and 4 through 6 years of age for dose 2.
2 Dose 1 at Ages 12 through 47 Months *
For the first dose of measles, mumps, rubella, and varicella vaccines at ages 12 through 47 months, either MMR and varicella vaccines or MMRV vaccine can be used. Providers who are considering administering MMRV vaccine should discuss the benefits and risks of both vaccination options with the parents or caregivers. Compared with use of MMR and varicella vaccines at the same visit, use of MMRV vaccine results in one fewer injection but is associated with a higher risk for fever and febrile seizures 5 through 12 days after the first dose among children aged 12 through 23 months* (about one extra febrile seizure for every 2,300–2,600 MMRV vaccine doses). Use of MMR and varicella vaccines avoids this increased risk for fever and febrile seizures following MMRV vaccine. Providers who face barriers to clearly communicating these benefits and risks for any reason (e.g., language barriers) should administer MMR and varicella vaccines.
3 Dose 1 at Ages 48 Months and Older and Dose 2 at any Age
For the first dose of measles, mumps, rubella, and varicella vaccines at ages 48 months and older and for dose 2 at any age (15 months through 12 years), use of MMRV vaccine generally is preferred over separate injections of its equivalent component vaccines (i.e., MMR and varicella vaccines). Considerations should include provider assessment†, patient preference, and the potential for adverse events.
* The 47-month cut-off was chosen on the basis of the epidemiology of febrile seizures: first febrile seizures are uncommon after ages 4 years, approximately 94% of febrile seizures occur in children aged less than 4 years.

Minimum Age and Dose Intervals

Dose	Minimum Age	Time Interval to Dose 2
1	12 months	3 months

Spacing and timing of MMRV from individual component vaccines (MMR and varicella):

- At least 1 month should elapse between a dose of a measles-containing vaccine and a dose of MMRV.
- At least 3 months should elapse between a dose of varicella vaccine and a dose of MMRV. However, if a 2nd dose was administered after at least 28 days following the 1st dose, the 2nd dose does not need to be repeated.

Recommended Dosage and Route

0.5 mL administered subcutaneously

Contraindications

A. Contraindications

- Anaphylactic reaction to a prior dose of any of the vaccines (measles, mumps, rubella, or varicella) or to the vaccine components
- Moderate or severe illness, with or without fever
- Altered immune status due to such things as malignancy, immunodeficiency, or immunosuppressive therapy
- Receipt of blood products or immune globulins---consult Appendix A of the listed reference for a table denoting the spacing of live virus vaccines and blood products and immune globulins.
- Steroid therapy---doses of systemic prednisone or equivalent at a dose of >2 mg/kg of body weight per day or 20 mg/day
- Persons receiving ongoing salicylate therapy, avoid using salicylates for 6 weeks after vaccination with ProQuad
- In persons who develop a rash post-vaccination, there is a minimal risk of transmission of vaccine virus to close contacts. Thus, vaccinees in which vaccine-related rash develops, particularly healthcare workers and household contacts of immunocompromised persons, should avoid contact with susceptible persons who are at high risk of serious complications.
- Pregnancy and lactation
- Cancer
- Untreated, active TB
- MMRV should not be administered to HIV infected persons who are severely immunocompromised.
- Consult Appendix A of the "Pink Book," 13th edition, for directions on administration of single antigen live virus vaccines to immunocompromised persons.

B. Precaution

- A personal or family (i.e., sibling, parent) history of seizures is a precaution for MMRV vaccination. Studies suggest that children who have a personal or family history of febrile seizures or family history of epilepsy are at increased risk for febrile seizures compared with children who do not have such histories. Children with a personal or family history of seizures generally should be vaccinated with MMR and varicella vaccines because the risks of using MMRV vaccine in this group of children generally outweigh the benefit of MMRV vaccine.
- Use caution in children with anaphylaxis or immediate hypersensitivity to eggs or contact hypersensitivity to neomycin
- Use caution in children with a history of cerebral injury or seizures or any other condition in which stress due to fever should be avoided

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:

Hepatitis A, Hepatitis B, DTaP, Tdap, Td, IPV, Hib, Influenza, MCV4, MPSV4, HPV, PCV13, and PPSV23

F. MenHibrix®

Vaccine Description

- MenHibrix® (Hib-MenCY-TT, GlaxoSmithKline Biologicals) is licensed for active immunization for prevention of invasive disease caused by *Haemophilus influenza* type b (Hib) and meningococcal serogroups C and Y.
- MenHibrix® is approved for use in children 6 weeks of age through 18 months of age.
- Immunization with MenHibrix *does not* substitute for routine tetanus immunization.
- MenHibrix is recommended by ACIP only for infants at increased risk for meningococcal disease.
- Infants with the following conditions are at increased risk of contracting meningococcal disease:
  - persistent complement component deficiencies
  - functional or anatomic asplenia
  - sickle cell disease
  - meningococcal serogroups C or Y disease outbreak environments
- MenHibrix is a solution for injection supplied as a single-dose vial of lyophilized vaccine to be reconstituted with the accompanying vial of saline diluent. A single dose after reconstitution is 0.5 mL. After reconstitution, administer MenHibrix immediately.
- MenHibrix for use during pregnancy is Category C.
- MenHibrix does not contain preservatives.
- The lyophilized vaccine and saline diluent vial stoppers are not made with natural rubber latex.

"Infant Meningococcal vaccination: Advisory Committee on Immunization Practices (ACIP) Recommendations and Rationale', MMWR, January 25, 2013, Vol.62, No. RR-3

Food and Drug Administration. Package insert for MenHibrix (meningococcal groups C and Y and *Haemophilus b* tetanus toxoid conjugate vaccine). Available at *https://www.fda.gov/downloads/BiologicsBloodVaccines/Vaccines/Approvedproducts/UCM308577.pdf*

Brand Name & Manufacturer

Vaccine	Manufacturer
MenHibrix®	GlaxoSmithKline

Eligible Groups for State Supplied Vaccine

MenHibrix is not supplied by the Georgia Immunization Program

Recommended Vaccine Schedule

Dose 1	Dose 2	Dose 3	Dose 4
2 months	4 months	6 months	12 through 15 months

Minimum Age and Dose Intervals[1,2,3,4]

Dose	Minimum Age	Intervals between Doses
1	2 months[6,7]	2 months
2	4 months	2 months
3	6 months	2 months
4	12-15 months	2 months

[1] If an infant at increased risk for meningococcal disease is behind on his or her Hib vaccine doses, MenHibrix may be used following the same catch-up schedule used for Hib vaccine. Consult the Hib Approved for use in children 6 weeks through 18 months of age

[2] The first dose may be given as early as 6 weeks of age.

[3] The fourth dose may be given as late as 18 months of age.

Recommended Dosage and Route

0.5 mL administered intramuscularly

Contraindications and Precautions

A. Contraindications

- Anaphylactic reaction to a previous dose of any meningococcal-, *H. influenzae* type b-, or tetanus toxoid-containing vaccine or any component of MenHibrix
- Delay vaccination for children with moderate or severe acute illnesses

B. Precaution

- If Guillain-Barre syndrome has occurred within 6 weeks of receipt of a prior vaccine containing tetanus toxoid, the decision to give any tetanus toxoid-containing vaccine, including MenHibrix, should be based on consideration of the potential benefits and possible risks
- Syncope (fainting) can occur in association with administration of injectable vaccines, including MenHibrix. Procedures should be in place to avoid falling injury and to restore cerebral perfusions following syncope.
- Apnea following intramuscular vaccination has been observed in some infants born prematurely. Decisions about when to administer an intramuscular vaccine, including MenHibrix, to infants born prematurely should be based on consideration of the individual infant's medical status and the potential benefits and possible risks of vaccination.

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:

Hepatitis A, Hepatitis B, DTaP, IPV, Influenza, PCV13, MMR, Varicella and Rotavirus.

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT DIPHTHERIA, TETANUS, AND PERTUSSIS

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for these vaccines or vaccine components supplied by the Georgia Immunization Program: diphtheria toxoid; tetanus toxoid; or acellular pertussis vaccine; (A) DTaP; (B) DT; (C) Tdap; and (D) Td. These standards were developed from the pertinent Vaccine Resolution from the Vaccines for Children Program and the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- "Preventing Tetanus, Diphtheria, and Pertussis Among Adolescents: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccines," *MMWR,* March 24, 2006, Vol. 55, No. RR-3
- "Pertussis Vaccination: Use of Acellular Pertussis Vaccines Among Infants and Young Children," *MMWR*, March 28, 1997, Vol. 46, No. RR-7
- "Diphtheria, Tetanus, and Pertussis: Recommendations for Vaccine Use and Other Preventive Measures," *MMWR*, August 8, 1991, Vol. 40, No. RR-10
- ACIP Diphtheria, Tetanus, and Pertussis Resolution for the Vaccines for Children Program (VFC), (Resolution No. 6/12-1)
- Epidemiology and Prevention of Vaccine Preventable Diseases, 13th edition.
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- "License of a Diphtheria and Tetanus Toxoids and acellular Pertussis Absorbed and Inactivated Poliovirus vaccine and Guidance for Use as a Booster Dose," MMWR Weekly, October 3, 2008, Vol. 57(39); 1078-1079.
- FDA Approval of Expanded Age Indication For a Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine, April 17, 2009, Vol. 58. RR-14
- *"*General Recommendations on Immunization*,"* MMWR*, January 28, 2011 Vol. 60, RR-2*
- "Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine (Tdap) in Pregnant Women and Persons Who Have or Anticipate Having Close Contact with an Infant Aged <12 Months," *MMWR*, October 21, 2011, Vol. 60, No. RR-4
- ACIP Provisional Recommendations for Health Care Personnel on use of Tetanus Toxoid,Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine (Tdap) and use of Postexposure Antimicrobial Prophylaxis, April 4, 2011
  This document available at: http://www.cdc.gov/vaccines/recs/provisional/default.htm
- "Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccine (Tdap) in Pregnant Women", *MMWR*, February 22, 2013, Vol 62, #7
- "Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis (Tdap) Vaccine in Adults Aged 65 Years and Older", *MMWR*, June 29, 2012, Vol 61, #25

Vaccine Description

A. DTaP

- Diphtheria and Tetanus and Acellular Pertussis Vaccine is an inactivated vaccine containing diphtheria and tetanus toxoids and purified inactivated components of *Bordetella pertussis* cells.
- DTaP is the recommended substitute for whole-cell DTP but should not be used if DTP has been contraindicated.
- Combination diphtheria and tetanus toxoid and whole-cell pertussis (DTP) vaccine is no longer available.

B. TT

- Tetanus toxoid is an inactivated bacterial toxoid that may be prescribed for active immunization of persons over age 7 years. It is NOT to be used for the treatment of tetanus infection.

F. Other information

- Single antigen diphtheria toxoid is not available. Diphtheria toxoid is available combined with tetanus as pediatric DT or adult Td, and with tetanus toxoid and acellular pertussis vaccine as DTaP or Tdap.
- Use of single antigen tetanus toxoid is not recommended.
- DTaP and DT vaccines contain similar amounts of tetanus toxoid as adult Td vaccine, but 3-4 times as much diphtheria toxoid as adult Td vaccine.

Brand Name & Manufacturer

VACCINES	MANUFACTURERS
Current brands of diphtheria and tetanus toxoids and acellular pertussis vaccine adsorbed (DTaP):	
Infanrix ®	GlaxoSmithKline
Tripedia®	sanofi pasteur
(See "Combination Guidelines" for further information on Pediarix®)	
Daptacel®	sanofi pasteur
(This vaccine is licensed for the first 4 doses only)	

Brand Name & Manufacturer (cont'd)

Current brand of diphtheria and tetanus toxoids, pediatric (DT):

Diphtheria/Tetanus, Pediatric	sanofi pasteur

Current brands of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine, adsorbed (Tdap):

Boostrix®	GlaxoSmithKline
Adacel™	sanofi pasteur

Current brand of tetanus and diphtheria toxoids, adult (Td):

Tetanus/Diphtheria, Adult	Massachusetts Biological Labs
Tenivac	sanofi pasteur

Current brand of tetanus toxoid (TT):

Tetanus Toxoid, Adsorbed USP	sanofi pasteur

DTaP Combination Vaccines (*See "Combination Vaccines" for more information.)*

Pediarix® **(DTap-IPV/Hib)** GlaxoSmithKline
(*This vaccine is licensed for primary series only [Doses 1-3].)*

Pentacel™ **(DTap-Hepb/IPV)** sanofi pasteur
(This vaccine is licensed for primary series, and 1st booster dose [Doses 1-4].)

Kinrix™ **(DTap-IPV)** GlaxoSmithKline
(This vaccine is licensed for booster dose at age 4-6.)

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see "Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" located in the front of this section.

Recommended Diphtheria, Tetanus and Pertussis Vaccine Schedule

A. DTaP [1, 2, 3]

Diphtheria, tetanus, and pertussis vaccine is recommended as part of the routine childhood immunization schedule at 2, 4, 6, and 15-18 months of age, and 4-6 years of age. Regardless of age and timing of doses, no more than a total of 6 DTaP vaccines should be given before 7 years of age.

Dose	Age	Interval[4]
Primary 1	2 months	----------
Primary 2	4 months	8 weeks after 1st dose
Primary 3	6 months	8 weeks after 2nd dose
First Booster	15-18 months[5,6,11]	6-12 months after 3rd dose[7,8]
Second Booster	4-6 years[9, 10]	
Tdap or Td Booster	11-12 years	

B. DT

- If the child begins the series at <1 year of age, follow the schedule outlined above.
- If the child is ≥12 months of age at the time the 1st dose of DT is administered, a 2nd dose should be administered 4-8 wks later, followed by a 3rd dose given 6-12 months after the 2nd dose. This completes primary vaccination with DT. A booster dose should be given at 4-6 years of age.

C. Tdap use in adolescents and adults- based on ACIP guidelines for use of Tdap in adolescents and the guidelines for use of Tdap in adults.

A (one-time dose) is recommended for persons ≥11 years of age through adulthood, providing they have previously completed the recommended DTP/DTaP/Td series and have not already received a dose of Td:

- Give in place of Td at the 11-12 year old healthcare visit.
- For those older adolescents or adults who have not already received a dose of Td.
- Can be given one time for tetanus prophylaxis in wound management, if a dose of Tdap has not previously been given.
- Can be used as any one of the 3 doses when administering a primary Td series to a person in the licensed age groups.
- Adults aged 65 years and older (e.g., grandparents, child-care providers, and health-care practitioners) who have or who anticipate having close contact with an infant less than 12 months of age and who previously have not received Tdap should receive a single dose of Tdap to protect against pertussis and reduce the likelihood of transmission. For other adults aged 65 years and older, a single dose of Tdap vaccine may be given instead of Td vaccine, in persons who have not previously received Tdap. Tdap can be administered regardless of interval since the last tetanus- or diphtheria-toxoid containing vaccine.
- Healthcare personnel (HCP), regardless of age, should receive a single dose of Tdap as soon as feasible if they have not previously received Tdap and regardless of the time since the last Td dose.

D. Tdap use in pregnancy

ACIP recommends that providers of prenatal care implement a Tdap immunization program for all pregnant women. A dose of Tdap should be administered during each pregnancy, irrespective of the patient's prior history of receiving Tdap.

- Special situations
  - Tdap may be administered any time during pregnancy, but vaccination **earlier** during the third trimester (between 27 and 36 weeks gestation) would provide the highest concentration of maternal antibodies to be transferred closer to birth.
  - If Tdap is not administered during pregnancy, Tdap should be administered immediately postpartum.

E. Td (refer to Tdap guidelines above for situations when that vaccine would be recommended instead of a dose of Td.)

- If administering as a primary series at ≥7 years of age, give at 0, 1, and 6 months.
- A Td booster is recommended at any age for persons regardless of interval since the previous dose of any tetanus-containing vaccine.
- Subsequent boosters are recommended at 10 year intervals.
- For wound management, give booster if >5 years have elapsed since last dose.

F. Use of DTaP, DT, Td, Tdap, and Tetanus Immune Globulin (TIG)[12] for Wound Management

- *Refer to wound management guidelines in ACIP Manual: "Diphtheria, Tetanus, and Pertussis: Recommendations for Vaccine Use and Other Preventive Measures, " MMWR, August 8, 1991, pg. 16; "Preventing Tetanus, Diphtheria, and Pertussis Among Adolescents: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccines," MMWR, March 24, 2004, pg. 25.*

[1] Use diphtheria and tetanus toxoids, adsorbed (DT), if encephalopathy has occurred after administration of a previous dose of pertussis-containing vaccine.

[2] ACIP recommends using the same brand of DTaP vaccine for all doses of the series. However, if the brand used for previous doses is not known or not available, use any brand of DTaP to complete the series.

[3] Pertussis vaccine given as DTaP is not recommended for children ≥7 years of age.

[4] Prolonging the interval does not require restarting the series.

[5] If using Daptacel™, this dose is recommended to be given at 17-20 months of age. (*MMWR*, July 5, 2002, Vol. 51, No. 26, pp.574.)

[6] Pediarix™ is licensed only for the primary series of 3 doses, not for the booster doses (#4and #5)

[7] The 4th dose of DTaP may be given as early as 12 months of age, provided 6 months have elapsed since the 3rd dose and if the child is unlikely to return at 15-18 months of age. TriHIBit ™ can be administered as the 4th dose following a primary series with either DTaP or whole-cell DTP and following a primary series with any *Haemophilus influenzae* type b conjugate vaccine.

[8] DTaP #4 does not need to be repeated if administered ≥4 months after DTaP #3.

[9] A 5th dose is not necessary if the 4th dose was given on or after the 4th birthday.

[10] Kinrix™ is licensed for the booster dose at age 4-6.

[11] Pentacel™ is licensed for the primary series and 1st booster dose (Doses 1-4.)

[12] The state does not supply TIG. There are 2 brands of TIG; hyperlet and baylet. Providers can order TIG from their wholesaler or FFS Enterprise (-1-800-843-7477)

Minimum Age and Dose Intervals[8]

Vaccine	Minimum age	Minimum interval between doses			
		Dose 1-2	Dose 2-3	Dose 3-4	Dose 4-5
DTaP	6 weeks	4 weeks	4 weeks	6 months	6 months[1]
DTaP-HepB-IPV[2]	6 weeks	4 weeks	**8 weeks**		
DTaP-Hib-IPV[3]	6 weeks	4 weeks	4 weeks	6 months	
DT	6 weeks	4 weeks	4 weeks	6 months	6 months[1]
DTaP-Hib[4]	15-18 months			6 months	
DTaP-IPV[5]	4 years				6 months[1]
Tdap/Td	11 years				
Tdap/Td (catch-up schedule)[7]	7 years	4 weeks	6 months	5 years	

Note: DT containing vaccines are not indicated for children >6 years of age.

[1] The fifth dose is not necessary if the fourth dose was given after the fourth birthday.

[2] The recommended DTaP-HepB-IPV vaccine may be used when any component of the combination is indicated, and if the other components are not contraindicated. The combined DTaP-HepB-IPV vaccine is approved for the primary series only (Doses 1-3). For adequate immune response, the last dose of hepatitis B vaccine should be given at ≥ 24 weeks of age and therefore this combination vaccine should not be administered as a complete primary series on an accelerated schedule at 4 week intervals for prevention of pertussis.

[3] The combined DTaP-Hib-IPV vaccine may be used when any component of the combination is indicated, and if the other components are not contraindicated. The combined DTaP-Hib-IPV vaccine is approved for the primary series and first booster dose (Doses 1-4). The combined DTaP-Hib-IPV vaccine is not indicated for children ≥ 5 years.

[4] The combined DTaP/Haemophilus influenzae type b (Hib) vaccine is indicated for the fourth dose at age 15-18 months.

[5] The combined DTaP-IPV vaccine may be used when any component of the combination is indicated, and if the other components are not contraindicated. The combined DTaP-IPV vaccine is approved for the booster dose at age 4-6 years.

[6] Tdap is indicated for a single booster dose at age 11 or 12 years if the childhood DTP/DTaP vaccination series has been completed. Tdap is preferred over Td as adolescents are susceptible to pertussis due to waning immunity, though Td may be indicated rather than Tdap in special situations (more information is available at: https://www.cdc.gov/mmwr/volumes/67/rr/rr6702a1.htm). Adolescents who did not receive Tdap at age 11 or 12 should receive a single dose of Tdap in place of a single Td booster dose. Tdap can be administered regardless of interval since the last tetanus of diphtheria containing vaccine.

[7] Tdap for Person without a History of DTP or DTaP

- All adolescents and adults should have documentation of having received a series of DTaP, DTP, DT or Td
- Persons without documentation should receive a series of 3 vaccinations
- One dose should be Tdap, preferably the first

Epidemiology and Prevention of Vaccine Preventable Diseases, 13th edition.

[8] the ACIP Diphtheria, Tetanus, and Pertussis Resolution for the Vaccines for Children Program (VFC), (Resolution No. 6/11-2)

Recommended Dosage and Route

A. DTaP: 0.5 mL administered intramuscularly

B. DT: 0.5 mL administered intramuscularly

C. Tdap: 0.5 mL administered intramuscularly

D. Td: 0.5 mL administered intramuscularly

Contraindications and Precautions for DTaP, DT, Tdap, and Td[1 2]

I. DTaP

- **CONTRAINDICATIONS**
- An immediate anaphylactic reaction following a previous dose. Defer further use of this vaccine because of the uncertainty as to which component of the vaccine might be responsible. However, because of the importance of tetanus vaccination, persons who experience anaphylactic reactions may be referred to an allergist for evaluation and, if specific allergy can be demonstrated, desensitized to tetanus toxoid.
- Encephalopathy following a previous dose not attributable to another identifiable cause. An acute, severe central nervous system disorder occurring within 7 days after vaccination and generally consisting of major alterations in consciousness, unresponsiveness, or generalized or focal seizures that persist more than a few hours, without recovery within 24 hours, is a contraindication to further administration of any DTaP-containing vaccine.

B. PRECAUTIONS

If any of the following events occurs within the specified period after administration of DTaP vaccine, providers and parents should evaluate the risks and benefits of administering subsequent doses of a pertussis-containing vaccine:

- Temperature of ≥105°F. (≥40.5°C.) within 48 hours, not attributable to another identifiable cause.
- Collapse or shock-like state (hypotonic hyporesponsive episode) within 48 hours.
- Persistent crying lasting ≥ 3 hours, occurring within 48 hours.
- Convulsions with or without fever, occurring within 3 days.
- Acute, moderate or severe illnesses with or without fever.

II. DT

A. CONTRAINDICATIONS

- An immediate anaphylactic reaction. Defer further use of this vaccine because of the uncertainty as to which component of the vaccine might be responsible. However, because of the importance of tetanus vaccination, persons who experience anaphylactic reactions may be referred to an allergist for evaluation and, if specific allergy can be demonstrated, desensitized to tetanus toxoid.

B. PRECAUTIONS

- Arthus-type hypersensitivity reactions. These are exaggerated local reactions that present as extensive, painful swelling, often from the shoulder to the elbow. Persons who experience arthus-type hypersensitivity reactions or a temperature of ≥103°F (39.4°C.) following a prior dose of tetanus toxoid usually have high serum tetanus antitoxin levels and should not be given DT or even emergency doses of Td more frequently than every 10 years, even if they have a wound that is neither clean nor minor.
- Guillain-Barre´ syndrome (GBS) within 6 weeks after a previous dose of tetanus toxoid containing vaccines.
- Acute, moderate or severe illnesses with or without fever.
- Latex Allergy.

III. Tdap

A. CONTRAINDICATIONS

- An immediate anaphylactic reaction to any vaccine containing any of the 3 Tdap components: tetanus, diphtheria, or pertussis.
- Encephalopathy not attributed to another identifiable cause, within 7 days of administration of a pertussis-containing vaccine (this is a contraindication for the pertussis components; Td can be used).

B. PRECAUTIONS

- Arthus-type hypersensitivity reactions following a prior dose of a tetanus toxoid
- Progressive neurological disorder, uncontrolled epilepsy, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized. If decision is made to withhold pertussis vaccination, then Td may be used instead of Tdap.
- Guillain-Barré syndrome (GBS) within 6 weeks after a previous dose of tetanus toxoid-containing vaccines.
- Acute, moderate or severe illnesses with or without fever.

IV. Td

A. CONTRAINDICATIONS/ PRECAUTIONS

- An immediate anaphylactic reaction. Defer further use of this vaccine because of the uncertainty as to which component of the vaccine might be responsible. However, because of the importance of tetanus vaccination, persons who experience anaphylactic reactions may be referred to an allergist for evaluation and, if specific allergy can be demonstrated, desensitized to tetanus toxoid.
- Moderate or severe illnesses with or without fever.

[1] For other contraindications and precautions, refer to Table 6, Contraindications and Precautions to Commonly Used Vaccines, in the ACIP statement, "General Recommendations on Immunization," *MMWR*, January 28, 2011 Vol. 60, RR-2

[2] the ACIP Diphtheria, Tetanus, and Pertussis Resolution for the Vaccines for Children Program (VFC), (Resolution No. 6/11-2)

Adverse Reactions Following the 4th and 5th DTaP Dose[1]

- Local adverse reactions and fever increased with 4th and 5th doses of DTaP
- Reports of swelling of entire limbs
- Extensive Swelling of 4th dose NOT a contraindication to 5th dose

[1] Epidemiology and Prevention of Vaccine Preventable Diseases, 13th edition.

Simultaneous Vaccine Administration

DTaP, DT, Tdap, and Td may be administered simultaneously with any of the following routinely recommended vaccines:

- MMR, Hib, Hepatitis A, **Hepatitis B*,** RV, IPV, Varicella, PCV13 or PPSV23, HPV, Zoster and Influenza
- Tdap or Td may also be administered simultaneously with MCV4, or at any time before or after.
- If administering DTaP and either PCV13 or PPSV23, it is recommended to administer the vaccines in separate limbs.

*** Hepatitis B is not to be given with Pediarix (DtaP-IPV-HepB)**

Appendix E

Guide to catch-up vaccination with Td for children aged 7--10 years*

Vaccination history before catch-up: number of pediatric DTP/DTaP/DT or Td doses administered before age 7 years		No. of Td/ doses needed to catch-up*†	Minimum interval between doses of tetanus and diphtheria toxoid–containing vaccines*†			
No. doses at age <1 year	No. doses at age 1–6 years		Last pediatric DTP/DTaP/DT dose to Td dose 1 at age ≥7 years	Td dose 1 to Td dose 2	Td dose 2 to Td dose 3	Td dose 3 to Td dose 4
Unknown	Unknown	3	NA§	4 weeks	6 months	—¶
0	0	3	NA	4 weeks	6 months	—¶
0	1	2	4 weeks	6 months	—¶	NA
0	2	1	6 months	—¶	NA	NA
0	3	0	—¶**	NA	NA	NA
1	0	3	NA: administer now	4 weeks	6 months	—¶
1	1	2	4 weeks	6 months	—¶	NA
1	2	1	6 months	—¶	NA	NA
1	3	0	—¶**	NA	NA	NA
2	0	2	NA: administer now	6 months	—¶	NA
2	1	1	6 months	—¶	NA	NA
2	2	0	—¶**	NA	NA	NA
3	0	1	NA: administer now	—¶	NA	NA
3	1	0	—¶**	NA	NA	NA

* Td is recommended for children aged 7–10 years; a single dose of BOOSTRIX® Tdap vaccine is licensed for persons aged 10 years and can be used instead of Td for one of the doses in children aged 10 years. If BOOSTRIX® is administered to a child aged 10 years, the dose counts as the adolescent Tdap dose. Pediatric DTaP/DTP/DT vaccines are not indicated for persons aged ≥7 years. See Appendix F for a complete list of vaccine abbreviations.

† Number of doses and the minimum intervals between the last dose administered and the next dose of tetanus and diphtheria toxoid–containing vaccine needed to provide protection against tetanus and diphtheria.

§ Not applicable.

¶ These children should receive Tdap to provide protection against tetanus, diphtheria and pertussis according to the routine vaccination recommendations for adolescents who completed the pediatric DTP/DTaP series, when they become adolescents aged 11–18 years; an interval of at least 5 years between Td and Tdap is encouraged, but shorter intervals can be used (see text, Routine Tdap Vaccination [1-A]).

** Some experts suggest administering a dose of Td now to children aged 7–10 years with this vaccination history if no dose of a tetanus and diphtheria toxoid–containing vaccine was administered at age ≥4 years.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

References to non-CDC sites on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of pages found at these sites. URL addresses listed in *MMWR* were current as of the date of publication.

This appendix taken from the ACIP statement "Preventing Tetanus, Diphtheria, and Pertussis Among Adolescents: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccines," MMWR, March 24, 2006, Vol. 55, No. RR-3.

3-J. Inadvertent Administration of Tdap or Pediatric DTaP

To help prevent inadvertent administration of Tdap when pediatric DTaP is indicated or pediatric DTaP when Tdap is indicated, vaccine providers should review product labels before administering these vaccines; the packaging might appear similar. Tdap is not indicated for children aged <10 years. Tdap contains lower amounts of diphtheria toxoid and lower amounts of some pertussis antigens compared with pediatric DTaP. Studies of the immune responses to Tdap among infants have not been conducted. Pediatric DTaP is not indicated for persons aged >7 years; the increased diphtheria toxoid content is associated with higher rates of adverse reactions in older persons (*24–28*).

Guidance on the best approach to vaccination following inadvertent administration of Tdap or pediatric DTaP is based primarily on expert opinion. The family should be informed of any inadvertent vaccine administration. Adverse events associated with inadvertent vaccine administration can be reported to VAERS (see Reporting of Adverse Events after Vaccination). If Tdap is inadvertently administered instead of pediatric DTaP to a child aged <7 years as any one of the first three doses of the tetanus-diphtheria-pertussis vaccination series, the Tdap dose should not be counted as valid, and a replacement dose of pediatric DTaP should be administered. If the inadvertent administration is discovered while the child is in the office, the pediatric DTaP can be administered during the same visit. If the child has left the office, some experts suggest administering the replacement dose of pediatric DTaP within approximately 72 hours, or administering it 4 weeks later to optimize the child's immune response to the antigens in pediatric DTaP. This practice helps ensure that the child stays on the primary series schedule and has adequate protection against diphtheria and pertussis. However, the replacement dose of pediatric DTaP can be administered as soon as feasible at any interval after the inadvertent Tdap dose. The remaining doses of the pediatric DTaP series should be administered on the routine schedule, with at least a 4 week interval between the replacement dose of pediatric DTaP and the next dose of pediatric DTaP. For example, if an 8-week week old infant inadvertently received a dose of Tdap instead of the first dose of pediatric DTaP and does not receive a replacement dose of pediatric DTaP within about 72 hours, a replacement dose of pediatric DTaP can be administered 4 weeks after the inadvertent Tdap dose (age 12 weeks). The routine schedule of pediatric DTaP can then be resumed 4 weeks after the pediatric DTaP replacement dose (age 16 weeks) with the other recommended vaccines (*1,23*).

If Tdap is inadvertently administered as the fourth or the fifth dose in the tetanus-diphtheria-pertussis vaccination series to a child aged <7 years, the Tdap dose should be counted as valid and does not need to be repeated; the child who received Tdap as a fourth dose should complete the pediatric DTaP schedule (*23*). The routine adolescent Tdap vaccination recommendations would apply when this child becomes an adolescent. For example, a child who inadvertently receives Tdap at age 5 years instead of the fifth dose of pediatric DTaP should receive a second dose of Tdap at age 11–12 years.

If Tdap or pediatric DTaP is inadvertently administered to a child aged 7-9 years instead of Td as part of catch-up vaccination or for wound management, this dose can be counted as the adolescent Tdap dose, or the child can later receive an adolescent booster dose of Tdap according to the interval guidance used for Td to Tdap (see Routine Tdap Vaccination [section 1-A] and Pertussis Outbreaks and Other Settings with Increased Risk for Pertussis or its Complications [section 3-C]). In either case, the child should receive a dose of vaccine containing tetanus and diphtheria toxoids no longer than 10 years after the inadvertent Tdap or pediatric DTaP dose or according to the guidance for catch-up vaccination (Appendix E).

If pediatric DTaP is inadvertently administered to an adolescent aged 11–18 years, the dose should be counted as the adolescent Tdap booster. The adolescent should receive the next dose of a vaccine containing tetanus and diphtheria toxoids 10 years after the inadvertent pediatric DTaP dose or according to the guidance for catch-up vaccination (Appendix D).*

* This page excerpted from "Preventing Tetanus, Diphtheria, and Pertussis Among Adolescents: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccines," *MMWR*, March 24, 2006, Vol. 55, No. RR-3, pg. 27.

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT *HAEMOPHILUS INFLUENZAE* TYPE B

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards should serve as a quick reference for clinics administering *Haemophilus influenzae* type b vaccine. The standards are not all inclusive and when more information is needed, the complete ACIP Recommendations statement should be referenced:

- "Haemophilus b Conjugate Vaccines for Prevention of *Haemophilus influenzae* type b Disease Among Infants and Children Two Months of Age and Older," *MMWR*, January 11, 1991, Vol. 40, No. RR-1.
- ACIP *Haemophilus influenzae* type b Resolution for the Vaccines for Children Program (VFC), (Resolution No. 2/13-2)
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- Epidemiology & Prevention of Vaccine Preventable Diseases, 13th ed.
- "Licensure of a Haemophilus influenzae Type b (Hib) Vaccine (Hiberix) and Updated Recommendations for Use of Hib Vaccine," *MMWR,September 18,2009,Vol. 58, RR-36*
- Prevention and Control of Haemophilus influenzae Type b Disease: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Recommendations and Reports MMWR, February 28, 2014; 63(RR01):1-14
- **Food and Drug Administration Approval for Use of Hiberix as a 3-Dose Primary Haemophilus influenzae Type b (Hib) Vaccination Series Weekly / April 29, 2016 65 (16)**

Vaccine Description

- *Haemophilus influenzae* type b polysaccharide-protein conjugate vaccines are produced by chemically bonding a polysaccharide (a poor antigen) to a protein "carrier," which is a more effective antigen.
- There are four types of Hib conjugate vaccines:
  1. HbOC (HibTITER®)
  2. PRP-OMP (PedvaxHIB®)
  3. PRP-T (ActHIB®and OmniHIB®)
  4. PRP-D (ProHIBiT®).
- HbOC, PRP-T, and PRP-OMP containing vaccines are highly immunogenic and are licensed for use in infants. These vaccines are interchangeable for use in the primary series and booster doses. However, the number of doses recommended depends upon the type of vaccine administered and the age at the time of the first dose. See "Recommended Schedule" Section.

Brand Name & Manufacturer

HIB VACCINES	MANUFACTURERS
PRP-T (ActHIB®)	sanofi pasteur
PRP-OMP (PedvaxHIB®)	Merck
PRP-T (Hiberix)	**GlaxoSmithKline**

Hib Combination Vaccines:

Hib/Hepatitis B	
Pentacel	sanofi pasteur
DTap/IPV/Hib	
MenHibRix MenCY	GlaxoSmithKline

Vaccines previously available:

PRP-T (OmniHIB®)	sanofi pasteur
PRP-D (ProHIBiT®)	Connaught
HbOC (HibTITER®)	Wyeth-Lederle

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section.

Recommended *Haemophilus influenzae* type b (Hib) Routine Vaccine Schedule

Type	Vaccine	2 Months	4 Months	6 Months	12-15 Months
PRP-T	ActHIB	X (1st)	X (2nd)	X (3rd)	X
	Pentacel[1]	X (1st)	X (2nd)	X (3rd)	X
	Hiberix	**X (1st)**	**X (2nd)**	**X (3rd)**	**X**
	MenHibrix[2]	X (1st)	X (2nd)	X (3rd)	X
PRP-OMP	PedvaxHIB	X (1st)	X (2nd)	-	X

[1] The recommended age for the 4th dose of Pentacel is 15-18 months, but it can be given as early as 12 months, provided at least 6 months have elapsed since the 3rd dose
[2] The recommended age for the 4th dose of MenHibrix is 12-18 months.

Minimum age and intervals for Hib vaccines

Minimum Age	Minimum Intervals—Primary Series (Up to 12 months)	Minimum Interval—Booster dose (12 months and older)
6 weeks	4 weeks	8 weeks

The ACIP recommends Hib vaccine for all children through 5 years of age. In addition, children less than 24 months of age who develop invasive Hib disease should be considered unvaccinated and receive Hib vaccine doses according to the age-appropriate schedule for unimmunized children. Vaccination or re-vaccination of children <24 months of age who develop invasive Hib disease should begin 4 weeks after disease.

Hib Vaccine Detailed Schedule for Unvaccinated Children

Vaccine	Age at 1st dose (months)	Primary Series	Booster
PRP-T[1] ActHIB Pentacel MenHibrix **Hiberix**	2-6	3 doses, 8 weeks apart	12-15 months
	7-11	2 doses, 4 weeks apart	12-15 months
	12-14	1 dose	2 Months later
	2	**3 dose** **8 weeks apart**	**12-15 months**
PRP-OMP PedvaxHIB	2-6	2 doses, 8 weeks apart	12-15 months
	7-11	2 doses, 4 weeks apart	12-15 months
	12-14	1 dose	2 months later
	15-59	1 dose	-

[1] MenHibrix brand PRP-T vaccine is not recommended for children 19 months of age or older.

Guidance for Haemophilus influenzae type b (Hib) vaccination in high-risk groups	
High-risk group*	Hib vaccine guidance
Patients aged less than 12 months	Follow routine Hib vaccination recommendations
Patients 12 through 59 months of age	If unimmunized or received 0 or 1 dose before age 12 months: 2 doses 2 months apart If received 2 or more doses before age 12 months: 1 dose If completed a primary series and received a booster dose at age 12 months or older: no additional doses
Patients undergoing chemotherapy or radiation therapy, age less than 59 months†	If routine Hib doses given 14 or more days before starting therapy: revaccination not required If dose given within 14 days of starting therapy or given during therapy: repeat doses starting at least 3 months following therapy completion
Patients undergoing elective splenectomy, aged greater than 15 months	If unimmunized§: 1 dose prior to procedure ‡
Asplenic patients aged greater than 59 months and adults	If unimmunized§: 1 dose
HIV-infected patients aged greater than 60 months	If unimmunized§: 1 dose
HIV-infected adults	Hib vaccination is not recommended
Recipients of hematopoietic stem cell transplant, through 18 years	Regardless of Hib vaccination history: 3 doses (at least 1 month apart) beginning 6-12 months after transplant

*Patients with functional or anatomic asplenia, HIV infection, immunoglobulin deficiency including Immunoglobulin G2 subclass deficiency, or early component complement deficiency, recipients of a hematopoietic stem cell transplant (HSCT), and those receiving chemotherapy for malignant neoplasms

† Some experts suggest conducting serologic testing for these patients.

‡Some experts suggest vaccination at least 14 days before the procedure; some experts suggest administering a dose prior to elective splenectomy regardless of prior vaccination history.

§ Patients who have received a primary series and booster dose or at least 1 dose of Hib vaccine after 14 months of age are considered immunized

Recommended Dosage and Route

0.5mL administered intramuscularly

Contraindications and Precautions

A. Contraindications and Precautions

1. Anaphylactic reaction to a prior dose or to any component of the vaccine
2. Acute, moderate, or severe illness with or without fever. Immunize as soon as illness subsides.
3. Do not administer to infants < 6 weeks of age because of the potential for development of immunologic tolerance.
4. Contraindications and precautions for the use of combination vaccines are the same as those for its individual component vaccines
5. **If Guillain-Barré syndrome has occurred within 6 weeks of receipt of a prior vaccine containing tetanus toxoid, the decision to give any tetanus toxoid-containing vaccine, should be based on careful consideration of the potential benefits and possible risks.**

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:

DTaP, RV, MMR, Varicella, Hepatitis A, Hepatitis B, IPV, MCV4, MPSV4, PCV13 or PPSV23, Zoster and Influenza

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT HEPATITIS A

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards were developed from the pertinent Vaccine Resolution from the Vaccines for Children Program and the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- "Prevention of Hepatitis A Through Active or Passive Immunization." *MMWR*, May 19, 2006, Vol. 55, No. RR-7
- "Notice to Readers: FDA Approval of Havrix® (Hepatitis A Vaccine, Inactivated) for Persons Aged 1--18 Years," *MMWR*, December 9, 2005, Vol. 54, No. 49
- "Notice To Readers: FDA Approval of VAQTA® (Hepatitis A Vaccine, Inactivated) for Children Aged >1 Year," *MMWR*, October 14, 2005, Vol. 54, No. 40
- "Protection Against Viral Hepatitis," *MMWR*, February 9,1990, Vol.39, No.RR-2;
- CDC STD Prevention website at https://www.cdc.gov/std/prevention/default.htm
- Hepatitis A Vaccine Resolution for the Vaccines for Children Programs (VFC), (Resolution No.06-07-1)
- **2015 Red Book, Report of the Committee on Infectious Diseases by the American Academy of Pediatrics**
- **Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th edition**
- "Updated Recommendation from the Advisory Committee on Immunization (ACIP) for use of Hepatitis A Vaccine in Close Contacts of Newly Arriving International Adoptees," *MMWR*, September 18, 2009, Vol. 58. No. 36
- **Update: Recommendations of the Advisory Committee on Immunization Practices for Use of Hepatitis A Vaccine for Postexposure Prophylaxis and for Preexposure Prophylaxis for International Travel. MMWR Morb Mortal Wkly Rep 2018;67:1216–1220. DOI: http://dx.doi.org/10.15585/mmwr.mm6743a5.**
- **Updated Dosing Instructions for Immune Globulin (Human) GamaSTAN S/D for Hepatitis A Virus Prophylaxis. MMWR Morb Mortal Wkly Rep 2017;66:959–960. DOI: http://dx.doi.org/10.15585/mmwr.mm6636a5**

Vaccine Description

- Hepatitis A vaccine is an inactivated vaccine grown in cell culture.
- There are 2 monovalent hepatitis A vaccine products licensed for use in the U.S. Both are available in 2 formulations: adult and pediatric.
- Both products are currently licensed for persons aged 12 months and older.
- An additional vaccine product available in the U.S. combines hepatitis A and hepatitis B vaccine (Twinrix®) in an adult formulation for administration to persons ages ≥18.

Brand Names & Manufacturer

VACCINES	MANUFACTURER
Havrix®	GlaxoSmithKline Biologicals
Pediatric Formulation 720 EL.U./0.5 mL	
Adult Formulation 1440 EL.U./1 mL	
Vaqta®	Merck & Co., Inc.
Pediatric/Adolescent Formulation 25U/0.5 mL	
Adult Formulation 50U/1 mL	
Twinrix® (combination hepatitis A and hepatitis B)	GlaxoSmithKline Biologicals
Not licensed for use in ages <18 years **Adult Formulation** **720 EL.U./1 mL**	

(see "Combination Vaccines Guidelines" in this section for more information)

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see "Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" located in the front of this section.

Groups Recommended to Receive Hepatitis A Vaccine

Recommendations for routine vaccination:

- All children at age 1 year. Children who are not vaccinated by age 2 years can be vaccinated at subsequent visits.
- **Persons who are at increased risk for infection**
- **Persons who are at increased risk for complications from hepatitis A**
- **Any person wishing to obtain immunity (protection)**

Recommendations for persons who are at increased risk of infection:

- **Persons with direct contact with persons who have hepatitis A**
- Persons traveling to developing countries which have high or intermediate endemicity of hepatitis A
- Men who have sex with men (MSM)
- Users of injecting and non-injecting illegal drugs
- **Persons who have occupational risk for infection**
- Persons who have clotting factor disorders
- Persons with chronic liver disease
- Household members and other close personal contacts of adopted children newly arriving from countries with high rates of hepatitis A Virus (HAV)[1]

Although hepatitis A may occur in other groups or settings, serologic surveys have **not** found that they are at increased risk for hepatitis A because of their occupation or setting and are

therefore **not** routinely recommended to receive vaccine.[2] These would include:

- Child care centers, employees or attendees
- Health-care workers
- Sewage plants or sanitation workers
- **Food service workers[3]**

[1] "Updated Recommendations from the Advisory Committee on Immunization (ACIP) for use of Hepatitis A Vaccine in Close Contacts of Newly Arriving International Adoptees," *MMWR,* September 18, 2009, Vol. 58. No. 36
[2] **Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th edition**
[3]**Consideration may be given to vaccine food service workers that work in areas where community-wide outbreaks are occurring and where state or local health authorities or private employers determine such vaccination is cost-effective.**

Recommended Hepatitis A Vaccine Schedule

Vaccine	Age Group	Number of Doses	Volume	Schedule
Havrix®				
Pediatric	12 months through18 yrs.	2	0.5 mL	0, 6-12 mos.
Adult	≥19 years	2	1 mL	0, 6-12 mos.
Vaqta® Pediatric	12 months through 18 yrs.	2	0.5 mL	0, 6-18 mos.
Adult	≥19 years	2	1 mL	0, 6-18 mos.

For Twinrix® schedule, see "Combination Vaccine Guidelines" in this section.

Recommended Minimum Age & Time Intervals & Interchangeability of Vaccine Brands

Vaccine[1]	Minimum age for first dose	Minimum interval from dose 1 to dose 2[2]
Havrix®	12 months	6 months
Vaqta®	12 months	6 months
Twinrix®	See "Combination Vaccine Guidelines" in this section	

[1] The 2 brands of vaccine can be considered interchangeable.
[2]The minimum interval between the first and booster doses of hepatitis A vaccine is six calendar months. If the interval between the first and booster doses of hepatitis A vaccine is longer than the recommended interval of 6-18 months, it is not necessary to repeat the first dose. For both

vaccines, the booster dose given should be based on the person's age at the time of the booster dose, not the age when the first dose was given. For example, if a child received the first dose of the pediatric formulation of VAQTA at 18 years of age and returns for the booster dose at age 19 years, the booster dose should be the adult formulation, not the pediatric formulation.

Recommended Vaccine Dosage and Route

	Dosage	Route
Pediatric Formulations:	0.5 mL	administered intramuscularly
Adult Formulations:	1 mL	administered intramuscularly

Contraindications and Precautions to Vaccine[1,2]

Contraindications:

1. **Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component.** (For a complete listing of components, see package insert.)

Precautions:

1. **Moderate or severe acute illness with or without fever.**

[1]For Twinrix® Contraindications and Precautions see "Combination Vaccine Guidelines" in this section.
[2]CDC Vaccine Recommendations and Guidelines of the ACIP website at https://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html

Simultaneous Vaccine Administration

Hepatitis A vaccine may be administered simultaneously with any of the following routinely recommended vaccines:

DTaP, Tdap, Td, Hib, hepatitis B, IPV, Influenza, PCV13, PPSV23, MMR, Varicella, Zoster, HPV, MCV4, and MPSV4.

Recommendations for Hepatitis A Immunoprophylaxis

- **Hepatitis A Immunoprophylaxis with Immune Globulin (IG) is routinely recommended in 2 situations:**
    1. **Preexposure prophylaxis for some international travelers (see Table 1); and**
    2. **Postexposure prophylaxis for contacts to acute cases of hepatitis A:**
        - **persons <12 months of age or**
        - **immunocompromised persons or those with chronic liver disease ≥12 months of age**
- **The provision of IG is available from the Epidemiology Branch for hepatitis A**

postexposure prophylaxis. The State Office of Pharmacy no longer stocks an IG supply. To obtain IG for this purpose, contact:

1. The appropriate designated district epidemiology personnel; and
2. Hepatitis epidemiology staff in the state office at (404) 657-2588. (When calling to request IG, please have on hand the necessary information regarding name of hepatitis A case and number of contacts, with descriptive information including: contact's age, weight and exposure date.

- Supplies of IG given for preexposure prophylaxis, i.e. international travel, should be purchased by districts. Preexposure IG is not supplied by the State Epidemiology or Immunization Programs.
- The guidelines below are only a minimum reference and any decision to use IG should be prefaced by further research using available resources, including medical providers. For more specific information, please see Chapter 6, "Surveillance and Reporting" in this manual, the ACIP Hepatitis A statement and the 2015 Red Book references cited in the opening paragraph of "Vaccines to Prevent Hepatitis A."

Preexposure Recommendations - Travelers

For persons traveling to certain parts of the world where hepatitis A has high or intermediate endemicity, immunoprophylaxis is indicated with IG, HepA vaccine or both. Preexposure IG is not supplied by the State.

A. Immune Globulin (IG)[1]

- Infants aged <6 months
- Travelers who elect not to receive the HepA vaccine
- Persons who HepA vaccine is contraindicated

B. Hepatitis A Vaccine (HepA)

- Infants aged 6-11 months
- Healthy persons aged 12 months – 40 years

C. Immune Globulin (IG) and HepA Vaccine

- Persons aged >40 years
- Immunocompromised persons
- Persons with chronic liver disease
- International travelers that will depart in ≤2 weeks (not enough time for vaccine to provide adequate protection)

Postexposure Prophylaxis (PEP) Recommendations – Exposed Contacts

- Hepatitis A vaccine should be administered to all persons aged ≥12 months for PEP, unless otherwise contraindicated.
- In addition to HepA vaccine, IG may be administered to person >40 years, depending on the provider's risk assessment.
- PEP should be given as soon as possible and within 14 days of exposure.

- **Exposed contact(s) should monitor themselves for signs/symptoms of illness for 50 days after the last exposure, even if they received PEP. If symptoms develop the person should notify the health department and be tested for hepatitis A.**

A. Immune Globulin (IG) only

- **Infants aged <12 months**
- **Persons for whom vaccine is contraindicated:**
  -Persons who have had a life-threatening allergic reaction after a dose of HepA vaccine
  -Persons who have a sever allergy to any component of this vaccine
- **IG should be administered as soon as possible and within 14 days of exposure.**

B. Hepatitis A (HepA) Vaccine only

- **Immunocompetent (healthy) persons aged ≥12 months who have not previously completed the 2-dose HepA vaccine series**
- **HepA vaccine should be administered as soon as possible and within 14 days of exposure.**

C. Immune Globulin (IG) and HepA Vaccine

- **Persons aged ≥12 months who are immunocompromised and who have not previously completed the 2-dose HepA vaccine series (e.g., congenital or acquired immunodeficiency, HIV infection, chronic renal failure/undergoing dialysis, solid organ, bone marrow or stem cell transplant recipients and persons with diseases requiring treatment with immunosuppressive drugs/biologics (e.g., tumor necrosis alpha inhibitors), long-term systemic corticosteroids and radiation therapy)**
- **Persons aged ≥12 months who have chronic liver disease and who have not previously completed the 2-dose HepA vaccine series (e.g., hepatitis B infection, hepatitis C infection, cirrhosis (any etiology) fatty liver disease, alcoholic liver disease, autoimmune hepatitis, Alanine aminotransferase (ALT) or aspartate amino transferase (AST) level more than twice the upper limit or persistently elevated for 6 months)**
- **Special considerations:**
  -Persons with increased risk factors for HAV infection (e.g., close contacts of person with HAV infection or occupational risks)
  -Persons with an increased risk for complications should be considered to receive IG and HepA vaccine (e.g., immunocompromised persons, persons with chronic liver disease)
- **IG and HepA vaccine should be administered simultaneously in a different anatomic site (e.g., separate site) as soon as possible after exposure and within 14 days of exposure**

Special Circumstances:

- **Child-care center staff, attendees, and attendees' household members**
  - **PEP should be administered to unvaccinated staff and attendees if one or more cases of hepatitis A is identified or if a case of hepatitis A is identified in two or more households of center attendees**
  - **PEP should be administered to classroom contacts only in centers that**

provide care to older children that no longer wear diapers
- **If an outbreak is identified, PEP should be considered for household members that have diaper-wearing children that attend the center**

- **Common source exposure, such as an infected food handler**
  - **If a food handler is diagnosed with hepatitis A, PEP should be administered to other food handlers at the same establishment.**
  - **PEP is not typically indicated for patrons, but can be considered if the food handler had both direct contact with uncooked foods or foods after cooking and had diarrhea or poor hygiene practices or if patrons can be identified and treated within 14 days of exposure.**

NOTE: IG would **not** routinely be recommended for:
- School settings, unless transmission within the school is documented.
- Hospital personnel caring for patients with hepatitis A disease, unless an outbreak among patients or between patients and staff is documented

TABLE 1. Recommendations for postexposure prophylaxis and preexposure protection, by age group and risk category[1]

Indication/Age	Risk category/Health status	Hepatitis A vaccine	Immune globulin
Postexposure prophylaxis			
<12 mos	Healthy	No	0.1 mL/kg*
12 mos–40 yrs	Healthy	**1 dose†**	None
>40 yrs	Healthy	**1 dose†**	0.1 mL/kg§
≥12 mos	Immunocompromised or chronic liver disease	**1 dose†**	0.1 mL/kg¶
≥12 mos	Vaccine contraindicated**	No	0.1 mL/kg
Preexposure protection††			
<6 mos	Healthy	No	0.1–0.2 mL/kg§§
6–11 mos	Healthy	1 dose¶¶	None
12 mos–40 yrs	Healthy	1 dose***	None
>40 yrs	Healthy	1 dose***	0.1–0.2 mL/kg§§,†††
All ages	Immunocompromised or chronic liver disease	1 dose***	0.1–0.2 mL/kg§§,†††
>6 mos	Persons who elect not to receive vaccine or for whom vaccine is contraindicated**	No	0.1–0.2 mL/kg§§

* Measles, mumps, and rubella vaccine should not be administered for at least 3 months after receipt of IG.
† **A second dose is not required for postexposure prophylaxis; however, for long-term immunity, the hepatitis A vaccination series should be completed with a second dose at least 6 months after the first dose.**
§ The provider's risk assessment should determine the need for immune globulin administration. If the provider's risk assessment determines that both vaccine and immune globulin are warranted, HepA vaccine and immune globulin should be administered simultaneously at different anatomic sites

¶ Vaccine and immune globulin should be administered simultaneously at different anatomic sites.
** Life-threatening allergic reaction to a previous dose of hepatitis A vaccine, or allergy to any vaccine component.
†† IG should be considered before travel for persons with special risk factors for either HAV infection or increased risk for complications in the event of exposure to HAV.
§§ 0.1 mL/kg for travel up to 1 month; 0.2 mL/kg for travel up to 2 months, 0.2mL/kg every 2 months for travel of ≥2 months' duration.
¶¶ This dose should not be counted toward the routine 2-dose series, which should be initiated at age 12 months.
*** For persons not previously vaccinated with HepA vaccine, administer dose as soon as travel is considered, and complete series according to routine schedule.
††† May be administered, based on providers' risk assessment.

[1]**Update: Recommendations of the Advisory Committee on Immunization Practices for Use of Hepatitis A Vaccine for Postexposure Prophylaxis and for Preexposure Prophylaxis for International Travel. MMWR Morb Mortal Wkly Rep 2018;67:1216–1220. DOI: http://dx.doi.org/10.15585/mmwr.mm6743a5)**
[2] "Update: Prevention of Hepatitis A After Exposure to Hepatitis A Virus and in International Travelers," *MMWR*, October 19. 2007, Vol. 56, No. 41
[3] See pages 1-5 of the Hepatitis A guidelines for the recommended schedule, minimum intervals, and contraindications and precautions for hepatitis A vaccine.

Recommended IG[1] Dosage[5] and Route

Time Since Exposure[2]	Age of Patient	Recommended Postexposure Prophylaxis
≤2 weeks	**All ages**	IG, 0.01 mL/kg[4]
> 2 weeks	All ages	**No prophylaxis; Contact should monitor themselves for signs/symptoms for 50 days from last exposure**

[1] This product does **NOT** contain thimerosal.
[2] Because hepatitis A cannot be reliably diagnosed on clinical presentation alone, serologic confirmation of HAV infection in index patients by IgM anti-HAV testing is recommended before postexposure treatment of contacts.
[3] Hepatitis A vaccine is recommended for postexposure prophylaxis for **healthy** persons ages ≥12 months of age.
[4]Immune Globulin should be administered deep into a large muscle mass (deltoid, **anterolateral thigh). Children under 24 months of age, use the anterolateral thigh muscle. Do not use the gluteal region as an injection site because of the risk of injury to the sciatic nerve.** Ordinarily, no more than 5 mL should be administered in 1 site in an adult or large child; lesser amounts (maximum 3 mL) should be given to small children and infants in one site.
[5]**Updated Dosing Instructions for Immune Globulin (Human) GamaSTAN S/D for Hepatitis A Virus Prophylaxis. MMWR Morb Mortal Wkly Rep 2017;66:959–960. DOI: http://dx.doi.org/10.15585/mmwr.mm6636a5**

Formula for calculating IG dosage:

- **Convert persons weight from pounds to kilograms: Persons weight ÷ 2.2 = kg**
- **Calculate IG dosage: Person's weight in kg x recommended IG mL/kg dosage = # mL**
  (Example: Person weighs 100 pounds. Pounds to kilograms conversion: 100 / 2.2=45 kg; Calculate IG dosage: 45 kg x 0.1 mL/kg = 4.5 mL)

TABLE 2. Indications and updated dosage recommendations for GamaSTAN S/D human immune globulin for preexposure and postexposure prophylaxis against hepatitis A infection Indication[5]

	Updated dosage recommendation
Preexposure prophylaxis	
Up to 1 month of travel	0.1 mL/kg
Up to 2 months of travel	0.2 mL/kg
2 months of travel or longer	0.2 mL/kg (repeat every 2 months)
Postexposure prophylaxis	
	0.1 mL/kg

Contraindications and Precautions to IG

Contraindications:

1. Persons with IgA deficiency. Anaphylaxis has been reported after repeated administration of IG to these persons.
2. Pregnancy or lactation is NOT a contraindication to IG use.

Precautions:

1. IG can interfere with the response to live injected vaccines, such as MMR, varicella, and LAIV. Administration of live vaccines should be delayed for at least 3 months after administration of IG (See Table 4 of ACIP "General Recommendations on Immunization" for more specific guidelines.)
2. Unless the benefits of IG prophylaxis exceed the benefits of vaccination, IG should not be administered for 2 weeks after measles-, mumps-, and rubella-containing vaccines, and for 3 weeks after vaccination with varicella vaccine. If IG is given during this period, the person should be revaccinated with the live vaccine, but not sooner than 3 months after administration of IG.

Simultaneous Administration of IG with Vaccines

Immune Globulin does not interfere in general with inactivated vaccines or to yellow fever vaccine. It may be administered simultaneously with any of the following routinely recommended vaccines:

DTaP, Tdap, Td, Hib, hepatitis A, hepatitis B, IPV, Inactivated Influenza, PCV13, PPSV23, HPV9, MCV4.

Seroconversion rates are not impaired by simultaneous administration of IG with the first dose of Hepatitis A vaccine, but lower serum antibody concentrations may be achieved. This decreased immunogenicity is not likely to be clinically important.

See “Contraindications and Precautions” section regarding administration of IG with or near live virus vaccines such as MMR, varicella., and LAIV

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT HEPATITIS B

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards should serve as a quick reference for clinics administering hepatitis B vaccine. The standards are not all inclusive and when more information is needed, the complete ACIP Recommendations statements should be referenced:

- "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States---Part II: Immunization of Adults," *MMWR,* December 8, 2006, Vol. 55, RR-16
- "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States - Part 1: Immunization of Infants, Children, and Adolescents," MMWR, December 23, 2005, Vol. 54, No. RR-16
- *ACIP* Hepatitis B Vaccine Resolution for the Vaccines for Children Program (VFC), (Resolution No.10/03-2)
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- Epidemiology and Prevention of Vaccine Preventable Diseases, 13th edition.
- "Use of Hepatitis B Vaccination for Adults with Diabetes Mellitus: Recommendations of the Advisory Committee on Immunization Practices (ACIP)", December 23, 2011, Vol. 60,RR-50
- CDC Guidance for Evaluating Health-Care Personnel for Hepatitis B Virus Protection and for Administering Postexposure Management – Recommendations and Reports, Source: MMWR, December 20, 2013; 62(rr10);1-19 (Not an ACIP statement but an important document from CDC).
- Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices-Recommendations and Reports, *"MMWR"*, January 12, 2018, Vol. 67, RR-1;1–31
- **Recommendations of the Advisory Committee on Immunization Practices for Use of a Hepatitis B Vaccine with a Novel Adjuvant--*MMWR*, April 20, 2018, Vol. 67, No. RR-15.**

Vaccine Description

- **Three single-antigen** hepatitis B vaccines (Hep B) licensed in the U.S. (**Recombivax HB, Engerix-B, and Heplisav-B)**.
  1. The currently available vaccines are produced by recombinant DNA technology using yeast cells. Since they contain no potentially infectious viral DNA or complete viral particles, they are incapable of causing hepatitis B infection.
  2. **On February 21, 2018, the Advisory Committee on Immunization Practices (ACIP) recommended Heplisav-B (HepB-CpG), a yeast-derived recombinant HepB surface antigen (HBsAg) and is prepared by combining purified HBsAg with small synthetic immunostimulatory cytidine-phosphate-guanosine oligodeoxynucleotide (CpG-ODN) motifs (1018 adjuvant). The 1018 adjuvant binds to Toll-like receptor 9 to stimulate a directed immune response to HBsAg.**
- **Hepatitis B vaccine is manufactured by three different companies. Data are**

limited on the safety and immunogenicity effects when HepB-CpG is interchanged with HepB vaccines from other manufacturers. When feasible, the same manufacturer's vaccines should be used to complete the series. However, vaccination should not be deferred when the manufacturer of the previously administered vaccine is unknown or when the vaccine from the same manufacturer is unavailable. The 2-dose HepB vaccine series only applies when both doses in the series consist of HepB-CpG. Series consisting of a combination of 1 dose of HepB-CpG and a vaccine from a different manufacturer should consist of 3 total vaccine doses and should adhere to the 3-dose schedule minimum intervals.

- Although the antigen content differs for Recombivax HB and Engerix-B, the vaccines are interchangeable.

Brand Name & Manufacturer

VACCINES		MANUFACTURERS
Engerix-B®	Pediatric/Adolescent Formulation (10µg/0.5mL) Adult Formulation (20 µg/1 mL) (Administered to dialysis/compromised persons 20 years of age and older as 2 doses [2 mL total] on the same visit)	Glaxo SmithKline
Recombivax HB®	Pediatric/Adolescent Formulation (5µg/0.5mL)[1] Adult Formulation (10µg/1 mL) Formulation for dialysis/compromised [2, 3] (40 µg/2 mL)	Merck
Heplisav-B™	**Adult Formulation (20µg of HBsAg and 3,000µg of 1018 adjuvant/0.5mL)[5]**	**Dynavax Technologies Corporation**

Hepatitis B Immune Globulin (HBIG)[4]

a. HepaGam B®	Cangene Corporation
b. HyperHEP B®	Grifols
c. Nabi-HB®	Biotest Pharmaceuticals Corporation

Hepatitis B Combination Vaccines

a. TwinRix® [5]
Hepatitis B (Engerix-B®) and Hepatitis A (Havrix®) Glaxo SmithKline

b. Pediarix® (Infanrix®, Engerix-B®, and inactivated poliovirus vaccine)[6]
Glaxo SmithKline

(See "Combination Guidelines" for more information on these 2 vaccines.)

[1] Recombivax HB® Pediatric/Adolescent formulation is also licensed for administration to persons 20 years of age and older. However, the dose should be increased to1 mL (10µg).
[2] Not supplied by the GA VFC or Georgia Immunization Program.
[3] In this case, use the Engerix B® product as directed in the package insert for these at risk populations.
[4] State-supplied HBIG is available by calling the Hepatitis Program Director at the GA Immunization Office at 404-657-3171. See "Eligibility Criteria for Vaccines Supplied by the Georgia Immunization Office for Children, Adolescents, and Adults" for further information.
[5] Licensed only for persons 18 years and older.
[6] Licensed only for the primary series of DTaP and polio and cannot be administered before the child is 6 weeks of age or to anyone 7 years of age or older.

Recommended Doses of Currently Licensed Formulations of Hepatitis B Vaccine, by Age Group and Vaccine Type

	Single-Antigen Vaccine					Combination Vaccine			
	Recombivax HB		Engerix-B		Hepli-sav-B	Pediarix		Twinrix	
Age Group	Dose (mcg)[1]	Volume (mL)	Dose (mcg)[1]	Volume (mL)	Volume (mL)	Dose (mcg)[1]	Volume (mL)	Dose mcg)[1]	Volume (mL)
Infants (<1 yr)	5	0.5	10	0.5	N/A	10	0.5	N/A[6]	N/A
Children (1-10 yrs)	5	0.5	10	0.5	N/A	10	0.5	N/A	N/A
Adolescents									
11-15 yrs	10[2]	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11-19 yrs	5	0.5	10	0.5	0.5 (18-19 yrs.)	N/A	N/A	N/A	N/A
Adults (≥ 20 yrs)	10	1.0	20	1.0	0.5	N/A	N/A	20	1.0
Hemodialysis patients and other immunocompromised persons									
< 20 yrs[3]	5	0.5	10	N/A	0.5	N/A	N/A	N/A	N/A
≥ 20 yrs	40[4]	1.0	40[5]	N/A	0.5	N/A	N/A	N/A	N/A
Adolescents and Adults (≥ 18 yrs)					0.5				

[1] Recombinant hepatitis B surface antigen protein dose.

[2] Adult formulation administered on a 2-dose schedule.

[3] Higher doses might be more immunogenic, but no specific recommendations have been made.

[4] Dialysis formulation administered on a 3-dose schedule at age 0,1, and 6 months.

[5] Two 1 mL doses administered at one site, on a 4-dose schedule at age 0, 1, 2, and 6 months.

[6] Not applicable.

Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th edition, pg. 116

Eligible[1,2] Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Office for Children, Adolescents, and Adults” located in the front of this section.

Recommended Hepatitis B Vaccine Schedule

Recommended Infant and Child Schedules

The hepatitis B vaccine series is routinely recommended for all infants. The first dose should be given at birth, but the recommended schedule for an infant depends upon the mother's hepatitis B surface antigen (HBsAg) status and infant's birth weight. See Minimal Age and Time Interval Section for requirements for minimum spacing of doses. Persons ≤19 years of age should receive the pediatric/adolescent vaccine formulation.

A. Medically stable infants weighing greater than or equal ≥ 2,000 (4.4 lbs.) grams born to mother known to be HBsAg-negative

Dose	Age of Infant
Hep B-1 **(monovalent Hep B)**	Birth, **within 24 hours of birth**[1]
Hep B-2	1-2 months
Hep B-3	6-18 months[2]

Infants born weighing less than < 2,000 grams (4.4 lbs.) born to mother known to be HBsAg- negative

Dose	Age of Infant
Hep B-1 **(monovalent Hep B)**	Chronological age of 1 month or hospital discharge; even if infant is still less than 2,000 grams. Complete series using recommended intervals[5]

B. Infants born to mother known to be HBsAg-positive

Dose	Age of Infant
Hep B-1 **(monovalent Hep B)**	Birth (within 12 hours)[1]
HBIG	Birth (within 12 hours)[3]
Hep B-2	1-2 months
Hep B-3	6 months[2, 4]

Test for HBsAg and anti-HBs at 9-12 months. If Hep B series is delayed, test 1-2 months after final dose. Infants weighing < 2,000 grams, the birth dose should not be counted as part of vaccine series; 3 additional doses should be administered beginning when infant reaches 1 month. The final dose should not be administered before age 24 weeks. [5]

C. Infants born to mother whose HBsAg status is unknown and has a birth weight greater than ≥ 2,000 grams (4.4 lbs.)

Dose	Age of Infant
Hep B-1 **(monovalent Hep B)**	Birth (within 12 hours)[1]
HBIG	≤ 7 days after birth[3]

Mother should be tested and if HBsAg positive, HBIG should be given to the infant no later than 7 days after birth[3]

Hep B-2	1-2 months
Hep B-3	6 months[2]

Infants born to mother whose HBsAg status is unknown and has a birth weight less than < 2,000 grams (4.4 lbs.)

Dose	Age of Infant
Hep B-1 **(monovalent Hep B)**	Birth (within 12 hours)[1]
HBIG	Birth (within 12 hours)[3]

If the mother's HBsAg status cannot be determined within 12 hours of birth the birth dose of vaccine should not be counted as part of the 3 doses required to complete the vaccine series; 3 additional doses of vaccine (for a total of 4 doses) should be administered according to a recommended schedule on the basis of the mother's HBsAg test result. Final dose should not be administered before age 24 weeks.[4]

Recommended Adult Schedule (20 years or older)

A. Hepatitis B vaccination should be administered to **adults who have a specific risk (see below), or lack of a risk factor but want protection.** unvaccinated adults with diabetes mellitus who are aged 19 through 59 years. Hepatitis B vaccination usually consists of 3 doses of vaccine administered intramuscularly at 0, 1, and 6 months; other schedules are available. Hepatitis B vaccination may be administered at the discretion of the treating clinician to unvaccinated adults with diabetes mellitus who are aged equal to or greater than 60 years

B. Adults at Risk for HBV Infection

- Sexual exposure
  - sex partners of HBsAg-positive persons
  - sexually active persons not in a long-term, mutually monogamous relationship (persons with more than one sex partner during the previous six month)
  - persons seeking evaluation or treatment for a sexually transmitted disease
  - men who have sex with men (MSM)
- Percutaneous or mucosal exposure to blood
  - Current or recent IDU (injection drug users)
  - Household contacts of HBsAg-positive persons
  - **Receive care in settings where a high proportion of adults have risks for hepatitis B infection (e.g., facilities providing sexually transmitted disease treatment, drug-abuse treatment and prevention services, hemodialysis and end-stage renal disease programs, institutions for developmentally disabled persons, health care settings targeting services to injection drug users or MSM, HIV testing and treatment facilities, and correctional facilities)**
  - **adults younger than age 60 years with diabetes mellitus or aged 60 years or older with diabetes mellitus based on individual clinical decision**
  - **adults in pre-dialysis care or receiving hemodialysis or peritoneal dialysis**
- Other groups
  - **International travelers to countries with high or intermediate levels of endemic HBV infection (HBsAg prevalence ≥ 2%**
  - HIV infection
  - **Chronic liver disease (e.g., hepatitis C infection, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] aspartate aminotransferase [AST] level greater than twice the upper limit of normal)**

[1] Pediarix® is a combination of DTaP, hepatitis B, and IPV and is licensed only for the primary series of 3 doses of DTaP and polio. This vaccine should be used for doses given before the child is 6 weeks of age. See the "Combination Vaccines" section in this section of the manual for more information.
[2] This dose is recommended at 6 calendar months of age, but should not be administered before 24 weeks of age.
[3] Hepatitis B Immune Globulin: 0.5ml administered IM at a site different from that used for the vaccine.
[4] When the mother is HBsAg-positive, the infant should receive the final dose of hepatitis B vaccine at 6 months of age and have postvaccination serologic testing (PVST) for anti-HBs and HBsAg at 9-12 months of age. Infants and children completing the series after the recommended intervals and who are at least 9 months of age should have PVST 1-2 months after the final HepB dose in the series.
[5] Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices-Recommendations and Reports, "MMWR", January 12, 2018, Vol. 67, RR-1;1–31

Recommended Schedules for Infants ≥ 4 Months of Age, Children, Adolescents and Adults

Previously unvaccinated infants older than 4 months of age, children, adolescents and adults should begin the vaccination series at the earliest opportunity. There are **3** optional schedules for vaccinating these age groups; however, minimum time intervals between doses apply.

Option 1: The pediatric/adolescent formulation should be used for persons ≤19 years of age, and those ≥ 20 years of age should receive the adult formulation.

Dose	Usual Time Interval	Minimum Time Interval Between Doses
Hep B-1	-----	-----
Hep B-2	1-2 months	4 weeks
Hep B-3	4-6 months	8 weeks from dose #2 **and** 16 weeks from dose #1

Option 2: Alternative 2 Dose Schedule for Adolescents (age 11 through 15 years only) and using Adult Formulation (Recombivax™ only). This vaccine is not available from the GA VFC Program.

Dose	Usual Time Interval	Minimum Time Interval Between Doses
Recombivax 1.0 mg	**------**	
Recombivax 1.0 mg	4-6 months	16 weeks

Option 3: The 2-dose schedule for persons ≥ 18 years of age and older.

Dose	Usual Time Interval	Minimum Time Interval Between Doses
Heplisav-B 0.5 mL	**----------**	**----------**
Heplisav-B 0.5 mL	**1 month**	**4 weeks**

Recommended Hepatitis B Post-Exposure Prophylaxis

All contacts should be pre-tested and vaccinated at the same visit.

1. Infants of HBsAg Positive Mom	HBIG: 0.5mL IM plus Hepatitis B Vaccine within 12 hours of birth but administered in different sites. Give subsequent doses of Hepatitis B vaccine according to the recommended vaccine schedule.
2. Preterm infants weighing < 2000 grams. (4.4 lbs.)	If the mother's HBsAg status cannot be determined ≤ 12 hrs. of birth, infants should receive both single antigen hepatitis B vaccine and HBIG (0.5 mL). The infants should receive 3 additional doses of hepatitis B vaccine according to the routine schedule------the birth dose should not be counted.
3. Unvaccinated Infants (0-12 months) whose primary caregiver is acutely infected	HBIG: 0.5mL IM plus Hepatitis B Vaccine: age-specific dose at the time of HBIG but administered in different sites. Give subsequent doses according to the vaccine schedule.
4. Unvaccinated Household contacts (>12 mos. of age) with identifiable blood exposure to acutely infected person within 7 days of exposure.	HBIG: single dose (0.06mL/kg IM) plus Hepatitis B Vaccine: age-specific dose at the time of HBIG but administered in different sites. Give subsequent doses according to the vaccine schedule.
5. Unvaccinated sexual contact to acutely infected person within 14 days of last sexual exposure	HBIG: single dose (0.06mL/kg IM) plus Hepatitis B Vaccine: age-specific dose at the time of HBIG but administered in different sites Give subsequent doses according to the vaccine schedule.
6. Percutaneous or permucosal exposure	See "Recommended Hepatitis B Post-Exposure Prophylaxis" Tables, for exposure in occupational and nonoccupational settings

Recommendations for postexposure prophylaxis after percutaneous or mucosal exposure to HBV in an OCCUPATIONAL setting				
Vaccination and antibody response status of exposed persons[1]	**Treatment when source is:**			
	HBsAg positive	**HBsAg negative**	**Source unknown or not tested**	
			High Risk	**Low Risk**
Unvaccinated	HBIG[2] (1 dose) and begin Hep B vaccine series	Begin Hep B vaccine series	Begin the Hep B vaccine series	Begin the Hep B vaccine series
Previously Vaccinated Known responder[3]	No treatment	No treatment	No treatment	No treatment
Previously Vaccinated Known Nonresponder[3]	HBIG (1 dose) and begin a revaccination[4] series or HBIG (2 doses)[5]	No treatment	HBIG (1 dose) and begin a revaccination[4] series	Begin a revaccination[4] series
Previously Vaccinated Antibody response unknown	Test for anti-HBs[6] If adequate[3]: no treatment If inadequate: HBIG x 1 dose and vaccine booster	No treatment	Test for anti-HBs[6] If adequate[3]: no treatment If inadequate: give vaccine booster and check anti-HBs in 1-2 months	

[1]Persons known to have had HBV infection in the past or who are chronically infected do not require HBIG or vaccine.
[2] Hepatitis B immune globulin (0.06 mL/kg) administered IM
[3] Adequate response is anti-HBs of at least 10 mIU/mL after vaccination.
[4] Revaccination means an additional 3-dose series of hepatitis B vaccine administered after the primary series. **Heplisav-B (HepB-CpG) may be used for revaccination following an initial HepB vaccine series that consisted of doses of HepB-CpG or doses from a different manufacturer. HepB-CpG may also be used to revaccinate new health care personnel (including challenge dose) initially vaccinated with a vaccine from a different manufacturer in the distant past who have anti-HBs < 10 mIU/mL upon hire or matriculation.**
[5] The option of giving one dose of HBIG and revaccinating the series is preferred for nonresponders who have not completed a second 3-dose vaccine series. For persons who previously completed a second vaccine series but failed to respond, two doses of HBIG are preferred.
[6] Testing for antibody to HBsAg should be done as soon as possible after exposure.
Reference: *MMWR* 2001; 50(RR-11) pg 22
CDC. Prevention of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep 2018; 67 (No.RR-1).

Postexposure Prophylaxis[1] of Persons with Nonoccupational[2] Exposure		
Exposure	**Treatment**	
	Unvaccinated person[3]	**Previously vaccinated person[4]**
HBsAg-positive source		
Percutaneous (e.g. bite or needlestick) or mucosal exposure to HBsAg-positive blood or body fluids	Administer hep B vaccine series and HBIG	Administer hep B vaccine booster dose
Sex or needle-sharing contact of an HBsAg-positive person	Administer hep B vaccine series and HBIG	Administer hep B vaccine booster dose
Victim of sexual assault/abuse by a perpetrator who is HBsAg-positive	Administer hep B vaccine series and HBIG	Administer hep B vaccine booster dose
Source with unknown HBsAg status		
Victim of sexual assault/abuse by a perpetrator with unknown HBsAg status	Administer hep B vaccine series	No treatment
Percutaneous or mucosal exposure to potentially infectious blood or body fluids from a source with unknown HBsAg status	Administer hep B vaccine series	No treatment
Sex or needle-sharing contact of person with unknown HBsAg status	Administer hep B vaccine series	No treatment

[1] When indicated, immunoprophylaxis should be initiated as soon as possible, preferably within 24 hours. The interval during which postexposure prophylaxis is effective is unlikely to exceed 7 days for percutaneous exposures or 14 days for sexual exposures. The hep B vaccine series should be completed.
[2] These guidelines apply to nonoccupational exposures. See previous table for management of occupational exposures.
[3] A person who is in the process of being vaccinated but who has not completed the vaccine series should complete the series and receive treatment as indicated.
[4] A person who has written documentation of a complete hep B vaccine series and who did not receive postvaccination testing.

Reference: "A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States," *MMWR*, December 8, 2006, Vol. 55, No. RR-16

Minimum Age & Dose Intervals

Vaccine	Age Dose 1	Interval Dose 1 to 2	Interval Dose 2 to 3	Interval Dose 1 to 3
Hep B (3-dose schedule with pediatric or adolescent formulation)	Birth	4 weeks	8 weeks	16 weeks[1]
Hep B (2-dose schedule adult formulation for children 11-15 years of age)[2,3]	11 years	16 weeks	-----	-----
Hep B (2-dose schedule adult formulation for ≥ 18 years)[4]	**18 years**	**4 weeks**	**------**	**------**

[1]The 3rd dose is recommended to be given to infants at 6 calendar months of age. It should not be administered before 24 weeks of age.
[2]Adult vaccine for this specific use is not available through VFC.
[3]This schedule can be used only with Recombivax™ brand vaccine and if started ≥11 years of age, must be completed before 16 years of age. If not completed within these minimal age and time intervals, the series should be completed following the 3-dose schedule.

[4]The 2-dose HepB vaccine series only applies when both doses in the series consist of Heplisav (HepB-CpG). Series consisting of a combination of 1 dose of Heplisav and a vaccine from a different manufacturer should consist of 3 total vaccine doses and should adhere to the 3-dose schedule minimum intervals of 4 weeks between dose 1 and 2, 8 weeks between dose 2 and 3, and 16 weeks between dose 1 and 3. Doses administered at less than the minimum interval should be repeated. However, a series containing 2 doses of Heplisav administered at least 4 weeks apart is valid, even if the patient received a single earlier dose from another

manufacturer.

NOTE: Post-vaccine serologic testing is not routinely recommended. However, testing is recommended 1-2 months after the **final** dose of vaccine for the following:

1. Hemodialysis patients
2. HIV-infected and other immunocompromised persons
3. Health care personnel
4. Immunocompromised patients at risk of exposure to HBV. Infants born to HBsAg positive mothers should be tested **1-2** months after the final dose of Hep B vaccine is administered.
5. Sex partners of HBsAg positive persons

CDC. Prevention of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices. *MMWR* Recomm Rep 2018; 67 (No. RR-1).

Recommended Dosage and Route

Hepatitis B Vaccines[1,4]

Pediatric/adolescent formulations:	0.5mL administered intramuscularly
Adult formulations:	1 mL administered intramuscularly
	0.5mL administered intramuscularly

NOTE: Hepatitis B vaccine should be administered in the deltoid or antero-lateral aspect (vastus lateralis) of the thigh. It should not be administered in the buttocks.

Hepatitis B Immune Globulin (HBIG)

Infant (birth-12 months):	0.5 mL intramuscularly in vastus lateralis
Children and adults:	0.06 mL/kg intramuscularly

[1] Refer to chart on pg. 3 of these guidelines for more dosing information.

Contraindications and Precautions

I. Hepatitis B Vaccine

A. Contraindications and Precautions

1. Anaphylactic reaction to a previous dose of hepatitis B vaccine, whether given as a single antigen or in a combination product.
2. Known allergy to yeast or yeast products.
3. Moderate or severe illnesses with or without fever.
4. Pediarix™ should not be given to infants younger than 6 weeks of age or to anyone 7 years of age or older
5. Administration of TwinRix® vaccine to persons younger than 18 years of age. See the "Combination Vaccine Guidelines" in this section of the manual.
6. Latex Allergy

Note:

1. Pregnancy is not a contraindication to receiving HepB vaccine, **but it should be given to a** pregnant woman only if clearly needed.
2. Not contraindicated in persons with a history of multiple sclerosis (MS), Guillain-Barre (GBS), autoimmune disease (e.g. systemic lupus erythematosus or rheumatoid arthritis) or any other chronic diseases
3. Apnea following intramuscular vaccination has been observed in some infants born prematurely.
4. **There are no clinical studies of Heplisav (HepB-CpG) in pregnant women. Until safety data are available for Heplisav, providers should continue to vaccinate pregnant women needing HepB vaccination with a vaccine from a different manufacturer**.

II. Hepatitis B Immune Globulin

A. Contraindications

1. Anaphylactic reaction to a previous dose of any immune globulin preparation.
2. Serum immunoglobulin A deficiency.

Note: HBIG is not contraindicated for a pregnant woman and should be administered if clearly indicated.

Simultaneous Vaccine Administration

Hepatitis B Vaccine

May be administered simultaneously with any of the following routinely recommended vaccines: DTaP, Tdap, Td, DT, RV, MMR, Hib, Varicella, IPV, Hepatitis A, MCV4, MPSV4, MenB, PCV13 or PPSV23, HPV9, Zoster and Influenza

Hepatitis B Immune Globulin (HBIG)[1]

May be administered simultaneously with any of the following routinely recommended vaccines: DTaP, Tdap, Td, DT, hepatitis B, Hib, IPV, Hepatitis A, MCV4, MPSV4, MenB, PCV13 or PPSV23, HPV9, RV, Zoster, MMR, Varicella and Influenza

[1] For guidelines on spacing of HBIG and MMR or varicella vaccines, see "General Recommendations on Immunization," *MMWR*, January 28, 2011, Vol. 60, No. 2.

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT HERPES ZOSTER (SHINGLES) DISEASE

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for this vaccine, though it is not supplied by the Georgia Immunization Program. These standards were developed from the vaccine package insert and the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- "ACIP Recommendations for the Use of the Prevention of Herpes Zoster," MMWR, June 6, 2008, Vol. 57, No. RR-5.
- Vaccine package insert; available at *https://www.fda.gov/downloads/biologicsbloodvaccines/vaccines/approvedproducts/ucm132831.pdf*
- "Update on Herpes Zoster Vaccine: Licensure for Persons Aged 50-59 Years," MMWR, November 11, 2011, Vol. 60, No. RR-44
- Update on Recommendations for Use of Herpes Zoster Vaccine, *MMWR*, August 22, 2014; 63(33):729-731
- Epidemiology and prevention of vaccine-preventable diseases, 13th Edition
- 2015 Red Book, Report of the Committee on Infectious Diseases by the American Academy of Pediatrics
- **Recommendations of the Advisory Committe*e on Immunization Practices for* Use of Herpes Zoster Vaccines. *MMWR, January 26, 2018 / 67(3);103–108***
- **Advisory Committee on Immunization Practices Recommended Immunization Schedule for Adults Aged 19 Years or Older. *MMWR*, February 9, 2018 / 67(5);158–160 2018**
- **"ZVL" replaced the term "HZV" (herpes zoster vaccine) that was used in past adult immunization schedules to refer to the live zoster vaccine.**

Vaccine Description

- Licensed **zoster vaccine live** is a lyophilized preparation of a live, attenuated strain of zoster vaccine, the same strain used in the varicella vaccines. However, its minimum potency is at least 14-times the potency of single-antigen varicella vaccine. To maintain potency, lyophilized zoster vaccine must be stored frozen at an average temperature of ≤ 5˚ F (≤-15˚C) until it is reconstituted for injection.
- **On October 20, 2017, Zoster Vaccine Recombinant, Adjuvanted (Shingrix, GlaxoSmithKline, [GSK], a 2-dose, subunit vaccine containing recombinant glycoprotein E in combination with novel adjuvant ($ASO1_B$), was approved by the Food and Drug Administration for the prevention of herpes zoster in adults aged ≥ 50 years.**

Brand Names & Manufacturer	
Zostavax®	Merck
Shingrix®	**GlaxoSmithKline**

Eligible Groups for State Supplied Vaccine
These vaccines **are** not supplied by the Georgia Immunization Program. These guidelines are for informational purposes only.

ACIP Recommendations for Administration of Zostavax®[1]

Zoster vaccine live (ZVL) is recommended for all persons aged ≥60 years who have no contraindications, including persons who report a previous episode of zoster or who have chronic medical conditions**. Zoster vaccination live** is not indicated to treat acute zoster, to prevent persons with acute zoster from developing postherpetic neuralgia (PHN), or to treat ongoing PHN.

Vaccination of Persons who have received Varicella Vaccine

Zoster vaccination live (ZVL) is not recommended for persons of any age who have received varicella vaccine. However, health-care providers do not need to inquire about varicella vaccination history before administrating **zoster vaccine live** because virtually all persons currently or soon to be in the recommended age group have not received varicella vaccine. In the United States, varicella vaccination began in 1995. Since that time, few adults aged ≥ 40 years would have been susceptible to varicella and thus eligible to receive varicella vaccine. The number of persons eligible for zoster vaccine who have received varicella vaccine is extremely small and will remain so for at least a decade.

Prevention of Herpes Zoster, Recommendations of the Advisory Committee on Immunization Practices (ACIP), *MMWR,* June 6, 2008 / Vol. 57 / RR-5

Recommended Herpes Zoster Vaccine Schedule

Vaccine	Dose	Minimum Age
Zostavax®	1	60 years

Recommended Dosage and Route
0.5 mL administered subcutaneously in the deltoid region

Contraindications and Precautions

Contraindications:

1. History of anaphylactic reaction to gelatin, neomycin, or any other vaccine component
2. History or primary or acquired immunodeficiency states including leukemia, lymphomas of any type, or other malignant neoplasms affecting the bone marrow or lymphatic system; AIDS or other clinical manifestations of infection with HIV[1]
3. Individuals on immunosuppressive therapy, including high-dose corticosteroids[2]
4. Individuals with active untreated tuberculosis
5. Women who are or may become pregnant
6. Persons undergoing hematopoietic stem cell transplantation (HSCT)

Precautions:

1. Moderate to severe illness
2. Current treatment with an antiviral drug active against herpesviruses, such as acyclovir, famciclovir or valacyclovir[3]

[1] The package insert implies that zoster vaccine should not be administered to anyone who has ever had leukemia or lymphoma. However, ACIP recommends that persons whose leukemia or lymphoma is in remission and who have not received chemotherapy or radiation for at least 3 months can be vaccinated.
[2] High dose corticosteroid therapy is defined as 20 milligrams or more per day of prednisone or equivalent lasting two or more weeks. Zoster vaccination should be deferred for at least 1 month after discontinuation of therapy.
[3] Persons taking these drugs should discontinue them at least 24 hours before administration of zoster vaccine, and the drugs should not be taken for at least 14 days after vaccination.

Special Groups and Circumstances

1. Persons with a reported history of zoster can be vaccinated
2. Persons receiving blood products-**Zoster vaccine live** can be administered to persons at any time before, concurrent with, or after receiving blood or other anti-body-containing blood products.

ACIP Recommendations for Administration of Shingrix®[1]

- **Recombinant zoster vaccine (RZV) is recommended for the prevention of herpes zoster and related complications for immunocompetent adults aged ≥ 50 years.**
- **RZV is recommended for the prevention of herpes zoster and related complications for immunocompetent adults who previously received zoster vaccine live (ZVL).**
- **RZV is preferred over ZVL for the prevention of herpes zoster and related complications. These recommendations serve as a supplement to the existing recommendations for the use of ZVL in immunocompetent adults aged ≥ 60 years.**

Vaccination of Persons who have received Varicella Vaccine

RZV may be used in adults aged ≥ 50 years, irrespective of prior receipt of varicella vaccine or ZVL, and does not require screening for a history of chickenpox (varicella). ZVL remains a recommended vaccine for prevention of herpes zoster in immunocompetent adults aged ≥60 years. Care should be taken not to confuse ZVL, which is stored in the freezer and administered subcutaneously, with RZV, which is stored in the refrigerator and administered intramuscularly.

Recommendations of the Advisory Committee on Immunization Practices for Use of Herpes Zoster Vaccines. MMWR, January 26, 2018 / 67(3);103–108

Recommended Herpes Zoster Vaccine Schedule

Vaccine	Dose(s)	Minimum Age
Shingrix®	2	50 years

Recommended interval between RZV doses is 2 to 6 months. Minimum interval between doses of RZV is 4 weeks. If the second dose is given less than 4 weeks after dose 1 then dose 2 should be repeated at least 8 weeks after the invalid dose. The vaccine series need not be restarted if more than 6 months have elapsed since the first dose. The first dose of RZV should be given at least 2 months after ZVL.

Recommended Dosage and Route

0.5 mL administered intramuscularly in the deltoid region

Contraindications and Precautions

Contraindications:

1. **RZV should not be administered to persons with a history of severe allergic reaction, such as anaphylaxis, to any component of this vaccine.**

Precautions:

1. **For Current herpes zoster infection RZV is not a treatment for herpes zoster or postherpetic neuralgia and should not be administered during an acute episode of herpes zoster.**
2. **For pregnancy and breastfeeding there is no available data to establish whether RZV is safe in pregnant or lactating women and there is currently no ACIP recommendation for RZV use in this population. Consider delaying vaccination with RZV in such circumstances.**

Special Populations:

1. **Adults with a history of herpes zoster should receive RZV. If a patient is experiencing an episode of herpes zoster, vaccination should be delayed until the acute stage of the illness is over and symptoms abate. Studies of safety and immunogenicity of RZV in the population is ongoing.**
2. **Adults with medical conditions (e.g., chronic renal failure, diabetes mellitus, rheumatoid arthritis, and chronic pulmonary disease) should receive RZV.**
3. **As with ZVL, the ACIP recommends the use of RZV in persons taking low-dose immunosuppressive therapy (e.g., <20mg/day of prednisone or equivalent or using inhaled or topical steroids) and persons anticipating immunosuppression or who have recovered from immunosuppression or who have recovered from immunocompromising illness. Whereas RZV is licensed for all persons aged ≥ 50 years, immunocompromised persons and those on moderate to high doses of immunosuppressive therapy were excluded from the efficacy studies (ZOE-50 and ZOE-70), and thus, ACIP has not made recommendations regarding the use of RZV in these patients.**

Recommendations of the Advisory Committee on Immunization Practices for Use of Herpes Zoster Vaccines. MMWR, January 26, 2018 / 67(3);103–108

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:
Tdap, Td, MMR, Hepatitis A, Hepatitis B, Polio, Influenza, MCV4, MPSV4, Hib, PPSV23 and PCV13

If simultaneous administration is not possible, **Zoster Vaccine Live (ZVL)** can be administered at any time before or after an inactivated vaccine, but at least 4 weeks before or after another live, attenuated vaccine.

CDC's general best practice guidelines for immunization advise that recombinant and adjuvanted vaccines, such as RZV, can be administered concomitantly, at different anatomic sites, with other adult vaccines. The safety and efficacy of administration of two adjuvanted vaccines (e.g., RZV and adjuvanted Fluad), either concomitantly or at other intervals have not been evaluated.

Recommendations of the Advisory Committee on Immunization Practices for Use of Herpes Zoster Vaccines. MMWR, January 26, 2018 / 67(3);103–108

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT HUMAN PAPILLOMAVIRUS INFECTION

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for this vaccine. These standards were developed from the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- "Quadrivalent Human Papillomavirus Vaccine," *MMWR*, March 23, 2007, Vol. 56, No. RR-2
- ACIP Human Papillomavirus Resolution for the Vaccines for Children Program (VFC), (Resolution No. 02/15-2)
- HPV vaccine package insert for HPV2, HPV4 & HPV9
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th edition.
- Announcement: *Additional Guidance Online for Providers Regarding 9-Valent HPV Vaccine Use Among Persons Who Previously Received HPV Vaccination, MMWR* July 31, 2015 / 64(29); 806
- Use of 9-Valent Human Papillomavirus (HPV) Vaccine: Updated HPV Vaccination Recommendations of the Advisory Committee on Immunization Practices, *MMWR* March 27, 2015 Vol. 64, No.11
- **Use of a 2-Dose Schedule for Human Papillomavirus Vaccination — Updated Recommendations of the Advisory Committee on Immunization Practices, MMWR December 16, 2016 / Vol. 65 / No. 49 1405**

Vaccine Description

Gardasil 4® is a non-infectious recombinant, quadrivalent vaccine prepared from virus-like particles of HPV Types 6, 11, 16, and 18. HPV types 16 and 18 cause approximately 70% of cervical cancer. Types 6 and 11 cause approximately 90% of genital wart cases.
This product does not contain a preservative or antibiotics. After thorough agitation, it is a white, cloudy liquid.
Gardasil 9 is a non-infectious 9-valent vaccine which contains HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58. 9vHPV targets five additional cancer causing types, which account for about 15% of cervical cancers. 9vHPV can be used for routine vaccination of males aged 11 or 12 years and males through age 21 years who have not been vaccinated previously or who have not completed the 3-dose series. ACIP recommends either 9vHPV or 4vHPV vaccination for men who have sex with men and immunocompromised persons (including those with HIV infection) through age 26 years if not vaccinated previously
Cervarix® is a Human papillomavirus bivalent (types 16 and 18) vaccine, recombinant] for

the prevention of cervical pre-cancers and cervical cancer associated with oncogenic human papillomavirus (HPV) types 16 and 18 for use in girls and young women (aged 10-25).

It is important to emphasize these points:

- Females should continue to have routine cervical cancer screening as recommended by their healthcare provider.
- Females do not need to get an HPV test or Pap test before receiving vaccine. If the person is already infected, the tests cannot tell which type of HPV she has. There are many types of HPV and vaccination would provide protection against infection with those types not already acquired.
- The vaccine will not have a therapeutic effect on existing HPV infection, genital warts or cervical lesions.
- There is no ACIP recommendation for additional 9-valent HPV vaccine doses for persons who started the series with quadrivalent or bivalent HPV vaccine and completed the series with 9-valent HPV vaccine.

Brand Names & Manufacturer

Gardasil® (HPV4) Gardasil® (HPV9)	Merck & Co., Inc.
Cervarix® (HPV2)	GlaxoSmithKline

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section.

Recommended HPV Vaccine Schedule [1, 4, 5]

2-Dose Schedule [2]- Persons initiating HPV vaccination at ages 9 through 14 years, except immunocompromised persons

Vaccine	Dose 1	Dose 2
Gardasil®	11-12 years of age	6–12 months after first dose

3-Dose Schedule [3] - Persons initiating HPV vaccination at ages 15 through 26 years and immunocompromised persons

Vaccine	Dose 1	Dose 2	Dose 3
Gardasil®	11-12 years of age	1-2 months after first dose	6 months after first dose

[1] **ACIP recommends routine HPV vaccination at age 11 or 12 years. Vaccination can be given starting at age 9 years. ACIP also recommends vaccination for females through age 26 years and for males through age 21 years who were not adequately vaccinated previously. Special populations- Children with a history of sexual abuse or assault, ACIP recommends routine HPV vaccination beginning at age 9 years; For men who have sex with men, ACIP recommends routine HPV vaccination as for all males; For transgender persons, ACIP recommends routine HPV vaccination as for all adolescents.**
[2] **In a 2-dose schedule of HPV vaccine, the minimum interval between the first and second doses is 5 months. If the second dose is administered after a shorter interval, a third dose should be administered a minimum of 12 weeks after the second dose and a minimum of 5 months after the first dose.**
[3] **In a 3-dose schedule of HPV vaccine, the minimum intervals are 4 weeks between the first and second doses, 12 weeks between the second and third doses, and 5 months between the first and third doses. If a vaccine dose is administered after a shorter interval, it should be re-administered after another minimum interval has elapsed since the most recent dose. Interrupted schedules.**
[4] **If the vaccination schedule is interrupted, the series does not need to be restarted. The number of recommended doses is based on age at administration of the first dose.**
[5] HPV vaccines are most effective for both males and females when given before exposure to HPV through sexual contact.

Recommended Age & Dose Intervals

2-Dose Schedule-

Vaccine	Recommended age for first dose	Minimum interval Dose 1 to Dose 2
Gardasil®	11-12 years (minimum age is 9 years) [1]	**6–12 months**

3-Dose Schedule

Vaccine	Recommended age for first dose	Minimum interval Dose 1 to Dose 2	Minimum interval Dose 1 to Dose 3
Gardasil®	11-12 years (minimum age is 9 years) [1]	**1-2 months**	**6 months**

[1] This vaccine is licensed for use in females and males 9-26 years of age.

Recommended Dosage and Route

0.5mL administered intramuscularly
In the deltoid region of the upper arm or in the higher anterolateral area of the thigh

Contraindications and Precautions

Contraindications:

1. **HPV4 and HPV9 are contraindicated for persons with a history of immediate hypersensitivity to yeast.** Previous anaphylactic, to any other vaccine component, or to a previous dose of any HPV vaccine.

Precautions:

1. Persons with moderate or severe acute illness

Special Situations:

1. Not recommended for use in pregnant women. However, pregnancy testing is not needed before vaccination. If a woman is found to be pregnant after initiating the vaccination series, the remainder of the 3-dose series should be delayed until completion of pregnancy. If a vaccine dose has been administered during pregnancy, no intervention is needed.
2. Lactating women can receive HPV vaccine.
3. Persons with impaired immune responsiveness either from disease or medication can receive the vaccine, but may have reduced antibody response to active immunization.
4. Syncope can occur after vaccination, most commonly among adolescents and young adults. To avoid serious injury related to syncopal episode, observation for 15 minutes after administration is recommended.

A pregnancy registry has been established for HPV9. Pregnancy registries for HPV4 and HPV2 have been closed with concurrence from FDA. Exposure during pregnancy can be reported to Merck at 1-877-888-4231 (for HPV9). Patients and health care providers can report an exposure to HPV vaccine during pregnancy to the Vaccine Adverse Event Reporting System (VAERS).

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:
Tdap, Td, MMR, Varicella, Hepatitis A, Hepatitis B, IPV, MCV4, MPSV4, Influenza, PCV13 and PPSV23

Georgia Department of Public Health
Immunization Program Standards

VACCINES TO PREVENT INFLUENZA

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards were developed from the pertinent Vaccine Resolution from the Vaccines for Children Program and the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- ACIP Vaccine Resolution for the Vaccines for Children Programs to prevent influenza (VFC), (Resolution No. 10/12-3)
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics.
- Epidemiology and Prevention of Vaccine Preventable Diseases, 2015, 13th ed.
- Prevention and Control of Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices, United States, 2015–16 Influenza Season Weekly, August 7, 2015 / 64(30); 818-825.
- Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2016–17 Influenza Season, Recommendations and Reports / August 26, 2016 / 65(5);1–54.
- General Best Practice Guidelines for Immunization: Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP). https//www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html
- Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — United States, 2017–18 Influenza Season Recommendations and Reports / August 25, 2017 / 66(2);1–20.
- **Package inserts for all 2018-2019 Influenza presentations.**
- **ACIP Adult Immunization Schedule,2018: https://www.cdc.gov/vaccines/schedules/hcp/adult.html**
- **Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices-United States, 2018-19 Influenza Season/*MMWR*/August 24, 2018/Vol.67/No. 3**

Important Note: The influenza dates are not listed (i.e., 2015-16) at the top of the VISs. These VISs may be used for this year and future years, until there is a significant change in flu recommendations that will require changing them.
VIS for IIV and RIV: http://www.cdc.gov/vaccines/hcp/vis/vis-statements/flu.pdf

Vaccine Composition

- **Vaccine viruses included in the 2018-19 U.S. trivalent influenza vaccines will be an A/Michigan/45/2015 (H1N1) pdm09-like virus, an A/Singapore/INFIMH-16-0019/2016 (H3N2)- like virus, and a B/Colorado/06/2017- like virus (Victoria lineage). The 2018-19 U.S. quadrivalent influenza vaccines will contain these same three viruses and an additional influenza B vaccine virus, a B/Phuket/3073/2013- like virus (Yamagata lineage).**
- **Following two seasons (2016-17 and 2017-18 during which ACIP recommended that LAIV4 not be used, ACIP voted in February 2018 to recommend that for the 2018-19 season, vaccination providers may choose to administer any licensed, age-appropriate influenza vaccine (IIV, RIV4, or LAIV4). LAIV4 is an option for those for whom it is appropriate.**

Brand Name & Manufacturer

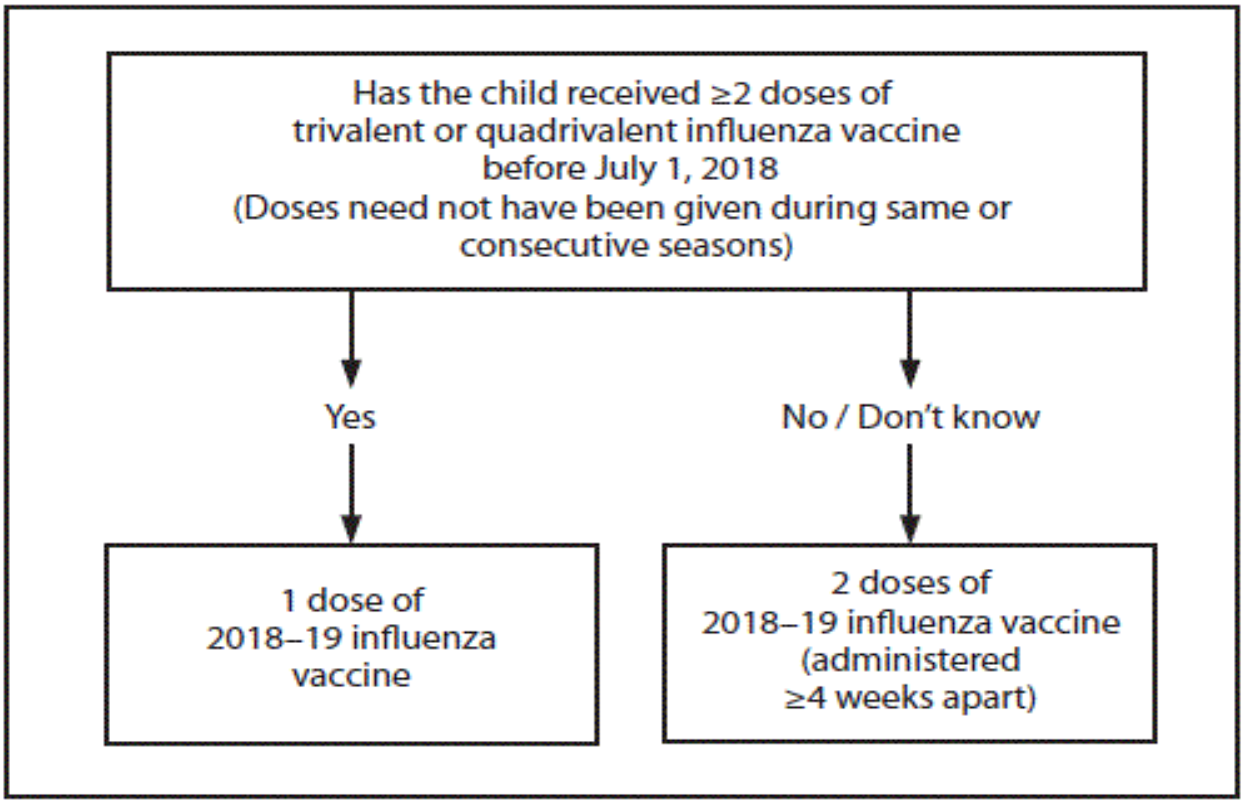
Fluarix Quadrivalent	GlaxoSmithKline
FluLaval Quadrivalent	ID Biomedical Corp. of Quebec (distributed by GlaxoSmithKline)
Fluzone Quadrivalent	Sanofi Pasteur
Fluzone High-Dose	Sanofi Pasteur
Afluria Quadrivalent	Seqirus, Inc.
Afluria	Seqirus, Inc.
Flucelvax Quadrivalent	Seqirus, Inc.
Flublok Quadrivalent	Sanofi Pasteur
FluMist Quadrivalent	**AstraZeneca**
Fluad™	Seqirus, Inc.

Eligible Groups for State Supplied Vaccine

Brand	VFC Age group		Presentation
Fluzone® - Quadrivalent	6-35 months	0.25ml	Single Dose Syringe
Fluzone® - Quadrivalent	3-18 years	0.5ml	Single Dose Vial
Fluzone® - Quadrivalent	3-18 years	0.5ml	Single Dose Syringe
Fluzone® - Quadrivalent	6 months – 18 years	5ml	Multi-dose Vial
Fluarix® - Quadrivalent	6 months –18 years	0.5ml	Single Dose Syringe
FluLaval® - Quadrivalent	6 months –18 years	5ml	Multi-dose Vial
FluLaval® - Quadrivalent	6 months –18 years	0.5ml	Single Dose Syringe
FluMist-Quadrivalent	**2 years- 18 years**	**0.2ml**	**Single-use intranasal sprayer**

For additional guidelines for Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section.

FIGURE 1. Influenza vaccine dosing algorithm for children aged 6 months through 8 years — Advisory Committee on Immunization Practices, United States, 2018–19 influenza season



Influenza Vaccination for Persons with a History of Egg Allergy For the 2018–19 Influenza Season.

ACIP recommends the following:

1. Persons with a history of egg allergy who have experienced only urticarial (hives) after exposure to egg should receive influenza vaccine. Any licensed and recommended influenza vaccine (**i.e., any IIV, RIV4, or LAIV4**) that is otherwise appropriate for the recipient's health status may be used.

2. Persons who report having had reactions to egg involving symptoms other than urticaria (hives), such as angioedema, respiratory distress, lightheadedness, or recurrent emesis; or who required epinephrine or another emergency medical intervention, may similarly receive any licensed and recommended influenza vaccine (**i.e., any IIV, RIV4, or LAIV4**) that is otherwise appropriate their health status. The selected vaccine should be administered in an inpatient or outpatient medical setting (including, but not necessarily limited to, hospitals, clinics, health departments, and physician offices). Vaccine administration should be supervised by a health care provider who is able to recognize and manage severe allergic **reactions.**

3. A previous severe allergic reaction to influenza vaccine, regardless of the component suspected of being responsible for the reaction, is a contraindication to future receipt of the vaccine.

No postvaccination observation period is recommended specifically for egg-allergic persons. However, ACIP recommends that vaccine providers consider observing patients **(seated or supine)** for 15 minutes following administration of any vaccine to decrease the risk for injury should syncope occur.

Persons who are able to eat lightly cooked egg (e.g., scrambled egg) without reaction are unlikely to be allergic. Egg-allergic persons might tolerate egg in baked products (i.e., bread or cake). Tolerance to egg-containing foods does not exclude the possibility of egg allergy. Egg allergy can be confirmed by a consistent medical history of adverse reactions to eggs and egg-containing foods, plus skin and/or blood testing for immunoglobulin E directed against egg proteins.

Flublok Quadrivalent (RIV4) is manufactured withouth the use of eggs and are egg-free.

Contraindications/Precautions to Seasonal Influenza Vaccine 2018-2019

Figure 2. Contraindications and precautions to the use of influenza vaccines — United States, 2018–19 influenza season*

Vaccine	Contraindications	Precautions
IIV	History of severe allergic reaction to any component of the vaccine† or after previous dose of any influenza vaccine. ACIP recommends that persons with egg allergy of any severity receive influenza vaccine (see Persons with a History of Egg Allergy).	Moderate to severe illness with or without fever; History of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine.
RIV	History of severe allergic reaction to any component of the vaccine.	Moderate to severe illness with or without fever; History of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine.
LAIV	History of severe allergic reaction to any component of the vaccine† or after a previous dose of any influenza vaccine Concomitant aspirin or salicylate-containing therapy in children and adolescents Children aged 2 through 4 years who have received a diagnosis of asthma or whose parents or caregivers report that a health care provider has told them during the preceding 12 months that their child had wheezing or asthma or whose medical record indicates a wheezing episode has occurred during the preceding 12 months	Moderate to severe illness with or without fever History of Guillain-Barré syndrome within 6 weeks of receipt of influenza vaccine Asthma in persons aged greater than or equal to 5 years; Other underlying medical conditions that might predispose to complications after wild-type influenza infection (e.g., chronic pulmonary, cardiovascular [except isolated hypertension], renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus).

Vaccine	Contraindications	Precautions
	Children and adults who have immunocompromised due to any cause (including immunosuppression caused by medications or by HIV) Close contacts and caregivers of severely immunosuppressed persons who require a protected environment Pregnancy Receipt of influenza antiviral medication within the previous 48 hours.	

Pregnancy Risk Categories	
A	Controlled studies in pregnant women fail to demonstrate a risk to the fetus in the first trimester with no evidence of risk in later trimesters. The possibility of fetal harm appears remote.
B	Either animal-reproduction studies have not demonstrated a fetal risk but there are not controlled studies in pregnant women, or animal-reproduction studies have shown an adverse effect (other than a decrease in fertility) that was not confirmed in controlled studies in women in the first trimester and there is no evidence in later trimesters.
C	Either studies in animals have revealed adverse effects on the fetus and there are no controlled studies in women, or studies in women and animals are not available. Drugs should be given only if the potential benefits justify the potential risk to the fetus.
D	There is positive evidence of human fetal risk, but the benefits from use in pregnant may be acceptable despite the risk (e.g., if the drug is needed in a life-threatening situation or for a serious disease for which safer drugs cannot be used or are ineffective).
X	Studies in animals or human beings have demonstrated fetal abnormalities or there is evidence of fetal risk based on human experience, or both, and the risk of the use of the drug in pregnant women clearly outweighs any possible benefit. The drug is contraindicated in women who are or may become pregnant.

*** Immunization providers should check Food and Drug Administration–approved prescribing information for 2018–19 influenza vaccines for the most complete and updated information, including (but not limited to) indications, contraindications, and precautions. Package inserts for US-licensed vaccines are available at https://www.fda.gov/BiologicsBloodVaccines/Vaccines/ApprovedProducts/ucm093833.htm.**

† History of severe allergic reaction (e.g., anaphylaxis) to egg is a labeled contraindication to the use of IIV and LAIV. However, ACIP recommends that any licensed, recommended, and age-appropriate influenza vaccine (IIV, RIV, or LAIV) may be administered to persons with egg allergy of any severity (see Persons with a History of Egg Allergy for further recommendations and information).

Vaccine	Age Group	Dosage & Route	Number of Doses	Interval between Doses	Pregnancy Category
Fluzone® [7]	6-35 months 3 through 8 years Greater than or equal to 9 years	0.25 ml IM 0.5 ml IM 0.5 ml IM	1 or 2 1 or 2 1	28 days 28 days -------	B
Fluzone® High Dose	Greater than or equal to 65 years	0.5 ml IM	1	-------	C
Fluzone® [1] Intradermal	18 through 64 years	Intradermal 0.1 ml	1	------	B
Flucelvax®[7]	4 through 8 years Greater than or equal to 9 years	0.5ml IM 0.5ml IM	1 or 2 1	28 days _____	B
Fluvirin®[2,3,7,8]	4 through 8 years Greater than or equal to 9 years	0.5 ml IM 0.5 ml IM	1 or 2 1	28 days ---------	B
Fluarix® [4,10,13]	6 months through 8 years Greater than or equal to 9 years	0.5 ml IM 0.5 ml IM	1 or 2 1	28 days ----------	**B**
FluLaval® [7,10,12]	6 months through 8 years Greater than or equal to 9 years	0.5 ml IM 0.5 ml IM	1 or 2 1	28 days ---------	**B**
Afluria® [5,7,**9**]	5 through 8 years 9 years of age and older	0.5 ml IM 0.5 ml IM	1 or 2 1	28 days ---------	B
Flublok®[11]	18 years of age and older	0.5ml IM	1	_____	
Fluad™ [2,6]	65 years of age and older	0.5ml IM	1	--------	B

[1] Quadrivalent inactivated influenza vaccine, intradermal: a 0.1-mL dose contains 9 µg of each vaccine antigen (36 µg total). The preferred injection site is over the deltoid muscle. Fluzone Intradermal Quadrivalent is administered using the delivery system included with the vaccine.
[2] Syringe tip caps may contain natural rubber latex.
[3] Fluvirin may contain traces of Neomycin and polymyxin B
[4] Fluarix IIV4 may contain traces of gentamicin
[5] Afluria (IIV3; Seqirus, Parkville, Victoria, Australia) may be used for persons aged greater than or equal to 5 years, consistent with Food and Drug Administration–approved labeling.
[6] Fluad contain traces of Neomycin and Kanamycin
7Contains thimerosal in multi-dose presentation
8 Contains thimerosal or trace of thimerosal in pre-filled syringe
[9] There were no developmental toxicity studies of AFLURIA QUADRIVALENT performed in 258 animals. A developmental toxicity study of AFLURIA (trivalent formulation) has been 259 performed in female rats administered a single human dose [0.5 mL (divided)] of AFLURIA 260 (trivalent formulation) prior to mating and during gestation. This study revealed no evidence 261 of harm to the fetus due to AFLURIA (trivalent formulation)
[10] Healthcare providers are encouraged to register women exposed to the following vaccines into the pregnancy exposure registry by calling for: Flulaval Quadrivalent or Fluarix Quadrivalent 1-888-452-9622
Flublok 1-888-855-7871Fluzone 1-800-822-2463
[11] Flublok produced without the use of eggs and are egg free.
[12]A developmental toxicity study was performed in female rats administered FLULAVAL QUADRIVALENT prior to mating and during gestation and lactation periods. The total dose was 0.2 mL at each occasion (a single human dose is 0.5 mL). This study revealed no adverse effects on fetal or pre-weaning development due to FLULAVAL QUADRIVALENT
[13]A developmental toxicity study was performed in female rats administered FLUARIX QUADRIVALENT prior to mating and during gestation and lactation periods. The total dose was 0.2 mL at each occasion (a single human dose is 0.5 mL). This study revealed no adverse effects on fetal or pre-weaning development due to FLUARIX QUADRIVALENT

Recommended Dosage and Route

0.25 ml or 0.5 ml administered intramuscularly for IIV or 0.5 ml administered intramuscularly for RIV. For adults and older children, the recommended site of vaccinations is the deltoid muscle. The preferred site for infants and young children is the anterolateral aspect of the thigh. *

0.1ml administered intradermally for IIV**

*Please refer to the Georgia Immunization Program Manual Chapter 13 (Quality Assurance-Attachment D) on vaccine administration recommendations for appropriate site and needle size.

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines: DTaP, Tdap, Td, RV, MMR, Varicella, Hib, Hepatitis A, Hepatitis B, IPV, PPSV23, PCV13, HPV9, Zoster, and MCV4.

Georgia Department of Community Health Immunization Program Vaccine Standards

VACCINES TO PREVENT MEASLES, MUMPS, AND RUBELLA

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for this vaccine which is supplied by the Georgia Immunization Program. These standards were developed from the pertinent Vaccine Resolution from the Vaccines for Children Program and the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- "Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP) for the Control and Elimination of Mumps," *MMWR*, Vol. 55/June 1, 2006.
- "Measles, Mumps, and Rubella---Vaccine Use and Strategies for Elimination of Measles, Rubella, and Congenital Rubella Syndrome and Control of Mumps," *MMWR*, May 22, 1998, Vol. 47, No. RR-8
- the ACIP Measles, Mumps, Rubella, and Varicella Vaccine Resolution for the Vaccines for Children Program (VFC), (Resolution No. 6/06-3)
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- Epidemiology and Prevention of Vaccine Preventable Diseases, 13th ed.
- "ACIP Provisional Recommendations for Measles-Mumps-Rubella (MMR) 'Evidence of Immunity' Requirements for Healthcare Personnel", August 28, 2009
- Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps, 2013 Summary: Recommendations of the ACIP, *MMWR*, June 14, 2013, Vol 62, #RR-04
- **Recommendation of the Advisory Committee on Immunization Practices for Use of a Third Dose of Mumps Virus–Containing Vaccine in Persons at Increased Risk for Mumps During an Outbreak. *MMWR,* January 12, 2018, Vol 67(1), No. RR- (33-38)**

Vaccine Description

Measles, mumps, and rubella vaccines are live virus vaccines and in combinations as measles-mumps-rubella or MMR (M-M-R II®), and measles-mumps-rubella-varicella or MMRV (ProQuad®).

- The ACIP recommends that the combined vaccine MMR be used when any of the individual components is indicated, unless one component is contraindicated.

Brand Name & Manufacturer

VACCINES	MANUFACTURERS
MMR (M-M-R II®)	Merck
Measles-mumps-rubella-varicella (ProQuad®) (See section on "Combination Vaccines")	Merck

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see "Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" located in the front of this section.

Recommended MMR Vaccine Schedule[1]

Vaccine	Dose 1[2]	Dose 2	Dose 3[4]
MMR	12-15 months[2, 3]	4-6 years[2]	**≥ 12 months[4]**

[1] Acceptable presumptive evidence of immunity to mumps is now the documentation of:

- 1 dose of mumps vaccine for preschool-aged children and adults not at high risk; and
- 2 doses of mumps vaccine for school-aged children grades K-12, and for adults at high risk (i.e., persons who work in healthcare facilities, international travelers, and students at post-high school educational institutions.)

[2] May be given as MMR or MMRV, if both MMR and varicella are indicated. See "Combination Vaccines" in this section for more information. Children whose vaccination history indicates they have received single antigen measles and/or mumps vaccine, should receive MMR to complete the 2nd dose requirement for each.

[3] Previously unvaccinated children beyond the recommended 12-15 months of age should receive the 1st dose of MMR as soon as possible. The 2nd dose can be provided at any age from 13 months on, as long as there has been an interval of at least 28 days between doses.

[4]Persons ≥ 12 months who previously received ≤ 2 doses of mumps-containing vaccine and are identified by public health authorities to be at increased risk during a mumps outbreak should receive 1 dose of mumps-virus containing vaccine (MMR).

Minimum Age & Dose Intervals[1]

Vaccine	Minimum age	Minimum interval from dose 1 to 2
Dose 1	12 months[2]	-------
Dose 2	13 months	28 days
Dose 3	**≥ 12 months[3]**	**28 days**

[1] MMR vaccine may offer some protection to persons exposed to measles if it is administered within 72 hours of exposure.
[2] Infants as young as 6 months of age may be given measles vaccine in an outbreak situation, or if it is recommended before travel to a foreign country where the child might be at risk for contracting measles. However, doses of MMR administered before 1 year of age should not be counted. Any child receiving vaccine before 1 year of age should be re-vaccinated at 12-15 months of age, with an additional dose at the time of school entry. Doses of any measles-containing vaccine should be separated by at least 28 days.
[3]Persons ≥ 12 months who previously received ≤ 2 doses of mumps-containing vaccine and are identified by public health authorities to be at increased risk during a mumps outbreak should receive 1 dose of mumps-virus containing vaccine (MMR).

Recommended Dosage and Route

0.5 mL administered subcutaneously

'Evidence of Immunity' Requirements for Healthcare Personnel

Adequate presumptive evidence of immunity to measles, rubella, and mumps for persons who work in health care facilities:

Measles:
- Documented administration of two doses of live measles virus vaccine or
- Laboratory evidence of immunity or laboratory confirmation of disease *or*
- Born before 1957[123]

Rubella
- Documented administration of one dose of live rubella virus vaccine or
- Laboratory evidence of immunity or laboratory confirmation of disease *or*
- Born before 1957 (except women of childbearing age who could become pregnant)[123]

Mumps
- Documented administration of two doses of live mumps virus vaccine or
- Laboratory evidence of immunity or laboratory confirmation of disease *or*
- Born before 1957[123]

[1] May vary depending on current state or local requirements.
[2] For unvaccinated personnel born before 1957 who lack laboratory evidence of measles, mumps and/or rubella immunity or laboratory confirmation of disease, healthcare facilities should consider vaccinating personnel with two doses of MMR vaccine at the appropriate interval (for measles and

mumps) and one dose of MMR vaccine (for rubella), respectively.
[3] For unvaccinated personnel born before 1957 who lack laboratory evidence of measles, mumps and/or rubella immunity or laboratory confirmation of disease, healthcare facilities should recommend two doses of MMR vaccine during an outbreak of measles or mumps and one dose during an outbreak of rubella.
http://www.cdc.gov/mmwr/preview/mmwrhtml/00050577.htm

Contraindications and Precautions

A. Contraindications

1. Previous anaphylactic reactions to any vaccine component (i.e. gelatin or gelatin-containing products, or to topically or systemically administered neomycin), or following a previous dose of MMR vaccine
2. Moderate or severe illness with or without fever
3. Pregnancy - Because of the theoretical risk to the fetus, women of childbearing age should receive MMR or its component vaccines only if they state they are not pregnant and are counseled not to become pregnant for 4 weeks after vaccination. However, MMR or measles, mumps, or rubella vaccination inadvertently given during pregnancy should not ordinarily be a reason to consider interruption of pregnancy.
4. Known altered immunocompetence - Replication of vaccine viruses can be enhanced in persons with immune deficiency diseases and in persons with immunosuppression. Severe immunosuppression may be caused by many disease conditions (e.g., congenital immunodeficiency, HIV infection, hematologic or generalized malignancy) and by therapy with immunosuppressive agents, including large doses of corticosteroids. The degree to which affected persons are immunocompromised can depend on the disease, its severity, and the treatment stage. Ultimately, the patient's physician must assume responsibility for determining whether the patient is severely immuno-compromised based on clinical and laboratory assessment.

Contraindications and Precautions (cont'd)

B. Precautions

1. Thrombocytopenia---Persons who have an episode of thrombocytopenic purpura within 6 weeks of vaccination with MMR should weigh the risk versus the benefit of receiving a 2nd dose. Serologic testing of immunity should be considered in lieu of MMR vaccination.
2. Recent receipt of blood, plasma, or immune globulin (in past 3-11 months) --- Blood and other antibody containing blood products, including immune globulin (IG) preparations, can diminish the immune response to MMR or its individual component vaccines. MMR or its component vaccines should be given at least 2 weeks before administration of an immune globulin or blood or blood-containing product or deferred until 3 or more months after administration of such preparations. (See Table 4 in this chapter for more specific guidelines regarding the time to wait before administering vaccine.)
3. Tuberculin skin tests --- MMR vaccine may interfere with the response to a tuberculin test. If such testing is otherwise indicated, it can be done either on the same day as MMR vaccine is administered or 4-6 weeks later.
4. Corticosteroid therapy --- Such therapy usually does not contraindicate the administration of live virus vaccines such as MMR when therapy is: a) short term (i.e. <14 days) low-to-moderate dose; b) low-to-moderate dose administered daily or on alternate days; c) long term alternate day treatment with short-acting preparations; d) physiologic maintenance doses (replacement therapy); or e) administered topically (skin or eyes), by aerosol, or by intra-articular, bursal, or tendon injection. Doses that are considered to be immunosuppressive are those equivalent to or greater than a prednisone dose of 2 mg/kg of body weight per day or a total of 20 mg per day. (For further information on this precaution, see the ACIP Recommendations Statement listed in the introductory paragraph.)

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:
DTaP, Tdap, Td, Hib, Hepatitis A, Hepatitis B, Polio, Varicella, PCV or PPSV, MCV4, HPV, Influenza, and **MenB**

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT MENINGOCOCCAL DISEASE

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards should serve as a quick reference for clinics administering A) meningococcal conjugate vaccines, B) Serogroup B meningococcal vaccines and C) meningococcal polysaccharide (MPSV4) vaccines. These standards were developed from the pertinent Vaccine Resolution from the Vaccines for Children Program and the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- Notice to Readers: Recommendation from the Advisory Committee on Immunization Practices (ACIP) for Use of Quadrivalent Meningococcal Conjugate Vaccine (MCV4) in Children Aged 2-10 Years at Increased Risk for Invasive Meningococcal Disease, *MMWR*, December 7, 2007, Vol. 56, No. RR-48
- Notice to Readers: Revised Recommendations of the Advisory Committee on Immunization Practices to Vaccinate All Persons Aged 11-18 Years with Meningococcal Conjugate Vaccine, *MMWR*, August 10, 2007, Vol. 56, No. RR-31
- "Prevention and Control of Meningococcal Disease," *MMWR*, May 27, 2005, Vol. 54, No. RR-7
- ACIP Vaccines to Prevent Meningococcal Disease, Vaccine Resolution for the Vaccines for Children Programs (VFC), Resolution No. 6/15-1
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- Epidemiology and Prevention of Vaccine Preventable Diseases, 13th edition
- CDC. Updated Recommendation from the Advisory Committee on Immunization Practices (ACIP) for revaccination of persons at prolonged increased risk for meningococcal disease. *MMWR,* September 25, 2009, Vol. 58, No. RR-37
- CDC. Updated Recommendations for Use of Meningococcal Conjugate Vaccines (ACIP), 2010, *MMWR,* January 28, 2011, Vol. 60, No. RR-3
- "Licensure of a Meningococcal Conjugate Vaccine for Children Aged 2 Through 10 Years and Updated Booster Dose Guidance for Adolescents and Other Persons at Increased Risk for Meningococcal Disease," *MMWR*, August 5, 2011, Vol. 60, RR-30 -- ACIP, 2011
- *"*Recommendation of the ACIP for Use of Quadrivalent Meningococcal Conjugate Vaccine (MenACWY-D) Among Children Aged 9 Through 23 Months at Increased Risk for Invasive Meningococcal Disease*," MMWR,* October 14, 2011, Vol. 60, RR-40
- "Infant Meningococcal Vaccination: ACIP Recommendations and Rationale," *MMWR*, January 25, 2013, Vol. 62, RR-3
- Use of MenACWY-CRM Vaccine in Children Aged 2 Through 23 Months at Increased Risk for Meningococcal Disease, *MMWR*, June 20, 2014; 63(24):527-530
- *Use of Serogroup B Meningococcal (MenB) Vaccines in Persons Aged ≥10 Years at Increased Risk for Serogroup B Meningococcal Disease:* Recommendations of the Advisory Committee on Immunization Practices, *MMWR*, June 12, 2015, Vol 64 #22

- Use of Serogroup B Meningococcal Vaccines in Adolescents and Young Adults: Recommendations of the Advisory Committee on Immunization Practices, *MMWR,* October 23, 2015, Vol 64 #41
- MENVEO [package insert]. Cambridge, MA; Novartis Vaccines and Diagnostics, Inc.; 08/2013 revision.
- Menactra [package insert]. Swiftwater, PA; Sanofi Pasteur Inc.; 08/2014 revision.
- Meningococcal Vaccines [Vaccine Information Sheet]
- **Recommendations for Use of Meningococcal Conjugate Vaccines in HIV-Infected Persons — Advisory Committee on Immunization Practices, 2016 *MMWR* November 4, 2016 / 65(43)**

A. Meningococcal Conjugate Vaccine (MCV4)

Vaccine Description

- Meningococcal (Groups A, C, Y, and W-135) Polysaccharide Diphtheria Toxoid Conjugate Vaccine (MCV4) contains *Neisseria meningitidis* serogroup A, C, Y, and W-135 capsular polysaccharide antigens individually conjugated to diphtheria toxoid protein. MCV4 vaccine is available only in single dose vials. No preservative or adjuvant is added during manufacture. Protective antibody levels are usually achieved within 7-10 days of vaccination.
- Menactra® is licensed for use in persons 9 months to 55 years of age.
- MENVEO is licensed for use in persons 2 months to 55 years of age.
- MenHibrix (Groups C, and Y) was licensed in 2012 and is recommended for use in children aged 6 weeks through 18 months at increased risk for meningococcal disease.

Brand Names and Manufacturer

VACCINE		MANUFACTURER
Menactra®	(MenACWY-D)	sanofi pasteur
MENVEO	(MenACWY-CRM)	GSK
MenHibrix	(HibMenCY-TT)	GlaxoSmithKline

Eligible Groups for State Supplied MCV4

For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section.

ACIP Recommendations for Administration of MCV4

In addition to the priority categories listed above, ACIP recommends routine vaccination for certain other persons who are at increased risk for meningococcal disease. Due to limited funds, the state does not supply vaccine for these additional categories. These guidelines are meant to provide information for those districts and clinics that administer this vaccine from privately purchased stock. The following populations are at increased risk for meningococcal disease and are recommended to be vaccinated:

- Routine vaccination of adolescents aged 11 through 18 years of age
- College freshman who live in dormitories
- Military recruits
- Persons who will be traveling to or reside in areas in which meningococcal disease is hyperendemic or epidemic
- Research, industrial, and clinical laboratory personnel who are routinely exposed to *N. meningitidis* in solutions that may be aerosolized
- Patients with anatomic or functional asplenia and patients with terminal complement deficiency
- Persons who may have been exposed to meningitis during an outbreak (MenACWY for outbreaks caused by A,C, W and Y and HibMenCY-TT for outbreaks specifically caused by C and Y).
- Persons 6 weeks through 18 months at increased risk for meningococcal disease
- **HIV-infected persons aged ≥2**

Other populations that may consider vaccination with MCV4:

Persons 2 years -55 years of age who do not have high risk factors, but wish to decrease their risk for meningococcal disease

Use of Meningococcal Conjugate Vaccine serogroups A, C, W, and Y (MCV4) vs. Meningococcal Polysaccharide Vaccine (MPSV4):

MCV4 is the preferred vaccine for people 2 years -55 years of age in these risk groups, but MPSV4 can be used if MCV4 is not available. MPSV4 should be used for adults over 55 who are at risk. (See Section B, MPSV4, of this document.)

MCV4 is not indicated for:

- The prevention of meningitis caused by other microorganisms or for the prevention of invasive meningococcal disease caused by N. meningitidis serogroup B
- The treatment of meningococcal infections
- Immunization against diphtheria

Syncope

Because vaccinees may develop syncope, sometimes resulting in falling with injury, observation for 15 minutes after administration is recommended. If syncope develops, patients should be observed until the symptoms resolve.

Meningococcal Vaccine Recommendations by Age and Risk Factor for Serogroups A, C, W, or Y Protection

A separate vaccine is needed for protection against meningococcal serogroup B disease.

MenACWY = Menactra (Sanofi Pasteur) and Menveo (GlaxoSmithKline)
MenACWY-D = Menactra **Hib-MenCY** = MenHibrix (GlaxoSmithKline)
MenACWY-CRM = Menveo **MPSV** = Menomune (Sanofi Pasteur)

Routine Recommendations for Quadrivalent Meningococcal Conjugate Vaccine (MenACWY)	
For preteens age 11 through 12 years	Give dose #1 of 2-dose MenACWY series. (Dose #2 is recommended at age 16 years.)
For teens age 13 through 15 years	Give catch-up dose #1 of 2-dose MenACWY series. (Dose #2 will be due at age 16 years.[1])
For teens at age 16 years	Give dose #2 of MenACWY.[1] (Separate from dose #1 by at least 8 weeks.)
Catch-up for teens age 17 through 18 years	If dose #2 not given at age 16 years, give dose #2 of MenACWY as catch-up.
Catch-up for teens age 16 through 18 years	If no history of prior vaccination with MenACWY, give 1 dose of MenACWY.
For first year college students, age 19 through 21 years, living in residence halls	If no history of prior vaccination with MenACWY, give 1 dose of MenACWY. If history of 1 dose of MenACWY given when younger than age 16 years, give dose #2 of MenACWY.

Risk-based Recommendations for Persons with Underlying Medical Conditions or Other Risk Factors		
TARGETED GROUP BY AGE/OR RISK FACTOR	**PRIMARY DOSE(S)**	**BOOSTER DOSE(S)**
Travelers to or residents of countries where meningococcal disease is hyperendemic or epidemic,[2] people present during outbreaks caused by a vaccine serogroup,[3] and other people with prolonged increased risk for exposure (e.g., microbiologists routinely working with *Neisseria meningitidis*)		
For age 2 through 6 months	Give 3 doses of MenACWY-CRM or Hib-MenCY,[4] 8 weeks apart, and a 4th dose at 12–15 months. If possible, vaccination should begin at age 2 months.	If risk continues, give initial booster after 3 years followed by boosters every 5 years.
For age 7 through 23 months who have not initiated a series of MenACWY-CRM	Give 2 doses of MenACWY-CRM[5] or HibMenCY[4,6] or, if 9–23 months, MenACWY-D.[7] Separate the 2 doses by at least 12 weeks.[8]	
For age 2 through 55 years	Give 1 dose of MenACWY.	Boost every 5 years with MenACWY.[9,10]
For age 56 years and older	If no previous MenACWY dose and either short-term travel or outbreak-related, give 1 dose of MPSV; all others, give 1 dose of MenACWY.	Boost every 5 years with MenACWY.[10]
People with persistent complement component deficiencies[11]		
For age 2 through 6 months	Give 3 doses of MenACWY-CRM or Hib-MenCY, 8 weeks apart, and a 4th dose at 12–15 months. If possible, vaccination should begin at age 2 months.	Give MenACWY booster after 3 years followed by boosters every 5 years thereafter.
For age 7 through 23 months who have not initiated a series of MenACWY-CRM	Give 2 doses of MenACWY-CRM[5] or Hib-MenCY[6] or, if age 9–23 months, MenACWY-D.[7] Separate the 2 doses by at least 12 weeks.	
For ages 2 through 55 years	Give 2 doses of MenACWY, 8 weeks apart.	Boost every 5 years with MenACWY.[9,12]
For age 56 years and older	Give 2 doses of MenACWY, 8 weeks apart.	Boost every 5 years with MenACWY.[12]
People with HIV infection or functional or anatomic asplenia (including sickle cell disease)		
For age 2 through 6 months	Give 3 doses of MenACWY-CRM or Hib-MenCY, 8 weeks apart, and a 4th dose at 12–15 months. If possible vaccination should begin at age 2 months.	Give MenACWY booster after 3 years followed by boosters every 5 years thereafter.[9]
For age 7 through 23 months who have not initiated a series of MenACWY-CRM	Give 2 doses of MenACWY-CRM[5] or Hib-MenCY.[6] Separate the 2 doses by at least 12 weeks. Or, if using MenACWY-D, give dose #1 at least 4 weeks following completion of pneumococcal conjugate vaccine series, and dose #2 at least 12 weeks after dose #1.[7]	
For ages 2 through 55 years	Give 2 doses of MenACWY, 8 weeks apart.	Boost every 5 years with MenACWY.[9,12]
For age 56 years and older	Give 2 doses of MenACWY, 8 weeks apart.	Boost every 5 years with MenACWY.[12]

FOOTNOTES

1. The minimum interval between doses of MenACWY is 8 weeks.
2. Prior receipt of Hib-MenCY is not sufficient for children traveling to the Hajj or African meningitis belt as it doesn't provide protection against serogroups A or W.
3. Seek advice of local public health authorities to determine if vaccination is recommended.
4. Children ages 2 through 18 months who are present during outbreaks caused by serogroups C or Y may be given an age-appropriate series of Hib-MenCY.
5. If initiating vaccination with MenACWY-CRM in a child age 7 through 23 months, dose 2 should be given no younger than age 12 months.
6. Hib-MenCY is not licensed for use in children age 18 months or older.
7. If MenACWY-D is to be administered to a child with increased risk for meningococcal disease, it should be given either before or concomitantly with DTaP.
8. If child age 7 through 23 months will enter an endemic area in less than 3 months, give doses as close as 2 months apart.
9. If most recent dose given when younger than age 7 years, give booster after 3 years; if given at or after age 7 years, give booster after 5 years; then boost every 5 years thereafter.
10. Booster doses are recommended if the person remains at increased risk.
11. Persistent complement component deficiencies include C3, C5–C9, properdin, factor D, factor H, or taking Soliris (eculizumab).
12. If the person has a history of only 1 dose, give dose 2 at least 8 weeks after dose 1, then boost every 5 years.

Technical content reviewed by the Centers for Disease Control and Prevention

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www.immunize.org/catg.d/p2018.pdf • Item #P2018 (12/16)

Recommended Dosage and Route

0.5 mL administered intramuscularly[1], preferably in the deltoid

[1] For guidance on the follow-up of vaccine doses inadvertently administered subcutaneously, rather than intramuscularly, please reference "Inadvertent Misadministration of Meningococcal Conjugate Vaccine---- United State, June---August, 2005," *MMWR*, September 22, 2006, Vol. 55 No. 37.

Contraindications

The following conditions are contraindications to the administration of MCV4:

1. Allergy to vaccine components
   Anaphylactic reaction to either MCV4 or MPSV4 or a constituent of either of these vaccines, including diphtheria toxoid (for MCV4) or dry natural rubber latex.
2. Acute, moderate or severe illnesses with or without fever
   Persons with moderate or severe illness should be immunized as soon as they have recovered from the acute phase of the illness. Minor illnesses (e.g. upper respiratory tract infection, allergic rhinitis) with or without fever should not contraindicate the use of meningococcal conjugate vaccine.
3. Previous history of Guillain-Barré syndrome (GBS)[1,2]

NOTE: MCV4 is a new vaccine and has not been studied as much as MPSV4 with regard to pregnant women. Women of childbearing age who become aware that they were pregnant at the time of MCV4 vaccination should contact their healthcare provider or the vaccine manufacturer.

[1] "Guillain-Barré Syndrome Among Recipients of Menactra® Meningococcal Conjugate Vaccine --- United States, June--July 2005," *MMWR,* October 14, 2005, Vol. 54, No. 40
[2] "Update: Guillain-Barré Syndrome Among Recipients of Menactra® Meningococcal Conjugate Vaccine-- United States, October 2005---February 2006," *MMWR*, April 7, 2006, Vol. 55, No. 13
[3] "Update: Guillain-Barré Syndrome Among Recipients of Menactra® Meningococcal Conjugate Vaccine -- United States, June 2005--September 2006," *MMWR*, October 20, 2006, Vol. 55. No. 41

B. Serogroup B meningococcal vaccines:

Vaccine Description

- Serogroup B meningococcal (MenB) recombinant vaccines can help prevent meningococcal disease caused by serogroup B. Other meningococcal vaccines are recommended to help protect against serogroups A, C, W, and Y.
- Two serogroup B meningococcal vaccines have been licensed by the Food and Drug Administration.
- Bexsero was licensed in January 2015, as a MenB vaccine (MenB-4C) approved for use in individuals 10 through 25 years of age.
- Trumenba was licensed in October 2014, as a MenB vaccine (MenB-FHbp) approved for use in individuals 10 through 25 years of age.

Brand Names and Manufacturer		
VACCINE		**MANUFACTURER**
Bexsero	(MenB-4C)	GlaxoSmithKline
Trumenba	(MenB-FHbp)	Pfizer

Eligible Groups for State Supplied MenB
• MenB series for uninsured college students 19 through 23 yrs.

ACIP Recommendations for Administration of MenB Vaccine

A MenB vaccine series may be administered to adolescents and young adults aged 16–23 years to provide short-term protection against most strains of serogroup B meningococcal disease. The preferred age for MenB vaccination is 16–18 years

Certain persons aged ≥10 years through 25 years of age who are at increased risk for meningococcal disease should receive MenB vaccine.
These persons include:

- Persons with persistent complement component deficiencies. ¶
- Persons with anatomic or functional asplenia including sickle cell
- Microbiologists routinely exposed to isolates of Neisseria meningitidis.
- Persons identified as at increased risk because of a serogroup B Meningococcal disease outbreak.

Certain other groups are included in the MenACWY recommendations for persons at increased risk, but are *not included* in this recommendation.

MenB vaccines are *not licensed* for:

- children aged 2 months–9 years who are at increased risk for serogroup B meningococcal disease.
- persons who travel to or reside in countries where meningococcal disease is hyperendemic or epidemic because the risk for meningococcal disease in these countries generally is not caused by serogroup B.
- routine use in first-year college students living in residence halls, military recruits, or all adolescents.

BEXSERO® MenB - 4C Vaccine

Bexsero was licensed in January 2015, as a MenB vaccine (MenB-4C)

- Approved for use in individuals 10 through 25 years of age.

DOSAGE / ADMINISTRATION/INTERVALS:
Administer Bexsero (0.5 mL each) intramuscularly only, as a two-dose series at least 1 month apart.

Precautions:

- The tip caps of the pre-filled syringes contain natural rubber latex which may cause

allergic reactions in latex sensitive individuals.

- Vaccination should be deferred in pregnant and lactating women unless the woman is at increased risk and, after consultation with her health care provider, the benefits of vaccination are considered to outweigh the potential risks.

Contraindication:

- Hypersensitivity, including severe allergic reaction, to any component of the vaccine, or after a previous dose of BEXSERO.

TRUMENBA® MenB - FHbp Vaccine

Trumenba was licensed in October 2014, (MenB-FHbp)

- Approved for use in individuals 10 through 25 years of age.
- DOSAGE / ADMINISTRATION/INTERVALS:
- **Healthy adolescents not at increased risk for meningococcal disease administer Trumenba (0.5 mL each) intramuscularly as a two- dose series at 0-, and 6-month**
- **For persons at increased risk for meningococcal disease and during serogroup B outbreaks, administer Trumenba (0.5 mL each) intramuscularly as a three - dose series at 0-, 2-, and 6-month**

Contraindication:

- Hypersensitivity, including severe allergic reaction, to any component of the vaccine, or after a previous dose of TRUMENBA

Pregnancy: Trumenba should be used during pregnancy only if clearly needed

Eligible Groups for State Supplied MenB

- **MenB series for uninsured college students 19 through 23 yrs.**

Simultaneous Vaccine Administration

MCV4 may be administered simultaneously with any of the following routinely recommended vaccines:

DTaP, Tdap, Td, MMR, Varicella, Hepatitis A, Hepatitis B, IPV, Influenza, HPV, Hib, PCV13 and PPSV23

C. Meningococcal Polysaccharide Vaccine (MPSV4)

Vaccine Description

Meningococcal Polysaccharide Vaccine, Groups A, C, Y, and W-135 Combined (MPSV4) is a freeze-dried preparation of the group-specific polysaccharide antigens from *Neisseria meningitidis*, Group A, Group C, Group Y, and Group W-135. It is available in single dose (0.5mL) and 10 dose (5 mL) vials. The vials of diluent used to reconstitute single doses of vaccine are preservative-free. However, the 6-mL vial of diluent intended for reconstitution of the10 mL vial of freeze-dried vaccine contains thimerosal that has been added as a preservative. Not indicated for treatment of meningococcal infections. This vaccine was licensed for use in the United States in 1981.

Protective antibody levels may be achieved within 7-10 days after vaccination.

Brand Names and Manufacturer

VACCINE	MANUFACTURER
Menomune®	sanofi pasteur

Eligible Groups for State Supplied Vaccine (MPSV4)

The Georgia Immunization Program and the Georgia Vaccines for Children Program do not currently supply meningococcal polysaccharide vaccine (Menomune®) for any populations. These guidelines are meant to provide information for those districts and clinics that administer this vaccine using privately purchased stock.

ACIP Recommendations for Administration of MPSV4

ACIP recommends that MPSV4 should be used for adults age 56 and older who are at risk for meningococcal disease. For adults who have received MenACWY previously, limited data demonstrate a higher antibody response after a subsequent dose of MenACWY compared with a subsequent dose of MPSV4. For meningococcal vaccine-naïve persons aged ≥56 years who anticipate requiring a single dose of meningococcal vaccine (e.g., travelers and persons at risk as a result of a community outbreak), MPSV4 is preferred. For persons now aged ≥56 years who were vaccinated previously with MenACWY and are recommended for revaccination or for whom multiple doses are anticipated (e.g., persons with asplenia and microbiologists), MenACWY is preferred. The following high risk populations in that age group are recommended to be vaccinated with MPSV4, if not vaccinated previously with MenACWY:

- Persons who are traveling to countries in which *N. meningitidis* is hyperendemic or epidemic, particularly if contact with the local population will be prolonged
- Persons with terminal complement deficiencies and those with anatomic or functional asplenia

- Research, industrial, and clinical laboratory personnel who routinely are exposed to *N. meningitidis* in solutions that may be aerosolized
- Persons who might have been exposed to meningococcal disease during an outbreak

Revaccination:

- Persons who previously were vaccinated with MPSV4 at age ≥7 years and are at prolonged increased risk should be revaccinated 5 years after their previous meningococcal vaccine with MCV4. Persons who previously were vaccinated at ages 2 **months**--6 years and are at prolonged increased risk should be revaccinated 3 years after their previous meningococcal vaccine with MCV4. Persons at prolonged increased risk for meningococcal disease include 1) persons with increased susceptibility such as persistent complement component deficiencies (e.g., C3, properdin, Factor D, and late complement component deficiencies), 2) persons with anatomic or functional asplenia, and 3) persons who have prolonged exposure (e.g., microbiologists routinely working with Neisseria meningitidis, or travelers to or residents of countries where meningococcal disease is hyperendemic or epidemic. Persons who remain in one of these increased risk groups indefinitely should continue to be revaccinated at 5-year intervals with MCV4.
- College freshmen living in dormitories who were vaccinated with MPSV4 ≥5 years previously are recommended to be vaccinated with MCV4.[1]

[1] "Updated Recommendation from the Advisory Committee on Immunization Practices (ACIP) for Revaccination of Persons at Prolonged Increased Risk for Meningococcal Disease", MMWR, September 25, 2009/ 58(37)

Recommended Doses and Intervals[1]

TABLE 2. Summary of meningococcal conjugate vaccine recommendations, by risk group---Advisory Committee on Immunization Practices (ACIP), 2010

Risk group	Primary Series	Booster dose
Persons aged 2 through 55 years with persistent component deficiency* or functional or anatomical asplenia	2 doses, 2 months apart	Every 5 years
		At the earliest opportunity if a 1-dose primary series administered, then every 5 years
Persons aged 2 through 55 years with prolonged increased risk for exposure†	1 dose	Persons aged 2 through 6 years: after 3 years
		Persons aged 7 years or older: after 5 years§

[1] Multidose vials of MPSV4 must be used within 35 days of reconstitution. Any doses remaining after that date should not be administered. Vaccine from single dose vials should be used immediately after reconstitution.
[2] MCV4 is the recommended vaccine for children 2 years of age and older
[3]In general, use of MPSV4 should be restricted to persons 2 years of age and older; however, children as young as 3 months of age may be vaccinated to elicit short-term protection against serogroup A meningococcal disease (two doses administered 3 months apart should be considered for children 3-18 months of age).

Abbreviation: HIV= human immunodeficiency virus.

*Such as C_5 - C_9, properidin, or factor D.

†Microbiologists routinely working with *Neisseria meningitidis* travelers to or residents of countries where meningococcal disease is hyperendemic or epidemic.

§If the person remains at increased risk.

Recommended Dosage and Route

0.5 mL administered **subcutaneously deltoid region**

Contraindications and Precautions

The following conditions are contraindications to the administration of MPSV4:

1. **Allergy to vaccine components**
   Anaphylactic reaction to either MPSV4 or MCV4 or a constituent of either of these vaccines, including diphtheria toxoid (for MCV4) or dry natural rubber latex.
2. **Acute, moderate, or severe illnesses with or without fever**
   Persons with moderate or severe illness should be immunized as soon as they have recovered from the acute phase of the illness. Minor illnesses (e.g. upper respiratory tract infection, allergic rhinitis) with or without fever should not contraindicate the use of meningococcal polysaccharide vaccine.
3. **Latex**
   The stoppers to the vials of lyophilized vaccine and diluents contain dry natural latex rubber that may cause allergic reactions in latex sensitive persons.
4. **Altered Immunocompetence**
   Persons who are immunosuppressed, including persons receiving immunosuppressive therapy, may have a diminished immune response to **MPSV4**

Based on data from studies involving use of meningococcal vaccines and other polysaccharide vaccines administered during pregnancy, altering meningococcal vaccination recommendations for MPSV4 during pregnancy is unnecessary.

Simultaneous Vaccine Administration
MPSV4 may be administered simultaneously with any of the following routinely recommended vaccines: DTaP, Tdap, Td, MMR, Varicella, Hib, Hepatitis A, Hepatitis B, IPV, Influenza, PCV13, PPSV23, ZOS and HPV

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT PNEUMOCOCCAL DISEASE

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards should serve as a quick reference for clinics administering **A) pneumococcal conjugate (PCV13**) and **B) pneumococcal polysaccharide (PPSV23) vaccines**. The guidelines are not all inclusive and when more information is needed, the complete ACIP Recommendations statements should be referenced:

- "Preventing Pneumococcal Disease Among Infants and Young Children", *MMWR*, October 6, 2000, Vol.49, No. RR-9
- "Prevention of Pneumococcal Disease", *MMWR*, April 4, 1997, Vol. 46, No. RR-8.
- ACIP Pneumococcal Vaccine Resolution for the Vaccines for Children Program (VFC), (Resolution No. 02/13-1)
- Epidemiology and Prevention of Vaccine Preventable Diseases, 13th edition.
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- Licensure of a 13-Valent Pneumococcal Conjugate Vaccine (PCV13) and Recommendations for use Among Children---Advisory Committee on Immunization Practices (ACIP), 2010 can be found at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5909a2.htm
- Use of PCV-13 and PPSV-23 Vaccines Among Children Aged 6–18 Years with Immunocompromising Conditions, *MMWR,* June 28, 2013, Vol. 62, No. RR-25.
- Use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine Among Adults Aged ≥65 Years, *MMWR*. 2014;63(37);822-825
- **Intervals Between PCV13 and PPSV23 Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP), *MMWR*, September 4, 2015 /64(34);944-947**

A. Pneumococcal Conjugate Vaccine (PCV13)

Vaccine Description

Pneumococcal Conjugate Vaccine (PCV13) is a 13-valent formulation composed of capsular polysaccharides derived from the seven pneumococcal serotypes contained in the current 7-valent Prevnar (4, 6B, 9V, 14, 18C, 19F, and 23F), and from six additional serotypes (1, 3, 5, 6A, 7F, and 19A). It is manufactured in the same way as Prevnar, by individual conjugation of each capsular polysaccharide to diphtheria protein. The vaccine is for active immunization of infants and children aged 6 weeks through 5 years against *Streptococcus pneumonia*–caused invasive pneumococcal diseases, such as pneumonia and meningitis, and against otitis media.

Brand Name & Manufacturer

VACCINE	MANUFACTURER
Prevnar13®	Pfizer

Eligible Groups for State Supplied Vaccine

Pneumococcal Conjugate Vaccine (PCV13) is supplied for:
For Adults, Children, and Adolescents, see "Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" located in the front of this section.

This vaccine is supplied for all VFC eligible children ages 6 weeks through **18 years**.

ACIP Recommendations for the use of PCV13
Children **and Adults** for Whom PCV13 is Recommended:

1) routine vaccination of all children aged 2--59 months with PCV13,
2) vaccination with PCV13 of children aged 60--71 months with underlying medical conditions that increase their risk for pneumococcal disease or complications, and
3) PCV13 vaccination of children who previously received 1 or more doses of PCV7
4) children 6 through 18 years who have not received PCV13 previously and are at increased risk for invasive pneumococcal disease
5) routine vaccination of adults 65 years old or older who have not previously received pneumococcal vaccine or whose previous vaccination history is unknown
6) routine vaccination of adults 65 years old or older who have previously received one or more doses of PPSV23
7) adults age 19 through 64 years with immunocompromising conditions, functional or anatomic asplenia, cerebrospinal fluid leak, or cochlear implants

Recommended PCV13 Vaccine Schedule[3]

Among infants and children who have not received previous doses of 7-valent vaccine (PCV7) or PVC13, by age at first dose

The routinely recommended schedule is a primary series at 2, 4, and 6 months of age with a booster at 12-15 months of age. However, the recommended schedule for pneumococcal conjugate vaccine varies with the age of the child and the presence of underlying conditions.

Recommended Schedule for Previously Unvaccinated Infants and Children

Age at first dose	Primary PCV 13 Series[1]	PCV13 Booster[2] dose
2-6 months	3 doses, 2 months apart	1 dose at 12-15 months
7-11 months	2 doses, 2 months apart	1 dose at 12-15 months
12-23 months	2 doses, 2 months apart	None
24-59 months (healthy children)	1 dose	None
24-59 months (children with	2 doses	None

certain chronic diseases or immunocompromising conditions) See High-Risk vaccination table below.		
[1]Minimum interval between doses is 8 weeks except for children vaccinated at age <12 months for whom minimum interval between doses is 4 weeks. Minimum age for administration of first dose is 6 weeks. [2]The booster dose should be administered at least 2 months (8 weeks) after the primary series is completed. [3]Licensure of a 13-Valent Pneumococcal Conjugate Vaccine (PCV13) and Recommendations for use Among Children---Advisory Committee on Immunization Practices (ACIP), 2010 can be found at http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5909a2.htm		

Vaccination among children by risk group—Advisory Committee on Immunization Practices (ACIP) 2010	
Risk group	**Condition**
Immunocompetent children	Chronic heart disease[1]
	Chronic lung disease[2]
	Diabetes mellitus
	Cerebrospinal fluid leaks
	Cochlear Implants
Children with functional or anatomic asplenia	Sickle cell disease and other hemoglobinopathies Congenital or acquired asplenia, or splenic dysfunction
Children with immunocompromising conditions	HIV infection
	Chronic renal failure and nephritic syndrome
	Diseases associated with treatment with immunosuppressive drugs or radiation therapy, including malignant neoplasms, leukemia, lymphomas, and Hodgkin disease; or solid organ transplantation
	Congenital immunodeficiency[3]
[1] Particularly cyanotic congenital heart disease and cardiac failure [2] Including asthma if treated with prolonged high-dose oral corticosteroids Includes B-(humoral) or T-lymphocyte deficiency; complement deficiencies, particularly C1, C2, C3 and C4 deficiency; and phagocytic disorders (excluding chronic granulomatous disease).	

Vaccination among adults, by risk and age groups, for persons with indications to receive PCV13 and PPSV23 sequence — Advisory Committee on Immunization Practices, United States, September 2015				
Risk group/Underlying medical condition	Intervals for PCV13–PPSV23 sequence, by age group		Intervals for PPSV23–PCV13 sequence, by age group	
	19–64 years	≥65 years	19–64 years	≥65 years
No underlying chronic conditions	NA	≥1 year	NA	≥1 year
Immunocompetent persons Chronic heart disease, Chronic lung disease, Diabetes mellitus, Alcoholism, Chronic liver disease, cirrhosis, Cigarette smoking	≥1 year	≥1 year	NA	≥1 year
Immunocompetent persons Cerebrospinal fluid leak, Cochlear implant	≥8 weeks	≥8 weeks	≥1 year	≥1 year
Persons with functional or anatomic asplenia Sickle cell disease/other hemaglobinopathy, Congenital or acquired asplenia	≥8 weeks	≥8 weeks	≥1 year	≥1 year
Immunocompromised persons Congenital or acquired immunodeficiency, Human immunodeficiency virus infection, Chronic renal failure, Nephrotic syndrome, Leukemia, Lymphoma, Hodgkin disease, Generalized malignancy, Iatrogenic immunosuppression, Solid organ transplant, Multiple myeloma	≥8 weeks	≥8 weeks	≥1 year	≥1 year
Abbreviation: NA = not applicable				

Minimum Age and Dose Intervals For PCV13 Vaccine

Minimum age and dose intervals:

- Vaccination should not begin earlier than 6 weeks of age.
- The minimum age for the booster dose is 12 months of age.
- The minimum time interval between the last dose of the primary series and the booster dose is 8 weeks.
- If a **person** has received the polysaccharide vaccine (PPSV23), and is recommended to receive the conjugate vaccine (PCV13) vaccine, the minimum time interval between the polysaccharide and conjugate vaccine is 8 weeks.

Recommended Dosage and Route

0.5 mL administered intramuscularly

Contraindications and Precautions

A. Contraindications and Precautions

1. **Vaccination with PCV13 is contraindicated among persons known to have severe allergic reactions (e.g., anaphylaxis) to any component of PCV13 or PCV7, or any diphtheria toxoid-containing vaccine.**
2. **Moderate or severe illnesses with or without fever. Pneumococcal conjugate vaccine can be administered to persons with minor illness, such as diarrhea; mild upper respiratory tract infection, with or without low grade fever; or other illnesses with low grade fever. Persons with an illness associated with a moderate or severe fever should be vaccinated as soon as they have recovered from the acute phase of the illness.**
3. **Apnea following intramuscular vaccination has been observed in some infants born prematurely. Decisions about when to administer an intramuscular vaccine, including PCV13, to infants born prematurely should be based on consideration of the individual infant's medical status and potential benefits and possible risks of vaccination.**

Simultaneous Vaccine Administration

PCV13 may be administered simultaneously with any of the following routinely recommended vaccines:
DTaP, DT, RV, MMR, Hib, Hepatitis A, Hepatitis B, Polio, Varicella and Influenza

Concurrent administration of PCV13 and PPSV23 is not recommended because safety and efficacy of concurrent vaccination has not been established. See “Minimum Age and Dose Interval” section.

Vaccine Description

Pneumococcal Polysaccharide Vaccine (PPSV23) is a purified capsular polysaccharide vaccine that protects against **23 serotypes of pneumococcal bacteria** that cause 88% of bacteremic pneumococcal disease. It is not effective in children under 2 years of age.

B. Pneumococcal Polysaccharide Vaccine (PPSV23)

Brand Name & Manufacturer

PNEUMOCOCCAL POLYSACCHARIDE VACCINE (PPSV23)	MANUFACTURER
Pneumovax 23®	Merck

Eligible Groups for State Supplied Vaccine

Pneumococcal Polysaccharide Vaccine (PPSV23):

For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section.

Recommended PPSV23 Vaccine Schedule

One dose of Pneumococcal Polysaccharide Vaccine (PPSV23) is recommended for all persons ≥ 65 years of age.

One to two doses of Pneumococcal Polysaccharide Vaccine (PPSV23) are recommended for all persons aged 2-64 years who have one of the following high-risk conditions. (The number of doses is dependent upon the person's age and high-risk condition. Refer to the ACIP statement on Prevention of Pneumococcal Disease for specific guidelines.) If earlier vaccination status is unknown, these persons should be administered PPSV23 vaccine. (See the "Recommended Doses and Intervals" section for dosage recommendations for children receiving both pneumococcal conjugate (PCV13) and pneumococcal polysaccharide (PPSV23) vaccines.)

High-risk Conditions:

1. **A chronic illness**
   a. Chronic cardiovascular disease (e.g., congestive heart failure or cardiomyopathies)
   b. Chronic pulmonary disease (e.g., COPD, emphysema, or asthma) [4]
   c. Diabetes mellitus
   d. Alcoholism
   e. Chronic liver disease (cirrhosis)
   f. Cerebrospinal fluid (CSF) leaks

2. **Functional or anatomic asplenia**
   a. Sickle cell disease
   b. Splenectomy[1]

3. **Living in special environments or social settings**
   a. Alaska Natives or American Indians **where risk of invasive pneumococcal disease is increased** [4]
   b. Residents of nursing homes or long-term care facilities

4. **Immunocompromised [2] persons with**
   a. HIV infection
   b. Leukemia
   c. Lymphoma, Hodgkins disease, multiple myeloma, generalized malignancy
   d. Chronic renal failure, nephrotic syndrome
   e. Organ or bone marrow transplants
   f. Immunosuppressive chemotherapy and long-term corticosteroids
5. **Cochlear implant recipients** [3]
6. **Adults who smoke cigarettes**[4]

[1] When an elective splenectomy is planned, PPV should be administered at least 2 weeks before surgery (Prevention of Pneumococcal Disease, MMWR, April 4, 1997, Vol. 46, RR-8, p.11).

[2] See "Contraindications and Precautions" section.

[3] "Pneumococcal Vaccination of Cochlear Implant Recipients," MMWR, October 18, 2002/51(41); 931.

[4] "Use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine for Adults with Immunocompromising Conditions: Recommendations of the Advisory Committee on Immunization Practices (ACIP)";
https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6140a4.htm

Recommended Doses and Intervals for PPSV23 Vaccine[1]

Population	Schedule for follow-up with PPSV23 for children ≥2 years of age	Revaccinate with PPSV23
Persons >65 years	Not Applicable	**Give 2nd dose of vaccine if:** 1. Person was < 65 years of age at the time of first dose **And** 2. It has been > 5 years since first dose
Persons ages 2-64 years with: • Sickle cell disease or anatomic or functional asplenia • Immunocompromised[2] • HIV-Infected	1 dose PPSV23 given at age ≥ 2 years and at least 8 weeks after last dose of PCV[3]	**Give 2nd dose of vaccine 5 years after the first dose**
Persons ages 2-64 years with: • Cardiovascular disease[2] • Chronic pulmonary disease[2] • Diabetes mellitus • Alcoholism • Chronic liver disease • Cerebrospinal Fluid (CSF) leaks • Cochlear implant recipients • Adults who smoke cigarettes[4] • Adults with asthma[4]	1 dose PPSV23 given at ≥2 years and at least 8 weeks after last dose of PCV[3]	Not recommended
Persons ages 2-64 years who live in special environments or social settings: • Alaska Natives or American Indians aged 50 through 64 years who are living in areas with increased risk of invasive pneumococcal disease • Residents of nursing homes or long-term facilities	Health care providers of Alaska Natives and American Indians may recommend PPSV23 for children aged 24-59 months who are living in areas in which risk of invasive pneumococcal disease is increased	Not recommended
Healthy Children	None	No

[1]See 1997 ACIP Recommendations, Vol. 46, RR-8, p. 12 and 2000 ACIP Recommendations, Vol. 49, RR-9, p. 25, for more detailed information.
[2]See detailed listing in "Recommended PPSV Vaccine Schedule" section.
[3]Regardless of when administered, a second dose of PPSV should not be given earlier than 3 years following the previous PPSV dose. Revaccination is recommended only once. (1997 ACIP, Vol. 46, RR-8, p.15; 2006 Red Book, pp. 534-535). If a child has received the polysaccharide vaccine (PPSV), and is recommended to receive the conjugate vaccine (PCV), the minimal time interval between the polysaccharide and conjugate vaccine, is 8 weeks.
[4] "Use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine for Adults with Immunocompromising Conditions: Recommendations of the Advisory Committee on Immunization Practices (ACIP)";
https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6140a4.htm

Recommended Dosage and Route

0.5 mL administered intramuscularly or subcutaneously

Contraindications and Precautions

A. CONTRAINDICATIONS

1. Allergy to vaccine components. Anaphylactic reaction to the vaccine or a constituent of the vaccine.
2. Moderate or severe illnesses with or without fever. Pneumococcal polysaccharide vaccine (PPSV23) can be administered to persons with a minor illness, such as: diarrhea; mild upper respiratory tract infection, with or without low grade fever; or other illnesses with low grade fever. Persons with an illness associated with a moderate or severe fever should be vaccinated as soon as they have recovered from the acute phase of the illness.
3. Anaphylactic reaction or localized arthus-type reaction (extensive painful swelling from shoulder to elbow) to the initial dose. (1997 ACIP, Vol. 46, RR-8, p.15).

B. PRECAUTIONS

1. Pregnancy. It is prudent on theoretical grounds to avoid vaccinating pregnant women.
2. When cancer or immunosuppressive therapy is being considered (e.g., for patients with Hodgkin's Disease or those who undergo organ or bone marrow transplantation) the interval between vaccination and initiation of immunosuppressive therapy should be at least 2 weeks. Vaccination during chemotherapy or radiation should be avoided (1997 ACIP, Vol. 46, RR-8, p.13).

Simultaneous Vaccine Administration

PPSV23 may be administered simultaneously with any of the following routinely recommended vaccines: DTaP, DT, Td, Tdap, MMR, Hib, Hepatitis A, Hepatitis B, Polio, MCV4, MPSV4, Varicella, HPV, Zoster and Influenza

Concurrent administration of PCV13 and PPSV23 is not recommended because safety and efficacy of concurrent vaccination has not been established. See "PCV Minimum Age and Dose Interval" section.

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT POLIO

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards should serve as a quick reference for clinics administering polio vaccine. The guidelines are not all inclusive. When more information is needed, the complete ACIP Recommendation statement should be referenced.

- "Poliomyelitis Prevention in the United States," *MMWR*, May 19, 2000, Vol. 49, No. RR-5.
- ACIP Polio Vaccine Resolution for the Vaccines for Children Program (VFC), (Resolution No. 6/09-1)
- Epidemiology and Prevention of Vaccine Preventable Diseases, 13th edition.
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- "Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP) Regarding Routine Poliovirus Vaccination, "MMWR, Vol. 58/August 7, 2009.
- **Guidance for Assessment of Poliovirus Vaccination Status and Vaccination of Children Who Have Received Poliovirus Vaccine Outside the United States Weekly / January 13, 2017 / 66(01);23–25**

Vaccine Description

- Trivalent oral polio vaccine was the vaccine of choice in the U.S. from the time it was licensed in 1963. Since wild virus-induced paralytic polio was essentially eliminated in the western hemisphere by 1979, vaccine-induced paralytic polio (VAPP) became the greater risk. Therefore, in order to further the goal of eliminating any paralytic polio in the U.S., the ACIP recommended that inactivated polio vaccine be used exclusively, beginning in 2000. Oral polio vaccine is no longer available in the U.S.
- Inactivated polio vaccine (IPV) was introduced in the U.S. in 1955 but was largely replaced by OPV in the 1960's. Enhanced-potency IPV (e-IPV) was licensed in 1987 and is now the preferred polio vaccine.

Guidance regarding assessment of poliovirus vaccination status and vaccination of children who have received poliovirus vaccine outside the United States.

Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements (tOPV was used for routine poliovirus vaccination in all OPV-using countries until April 1, 2016)

> ***Previous poliovirus vaccination is valid if documentation indicates receipt of IPV or trivalent OPV. Trivalent OPV was used for routine poliovirus vaccination before April 1, 2016 in all OPV-using countries. Therefore, if a child has documentation of receipt of an OPV dose (rather than "tOPV") before April 1, 2016, this represents a tOPV dose and should be counted towards the U.S. vaccination schedule, unless specifically notated that it was administered during a vaccination campaign.* Consistent with the polio eradication strategy, doses of OPV administered on or after April 1, 2016 are either bOPV (used in routine vaccination and campaigns), or mOPV (used in a type-specific outbreak response); these doses do not count towards the U.S. vaccination requirements for protection against all three poliovirus types.***

If both OPV and IPV were administered as part of a series, the total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. A minimum interval of 4 weeks should separate doses in the series, with the final dose administered on or after the fourth birthday and at least 6 months after the previous dose.

If only OPV was administered, and all doses were given before age 4 years, 1 dose of IPV should be given at 4 years or older and at least 6 months after the last OPV dose. This 6-month period is a change from the current footnote which indicates the period is 4 weeks after the last OPV dose.

Brand Name & Manufacturer

VACCINES	MANUFACTURERS
IPOL™ (e-IPV)	sanofi pasteur
Poliovax™ (IPV)	sanofi pasteur
(licensed but not distributed in the U.S.)	
Orimune™ (OPV)	Wyeth-Lederle
(not available for use in U.S.)	
Pediarix™ (combination of Infanrix™, EngerixB™, and inactivated polio vaccine)	GlaxoSmithKline
Kinrix™ (combination DTaP-IPV)	GlaxoSmithKline
Pentacel™ (combination DTaP-IPV/Hib)	sanofi pasteur

(See Section on "Combination Vaccines" for more information on Kinrix™, Pediarix™, And Pentacel™)

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see "Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" located in the front of this section.

Recommended Polio Vaccine Schedule[1]

Infants

Vaccine	Dose 1	Dose 2	Dose 3	Dose 4[1, 2, 3, 4, 5,6]
IPV	age 2 mos.	age 4 mos.	age 6-18 mos.	age 4-6 yrs.

Children and Persons < 18 years of age [7]

Vaccine	Dose 1	Dose 2	Dose 3	Dose 4[2, 3, 4, 5, 6]
IPV	------	4 – 8 wks. after Dose 1	6-12 mos. after Dose 2	3.5 years after Dose 3

[1] Prior to 2001 individuals may have received a combination of OPV and IPV. Any combination of 4 doses of IPV and OPV by 4-6 years of age constitutes a complete series.
[2] The 4-dose IPV series is administered at ages 2 months, 4 months, 6-18 months, and 4-6 years.
[3] The final dose in the IPV series should be administered at age ≥ 4 years regardless of the number of previous doses. The minimum interval between the final dose and previous dose is 6 months.
[4] Pediarix® is licensed only for the primary series of 3 doses of IPV and should not be used for the booster dose. Not indicated for children > 6 years of age.
[5] Pentacel™ is approved for the primary series and first booster dose (doses 1-4). It is not indicated for children ≥ 5 years.
[6] Kinrix™ is approved for the booster dose at age 4-6. Not to be administered to children aged < 4 years or ≥ 7 years.
[7] Polio vaccination is not routinely recommended for healthy persons ≥18 years of age even if living in the U.S. and even if they have never received or completed a primary polio series. Some immunocompromised persons may need to be vaccinated. For more information, see "General Recommendations on Immunization," *MMWR*, January 11, 2011 Vol. 60, No. RR-2.

Minimum Age & Dose Intervals for IPV[1]

DOSE	MINIMUM AGE	MINIMUM DOSE INTERVAL
1	6 weeks	--------
2	10 weeks	4 weeks after 1st dose
3	14 weeks	4 weeks after 2nd dose
4	≥4 years	6 months after 3rd dose.

[1]Use of the minimum age and minimum intervals for vaccine administration in the first 6 months of life are recommended only if the vaccine recipient is at risk for imminent exposure to circulating poliovirus (e.g., during outbreak or because of travel to a polio-endemic region). ACIP is making this precaution because shorter intervals and earlier start dates lead to lower seroconversion rates.

Recommended Dosage and Route

0.5 mL administered subcutaneously or intramuscularly

Contraindications and Precautions

A. Contraindications

1. Allergy to any vaccine component. Persons who have had anaphylactic reactions to topically or systemically administered streptomycin, neomycin, or Polymyxin B should not receive IPV. Persons with only skin contact sensitivity may be vaccinated.

B. Precautions

Pregnancy. In general, polio vaccine should not be administered to pregnant women unless immediate protection against poliomyelitis is needed. If determined necessary, IPV is recommended.

1. Moderate or severe illness with or without fever

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines: DTaP, RV, Td, Tdap, MMR, Hib, Hepatitis A, Hepatitis B, Varicella, MCV4, MPSV4, PCV13 or PPSV23, HPV, and Influenza

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT ROTAVIRUS GASTROENTERITIS

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards were developed from the pertinent Vaccine Resolution from the Vaccines for Children Program and the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- ”Prevention of Rotavirus Gastroenteritis among Infants and Children,” *MMWR*, August 11, 2006, Vol. 55
- ACIP Rotavirus Gastroenteritis Vaccine Resolution for the Vaccines for Children Programs (VFC), (Resolution No. 6/08-1)
- “Prevention of Rotavirus Gastroenteritis among Infants and Children,” *MMWR*, Feb 6, 2009, Vol. 58, RR-02
- “Addition of Severe Combined Immunodeficiency as a Contraindication for Administration of Rotavirus,” *MMWR,* June 11, 2010, Vol. 59, RR-22
- “Addition of History of Intussusception as a Contraindication for Rotavirus Vaccination*,”* MMWR, October 21, 2011, Vol. 60, RR-41
- Epidemiology and Prevention of Vaccine-Preventable Diseases, 13th edition
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- *“*Addition of Severe Combined Immunodeficiency as a Contraindication for Administration of Rotavirus Vaccine*,”* MMWR, June 11, 2010, Vol. 59, RR-22

A. RotaTeq® (RV5) Vaccine Description

Pentavalent rotavirus vaccine is an oral vaccine that contains 5 live, reassortant rotaviruses isolated from human and bovine hosts. There are no preservatives or thimerosal present. The vaccine is a pale yellow clear liquid that may have a pink tint. It is supplied in a squeezable plastic, latex-free dosing tube with a twist-off cap, allowing for direct oral administration.

Brand Names & Manufacturer	
RotaTeq®	Merck & Co.

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults” located in the front of this section.

Recommended RV5 Rotavirus Vaccine Schedule

Dose	Age
Primary 1	2 months
Primary 2	4 months
Primary 3	6 months

Recommended Doses & Intervals [2]	
RotaTeq®	
Number of doses in series	3
Recommended ages for doses	2 , 4 and 6 months
Minimum age for first dose	6 weeks
Maximum age for first dose	14 weeks 6 days[1]
Interval between doses	4 weeks or more
Maximum age for last dose	8 months 0 days

[1] Vaccination should not be initiated for infants >15 weeks of age. However, for infants in whom the first dose is inadvertently administered off label at age 15 weeks and 0 days or later, the rest of the vaccine series should be completed as per the schedule.

[2] ACIP recommends that the rotavirus vaccine series be completed with the same product whenever possible. However, vaccination should not be deferred because the product used for a previous dose(s) is not available or unknown. Continue or complete the series with product available.

NOTE: Infants who have had rotavirus gastroenteritis before receiving the full course of rotavirus vaccinations should still initiate or complete the 3-dose schedule because the initial infection frequently provides only partial immunity.

Special Situations:

1. Premature infants (< 37 weeks gestation)----immunize if they are:
    a. At least 6 weeks of age
    b. Clinically stable
    c. Being or have been discharged from the nursery
2. Infants living in households with immunocompromised persons can be vaccinated. The benefit to the household members of vaccinating young children outweighs the small risk for transmitting vaccine virus to immunocompromised persons. To minimize even this risk, all household members should employ good hygiene practices, especially after changing the infant's diapers.
3. Regurgitation of the vaccine dose---if for any reason an incomplete dose is administered (e.g., infant spits or regurgitates the vaccine), a replacement dose is not recommended. The infant should continue to receive any remaining doses in the recommended series at appropriate intervals.
4. Infants living in households with pregnant women can be vaccinated.
5. Hospitalization after recent rotavirus vaccination---no precautions other than routine standard precautions need be taken.
6. Rotavirus may be administered at any time before, concurrent with, or after administration of any blood product, including antibody-containing products.

Contraindications and Precautions
For RV5 (RotaTeq) and RV1 (Rotarix)

Contraindications:

1. History of severe allergic reaction (e.g., anaphylaxis) after a previous dose of rotavirus vaccine or exposure to a vaccine component
2. Infants diagnosed with severe combined immunodeficiency (SCID)
3. Infants with a history of intussusception

Precautions:

1. Acute gastroenteritis--- rotavirus vaccine should not be administered to infants with acute, moderate to severe gastroenteritis until the condition improves.
2. Moderate to severe illness---vaccinate infants as soon as they have recovered from the acute phase of the illness.
3. Preexisting chronic gastrointestinal disease---providers should consider the potential risks and benefits of administering this vaccine to infants with this preexisting condition. Infants with preexisting chronic gastrointestinal conditions (i.e. congenital malabsorption syndromes, Hirschsprung's disease, short-gut syndrome, or persistent vomiting of unknown cause) and not undergoing immunosuppressive therapy should benefit from rotavirus vaccination and the benefits outweigh the theoretical risks.
4. **Intussusception---the current rotavirus vaccine has shown no evidence of an association with intussusception. However, additional post-licensure surveillance data are required to confirm that the vaccine is not associated with intussusception. Until post-licensure data on safety of rotavirus vaccine are available, the risks and benefits of vaccination should be considered when vaccinating infants with a previous episode of intussusception. Until further safety data is available, vaccination of these infants with rotavirus vaccine should be delayed.**
5. Altered immunocompetence---providers should consider the potential risks and benefits of administering rotavirus vaccine in this situation. Shedding of the vaccine virus may be possible, particularly after administration of the first dose. Caution is advised when considering whether to administer rotavirus vaccine to individuals with immunodeficient close contacts. No safety or efficacy data are available for the administration of this vaccine to infants who are potentially immunocompromised including:
    a. Infants with blood dyscrasias, leukemia, lymphomas of any type or other malignant neoplasms
    b. Infants on immunosuppressive therapy (including high-dose systemic corticosteroids)
    c. Infants with primary and acquired immunodeficiency states
    d. Infants who are HIV-exposed or infected. However, two considerations support vaccination of HIV-exposed or infected infants: first, the HIV diagnosis might not be established in infants born to HIV-infected mothers before the age of the first rotavirus vaccine and second, vaccine strains of rotavirus are considerably attenuated.

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:

DTaP, Hib, Hepatitis B, IPV, inactivated influenza and PCV13

B. Rotarix (RV1) Vaccine Description

Rotarix® (RV1) is a live, oral, attenuated rotavirus vaccine derived from the human 89-12 strain which belongs to G1P[8] type. The liquid diluent contains calcium carbonate, sterile water, and xanthan. The diluent includes an antacid component (calcium carbonate) to protect the vaccine during passage through the stomach and prevent its inactivation due to the acidic environment of the stomach. ROTARIX contains no preservatives. The tip cap and the rubber plunger of the oral applicator contain dry natural latex rubber. The vial stopper and transfer adapter are latex-free.

Brand Names & Manufacturer

Rotarix®	GlaxoSmithKline

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see “Eligibility for Vaccines Supplied by the Georgia Immunization Office for Children, Adolescents, and Adults” located in the front of this section.

Recommended RV1 Rotavirus Vaccine Schedule

Dose	Age
Primary 1	2 months
Primary 2	4 months

Recommended Doses & Intervals [3]	
RotaTeq®	
Number of doses in series	2
Recommended ages for doses	2 and 4 months
Minimum age for first dose	6 weeks
Maximum age for first dose	14 weeks 6 days[1]
Interval between doses	4 weeks or more[2]
Maximum age for last dose	8 months 0 days

[1] Vaccination should not be initiated for infants aged 15 weeks 0 days or older because of insufficient data on safety of dose 1 of rotavirus vaccine in older infants. For infants to whom dose 1 is administered inadvertently at age 15 weeks and 0 days or older, the rest of the rotavirus vaccination series should be completed according to the schedule and by 8 months and 0 days.
[2] The minimum interval between doses of rotavirus vaccine is 4 weeks; no maximum interval is set.
[3] ACIP recommends that the rotavirus vaccine series be completed with the same product whenever possible. However, vaccination should not be deferred because the product used for a previous dose(s) is not available or unknown. Continue or complete the series with product available. If any dose in the series is RV5 or the vaccine product is unknown for any dose in the series, a total of 3 doses of rotavirus should be administered.

NOTE: Infants who have had rotavirus gastroenteritis before receiving the full course of rotavirus vaccinations should still initiate or complete the 2-dose schedule because the initial infection frequently provides only partial immunity.

Special Situations:

1. Premature infants (< 37 weeks gestation)----immunize if they are:
    a. At least 6 weeks of age
    b. Clinically stable
    c. Are being or have been discharged from the nursery
2. Infants living in households with immunocompromised persons can be vaccinated. The benefit to the household members of vaccinating young children outweighs the small risk for transmitting vaccine virus to immunocompromised persons. To minimize even this risk, all household members should employ good hygiene practices, especially after changing the infant's diapers.
3. Regurgitation of the vaccine dose---if for any reason an incomplete dose is administered (e.g., infant spits or regurgitates the vaccine), a replacement dose is not recommended. The infant should continue to receive any remaining doses in the recommended series at appropriate intervals.
4. Infants living in households with pregnant women can be vaccinated.
5. Hospitalization after recent rotavirus vaccination---no precautions other than routine standard precautions need be taken.

Rotavirus may be administered at any time before, concurrent with, or after administration of any blood product, including antibody-containing products.

Simultaneous Vaccine Administration

May be administered simultaneously with any of the following routinely recommended vaccines:

DTaP, Hib, Hepatitis B, IPV, inactivated Influenza, and PCV13

Georgia Department of Public Health
Immunization Program Vaccine Standards

VACCINES TO PREVENT VARICELLA

The purpose of these standards is to provide public health clinics with a summary of the current Recommendations of the Advisory Committee on Immunization Practices (ACIP) for each of the vaccines supplied by the Georgia Immunization Program. These standards were developed from the pertinent Vaccine Resolution from the Vaccines for Children Program and the references below and will be updated as needed. The standards are not all inclusive and when more information is needed, the following publications should be referenced:

- "Prevention of Varicella," *MMWR*, June 22, 2007, Vol. 56, No. RR-4
- ACIP Measles, Mumps, Rubella, and Varicella Vaccine Resolution for the Vaccines for Children Program (VFC), (Resolution No.6/09-3)
- 2015 Red Book: Report of the Committee on Infectious Diseases published by the American Academy of Pediatrics
- Epidemiology and Prevention of Vaccine Preventable Diseases, 13th edition
- Update: Recommendations from the Advisory Committee on Immunization Practices (ACIP) Regarding Administration of Combination MMRV vaccine, *MMWR,* March 14, 2008, Vol. 57, No. RR-10
- Notice to Readers: Licensure of a Combined Live Attenuated Measles, Mumps, Rubella, and Varicella Vaccine, December 2, 2005, Vol. 54, No. RR-47
- "Updated Recommendations for Use of VariZIG," MMWR, July 19, 2013, Vol. 62, No. RR-28

Vaccine Description

Varicella zoster vaccine is a live attenuated viral vaccine, derived from the Oka strain of varicella zoster virus.

Brand Name & Manufacturer

VACCINE	MANUFACTURER
Varicella (Varivax ®)	Merck
Measles-mumps-rubella-varicella (ProQuad®) (See "Combination Vaccines" in this section)	Merck

Eligible Groups for State Supplied Vaccine

For Adults, Children, and Adolescents, see "Eligibility for Vaccines Supplied by the Georgia Immunization Program for Children, Adolescents, and Adults" located in the front of this section.

The varicella immune globulin (VZIG) product currently used in the U.S. is VariZIG. ™ This product can be obtained 24 hours a day from the sole authorized U.S. distributor (FFF Enterprises, Temecula, California) at 1-800-843-7477 or online at hppt://www.fffenterprises.com

Recommended Varicella Vaccine Schedule

Two doses of varicella vaccine are recommended for all susceptible[1] persons beginning at 12-15 months of age. If a child is 15 months or older and has not had the disease, the child should be immunized at the earliest opportunity.

Vaccine	Dose[2]	Age (for routine vaccination)[3]
Varicella	1	12-15 months
	2	4-6 years

In addition, varicella vaccination is recommended in the following situations:

- A 2nd dose catch-up for all children, adolescents, and adults who previously had received one dose.
- Vaccination should be considered for HIV-infected children with age-specific CD4+ T-lymphocyte percentage ≥15% and may be considered for adolescents and adults in with CD4+ T-lymphocyte count ≥200 cells/μL. **DO NOT** use MMRV vaccine for these persons.
- For postpartum women whose prenatal assessment indicated susceptibility to varicella disease, the 1st dose of vaccine should be administered before discharge from the healthcare facility and the 2nd dose scheduled at an appropriate interval.
- During a varicella outbreak, a 2nd dose of vaccine should be given to those who had previously only received 1 dose, provided the appropriate minimum interval has elapsed since the first dose.[3]

Recommended Varicella Vaccine Schedule (cont'd)

- Other adults who should receive special consideration for varicella vaccine if determined not to be immune:
  - Healthcare providers
  - Household contacts of immunocompromised persons
  - Persons in environments where transmission of VZV is likely, such as teachers, childcare employees, persons in institutional settings, college students, staff and inmates of correctional institutions, and military personnel.
  - Nonpregnant women of childbearing age
  - Adolescents and adults living in households with children
  - International travelers

[1] See Guidelines for Documentation of Immunity below.
[2] Doses of varicella may be given as MMRV if the child is 12 months through 12 years of age, and a dose of MMR is also indicated. See "Combination Vaccine" guidelines in this section for more information.
[3] Minimum interval from dose 1 to 2:
3 months if 1st dose is given at <13 years of age
4 weeks if 1st dose is given at ≥13 years of age

NOTE:
Varicella vaccine is effective in preventing illness or modifying varicella severity if it is administered within 3 days and possibly up to 5 days after exposure.

Standards for Public Health Clinics
Documentation of Varicella Immunity

These standards are to be used by nurses in public health clinics to document varicella immunity. This documentation will be for issuing a "Certificate of Immunization" for childcare and school attendance.

1. Documentation of age-appropriate vaccination:
   - Ages 12 months through preschool----1 dose
   - Kindergarten through adulthood---2 doses
2. Laboratory evidence of immunity or confirmation of disease
3. Born in the US before 1980. (For healthcare providers, pregnant women and immunocompromised persons' birth before 1980 should not be considered evidence of immunity.
4. Healthcare provider diagnosis of disease or documentation of history of disease
   - Typical case history
     - Recollection of an itchy, blister-like rash that lasted about a week with
     - History of known exposure to shingles or a typical case of chickenpox (fever and maculopapular rash with successive crops of vesicular lesions in different stages)
     - Documentation should be made by licensed medical personnel (e.g., physician, public health nurse, physician's assistant, or nurse practitioner); however, the Immunization Certificate must be signed by a physician, advanced practice registered nurse or physician assistant licensed in Georgia or by a Public Health Official.

Guidelines for Public Health Clinics Documentation of Varicella Immunity (cont'd)

- Mild or atypical case history
  - Assessment should be made by licensed medical personnel (e.g., physician, public health nurse, physician's assistant, or nurse practitioner) and one of the following should be sought:
    - An epidemiologic link to a typical varicella case, or a laboratory confirmed case
    - Evidence of laboratory confirmation (if the testing was performed at the time of acute disease)
- If none of the above can be ascertained, vaccination with appropriate doses of varicella vaccine should be considered.

5. History of herpes zoster (shingles) based on healthcare provider diagnosis

Recommended Doses & Intervals

Vaccine	Minimum age	Minimum interval from dose 1 to 2[1]
Dose 1	12 months	3 months
Dose 2	13 months	-----

[1] If 2 doses of varicella vaccine are given during the time the child is 12 months through 12 years of age, the minimum interval between doses is **3 months.** Once the child turns 13 years of age, the minimum interval between the 2 doses is **1 month**. However, regardless of the child's age, if the 2nd dose was administered after at least 28 days following the 1st dose, the 2nd dose does not need to be repeated.

Recommended Dosage and Route

0.5 mL administered subcutaneously

Contraindications and Precautions

A. Contraindications and Precautions

1. Allergy to vaccine components
   Anaphylactic reaction to the vaccine or a constituent of the vaccine (e.g., gelatin or neomycin)
2. Moderate or severe illnesses with or without fever
   Varicella vaccine can be administered to persons with minor illness, such as diarrhea; mild upper respiratory tract infection, with or without low grade fever; or other illnesses with low grade fever. Persons with an illness associated with a moderate or severe fever should be vaccinated as soon as they have recovered from the acute phase of the illness. Although no data exist as to whether varicella or live varicella virus vaccine exacerbates tuberculosis, vaccination is not recommended for persons who have untreated, active tuberculosis. Tuberculin skin testing is not a prerequisite for varicella vaccination.
3. Altered immune status
   Altered immune status due to: a malignant condition (blood dyscrasia, leukemia,[1] lymphoma, or other neoplasms affecting the bone marrow or lymphatic system); primary or acquired immune deficiency, including acquired immunodeficiency syndrome (AIDS) or other clinical manifestations of HIV infection, cellular immunodeficiencies, hypogammaglobulinemia, and dysgammaglobulinemia; family history of congenital or hereditary immunodeficiency, unless immune competence of possible vaccine recipient is demonstrated; and individuals receiving immunosuppressive therapy. See ACIP statement cited in the opening paragraph of "Vaccines to Prevent Varicella."
4. Receipt of blood products
   Varicella virus vaccine should not be given for at least 5 months after receipt of blood (except washed red blood cells) or plasma transfusions, Immune Globulin (IG), or Varicella Zoster Immune Globulin (VZIG). In addition, IG and VZIG should not be administered for 3 weeks after vaccination unless the benefits of receiving the IG or VZIG exceed the benefits of vaccination.
5. Steroid therapy
   Receiving doses of systemic prednisone or its equivalent at a dose of ≥2 mg/kg of body weight per day or 20 mg/day.
6. Exposure of immunocompromised persons to vaccinees
   In persons who develop a rash post-vaccination, there is a minimal risk of transmission of vaccine virus to close contacts. Thus, vaccinees in whom vaccine-related rash develops, particularly health care workers and household contacts of immunocompromised persons, should avoid contact with susceptible persons who are at high risk of serious complications.
7. Salicylates
   Due to the association between wild varicella zoster infection, salicylates, and Reye syndrome, if feasible, vaccine recipients should avoid using salicylates for 6 weeks after receiving varicella virus vaccine. Vaccination with subsequent close monitoring should be considered for children who have conditions requiring therapeutic aspirin because the risk for serious complications associated with aspirin is likely to be greater in children in whom natural varicella disease develops than in children who receive the vaccine containing attenuated varicella zoster virus.

8. Pregnancy
   Theoretically, it is best not to administer varicella vaccine to pregnant women. Woman who are not pregnant but are of childbearing age who receive the vaccine should be advised not to become pregnant for at least 1 month after each injection. Merck and the CDC have established a hotline to monitor the maternal/fetal outcomes of women who are vaccinated with varicella 3 months before or at any time during the pregnancy. The phone number is (800) 986-8999.
9. Nursing mothers
   Whether attenuated varicella (VZV) vaccine is excreted in human milk and, if so, whether the infant could be infected, are not known. Most live vaccines have not been demonstrated to be secreted in human milk. Therefore, varicella vaccine may be considered for a nursing mother.

[1] Except under research protocol

Note: A prior history of chicken pox is not a contraindication to varicella vaccination.

Simultaneous Vaccine Administration

Varicella vaccine may be administered simultaneously with any of the following routinely recommended vaccines:
DTaP, Tdap, Td, MMR, Hib, Hepatitis A, Hepatitis B, Polio, PCV13 and PPSV23, Influenza, HPV, MPSV4 and MCV4

Tuberculin Skin Testing: While no data are available regarding the effect of varicella vaccination on tuberculin reactivity, it is prudent to apply the same precautions as with MMR when using the varicella vaccine. See guidelines for simultaneous tuberculin skin testing (TST) and the administration of live virus vaccines in the ACIP statement, "General Recommendations on Immunization," *MMWR*, January 28, 2011, Vol. 60, RR-2, page 24.

CDC Recommendations for Use of VariZIG- varicella zoster immune globulin

The decision to administer VariZIG depends on three factors:

1) Whether the patient lacks evidence of immunity to varicella,
2) Whether the exposure is likely to result in infection, and
3) Whether the patient is at greater risk for varicella complications than the general population.

For high-risk patients who have additional exposures to varicella-zoster virus ≥3 weeks after initial VariZIG administration, another dose of VariZIG should be considered.

Timing of VariZIG administration

CDC recommends administration of VariZIG as soon as possible after exposure to varicella-zoster virus and within 10 days.

Patient groups for whom VariZIG is recommended

- **Immunocompromised patients without evidence of immunity.**
- **Newborn infants whose mothers have signs and symptoms of varicella around the time of delivery (i.e., 5 days before to 2 days after).**
- **Hospitalized premature infants born at <28 weeks of gestation or who weigh ≤1,000 g at birth, regardless of their mothers' evidence of immunity to varicella.**
- **Pregnant women without evidence of immunity.**

VariZIG Administration

VariZIG is supplied in 125-IU vials and should be administered intramuscularly as directed by the manufacturer. The recommended dose is 125 IU/10 kg of body weight, up to a maximum of 625 IU (five vials). The minimum dose is 62.5 IU (0.5 vial) for patients weighing ≤2.0 kg and 125 IU (one vial) for patients weighing 2.1–10.0 kg

Patients who become eligible for vaccination, varicella vaccine should be administered ≥5 months after VariZIG administration. Because varicella zoster immune globulin might prolong the incubation period by ≥1 week, any patient who receives VariZIG should be observed closely for signs and symptoms of varicella for 28 days after exposure.

Contraindications

- **History of anaphylactic or severe systemic reactions to human immune globulins and IgA-deficient patients with antibodies against IgA and a history of hypersensitivity**

How to Obtain VariZIG

VariZIG can be ordered from the exclusive U.S. distributor, FFF Enterprises (Temecula, California) (telephone, 800-843-7477; online at http://www.fffenterprises.comExternal Web Site Icon).

Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, UNITED STATES, 2018

- Consult relevant ACIP statements for detailed recommendations (www.cdc.gov/vaccines/hcp/acip-recs/index.html).
- When a vaccine is not administered at the recommended age, administer at a subsequent visit.
- Use combination vaccines instead of separate injections when appropriate.
- Report clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS) online (www.vaers.hhs.gov) or by telephone (800-822-7967).
- Report suspected cases of reportable vaccine-preventable diseases to your state or local health department.
- For information about precautions and contraindications, see www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

Approved by the

Advisory Committee on Immunization Practices
(www.cdc.gov/vaccines/acip)

American Academy of Pediatrics
(www.aap.org)

American Academy of Family Physicians
(www.aafp.org)

American College of Obstetricians and Gynecologists
(www.acog.org)

This schedule includes recommendations in effect as of January 1, 2018.

The table below shows vaccine acronyms, and brand names for vaccines routinely recommended for children and adolescents. The use of trade names in this immunization schedule is for identification purposes only and does not imply endorsement by the ACIP or CDC.

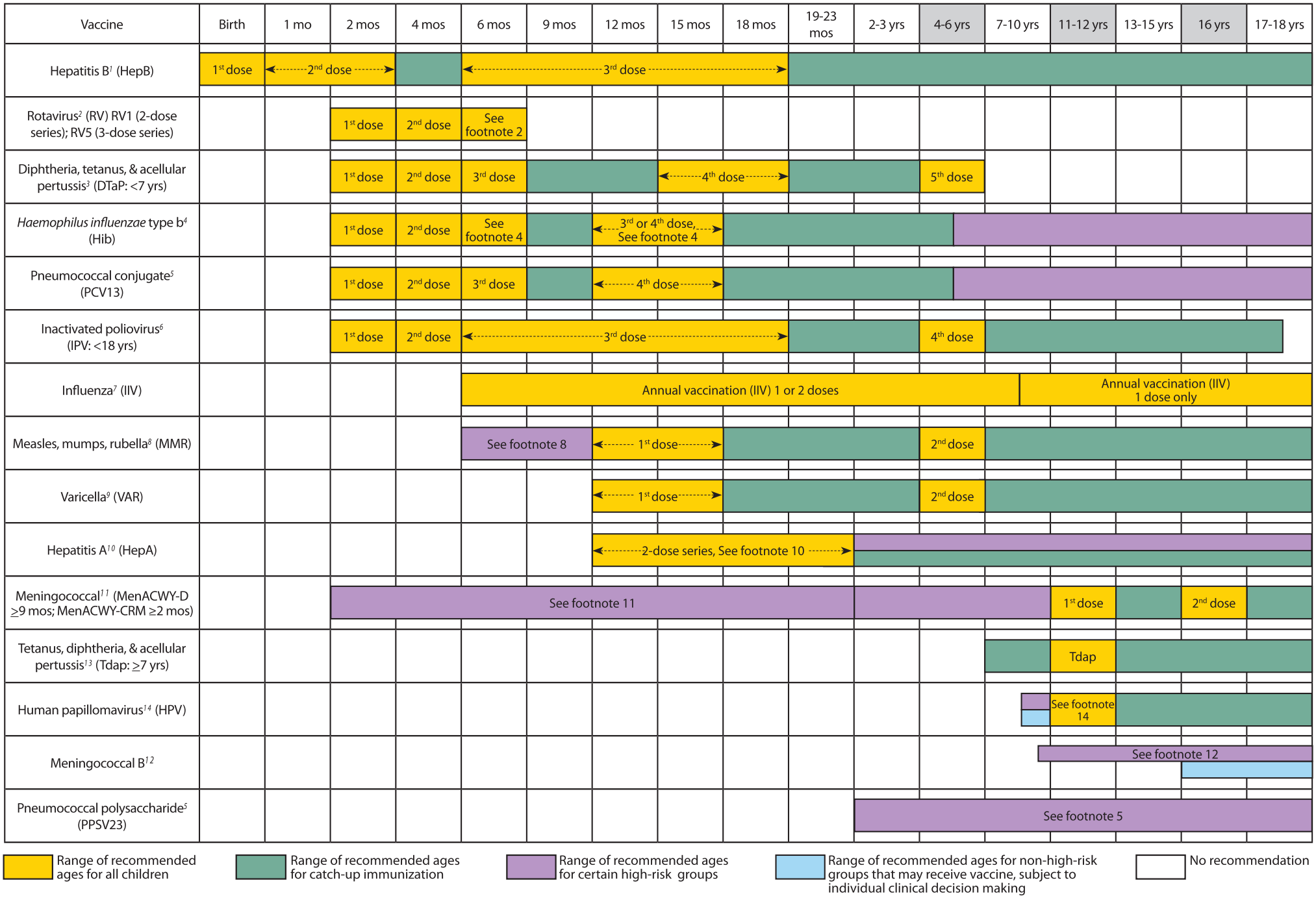
Vaccine type	Abbreviation	Brand(s)
Diphtheria, tetanus, and acellular pertussis vaccine	DTaP	Daptacel Infanrix
Diphtheria, tetanus vaccine	DT	No Trade Name
Haemophilus influenzae type B vaccine	Hib (PRP-T) Hib (PRP-OMP)	ActHIB Hiberix PedvaxHIB
Hepatitis A vaccine	HepA	Havrix Vaqta
Hepatitis B vaccine	HepB	Engerix-B Recombivax HB
Human papillomavirus vaccine	HPV	Gardasil 9
Influenza vaccine (inactivated)	IIV	Multiple
Measles, mumps, and rubella vaccine	MMR	M-M-R II
Meningococcal serogroups A, C, W, Y vaccine	MenACWY-D MenACWY-CRM	Menactra Menveo
Meningococcal serogroup B vaccine	MenB-4C MenB-FHbp	Bexsero Trumenba
Pneumococcal 13-valent conjugate vaccine	PCV13	Prevnar 13
Pneumococcal 23-valent polysaccharide vaccine	PPSV23	Pneumovax
Poliovirus vaccine (inactivated)	IPV	IPOL
Rotavirus vaccines	RV1 RV5	Rotarix RotaTeq
Tetanus, diphtheria, and acellular pertussis vaccine	Tdap	Adacel Boostrix
Tetanus and diphtheria vaccine	Td	Tenivac No Trade Name
Varicella vaccine	VAR	Varivax
Combination Vaccines		
DTaP, hepatitis B and inactivated poliovirus vaccine	DTaP-HepB-IPV	Pediarix
DTaP, inactivated poliovirus and *Haemophilus influenzae* type B vaccine	DTaP-IPV/Hib	Pentacel
DTaP and inactivated poliovirus vaccine	DTaP-IPV	Kinrix Quadracel
Measles, mumps, rubella, and varicella vaccines	MMRV	ProQuad

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Figure 1. Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger—United States, 2018.

(FOR THOSE WHO FALL BEHIND OR START LATE, SEE THE CATCH-UP SCHEDULE [FIGURE 2]).

These recommendations must be read with the footnotes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars in Figure 1. To determine minimum intervals between doses, see the catch-up schedule (Figure 2). School entry and adolescent vaccine age groups are shaded in gray.



NOTE: The above recommendations must be read along with the footnotes of this schedule.

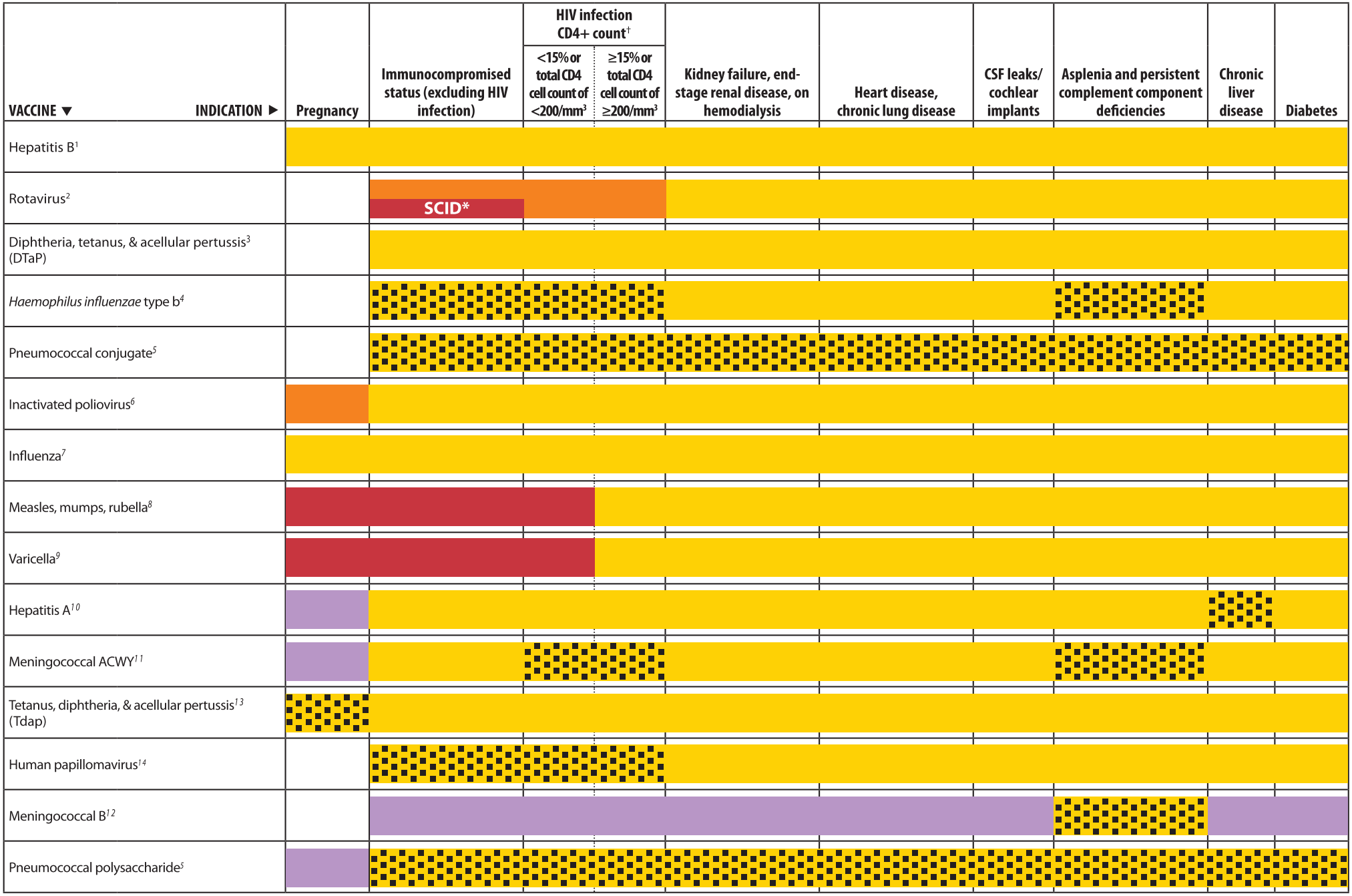
FIGURE 2. Catch-up immunization schedule for persons aged 4 months–18 years who start late or who are more than 1 month behind—United States, 2018.

The figure below provides catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed. A vaccine series does not need to be restarted, regardless of the time that has elapsed between doses. Use the section appropriate for the child's age. Always use this table in conjunction with Figure 1 and the footnotes that follow.

Vaccine	Minimum Age for Dose 1	Minimum Interval Between Doses			
		Dose 1 to Dose 2	Dose 2 to Dose 3	Dose 3 to Dose 4	Dose 4 to Dose 5
Children age 4 months through 6 years					
Hepatitis B[1]	Birth	4 weeks	8 weeks ***and*** at least 16 weeks after first dose. Minimum age for the final dose is 24 weeks.		
Rotavirus[2]	6 weeks Maximum age for first dose is 14 weeks, 6 days	4 weeks	4 weeks[2] Maximum age for final dose is 8 months, 0 days.		
Diphtheria, tetanus, and acellular pertussis[3]	6 weeks	4 weeks	4 weeks	6 months	6 months[3]
Haemophilus influenzae type b[4]	6 weeks	4 weeks if first dose was administered before the 1st birthday. 8 weeks (as final dose) if first dose was administered at age 12 through 14 months. No further doses needed if first dose was administered at age 15 months or older.	4 weeks[4] if current age is younger than 12 months **and** first dose was administered at younger than age 7 months, **and** at least 1 previous dose was PRP-T (ActHib, Pentacel, Hiberix) or unknown. 8 weeks ***and*** age 12 through 59 months (as final dose)[4] • if current age is younger than 12 months **and** first dose was administered at age 7 through 11 months; OR • if current age is 12 through 59 months **and** first dose was administered before the 1st birthday, **and** second dose administered at younger than 15 months; OR • if both doses were PRP-OMP (PedvaxHIB; Comvax) **and** were administered before the 1st birthday. No further doses needed if previous dose was administered at age 15 months or older.	8 weeks (as final dose) This dose only necessary for children age 12 through 59 months who received 3 doses before the 1st birthday.	
Pneumococcal conjugate[5]	6 weeks	4 weeks if first dose administered before the 1st birthday. 8 weeks (as final dose for healthy children) if first dose was administered at the 1st birthday or after. No further doses needed for healthy children if first dose was administered at age 24 months or older.	4 weeks if current age is younger than 12 months and previous dose given at <7 months old. 8 weeks (as final dose for healthy children) if previous dose given between 7-11 months (wait until at least 12 months old); OR if current age is 12 months or older and at least 1 dose was given before age 12 months. No further doses needed for healthy children if previous dose administered at age 24 months or older.	8 weeks (as final dose) This dose only necessary for children aged 12 through 59 months who received 3 doses before age 12 months or for children at high risk who received 3 doses at any age.	
Inactivated poliovirus[6]	6 weeks	4 weeks[6]	4 weeks[6] if current age is < 4 years 6 months (as final dose) if current age is 4 years or older	6 months[6] (minimum age 4 years for final dose).	
Measles, mumps, rubella[8]	12 months	4 weeks			
Varicella[9]	12 months	3 months			
Hepatitis A[10]	12 months	6 months			
Meningococcal[11] (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	6 weeks	8 weeks[11]	See footnote 11	See footnote 11	
Children and adolescents age 7 through 18 years					
Meningococcal[11] (MenACWY-D ≥9 mos; MenACWY-CRM ≥2 mos)	Not Applicable (N/A)	8 weeks[11]			
Tetanus, diphtheria; tetanus, diphtheria, and acellular pertussis[13]	7 years[13]	4 weeks	4 weeks if first dose of DTaP/DT was administered before the 1st birthday. 6 months (as final dose) if first dose of DTaP/DT or Tdap/Td was administered at or after the 1st birthday.	6 months if first dose of DTaP/DT was administered before the 1st birthday.	
Human papillomavirus[14]	9 years	Routine dosing intervals are recommended.[14]			
Hepatitis A[10]	N/A	6 months			
Hepatitis B[1]	N/A	4 weeks	8 weeks **and** at least 16 weeks after first dose.		
Inactivated poliovirus[6]	N/A	4 weeks	6 months[6] A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.	A fourth dose of IPV is indicated if all previous doses were administered at <4 years or if the third dose was administered <6 months after the second dose.	
Measles, mumps, rubella[8]	N/A	4 weeks			
Varicella[9]	N/A	3 months if younger than age 13 years. 4 weeks if age 13 years or older.			

NOTE: The above recommendations must be read along with the footnotes of this schedule.

Figure 3. Vaccines that might be indicated for children and adolescents aged 18 years or younger based on medical indications



*Severe Combined Immunodeficiency

†For additional information regarding HIV laboratory parameters and use of live vaccines; see the General Best Practice Guidelines for Immunization "Altered Immunocompetence" at: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html; and Table 4-1 (footnote D) at: www.cdc.gov/vaccines/hcp/acip-recs/general-recs/contraindications.html.

NOTE: The above recommendations must be read along with the footnotes of this schedule.

Footnotes — Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger, UNITED STATES, 2018

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip-recs/index.html.
For vaccine recommendations for persons 19 years of age and older, see the Adult Immunization Schedule.

Additional information

- For information on contraindications and precautions for the use of a vaccine, consult the *General Best Practice Guidelines for Immunization* and relevant ACIP statements, at www.cdc.gov/vaccines/hcp/acip-recs/index.html.
- For calculating intervals between doses, 4 weeks = 28 days. Intervals of ≥4 months are determined by calendar months.
- Within a number range (e.g., 12–18), a dash (–) should be read as "through."
- Vaccine doses administered ≤4 days before the minimum age or interval are considered valid. Doses of any vaccine administered ≥5 days earlier than the minimum interval or minimum age should not be counted as valid and should be repeated as age-appropriate. The repeat dose should be spaced after the invalid dose by the recommended minimum interval. For further details, see Table 3-1, *Recommended and minimum ages and intervals between vaccine doses,* in *General Best Practice Guidelines for Immunization* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html.
- Information on travel vaccine requirements and recommendations is available at wwwnc.cdc.gov/travel/.
- For vaccination of persons with immunodeficiencies, see Table 8-1, *Vaccination of persons with primary and secondary immunodeficiencies,* in *General Best Practice Guidelines for Immunization,* at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/immunocompetence.html; and Immunization in Special Clinical Circumstances. (In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. *Red Book: 2015 report of the Committee on Infectious Diseases. 30th ed.* Elk Grove Village, IL: American Academy of Pediatrics, 2015:68-107).
- The National Vaccine Injury Compensation Program (VICP) is a no-fault alternative to the traditional legal system for resolving vaccine injury claims. All routine child and adolescent vaccines are covered by VICP except for pneumococcal polysaccharide vaccine (PPSV23). For more information; see www.hrsa.gov/vaccinecompensation/index.html.

1. **Hepatitis B (HepB) vaccine. (minimum age: birth)**

Birth Dose (Monovalent HepB vaccine only):

- **Mother is HBsAg-Negative:** 1 dose within 24 hours of birth for medically stable infants ≥2,000 grams. Infants <2,000 grams administer 1 dose at chronological age 1 month or hospital discharge.
- **Mother is HBsAg-Positive:**
  - Give **HepB vaccine** and **0.5 mL of HBIG** (at separate anatomic sites) within 12 hours of birth, regardless of birth weight.
  - Test for HBsAg and anti-HBs at age 9–12 months. If HepB series is delayed, test 1–2 months after final dose.
- **Mother's HBsAg status is unknown:**
  - Give **HepB vaccine** within 12 hours of birth, regardless of birth weight.
  - For infants <2,000 grams, give **0.5 mL of HBIG** in addition to HepB vaccine within 12 hours of birth.
  - Determine mother's HBsAg status as soon as possible. If mother is HBsAg-positive, give **0.5 mL of HBIG** to infants ≥2,000 grams as soon as possible, but no later than 7 days of age.

Routine Series:

- A complete series is 3 doses at 0, 1–2, and 6–18 months. (Monovalent HepB vaccine should be used for doses given before age 6 weeks.)
- Infants who did not receive a birth dose should begin the series as soon as feasible (see Figure 2).
- Administration of **4 doses** is permitted when a combination vaccine containing HepB is used after the birth dose.
- **Minimum age** for the final (3rd or 4th) dose: 24 weeks.
- **Minimum Intervals:** Dose 1 to Dose 2: 4 weeks / Dose 2 to Dose 3: 8 weeks / Dose 1 to Dose 3: 16 weeks. (When 4 doses are given, substitute "Dose 4" for "Dose 3" in these calculations.)

Catch-up vaccination:

- Unvaccinated persons should complete a 3-dose series at 0, 1–2, and 6 months.
- Adolescents 11–15 years of age may use an alternative 2-dose schedule, with at least 4 months between doses (adult formulation **Recombivax HB** only).
- For other catch-up guidance, see Figure 2.

2. **Rotavirus vaccines. (minimum age: 6 weeks)**

Routine vaccination:

Rotarix: 2-dose series at 2 and 4 months.

RotaTeq: 3-dose series at 2, 4, and 6 months.

If any dose in the series is either RotaTeq or unknown, default to 3-dose series.

Catch-up vaccination:

- Do not start the series on or after age 15 weeks, 0 days.
- The maximum age for the final dose is 8 months, 0 days.
- For other catch-up guidance, see Figure 2.

3. **Diphtheria, tetanus, and acellular pertussis (DTaP) vaccine. (minimum age: 6 weeks [4 years for Kinrix or Quadracel])**

Routine vaccination:

- 5-dose series at 2, 4, 6, and 15–18 months, and 4–6 years.
  - **Prospectively:** A 4th dose may be given as early as age 12 months if at least 6 months have elapsed since the 3rd dose.
  - **Retrospectively:** A 4th dose that was inadvertently given as early as 12 months may be counted if at least 4 months have elapsed since the 3rd dose.

Catch-up vaccination:

- The 5th dose is not necessary if the 4th dose was administered at 4 years or older.
- For other catch-up guidance, see Figure 2.

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip-recs/index.html.

4. ***Haemophilus influenzae* type b (Hib) vaccine. (minimum age: 6 weeks)**

Routine vaccination:

- **ActHIB, Hiberix, or Pentacel:** 4-dose series at 2, 4, 6, and 12–15 months.
- **PedvaxHIB:** 3-dose series at 2, 4, and 12–15 months.

Catch-up vaccination:

- **1st dose at 7–11 months:** Give 2nd dose at least 4 weeks later and 3rd (final) dose at 12–15 months or 8 weeks after 2nd dose (whichever is later).
- **1st dose at 12–14 months:** Give 2nd (final) dose at least 8 weeks after 1st dose.
- **1st dose before 12 months and 2nd dose before 15 months:** Give 3rd (final) dose 8 weeks after 2nd dose.
- **2 doses of PedvaxHIB before 12 months:** Give 3rd (final) dose at 12–59 months and at least 8 weeks after 2nd dose.
- **Unvaccinated at 15–59 months:** 1 dose.
- For other catch-up guidance, see Figure 2.

Special Situations:

- **Chemotherapy or radiation treatment**
  12–59 months
  - o Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart
  - o 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

  Doses given within 14 days of starting therapy or during therapy should be repeated at least 3 months after therapy completion.
- **Hematopoietic stem cell transplant (HSCT)**
- 3-dose series with doses 4 weeks apart starting 6 to 12 months after successful transplant (regardless of Hib vaccination history).
- **Anatomic or functional asplenia (including sickle cell disease)**
  12–59 months
  - o Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.
  - o 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

  Unimmunized persons 5 years or older*
  - o Give 1 dose
- **Elective splenectomy**
  Unimmunized* persons 15 months or older
  - o Give 1 dose (preferably at least 14 days before procedure).
- **HIV infection**
  12–59 months
  - o Unvaccinated or only 1 dose before 12 months: Give 2 doses 8 weeks apart.
  - o 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

  Unimmunized persons 5–18 years*
  - o Give 1 dose
- **Immunoglobulin deficiency, early component complement deficiency**
  12–59 months
  - o Unvaccinated or only 1 dose before 12 months: Give 2 doses, 8 weeks apart.
  - o 2 or more doses before 12 months: Give 1 dose, at least 8 weeks after previous dose.

**Unimmunized* = Less than routine series (through 14 months) OR no doses (14 months or older)

5. **Pneumococcal vaccines. (minimum age: 6 weeks [PCV13], 2 years [PPSV23])**

Routine vaccination with PCV13:

- 4-dose series at 2, 4, 6, and 12–15 months.

Catch-up vaccination with PCV13:

- 1 dose for healthy children aged 24–59 months with any incomplete* PCV13 schedule
- For other catch-up guidance, see Figure 2.

Special situations: High-risk conditions: Administer PCV13 doses before PPSV23 if possible.

Chronic heart disease (particularly cyanotic congenital heart disease and cardiac failure); chronic lung disease (including asthma treated with high-dose, oral, corticosteroids); diabetes mellitus:

Age 2–5 years:

- Any incomplete* schedules with:
  - o 3 PCV13 doses: 1 dose of PCV13 (at least 8 weeks after any prior PCV13 dose).
  - o <3 PCV13 doses: 2 doses of PCV13, 8 weeks after the most recent dose and given 8 weeks apart.
- No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).

Age 6-18 years:

- No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).

Cerebrospinal fluid leak; cochlear implant:

Age 2–5 years:

- Any incomplete* schedules with:
  - o 3 PCV13 doses: 1 dose of PCV13 (at least 8 weeks after any prior PCV13 dose).
  - o <3 PCV13 doses: 2 doses of PCV13, 8 weeks after the most recent dose and given 8 weeks apart.
- No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).

Age 6–18 years:

- No history of either PCV13 or PPSV23: 1 dose of PCV13, 1 dose of PPSV23 at least 8 weeks later.
- Any PCV13 but no PPSV23: 1 dose of PPSV23 at least 8 weeks after the most recent dose of PCV13
- PPSV23 but no PCV13: 1 dose of PCV13 at least 8 weeks after the most recent dose of PPSV23.

Sickle cell disease and other hemoglobinopathies; anatomic or functional asplenia; congenital or acquired immunodeficiency; HIV infection; chronic renal failure; nephrotic syndrome; malignant neoplasms, leukemias, lymphomas, Hodgkin disease, and other diseases associated with treatment with immunosuppressive drugs or radiation therapy; solid organ transplantation; multiple myeloma:

Age 2–5 years:

- Any incomplete* schedules with:
  - o 3 PCV13 doses: 1 dose of PCV13 (at least 8 weeks after any prior PCV13 dose).
  - o <3 PCV13 doses: 2 doses of PCV13, 8 weeks after the most recent dose and given 8 weeks apart.
- No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose) and a 2nd dose of PPSV23 5 years later.

Age 6–18 years:

- No history of either PCV13 or PPSV23: 1 dose of PCV13, 2 doses of PPSV23 (1st dose of PPSV23 administered 8 weeks after PCV13 and 2nd dose of PPSV23 administered at least 5 years after the 1st dose of PPSV23).
- Any PCV13 but no PPSV23: 2 doses of PPSV23 (1st dose of PPSV23 to be given 8 weeks after the most recent dose of PCV13 and 2nd dose of PPSV23 administered at least 5 years after the 1st dose of PPSV23).

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip-recs/index.html.

- PPSV23 but no PCV13: 1 dose of PCV13 at least 8 weeks after the most recent PPSV23 dose and a 2nd dose of PPSV23 to be given 5 years after the 1st dose of PPSV23 and at least 8 weeks after a dose of PCV13.

Chronic liver disease, alcoholism:

Age 6–18 years:

- No history of PPSV23: 1 dose of PPSV23 (at least 8 weeks after any prior PCV13 dose).

*Incomplete schedules are any schedules where PCV13 doses have not been completed according to ACIP recommended catch-up schedules. The total number and timing of doses for complete PCV13 series are dictated by the age at first vaccination. See Tables 8 and 9 in the ACIP pneumococcal vaccine recommendations (www.cdc.gov/mmwr/pdf/rr/rr5911.pdf) for complete schedule details.

6. Inactivated poliovirus vaccine (IPV). (minimum age: 6 weeks)

Routine vaccination:

- 4-dose series at ages 2, 4, 6–18 months, and 4–6 years. Administer the final dose on or after the 4th birthday and at least 6 months after the previous dose.

Catch-up vaccination:

- In the first 6 months of life, use minimum ages and intervals only for travel to a polio-endemic region or during an outbreak.
- If 4 or more doses were given before the 4th birthday, give 1 more dose at age 4–6 years and at least 6 months after the previous dose.
- A 4th dose is not necessary if the 3rd dose was given on or after the 4th birthday and at least 6 months after the previous dose.
- IPV is not routinely recommended for U.S. residents 18 years and older.

Series Containing Oral Polio Vaccine (OPV), *either mixed OPV-IPV or OPV-only series*:

- Total number of doses needed to complete the series is the same as that recommended for the U.S. IPV schedule. See www.cdc.gov/mmwr/volumes/66/wr/mm6601a6.htm?s_cid=mm6601a6_w.
- Only trivalent OPV (tOPV) counts toward the U.S. vaccination requirements. For guidance to assess doses documented as "OPV" see www.cdc.gov/mmwr/volumes/66/wr/mm6606a7.htm?s_cid=mm6606a7_w.
- For other catch-up guidance, see Figure 2.

7. Influenza vaccines. (minimum age: 6 months)

Routine vaccination:

- Administer an age-appropriate formulation and dose of influenza vaccine annually.
  - **Children 6 months–8 years** who did not receive at least 2 doses of influenza vaccine before July 1, 2017 should receive 2 doses separated by at least 4 weeks.
  - **Persons 9 years and older** 1 dose
- Live attenuated influenza vaccine (LAIV) not recommended for the 2017–18 season.
- For additional guidance, see the 2017–18 ACIP influenza vaccine recommendations (*MMWR* August 25, 2017;66(2):1-20: www.cdc.gov/mmwr/volumes/66/rr/pdfs/rr6602.pdf).

(For the 2018–19 season, see the 2018–19 ACIP influenza vaccine recommendations.)

8. Measles, mumps, and rubella (MMR) vaccine. (minimum age: 12 months for routine vaccination)

Routine vaccination:

- 2-dose series at 12–15 months and 4–6 years.
- The 2nd dose may be given as early as 4 weeks after the 1st dose.

Catch-up vaccination:

- Unvaccinated children and adolescents: 2 doses at least 4 weeks apart.

International travel:

- **Infants 6–11 months:** 1 dose before departure. Revaccinate with 2 doses at 12–15 months (12 months for children in high-risk areas) and 2nd dose as early as 4 weeks later.
- **Unvaccinated children 12 months and older:** 2 doses at least 4 weeks apart before departure.

Mumps outbreak:

- Persons ≥12 months who previously received ≤2 doses of mumps-containing vaccine and are identified by public health authorities to be at increased risk during a mumps outbreak should receive a dose of mumps-virus containing vaccine.

9. Varicella (VAR) vaccine. (minimum age: 12 months)

Routine vaccination:

- 2-dose series: 12–15 months and 4–6 years.
- The 2nd dose may be given as early as 3 months after the 1st dose (a dose given after a 4-week interval may be counted).

Catch-up vaccination:

- Ensure persons 7–18 years without evidence of immunity (see *MMWR* 2007;56[No. RR-4], at www.cdc.gov/mmwr/pdf/rr/rr5604.pdf) have 2 doses of varicella vaccine:
  - **Ages 7–12:** routine interval 3 months (minimum interval: 4 weeks).
  - **Ages 13 and older:** minimum interval 4 weeks.

10. Hepatitis A (HepA) vaccine. (minimum age: 12 months)

Routine vaccination:

- 2 doses, separated by 6-18 months, between the 1st and 2nd birthdays. (A series begun before the 2nd birthday should be completed even if the child turns 2 before the second dose is given.)

Catch-up vaccination:

- Anyone 2 years of age or older may receive HepA vaccine if desired. Minimum interval between doses is 6 months.

Special populations:

Previously unvaccinated persons who should be vaccinated:

- Persons traveling to or working in countries with high or intermediate endemicity
- Men who have sex with men
- Users of injection and non-injection drugs
- Persons who work with hepatitis A virus in a research laboratory or with non-human primates
- Persons with clotting-factor disorders
- Persons with chronic liver disease
- Persons who anticipate close, personal contact (e.g., household or regular babysitting) with an international adoptee during the first 60 days after arrival in the United States from a country with high or intermediate endemicity (administer the 1st dose as soon as the adoption is planned—ideally at least 2 weeks before the adoptee's arrival).

11. Serogroup A, C, W, Y meningococcal vaccines. (Minimum age: 2 months [Menveo], 9 months [Menactra].

Routine:

- 2-dose series: 11-12 years and 16 years.

Catch-Up:

- Age 13-15 years: 1 dose now and booster at age 16-18 years. Minimum interval 8 weeks.
- Age 16-18 years: 1 dose.

For further guidance on the use of the vaccines mentioned below, see: www.cdc.gov/vaccines/hcp/acip-recs/index.html.

Special populations and situations:
Anatomic or functional asplenia, sickle cell disease, HIV infection, persistent complement component deficiency (including eculizumab use):

- **Menveo**
  - 1st dose at 8 weeks: 4-dose series at 2, 4, 6, and 12 months.
  - 1st dose at 7–23 months: 2 doses (2nd dose at least 12 weeks after the 1st dose and after the 1st birthday).
  - 1st dose at 24 months or older: 2 doses at least 8 weeks apart.
- **Menactra**
  - Persistent complement component deficiency:
    - 9–23 months: 2 doses at least 12 weeks apart
    - 24 months or older: 2 doses at least 8 weeks apart
  - Anatomic or functional asplenia, sickle cell disease, or HIV infection:
    - 24 months or older: 2 doses at least 8 weeks apart.
    - **Menactra** must be administered at least 4 weeks after completion of PCV13 series.

Children who travel to or live in countries where meningococcal disease is hyperendemic or epidemic, including countries in the African meningitis belt or during the Hajj, or exposure to an outbreak attributable to a vaccine serogroup:

- Children <24 months of age:
  - **Menveo (2-23 months):**
    - 1st dose at 8 weeks: 4-dose series at 2, 4, 6, and 12 months.
    - 1st dose at 7-23 months: 2 doses (2nd dose at least 12 weeks after the 1st dose and after the 1st birthday).
  - **Menactra (9-23 months):**
    - 2 doses (2nd dose at least 12 weeks after the 1st dose. 2nd dose may be administered as early as 8 weeks after the 1st dose in travelers).
- Children 2 years or older: 1 dose of **Menveo** or **Menactra**.

Note: Menactra should be given either before or at the same time as DTaP. For MenACWY booster dose recommendations for groups listed under "Special populations and situations" above, and additional meningococcal vaccination information, see meningococcal *MMWR* publications at: www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html.

12. Serogroup B meningococcal vaccines (minimum age: 10 years [Bexsero, Trumenba].

Clinical discretion: Adolescents not at increased risk for meningococcal B infection who want MenB vaccine.

MenB vaccines may be given at clinical discretion to adolescents 16–23 years (preferred age 16–18 years) who are not at increased risk.

- **Bexsero**: 2 doses at least 1 month apart.
- **Trumenba**: 2 doses at least 6 months apart. If the 2nd dose is given earlier than 6 months, give a 3rd dose at least 4 months after the 2nd.

Special populations and situations:
Anatomic or functional asplenia, sickle cell disease, persistent complement component deficiency (including eculizumab use), serogroup B meningococcal disease outbreak

- **Bexsero**: 2-dose series at least 1 month apart.
- **Trumenba**: 3-dose series at 0, 1-2, and 6 months.

Note: **Bexsero** and **Trumenba** are not interchangeable.
For additional meningococcal vaccination information, see meningococcal *MMWR* publications at: www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html.

13. Tetanus, diphtheria, and acellular pertussis (Tdap) vaccine. (minimum age: 11 years for routine vaccinations, 7 years for catch-up vaccination)

Routine vaccination:

- **Adolescents 11–12 years of age:** 1 dose.
- **Pregnant adolescents:** 1 dose during each pregnancy (preferably during the early part of gestational weeks 27–36).
- Tdap may be administered regardless of the interval since the last tetanus- and diphtheria-toxoid-containing vaccine.

Catch-up vaccination:

- **Adolescents 13–18 who have not received Tdap**: 1 dose, followed by a Td booster every 10 years.
- **Persons aged 7–18 years not fully immunized with DTaP**: 1 dose of Tdap as part of the catch-up series (preferably the first dose). If additional doses are needed, use Td.
- **Children 7–10 years** who receive Tdap inadvertently or as part of the catch-up series may receive the routine Tdap dose at 11–12 years.
- **DTaP inadvertently given after the 7th birthday**:
  - **Child 7–10**: DTaP may count as part of catch-up series. Routine Tdap dose at 11-12 may be given.
  - **Adolescent 11–18**: Count dose of DTaP as the adolescent Tdap booster.
- For other catch-up guidance, see Figure 2.

14. Human papillomavirus (HPV) vaccine (minimum age: 9 years)

Routine and catch-up vaccination:

- Routine vaccination for all adolescents at 11–12 years (can start at age 9) and through age 18 if not previously adequately vaccinated. Number of doses dependent on age at initial vaccination:
  - **Age 9–14 years at initiation:** 2-dose series at 0 and 6–12 months. Minimum interval: 5 months (repeat a dose given too soon at least 12 weeks after the invalid dose and at least 5 months after the 1st dose).
  - **Age 15 years or older at initiation:** 3-dose series at 0, 1–2 months, and 6 months. Minimum intervals: 4 weeks between 1st and 2nd dose; 12 weeks between 2nd and 3rd dose; 5 months between 1st and 3rd dose (repeat dose(s) given too soon at or after the minimum interval since the most recent dose).
- Persons who have completed a valid series with any HPV vaccine do not need any additional doses.

Special situations:

- **History of sexual abuse or assault**: Begin series at age 9 years.
- **Immunocompromised* (including HIV)** aged 9–26 years: 3-dose series at 0, 1–2 months, and 6 months.
- **Pregnancy:** Vaccination not recommended, but there is no evidence the vaccine is harmful. No intervention is needed for women who inadvertently received a dose of HPV vaccine while pregnant. Delay remaining doses until after pregnancy. Pregnancy testing not needed before vaccination.

*See MMWR, December 16, 2016;65(49):1405–1408, at www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6549a5.pdf.

Recommended and Minimum Ages and Intervals Between Doses of Routinely Recommended Vaccines[1,2,3,4]

Vaccine and dose number	Recommended age for this dose	Minimum age for this dose	Recommended interval to next dose	Minimum interval to next dose
Diphtheria-tetanus-acellular pertussis (DTaP)-1[5]	2 months	6 weeks	8 weeks	4 weeks
DTaP-2	4 months	10 weeks	8 weeks	4 weeks
DTaP-3	6 months	14 weeks	6-12 months[6]	6 months[6]
DTaP-4[6]	15-18 months	15 months[6]	3 years	6 months
DTaP-5	4-6 years	4 years	—	—
Haemophilus influenzae type b (Hib)-1[7]	2 months	6 weeks	8 weeks	4 weeks
Hib-2	4 months	10 weeks	8 weeks	4 weeks
Hib-3[8]	6 months	14 weeks	6-9 months	8 weeks
Hib-4	12-15 months	12 months	—	—
Hepatitis A (HepA)-1[5]	12-23 months	12 months	6-18 months	6 months
HepA-2	≥18 months	18 months	—	—
Hepatitis B (HepB)-1	Birth	Birth	4 weeks-4 months	4 weeks
HepB-2	1-2 months	4 weeks	8 weeks-17 months	8 weeks
HepB-3[9]	6-18 months	24 weeks	—	—
Herpes zoster (HZV)[10]	≥60 years	60 years	—	—
Human papillomavirus (HPV)-1[11]	11-12 years	9 years	8 weeks	4 weeks
HPV-2	11-12 years (+ 2 months)	9 years (+ 4 weeks)	4 months	12 weeks[11]
HPV-3[11,12]	11-12 years (+ 6 months)	9 years (+5 months)	—	—
Influenza, inactivated (IIV)[13]	≥6 months	6 months[14]	4 weeks	4 weeks
Influenza, live attenuated (LAIV)[13]	2-49 years	2 years	4 weeks	4 weeks
Measles-mumps-rubella (MMR)-1[15]	12-15 months	12 months	3-5 years	4 weeks
MMR-2[15]	4-6 years	13 months	—	—
Meningococcal conjugate (MenACWY)-1[16]	11-12 years	6 weeks[17]	4-5 years	8 weeks
MenACWY-2	16 years	11 years[18] (+ 8 weeks)	—	—
Meningococcal polysaccharide (MPSV4)-1[16]	—	2 years	5 years	5 years
MPSV4-2	—	7 years	—	—
Pneumococcal conjugate (PCV13)-1[7]	2 months	6 weeks	8 weeks	4 weeks
PCV-2	4 months	10 weeks	8 weeks	4 weeks
PCV-3	6 months	14 weeks	6 months	8 weeks
PCV-4	12-15 months	12 months	—	—
Pneumococcal polysaccharide (PPSV)-1	—	2 years	5 years	3 years
PPSV-2[19]	—	7 years	—	—
Poliovirus, Inactivated (IPV)-1[5]	2 months	6 weeks	8 weeks	4 weeks
IPV-2	4 months	10 weeks	8 weeks-14 months	4 weeks
IPV-3	6-18 months	14 weeks	3-5 years	6 months
IPV-4[20]	4-6 years	4 years	—	—
Rotavirus (RV)-1[21]	2 months	6 weeks	8 weeks	4 weeks
RV-2	4 months	10 weeks	8 weeks	4 weeks
RV-3[21]	6 months	14 weeks	—	—
Tetanus-diphtheria (Td)	11-12 years	7 years	10 years	5 years
Tetanus-diphtheria-acellular pertussis (Tdap)[22]	≥11 years	7 years	—	—
Varicella (Var)-1[15]	12-15 months	12 months	3-5 years	12 weeks[23]
Var-2[15]	4-6 years	15 months[24]	—	—

1 Combination vaccines are available. Use of licensed combination vaccines is generally preferred to separate injections of their equivalent component vaccines. When administering combination vaccines, the minimum age for administration is the oldest age for any of the individual components (*exception*: the minimum age for the first dose of MenHibrix is 6 weeks). The minimum interval between doses is equal to the greatest interval of any of the individual components.

2 Information on travel vaccines including typhoid, Japanese encephalitis, and yellow fever, is available at www.cdc.gov/travel. Information on other vaccines that are licensed in the US but not distributed, including anthrax and smallpox, is available at https://emergency.cdc.gov/bioterrorism/.

3 "Months" refers to calendar months.

4 A hyphen used to express a range (as in "12-15 months") means "through."

5 Combination vaccines containing a hepatitis B component (Pediarix and Twinrix) are available. These vaccines should not be administered to infants younger than 6 weeks because of the other components (i.e., Hib, DTaP, HepA, and IPV).

6 The minimum recommended interval between DTaP-3 and DTaP-4 is 6 months. However, DTaP-4 need not be repeated if administered at least 4 months after DTaP-3. This is a special grace period of 2 months, which can be used when evaluating records retrospectively. An additional 4 days should not be added to this grace period.

7 Children receiving the first dose of Hib or PCV13 vaccine at age 7 months or older require fewer doses to complete the series.

8 If PedvaxHib is administered at ages 2 and 4 months, a dose at age 6 months is not required. The minimum age for the final dose is 12 months.

9 HepB-3 should be administered at least 8 weeks after HepB-2 and at least 16 weeks after HepB-1, and should not be administered before 24 weeks of age.

10 Herpes zoster vaccine is recommended as a single dose for persons 60 years of age and older.

11 Gardasil and Gardasil 9 are approved for males and females 9 through 26 years of age. The minimum age for HPV-3 is based on the baseline minimum age for the first dose (i.e., 9 years) and the minimum interval of 5 months between the first and third dose. Dose 3 need not be repeated if it is administered at least 5 months after the first dose, and if the intervals between doses 1 and 2, and doses 2 and 3, are 4 weeks and 12 weeks, respectively.

12 A two-dose HPV vaccine schedule is recommended for most persons who begin the series before the 15th birthday. See www.cdc.gov/mmwr/volumes/65/wr/pdfs/mm6549a5.pdf for details.

13 One dose of influenza vaccine per season is recommended for most people. Some children younger than 9 years of age should receive 2 doses in a single season. See current influenza recommendations for details.

14 The minimum age for inactivated influenza vaccine varies by vaccine manufacturer. See package inserts for vaccine-specific minimum ages.

15 Combination MMRV vaccine can be used for children 12 months through 12 years of age. See www.cdc.gov/mmwr/pdf/rr/rr5903.pdf for details.

16 Revaccination with meningococcal vaccine is recommended for previously vaccinated persons who remain at high risk for meningococcal disease. See www.cdc.gov/mmwr/pdf/rr/rr6202.pdf for details.

17 High-risk children can receive Menactra as young as 9 months and Menveo as young as 2 months. MenHibrix is given as a four-dose series at 2, 4, 6, and 12-18 months. It can be given as young as 6 weeks for high-risk children.

18 For routine, non-high risk adolescent vaccination, the minimum age for the booster dose is 16 years.

19 A second dose of PPSV23 5 years after the first dose is recommended for persons ≤65 years of age at highest risk for serious pneumococcal infection, and for those who are likely to have a rapid decline in pneumococcal antibody concentration. See www.cdc.gov/mmwr/PDF/rr/rr4608.pdf for details.

20 A fourth dose is not needed if the third dose was administered on or after the 4th birthday and at least 6 months after the previous dose.

21 The first dose of rotavirus must be administered no earlier than 6 weeks and no later than 14 weeks 6 days. The vaccine series should not be started for infants 15 weeks 0 days or older. Rotavirus vaccine should not be administered to children older than 8 months 0 days, regardless of the number of doses received before that age. If two doses of Rotarix are administered as age appropriate, a third dose is not necessary.

22 Only one dose of Tdap is recommended. Subsequent doses should be given as Td. For management of a tetanus-prone wound in a person who has received a primary series of a tetanus-toxoid containing vaccine, the minimum interval after a previous dose of any tetanus-containing vaccine is 5 years.

23 A special grace period of 2 months, based on expert opinion, can be applied to the minimum interval of 3 months, when evaluating records retrospectively, which results in an acceptable minimum interval of 4 weeks. An additional 4 days should not be added to this grace period.

24 A special grace period of 2 months, based on expert opinion, can be applied to the minimum age of 15 months when evaluating records retrospectively, which will result in an acceptable minimum age of 13 months. An additional 4 days should not be added to this grace period.

Adapted from Table 3-1, ACIP General Best Practice Guidelines for Immunization. June 2017

Recommended intervals between administration of **immune globulin preparations** and **measles-** or **varicella-containing vaccine**

Product / Indication	Dose, including mg immunoglobulin G (IgG)/kg body weight	Recommended interval before measles or varicella-containing[1] vaccine administration
Blood transfusion		
- Red blood cells (RBCs), washed	10 mL/kg (negligible IgG/kg) IV	None
- RBCs, adenine-saline added	10 mL/kg (10 mg IgG/kg) IV	3 months
- Packed RBCs (hematocrit 65%)[2]	10 mL/kg (60 mg IgG/kg) IV	6 months
- Whole blood (hematocrit 35%-50%)[2]	10 mL/kg (80-100 mg IgG/kg) IV	6 months
- Plasma/platelet products	10 mL/kg (160 mg IgG/kg) IV	7 months
Botulinum Immune Globulin Intravenous (Human)	1.5 mL/kg (75 mg IgG/kg) IV	6 months
Cytomegalovirus IGIV	150 mg/kg maximum	6 months
Hepatitis A IG		
- Contact prophylaxis	0.02 mL/kg (3.3 mg IgG/kg) IM	3 months
- International travel	0.06 mL/kg (10 mg IgG/kg) IM	3 months
Hepatitis B IG (HBIG)	0.06 mL/kg (10 mg IgG/kg) IM	3 months
IGIV		
- Replacement therapy for immune deficiencies[3]	300-400 mg/kg IV	8 months
- Immune thrombocytopenic purpura treatment	400 mg/kg IV	8 months
- Measles IG, contact prophylaxis (immunocompromised contact)	400 mg/kg IV	8 months
- Postexposure varicella prophylaxis	400 mg/kg IV	8 months
- Immune thrombocytopenic purpura treatment	1,000 mg/kg IV	10 months
Measles IG, contact prophylaxis - Standard (i.e., nonimmunocompromised) contact	0.5 mL/kg (80 mg IgG/kg) IM	6 months
Monoclonal antibody to respiratory syncytial virus F protein (Synagis™)[4]	15 mg/kg (IM)	None
Rabies IG (RIG)	20 IU/kg (22 mg IgG/kg) IM	4 months
Tetanus IG (TIG)	250 units (10 mg IgG/kg) IM	3 months
Varicella IG[5]	125 units/10 kg (60-200 mg IgG/kg) IM, maximum 625 units	5 months

This table is not intended for determining the correct indications and dosages for using antibody-containing products. Unvaccinated persons might not be fully protected against measles during the entire recommended interval, and additional doses of IG or measles vaccine might be indicated after measles exposure. Concentrations of measles antibody in an IG preparation can vary by manufacturer's lot. Rates of antibody clearance after receipt of an IG preparation also might vary. Recommended intervals are extrapolated from an estimated half-life of 30 days for passively acquired antibody and an observed interference with the immune response to measles vaccine for 5 months after a dose of 80 mg IgG/kg.

1 Does not include zoster vaccine. Zoster vaccine may be given with antibody-containing blood products.

2 Assumes a serum IgG concentration of 16 mg/mL.

3 Measles vaccination is recommended for children with mild or moderate immunosuppression from human immunodeficiency virus (HIV) infection, and varicella vaccination may be considered for children with mild or moderate immunosuppression from HIV, but both are contraindicated for persons with severe immunosuppression from HIV or any other immunosuppressive disorder.

4 Contains antibody only to respiratory syncytial virus.

5 Licensed VariZIG is a purified human IG preparation made from plasma containing high levels of anti-varicella antibodies (IgG).

Adapted from Table 5, ACIP General Recommendations on Immunization June 2014

Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2018

In February 2018, the *Recommended Immunization Schedule for Adults Aged 19 Years or Older, United States, 2018* became effective, as recommended by the Advisory Committee on Immunization Practices (ACIP) and approved by the Centers for Disease Control and Prevention (CDC). The adult immunization schedule was also approved by the American College of Physicians, the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American College of Nurse-Midwives.

CDC announced the availability of the 2018 adult immunization schedule in the *Morbidity and Mortality Weekly Report (MMWR)*.[1] The schedule is published in its entirety in the *Annals of Internal Medicine*.[2]

The adult immunization schedule consists of figures that summarize routinely recommended vaccines for adults by age groups and medical conditions and other indications, footnotes for the figures, and a table of vaccine contraindications and precautions. Note the following when reviewing the adult immunization schedule:

- The figures in the adult immunization schedule should be reviewed with the accompanying footnotes.
- The figures and footnotes display indications for which vaccines, if not previously administered, should be administered unless noted otherwise.
- The table of contraindications and precautions identifies populations and situations for which vaccines should not be used or should be used with caution.
- When indicated, administer recommended vaccines to adults whose vaccination history is incomplete or unknown.
- Increased interval between doses of a multidose vaccine series does not diminish vaccine effectiveness; it is not necessary to restart the vaccine series or add doses to the series because of an extended interval between doses.
- Combination vaccines may be used when any component of the combination is indicated and when the other components of the combination are not contraindicated.
- The use of trade names in the adult immunization schedule is for identification purposes only and does not imply endorsement by the ACIP or CDC.

Special populations that need additional considerations include:

- Pregnant women. Pregnant women should receive the tetanus, diphtheria, and acellular pertussis vaccine (Tdap) during pregnancy and the influenza vaccine during or before pregnancy. Live vaccines (e.g., measles, mumps, and rubella vaccine [MMR]) are contraindicated.
- Asplenia. Adults with asplenia have specific vaccination recommendations because of their increased risk for infection by encapsulated bacteria. Anatomical or functional asplenia includes congenital or acquired asplenia, splenic dysfunction, sickle cell disease and other hemoglobinopathies, and splenectomy.
- Immunocompromising conditions. Adults with immunosuppression should generally avoid live vaccines. Inactivated vaccines (e.g., pneumococcal vaccines) are generally acceptable. High-level immunosuppression includes HIV infection with a CD4 cell count <200 cells/µL, receipt of daily corticosteroid therapy with ≥20 mg of prednisone or equivalent for ≥14 days, primary immunodeficiency disorder (e.g., severe combined immunodeficiency or complement component deficiency), and receipt of cancer chemotherapy. Other immunocompromising conditions and immunosuppressive medications to consider when vaccinating adults can be found in *IDSA Clinical Practice Guideline for Vaccination of the Immunocompromised Host*.[3] Additional information on vaccinating immunocompromised adults is in *General Best Practice Guidelines for Immunization*.[4]

Additional resources for health care providers include:

- Details on vaccines recommended for adults and complete ACIP statements at www.cdc.gov/vaccines/hcp/acip-recs/index.html
- Vaccine Information Statements that explain benefits and risks of vaccines at www.cdc.gov/vaccines/hcp/vis/index.html
- Information and resources on vaccinating pregnant women at www.cdc.gov/vaccines/adults/rec-vac/pregnant.html
- Information on travel vaccine requirements and recommendations at www.cdc.gov/travel/destinations/list
- CDC Vaccine Schedules App for immunization service providers to download at www.cdc.gov/vaccines/schedules/hcp/schedule-app.html
- Adult Vaccination Quiz for self-assessment of vaccination needs based on age, health conditions, and other indications at www2.cdc.gov/nip/adultimmsched/default.asp
- *Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger* at www.cdc.gov/vaccines/schedules/hcp/child-adolescent.html

Report suspected cases of reportable vaccine-preventable diseases to the local or state health department, and report all clinically significant postvaccination events to the Vaccine Adverse Event Reporting System at www.vaers.hhs.gov or by telephone, 800-822-7967. All vaccines included in the adult immunization schedule except 23-valent pneumococcal polysaccharide and zoster vaccines are covered by the Vaccine Injury Compensation Program. Information on how to file a vaccine injury claim is available at www.hrsa.gov/vaccinecompensation or by telephone, 800-338-2382. Submit questions and comments to CDC through www.cdc.gov/cdc-info or by telephone, 800-CDC-INFO (800-232-4636), in English and Spanish, 8:00am–8:00pm ET, Monday–Friday, excluding holidays.

The following abbreviations are used for vaccines in the adult immunization schedule (in the order of their appearance):

IIV	inactivated influenza vaccine
RIV	recombinant influenza vaccine
Tdap	tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine
Td	tetanus and diphtheria toxoids
MMR	measles, mumps, and rubella vaccine
VAR	varicella vaccine
RZV	recombinant zoster vaccine
ZVL	zoster vaccine live
HPV vaccine	human papillomavirus vaccine
PCV13	13-valent pneumococcal conjugate vaccine
PPSV23	23-valent pneumococcal polysaccharide vaccine
HepA	hepatitis A vaccine
HepA-HepB	hepatitis A vaccine and hepatitis B vaccine
HepB	hepatitis B vaccine
MenACWY	serogroups A, C, W, and Y meningococcal vaccine
MenB	serogroup B meningococcal vaccine
Hib	*Haemophilus influenzae* type b vaccine

1. MMWR Morb Mortal Wkly Rep. 2018;66(5):xx–xx. Available at www.cdc.gov/mmwr/volumes/67/xxxxxxxxxx.
2. Ann Intern Med. 2018;168:xxx–xxx. Available at annals.org/aim/article/doi/10.7326/M17-3439.
3. Clin Infect Dis. 2014;58:e44-100. Available at www.idsociety.org/Templates/Content.aspx?id=32212256011.
4. Kroger et al. Available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Figure 1. Recommended immunization schedule for adults aged 19 years or older by age group, United States, 2018

This figure should be reviewed with the accompanying footnotes. This figure and the footnotes describe indications for which vaccines, if not previously administered, should be administered unless noted otherwise.

Vaccine	19–21 years	22–26 years	27–49 years	50–64 years	≥65 years
Influenza[1]	1 dose annually				
Tdap[2] or Td[2]	1 dose Tdap, then Td booster every 10 yrs				
MMR[3]	1 or 2 doses depending on indication (if born in 1957 or later)				
VAR[4]	2 doses				
RZV[5] (preferred)				2 doses RZV (preferred)	
or				or	
ZVL[5]				1 dose ZVL	
HPV–Female[6]	2 or 3 doses depending on age at series initiation				
HPV–Male[6]	2 or 3 doses depending on age at series initiation				
PCV13[7]	1 dose				
PPSV23[7]	1 or 2 doses depending on indication				1 dose
HepA[8]	2 or 3 doses depending on vaccine				
HepB[9]	3 doses				
MenACWY[10]	1 or 2 doses depending on indication, then booster every 5 yrs if risk remains				
MenB[10]	2 or 3 doses depending on vaccine				
Hib[11]	1 or 3 doses depending on indication				

Recommended for adults who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended for adults with other indications

No recommendation

Figure 2. Recommended immunization schedule for adults aged 19 years or older by medical condition and other indications, United States, 2018

This figure should be reviewed with the accompanying footnotes. This figure and the footnotes describe indications for which vaccines, if not previously administered, should be administered unless noted otherwise.

Vaccine	Pregnancy[1-6]	Immuno-compromised (excluding HIV infection)[3-7,11]	HIV infection CD4+ count (cells/µL)[3-7,9-10] <200	HIV infection CD4+ count (cells/µL)[3-7,9-10] ≥200	Asplenia, complement deficiencies[7,10,11]	End-stage renal disease, on hemodialysis[7,9]	Heart or lung disease, alcoholism[7]	Chronic liver disease[7-9]	Diabetes[7,9]	Health care personnel[3,4,9]	Men who have sex with men[6,8,9]
Influenza[1]	1 dose annually										
Tdap[2] or Td[2]	1 dose Tdap each pregnancy	1 dose Tdap, then Td booster every 10 yrs									
MMR[3]	contraindicated			1 or 2 doses depending on indication							
VAR[4]	contraindicated			2 doses							
RZV[5] (preferred)					2 doses RZV at age ≥50 yrs (preferred)						
or					or						
ZVL[5]	contraindicated				1 dose ZVL at age ≥60 yrs						
HPV–Female[6]		3 doses through age 26 yrs			2 or 3 doses through age 26 yrs						
HPV–Male[6]		3 doses through age 26 yrs			2 or 3 doses through age 21 yrs						2 or 3 doses through age 26 yrs
PCV13[7]		1 dose									
PPSV23[7]		1, 2, or 3 doses depending on indication									
HepA[8]	2 or 3 doses depending on vaccine										
HepB[9]	3 doses										
MenACWY[10]	1 or 2 doses depending on indication , then booster every 5 yrs if risk remains										
MenB[10]	2 or 3 doses depending on vaccine										
Hib[11]	3 doses HSCT recipients only			1 dose							

Recommended for adults who meet the age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended for adults with other indications

Contraindicated

No recommendation

Footnotes. Recommended immunization schedule for adults aged 19 years or older, United States, 2018

1. Influenza vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html

General information

- Administer 1 dose of age-appropriate inactivated influenza vaccine (IIV) or recombinant influenza vaccine (RIV) annually
- Live attenuated influenza vaccine (LAIV) is not recommended for the 2017–2018 influenza season
- A list of currently available influenza vaccines is available at www.cdc.gov/flu/protect/vaccine/vaccines.htm

Special populations

- Administer age-appropriate IIV or RIV to:
  - **Pregnant women**
  - Adults with **hives-only egg allergy**
  - Adults with **egg allergy other than hives** (e.g., angioedema or respiratory distress): Administer IIV or RIV in a medical setting under supervision of a health care provider who can recognize and manage severe allergic conditions

2. Tetanus, diphtheria, and pertussis vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/tdap-td.html

General information

- Administer to adults who previously did not receive a dose of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) as an adult or child (routinely recommended at age 11–12 years) 1 dose of Tdap, followed by a dose of tetanus and diphtheria toxoids (Td) booster every 10 years
- Information on the use of Tdap or Td as tetanus prophylaxis in wound management is available at www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a1.htm

Special populations

- **Pregnant women**: Administer 1 dose of Tdap during each pregnancy, preferably in the early part of gestational weeks 27–36

3. Measles, mumps, and rubella vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mmr.html

General information

- Administer 1 dose of measles, mumps, and rubella vaccine (MMR) to adults with no evidence of immunity to measles, mumps, or rubella
- Evidence of immunity is:
  - Born before 1957 (except for health care personnel, see below)
  - Documentation of receipt of MMR
  - Laboratory evidence of immunity or disease
- Documentation of a health care provider-diagnosed disease without laboratory confirmation is not considered evidence of immunity

Special populations

- **Pregnant women and nonpregnant women of childbearing age** with no evidence of immunity to rubella: Administer 1 dose of MMR (if pregnant, administer MMR after pregnancy and before discharge from health care facility)
- **HIV infection and CD4 cell count ≥200 cells/µL for at least 6 months** and no evidence of immunity to measles, mumps, or rubella: Administer 2 doses of MMR at least 28 days apart
- **Students in postsecondary educational institutions, international travelers**, and **household contacts of immunocompromised persons**: Administer 2 doses of MMR at least 28 days apart (or 1 dose of MMR if previously administered 1 dose of MMR)
- **Health care personnel born in 1957 or later** with no evidence of immunity: Administer 2 doses of MMR at least 28 days apart for measles or mumps, or 1 dose of MMR for rubella (if born before 1957, consider MMR vaccination)
- Adults who **previously received ≤2 doses of mumps-containing vaccine and are identified by public health authority to be at increased risk for mumps in an outbreak**: Administer 1 dose of MMR
- MMR is contraindicated for pregnant women and adults with severe immunodeficiency

4. Varicella vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/varicella.html

General information

- Administer to adults without evidence of immunity to varicella 2 doses of varicella vaccine (VAR) 4–8 weeks apart if previously received no varicella-containing vaccine (if previously received 1 dose of varicella-containing vaccine, administer 1 dose of VAR at least 4 weeks after the first dose)
- Evidence of immunity to varicella is:
  - U.S.-born before 1980 (except for pregnant women and health care personnel, see below)
  - Documentation of receipt of 2 doses of varicella or varicella-containing vaccine at least 4 weeks apart
  - Diagnosis or verification of history of varicella or herpes zoster by a health care provider
  - Laboratory evidence of immunity or disease

Special populations

- Administer 2 doses of VAR 4–8 weeks apart if previously received no varicella-containing vaccine (if previously received 1 dose of varicella-containing vaccine, administer 1 dose of VAR at least 4 weeks after the first dose) to:
  - **Pregnant women without evidence of immunity**: Administer the first of the 2 doses or the second dose after pregnancy and before discharge from health care facility
  - **Health care personnel without evidence of immunity**
- Adults with **HIV infection and CD4 cell count ≥200 cells/µL**: May administer, based on individual clinical decision, 2 doses of VAR 3 months apart
- VAR is contraindicated for pregnant women and adults with severe immunodeficiency

5. Zoster vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/shingles.html

General information

- Administer 2 doses of recombinant zoster vaccine (RZV) 2–6 months apart to adults aged 50 years or older regardless of past episode of herpes zoster or receipt of zoster vaccine live (ZVL)
- Administer 2 doses of RZV 2–6 months apart to adults who previously received ZVL at least 2 months after ZVL
- For adults aged 60 years or older, administer either RZV or ZVL (RZV is preferred)

Special populations

- ZVL is contraindicated for pregnant women and adults with severe immunodeficiency

6. Human papillomavirus vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hpv.html

General information

- Administer human papillomavirus (HPV) vaccine to **females through age 26 years** and **males through age 21 years** (males aged 22 through 26 years may be vaccinated based on individual clinical decision)
- The number of doses of HPV vaccine to be administered depends on age at initial HPV vaccination
  - **No previous dose of HPV vaccine**: Administer 3-dose series at 0, 1–2, and 6 months (minimum intervals: 4 weeks between doses 1 and 2, 12 weeks between doses 2 and 3, and 5 months between doses 1 and 3; repeat doses if given too soon)
  - **Aged 9–14 years at HPV vaccine series initiation and received 1 dose or 2 doses less than 5 months apart**: Administer 1 dose
  - **Aged 9–14 years at HPV vaccine series initiation and received 2 doses at least 5 months apart**: No additional dose is needed

Special populations

- Adults with **immunocompromising conditions (including HIV infection)** through age 26 years: Administer 3-dose series at 0, 1–2, and 6 months
- **Men who have sex with men** through age 26 years: Administer 2- or 3-dose series depending on age at initial vaccination (see above); if no history of HPV vaccine, administer 3-dose series at 0, 1–2, and 6 months
- **Pregnant women** through age 26 years: HPV vaccination is not recommended during pregnancy, but there is no evidence that the vaccine is harmful and no intervention needed for women who inadvertently receive HPV vaccine while pregnant; delay remaining doses until after pregnancy; pregnancy testing is not needed before vaccination

7. Pneumococcal vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/pneumo.html

General information

- Administer to immunocompetent adults aged 65 years or older 1 dose of 13-valent pneumococcal conjugate vaccine (PCV13), if not previously administered, followed by 1 dose of 23-valent pneumococcal polysaccharide vaccine (PPSV23) at least 1 year after PCV13; if PPSV23 was previously administered but not PCV13, administer PCV13 at least 1 year after PPSV23
- When both PCV13 and PPSV23 are indicated, administer PCV13 first (PCV13 and PPSV23 should not be administered during the same visit); additional information on vaccine timing is available at www.cdc.gov/vaccines/vpd/pneumo/downloads/pneumo-vaccine-timing.pdf

Special populations

- Administer to adults aged 19 through 64 years with the following chronic conditions 1 dose of PPSV23 (at age 65 years or older, administer 1 dose of PCV13, if not previously received, and another dose of PPSV23 at least 1 year after PCV13 and at least 5 years after PPSV23):
  - **Chronic heart disease** (excluding hypertension)
  - **Chronic lung disease**
  - **Chronic liver disease**
  - **Alcoholism**
  - **Diabetes mellitus**
  - **Cigarette smoking**
- Administer to adults aged 19 years or older with the following indications 1 dose of PCV13 followed by 1 dose of PPSV23 at least 8 weeks after PCV13, and a second dose of PPSV23 at least 5 years after the first dose of PPSV23 (if the most recent dose of PPSV23 was administered before age 65 years, at age 65 years or older, administer another dose of PPSV23 at least 5 years after the last dose of PPSV23):
  - **Immunodeficiency disorders (**including B- and T-lymphocyte deficiency, complement deficiencies, and phagocytic disorders)
  - **HIV infection**
  - **Anatomical or functional asplenia (**including sickle cell disease and other hemoglobinopathies)
  - **Chronic renal failure and nephrotic syndrome**
- Administer to adults aged 19 years or older with the following indications 1 dose of PCV13 followed by 1 dose of PPSV23 at least 8 weeks after PCV13 (if the dose of PPSV23 was administered before age 65 years, at age 65 years or older, administer another dose of PPSV23 at least 5 years after the last dose of PPSV23):
  - **Cerebrospinal fluid leak**
  - **Cochlear implant**

8. Hepatitis A vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepa.html

General information

- Administer to adults who have a specific risk (see below), or lack a risk factor but want protection, 2-dose series of single antigen hepatitis A vaccine (HepA; Havrix at 0 and 6–12 months or Vaqta at 0 and 6–18 months; minimum interval: 6 months) or a 3-dose series of combined hepatitis A and hepatitis B vaccine (HepA-HepB) at 0, 1, and 6 months; minimum intervals: 4 weeks between first and second doses, 5 months between second and third doses

Special populations

- Administer HepA or HepA-HepB to adults with the following indications:
  - **Travel** to or work in countries with high or intermediate hepatitis A endemicity
  - **Men who have sex with men**
  - **Injection or noninjection drug use**
  - **Work with hepatitis A virus in a research laboratory or with nonhuman primates infected with hepatitis A virus**
  - **Clotting factor disorders**
  - **Chronic liver disease**
  - Close, personal **contact with an international adoptee** (e.g., household or regular babysitting) during the first 60 days after arrival in the United States from a country with high or intermediate endemicity (administer the first dose as soon as the adoption is planned)
  - Healthy adults **through age 40 years who have recently been exposed to hepatitis A virus**; adults older than age 40 years may receive HepA or HepA-HepB if hepatitis A immunoglobulin cannot be obtained

9. Hepatitis B vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hepb.html

General information

- Administer to adults who have a specific risk (see below), or lack a risk factor but want protection, 3-dose series of single antigen hepatitis B vaccine (HepB) or combined hepatitis A and hepatitis B vaccine (HepA-HepB) at 0, 1, and 6 months (minimum intervals: 4 weeks between doses 1 and 2 for HepB and HepA-HepB; between doses 2 and 3, 8 weeks for HepB and 5 months for HepA-HepB)

Special populations

- Administer HepB or HepA-HepB to adults with the following indications:
  - **Chronic liver disease** (e.g., hepatitis C infection, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, alanine aminotransferase [ALT] or aspartate aminotransferase [AST] level greater than twice the upper limit of normal)
  - **HIV infection**
  - **Percutaneous or mucosal risk of exposure to blood** (e.g., **household contacts** of hepatitis B surface antigen [HBsAg]-positive persons; adults younger than age 60 years with **diabetes mellitus** or aged 60 years or older with diabetes mellitus based on individual clinical decision; adults in predialysis care or receiving **hemodialysis or peritoneal dialysis**; recent or current **injection drug users**; **health care and public safety workers** at risk for exposure to blood or blood-contaminated body fluids)
  - **Sexual exposure risk** (e.g., sex partners of HBsAg-positive persons; sexually active persons not in a mutually monogamous relationship; persons seeking evaluation or treatment for a sexually transmitted infection; and **men who have sex with men** [MSM])
  - Receive care in **settings where a high proportion of adults have risks for hepatitis B infection** (e.g., facilities providing sexually transmitted disease treatment, drug-abuse treatment and prevention services, hemodialysis and end-stage renal disease programs, institutions for developmentally disabled persons, health care settings targeting services to injection drug users or MSM, HIV testing and treatment facilities, and correctional facilities)
  - **Travel** to countries with high or intermediate hepatitis B endemicity

10. Meningococcal vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mening.html

Special populations: Serogroups A, C, W, and Y meningococcal vaccine (MenACWY)

- Administer 2 doses of MenACWY at least 8 weeks apart and revaccinate with 1 dose of MenACWY every 5 years, if the risk remains, to adults with the following indications:
  - **Anatomical or functional asplenia (**including sickle cell disease and other hemoglobinopathies)
  - **HIV infection**
  - **Persistent complement component deficiency**
  - **Eculizumab use**
- Administer 1 dose of MenACWY and revaccinate with 1 dose of MenACWY every 5 years, if the risk remains, to adults with the following indications:
  - **Travel to or live in countries where meningococcal disease is hyperendemic or epidemic**, including countries in the African meningitis belt or during the Hajj
  - At risk from a **meningococcal disease outbreak attributed to serogroup A, C, W, or Y**
  - **Microbiologists** routinely exposed to *Neisseria meningitidis*
  - **Military recruits**
  - **First-year college students who live in residential housing** (if they did not receive MenACWY at age 16 years or older)

General Information: Serogroup B meningococcal vaccine (MenB)

- May administer, based on individual clinical decision, to young adults and adolescents aged 16–23 years (preferred age is 16–18 years) who are not at increased risk 2-dose series of MenB-4C (Bexsero) at least 1 month apart or 2-dose series of MenB-FHbp (Trumenba) at least 6 months apart
- MenB-4C and MenB-FHbp are not interchangeable

Special populations: MenB

- Administer 2-dose series of MenB-4C at least 1 month apart or 3-dose series of MenB-FHbp at 0, 1–2, and 6 months to adults with the following indications:
  - **Anatomical or functional asplenia** (including sickle cell disease)
  - **Persistent complement component deficiency**
  - **Eculizumab use**
  - At risk from a **meningococcal disease outbreak attributed to serogroup B**
  - **Microbiologists** routinely exposed to *Neisseria meningitidis*

11. *Haemophilus influenzae* type b vaccination

www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/hib.html

Special populations

- Administer *Haemophilus influenzae* type b vaccine (Hib) to adults with the following indications:
  - **Anatomical or functional asplenia** (including sickle cell disease) or undergoing elective splenectomy: Administer 1 dose if not previously vaccinated (preferably at least 14 days before elective splenectomy)
  - **Hematopoietic stem cell transplant** (HSCT): Administer 3-dose series with doses 4 weeks apart starting 6 to 12 months after successful transplant regardless of Hib vaccination history

Table. Contraindications and precautions for vaccines recommended for adults aged 19 years or older*

The Advisory Committee on Immunization Practices (ACIP) recommendations and package inserts for vaccines provide information on contraindications and precautions related to vaccines. Contraindications are conditions that increase chances of a serious adverse reaction in vaccine recipients and the vaccine should not be administered when a contraindication is present. Precautions should be reviewed for potential risks and benefits for vaccine recipients.

Contraindications and precautions for vaccines routinely recommended for adults

Vaccine(s)	Contraindications	Precautions
All vaccines routinely recommended for adults	• Severe reaction, e.g., anaphylaxis, after a previous dose or to a vaccine component	• Moderate or severe acute illness with or without fever

Additional contraindications and precautions for vaccines routinely recommended for adults

Vaccine(s)	Additional Contraindications	Additional Precautions
IIV[1]		• History of Guillain-Barré syndrome within 6 weeks after previous influenza vaccination • Egg allergy other than hives, e.g., angioedema, respiratory distress, lightheadedness, or recurrent emesis; or required epinephrine or another emergency medical intervention (IIV may be administered in an inpatient or outpatient medical setting and under the supervision of a health care provider who is able to recognize and manage severe allergic conditions)
RIV[1]		• History of Guillain-Barré syndrome within 6 weeks after previous influenza vaccination
Tdap, Td	• For pertussis-containing vaccines: encephalopathy, e.g., coma, decreased level of consciousness, or prolonged seizures, not attributable to another identifiable cause within 7 days of administration of a previous dose of a vaccine containing tetanus or diphtheria toxoid or acellular pertussis	• Guillain-Barré syndrome within 6 weeks after a previous dose of tetanus toxoid-containing vaccine • History of Arthus-type hypersensitivity reactions after a previous dose of tetanus or diphtheria toxoid-containing vaccine. Defer vaccination until at least 10 years have elapsed since the last tetanus toxoid-containing vaccine • For pertussis-containing vaccine, progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy (until a treatment regimen has been established and the condition has stabilized)
MMR[2]	• Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy[3], human immunodeficiency virus (HIV) infection with severe immunocompromise • Pregnancy	• Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[4] • History of thrombocytopenia or thrombocytopenic purpura • Need for tuberculin skin testing[5]
VAR[2]	• Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy[3], HIV infection with severe immunocompromise • Pregnancy	• Recent (within 11 months) receipt of antibody-containing blood product (specific interval depends on product)[4] • Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)
ZVL[2]	• Severe immunodeficiency, e.g., hematologic and solid tumors, chemotherapy, congenital immunodeficiency or long-term immunosuppressive therapy[3], HIV infection with severe immunocompromise • Pregnancy	• Receipt of specific antiviral drugs (acyclovir, famciclovir, or valacyclovir) 24 hours before vaccination (avoid use of these antiviral drugs for 14 days after vaccination)
HPV vaccine		• Pregnancy
PCV13	• Severe allergic reaction to any vaccine containing diphtheria toxoid	

1. For additional information on use of influenza vaccines among persons with egg allergy, see: CDC. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices—United States, 2016–17 influenza season. MMWR. 2016;65(RR-5):1–54. Available at www.cdc.gov/mmwr/volumes/65/rr/rr6505a1.htm.
2. MMR may be administered together with VAR or ZVL on the same day. If not administered on the same day, separate live vaccines by at least 28 days.
3. Immunosuppressive steroid dose is considered to be daily receipt of 20 mg or more prednisone or equivalent for 2 or more weeks. Vaccination should be deferred for at least 1 month after discontinuation of immunosuppressive steroid therapy. Providers should consult ACIP recommendations for complete information on the use of specific live vaccines among persons on immune-suppressing medications or with immune suppression because of other reasons.
4. Vaccine should be deferred for the appropriate interval if replacement immune globulin products are being administered. See: Best practices guidance of the Advisory Committee on Immunization Practices (ACIP). Available at www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html.
5. Measles vaccination may temporarily suppress tuberculin reactivity. Measles-containing vaccine may be administered on the same day as tuberculin skin testing, or should be postponed for at least 4 weeks after vaccination.

* Adapted from: CDC. Table 6. Contraindications and precautions to commonly used vaccines. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices. MMWR. 2011;60(No. RR-2):40–1 and from: Hamborsky J, Kroger A, Wolfe S, eds. Appendix A. Epidemiology and prevention of vaccine preventable diseases. 13th ed. Washington, DC: Public Health Foundation, 2015. Available at www.cdc.gov/vaccines/pubs/pinkbook/index.html.

Abbreviations of vaccines

IIV	inactivated influenza vaccine
RIV	recombinant influenza vaccine
Tdap	tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine
Td	tetanus and diphtheria toxoids
MMR	measles, mumps, and rubella vaccine
VAR	varicella vaccine
RZV	recombinant zoster vaccine
ZVL	zoster vaccine live
HPV vaccine	human papillomavirus vaccine
PCV13	13-valent pneumococcal conjugate vaccine
PPSV23	23-valent pneumococcal polysaccharide vaccine
HepA	hepatitis A vaccine
HepA-HepB	hepatitis A and hepatitis B vaccines
HepB	hepatitis B vaccine
MenACWY	serogroups A, C, W, and Y meningococcal vaccine
MenB	serogroup B meningococcal vaccine
Hib	*Haemophilus influenzae* type b vaccine

Screening Checklist for Contraindications to Vaccines for Children and Teens

PATIENT NAME _____

DATE OF BIRTH ____ / ____ / ____
month day year

For parents/guardians: The following questions will help us determine which vaccines your child may be given today. If you answer "yes" to any question, it does not necessarily mean your child should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Is the child sick today?	☐	☐	☐
2. Does the child have allergies to medications, food, a vaccine component, or latex?	☐	☐	☐
3. Has the child had a serious reaction to a vaccine in the past?	☐	☐	☐
4. Has the child had a health problem with lung, heart, kidney or metabolic disease (e.g., diabetes), asthma, or a blood disorder? Is he/she on long-term aspirin therapy?	☐	☐	☐
5. If the child to be vaccinated is 2 through 4 years of age, has a healthcare provider told you that the child had wheezing or asthma in the past 12 months?	☐	☐	☐
6. If your child is a baby, have you ever been told he or she has had intussusception?	☐	☐	☐
7. Has the child, a sibling, or a parent had a seizure; has the child had brain or other nervous system problems?	☐	☐	☐
8. Does the child or a family member have cancer, leukemia, HIV/AIDS, or any other immune system problems?	☐	☐	☐
9. In the past 3 months, has the child taken medications that affect the immune system such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or had radiation treatments?	☐	☐	☐
10. In the past year, has the child received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	☐	☐	☐
11. Is the child/teen pregnant or is there a chance she could become pregnant during the next month?	☐	☐	☐
12. Has the child received vaccinations in the past 4 weeks?	☐	☐	☐

FORM COMPLETED BY _____ DATE _____

FORM REVIEWED BY _____ DATE _____

Did you bring your immunization record card with you? **yes** ☐ **no** ☐

It is important to have a personal record of your child's vaccinations. If you don't have one, ask the child's healthcare provider to give you one with all your child's vaccinations on it. Keep it in a safe place and bring it with you every time you seek medical care for your child. Your child will need this document to enter day care or school, for employment, or for international travel.

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Technical content reviewed by the Centers for Disease Control and Prevention

Saint Paul, Minnesota ▪ 651-647-9009 ▪ www.immunize.org ▪ www.vaccineinformation.org

www.immunize.org/catg.d/p4060.pdf ▪ Item #P4060 (9/17)

Information for Healthcare Professionals about the Screening Checklist for Contraindications (Children and Teens)

Are you interested in knowing why we included a certain question on the screening checklist? If so, read the information below. If you want to find out even more, consult the references listed at the end.

1. Is the child sick today? *[all vaccines]*

There is no evidence that acute illness reduces vaccine efficacy or increases vaccine adverse events.[1,2] However, as a precaution with moderate or severe acute illness, all vaccines should be delayed until the illness has improved. Mild illnesses (such as otitis media, upper respiratory infections, and diarrhea) are NOT contraindications to vaccination. Do not withhold vaccination if a person is taking antibiotics.

2. Does the child have allergies to medications, food, a vaccine component, or latex? *[all vaccines]*

An anaphylactic reaction to latex is a contraindication to vaccines that contain latex as a component or as part of the packaging (e.g., vial stoppers, prefilled syringe plungers, prefilled syringe caps). If a person has anaphylaxis after eating gelatin, do not administer vaccines containing gelatin. A local reaction to a prior vaccine dose or vaccine component, including latex, is not a contraindication to a subsequent dose or vaccine containing that component. For information on vaccines supplied in vials or syringes containing latex, see reference 3; for an extensive list of vaccine components, see reference 4. People with egg allergy of any severity can receive any recommended influenza vaccine (i.e., any IIV or RIV) that is otherwise appropriate for the patient's age. For people with a history of severe allergic reaction to egg involving any symptom other than hives (e.g., angioedema, respiratory distress), or who required epinephrine or another emergency medical intervention, the vaccine should be administered in a medical setting, such as a clinic, health department, or physician office. Vaccine administration should be supervised by a healthcare provider who is able to recognize and manage severe allergic conditions.[5]

3. Has the child had a serious reaction to a vaccine in the past? *[all vaccines]*

History of anaphylactic reaction (see question 2) to a previous dose of vaccine or vaccine component is a contraindication for subsequent doses.[1] History of encephalopathy within 7 days following DTP/DTaP is a contraindication for further doses of pertussis-containing vaccine. Precautions to DTaP (not Tdap) include the following: (a) seizure within 3 days of a dose, (b) pale or limp episode or collapse within 48 hours of a dose, (c) continuous crying for 3 or more hours within 48 hours of a dose, and (d) fever of 105°F (40°C) within 48 hours of a previous dose. There are other adverse events that might have occurred following vaccination that constitute contraindications or precautions to future doses. Under normal circumstances, vaccines are deferred when a precaution is present. However, situations may arise when the benefit outweighs the risk (e.g., during a community pertussis outbreak).

4. Has the child had a health problem with lung, heart, kidney, or metabolic disease (e.g., diabetes), asthma, or a blood disorder? Is he/she on long-term aspirin therapy? *[MMR, MMRV, LAIV]*

A history of thrombocytopenia or thrombocytopenic purpura is a precaution to MMR and MMRV vaccines. The safety of live, attenuated influenza vaccine (LAIV) in children and teens with lung, heart, kidney, or metabolic disease (e.g., diabetes), or a blood disorder has not been established. These conditions, including asthma in children ages 5 years and older, should be considered precautions for the use of LAIV. Children on long-term aspirin therapy should not be given LAIV; instead, they should be given IIV.

5. If the child to be vaccinated is 2 through 4 years of age, has a healthcare provider told you that the child had wheezing or asthma in the past 12 months? *[LAIV]*

Children ages 2 through 4 years who have had a wheezing episode within the past 12 months should not be given LAIV. Instead, these children should be given IIV.

6. If your child is a baby, have you ever been told that he or she has had intussusception? *[Rotavirus]*

Infants who have a history of intussusception (i.e., the telescoping of one portion of the intestine into another) should not be given rotavirus vaccine.

7. Has the child, a sibling, or a parent had a seizure; has the child had brain or other nervous system problem? *[DTaP, Td, Tdap, IIV, LAIV, MMRV]*

DTaP and Tdap are contraindicated in children who have a history of encephalopathy within 7 days following DTP/DTaP. An unstable progressive neurologic problem is a precaution to the use of DTaP and Tdap. For children with stable neurologic disorders (including seizures) unrelated to vaccination, or for children with a family history of seizures, vaccinate as usual (exception: children with a personal or family [i.e., parent or sibling] history of seizures generally should not be vaccinated with MMRV; they should receive separate MMR and VAR vaccines). A history of Guillain-Barré syndrome (GBS) is a consideration with the following: 1) Td/Tdap: if GBS has occurred within 6 weeks of a tetanus-containing vaccine and decision is made to continue vaccination, give Tdap instead of Td if no history of prior Tdap; 2) Influenza vaccine (IIV or LAIV): if GBS has occurred within 6 weeks of a prior influenza vaccination, vaccinate with IIV if at high risk for severe influenza complications.

NOTE: Live attenuated influenza vaccine (LAIV4; FluMist) is not recommended by CDC's Advisory Committee on Immunization Practices for use in the U.S. for the 2017–18 influenza season.

8. Does the child or a family member have cancer, leukemia, HIV/AIDS, or any other immune system problem? *[LAIV, MMR, MMRV, RV, VAR]*

Live virus vaccines (e.g., MMR, MMRV, varicella, rotavirus, and LAIV) are usually contraindicated in immunocompromised children. However, there are exceptions. For example, MMR is recommended for asymptomatic HIV-infected children who do not have evidence of severe immunosuppression. Likewise, varicella vaccine should be considered for HIV-infected children with age-specific CD4+ T-lymphocyte percentage at 15% or greater, or for children 6–7 years with CD4+ T-lymphocyte counts of greater than or equal to 200 cell/µL. Varicella vaccine may be considered for HIV-infected children with age-specific CD4+ T-lymphocyte percentage of greater than or equal to 200 cells/µL. Varicella and MMR vaccines should not be given to a child or teen with a family history of congenital or hereditary immunodeficiency in first-degree relatives (e.g., parents, siblings) unless the immune competence of the potential vaccine recipient has been clinically substantiated or verified by a laboratory. Immunosuppressed children should not receive LAIV. Infants who have been diagnosed with severe combined immunodeficiency (SCID) should not be given a live virus vaccine, including rotavirus (RV) vaccine. Other forms of immunosuppression are a precaution, not a contraindication, to rotavirus vaccine. For details, consult ACIP recommendations.[1,6,7,8]

9. In the past 3 months, has the child taken medications that affect the immune system such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or had radiation treatments? *[LAIV, MMR, MMRV, VAR]*

Live virus vaccines (e.g., LAIV, MMR, MMRV, VAR) should be postponed until after chemotherapy or long-term high-dose steroid therapy has ended. For details and length of time to postpone, consult the ACIP statement.[1] Some immune mediator and immune modulator drugs (especially the antitumor-necrosis factor agents adalimumab, infliximab, and etanercept) may be immunosuppressive. The use of live vaccines should be avoided in persons taking these drugs.[1] To find specific vaccination schedules for stem cell transplant (bone marrow transplant) patients, see reference 9. LAIV, when recommended, can be given only to healthy non-pregnant people ages 2 through 49 years.

10. In the past year, has the child received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug? *[LAIV, MMR, MMRV, VAR]*

Certain live virus vaccines (e.g., LAIV, MMR, MMRV, varicella) may need to be deferred, depending on several variables. Consult the most current ACIP recommendations or the current Red Book for the most current information on intervals between antiviral drugs, immune globulin or blood product administration and live virus vaccines.[1,2]

11. Is the child/teen pregnant or is there a chance she could become pregnant during the next month? *[HPV, IPV, LAIV, MMR, MMRV, VAR]*

Live virus vaccines (e.g., MMR, MMRV, varicella, LAIV) are contraindicated one month before and during pregnancy because of the theoretical risk of virus transmission to the fetus.[1,2] Sexually active young women who receive a live virus vaccine should be instructed to practice careful contraception for one month following receipt of the vaccine.[7-10] On theoretical grounds, inactivated poliovirus vaccine should not be given during pregnancy; however, it may be given if risk of exposure is imminent (e.g., travel to endemic areas) and immediate protection is needed. Inactivated influenza vaccine and Tdap are both recommended during pregnancy. HPV vaccine is not recommended during pregnancy.

12. Has the child received vaccinations in the past 4 weeks? *[LAIV, MMR, MMRV, VAR, yellow fever]*

Children who were given either LAIV or an injectable live virus vaccine (e.g., MMR, MMRV, varicella, yellow fever) should wait 28 days before receiving another vaccination of this type. Inactivated vaccines may be given at the same time or at any spacing interval.

REFERENCES

1. CDC. General best practice guidelines for immunization. Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP) at www.cdc.gov/vaccines/hcp/acip-recs/downloads/general-recs.pdf.
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4. Table of Vaccine Components: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.
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10. CDC. Notice to readers: Revised ACIP recommendation for avoiding pregnancy after receiving a rubella-containing vaccine. *MMWR* 2001; 50 (49).

Cuestionario de contraindicaciones para vacunación de niños y adolescentes

NOMBRE DEL PACIENTE _____

FECHA DE NACIMIENTO ____/____/____
mes día año

A los padres/tutores: Las siguientes preguntas nos ayudarán a determinar cuáles vacunas le podremos administrar a su hijo hoy. Si responde "sí" a alguna pregunta, no necesariamente significa que no se debe vacunar a su hijo. Simplemente quiere decir que hay que hacerle más preguntas. Si alguna pregunta no está clara, solicítele a su proveedor de atención médica que se la explique.

	sí	no	no sé
1. ¿El niño está enfermo hoy?	☐	☐	☐
2. ¿El niño es alérgico a algún medicamento, alimento, componente de vacunas o al látex?	☐	☐	☐
3. ¿El niño ha tenido alguna reacción seria a una vacuna en el pasado?	☐	☐	☐
4. ¿El niño ha tenido algún problema de salud como enfermedad de pulmonar, cardíaca, renal o metabólica (como diabetes), asma o un trastorno de la sangre? ¿Está en terapia de aspirina a largo plazo?	☐	☐	☐
5. Si el niño que va a ser vacunado tiene entre 2 y 4 años de edad, ¿le ha dicho algún proveedor de atención médica que el niño tuvo sibilancias o asma en los últimos 12 meses?	☐	☐	☐
6. Si el niño es un bebé, ¿le han dicho alguna vez que tuvo intususcepción?	☐	☐	☐
7. ¿El niño, uno de sus hermanos o padres, ha tenido convulsiones; el niño ha tenido problemas cerebrales o algún otro problema del sistema nervioso?	☐	☐	☐
8. ¿El niño o un miembro de su familia tiene cáncer, leucemia, VIH/SIDA o cualquier otro problema del sistema inmunitario?	☐	☐	☐
9. ¿En los últimos 3 meses, el niño ha tomado medicamentos que afecten el sistema inmunitario, como prednisona, otros esteroides o medicamentos contra el cáncer; medicamentos para el tratamiento de la artritis reumatoide, la enfermedad de Crohn o la psoriasis, o tuvo tratamientos de radiación?	☐	☐	☐
10. Durante el año pasado, ¿el niño recibió una transfusión de sangre o de productos sanguíneos, o se le administró inmunoglobulina o gammaglobulina o algún medicamento antiviral?	☐	☐	☐
11. ¿La niña/adolescente está embarazada o hay alguna posibilidad de que quede embarazada durante el próximo mes?	☐	☐	☐
12. ¿Se le aplicó alguna vacuna al niño en las últimas 4 semanas?	☐	☐	☐

FORMA LLENADA POR _____ FECHA _____

FORMA REVISADA POR _____ FECHA _____

¿Trajo su cartilla de vacunación consigo? **sí** ☐ **no** ☐

Es importante que tenga un registro personal de las vacunas de su hijo. Si no lo tiene, pídale al proveedor de atención médica de su hijo que le dé uno con todas las vacunas de su hijo. Guárdelo en un lugar seguro y llévelo con usted todas las veces que busque atención médica para su hijo. Su hijo necesitará este documento para ingresar a la guardería o a la escuela, para obtener empleos o para viajar al extranjero.

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"Screening Checklist for Contraindications to Vaccines for Children and Teens"

Saint Paul, Minnesota • 651-647-9009 • www.immunize.org • www.vaccineinformation.org

www.immunize.org/catg.d/p4060-01.pdf • Item #P4060-01 Spanish (9/17)

Information for Healthcare Professionals about the Screening Checklist for Contraindications (Children and Teens)

Are you interested in knowing why we included a certain question on the screening checklist? If so, read the information below. If you want to find out even more, consult the references listed at the end.

1. Is the child sick today? *[all vaccines]*

There is no evidence that acute illness reduces vaccine efficacy or increases vaccine adverse events.[1,2] However, as a precaution with moderate or severe acute illness, all vaccines should be delayed until the illness has improved. Mild illnesses (such as otitis media, upper respiratory infections, and diarrhea) are NOT contraindications to vaccination. Do not withhold vaccination if a person is taking antibiotics.

2. Does the child have allergies to medications, food, a vaccine component, or latex? *[all vaccines]*

An anaphylactic reaction to latex is a contraindication to vaccines that contain latex as a component or as part of the packaging (e.g., vial stoppers, prefilled syringe plungers, prefilled syringe caps). If a person has anaphylaxis after eating gelatin, do not administer vaccines containing gelatin. A local reaction to a prior vaccine dose or vaccine component, including latex, is not a contraindication to a subsequent dose or vaccine containing that component. For information on vaccines supplied in vials or syringes containing latex, see reference 3; for an extensive list of vaccine components, see reference 4. People with egg allergy of any severity can receive any recommended influenza vaccine (i.e., any IIV or RIV) that is otherwise appropriate for the patient's age. For people with a history of severe allergic reaction to egg involving any symptom other than hives (e.g., angioedema, respiratory distress), or who required epinephrine or another emergency medical intervention, the vaccine should be administered in a medical setting, such as a clinic, health department, or physician office. Vaccine administration should be supervised by a healthcare provider who is able to recognize and manage severe allergic conditions.[5]

3. Has the child had a serious reaction to a vaccine in the past? *[all vaccines]*

History of anaphylactic reaction (see question 2) to a previous dose of vaccine or vaccine component is a contraindication for subsequent doses.[1] History of encephalopathy within 7 days following DTP/DTaP is a contraindication for further doses of pertussis-containing vaccine. Precautions to DTaP (not Tdap) include the following: (a) seizure within 3 days of a dose, (b) pale or limp episode or collapse within 48 hours of a dose, (c) continuous crying for 3 or more hours within 48 hours of a dose, and (d) fever of 105°F (40°C) within 48 hours of a previous dose. There are other adverse events that might have occurred following vaccination that constitute contraindications or precautions to future doses. Under normal circumstances, vaccines are deferred when a precaution is present. However, situations may arise when the benefit outweighs the risk (e.g., during a community pertussis outbreak).

4. Has the child had a health problem with lung, heart, kidney, or metabolic disease (e.g., diabetes), asthma, or a blood disorder? Is he/she on long-term aspirin therapy? *[MMR, MMRV, LAIV]*

A history of thrombocytopenia or thrombocytopenic purpura is a precaution to MMR and MMRV vaccines. The safety of live, attenuated influenza vaccine (LAIV) in children and teens with lung, heart, kidney, or metabolic disease (e.g., diabetes), or a blood disorder has not been established. These conditions, including asthma in children ages 5 years and older, should be considered precautions for the use of LAIV. Children on long-term aspirin therapy should not be given LAIV; instead, they should be given IIV.

5. If the child to be vaccinated is 2 through 4 years of age, has a healthcare provider told you that the child had wheezing or asthma in the past 12 months? *[LAIV]*

Children ages 2 through 4 years who have had a wheezing episode within the past 12 months should not be given LAIV. Instead, these children should be given IIV.

6. If your child is a baby, have you ever been told that he or she has had intussusception? *[Rotavirus]*

Infants who have a history of intussusception (i.e., the telescoping of one portion of the intestine into another) should not be given rotavirus vaccine.

7. Has the child, a sibling, or a parent had a seizure; has the child had brain or other nervous system problem? *[DTaP, Td, Tdap, IIV, LAIV, MMRV]*

DTaP and Tdap are contraindicated in children who have a history of encephalopathy within 7 days following DTP/DTaP. An unstable progressive neurologic problem is a precaution to the use of DTaP and Tdap. For children with stable neurologic disorders (including seizures) unrelated to vaccination, or for children with a family history of seizures, vaccinate as usual (exception: children with a personal or family [i.e., parent or sibling] history of seizures generally should not be vaccinated with MMRV; they should receive separate MMR and VAR vaccines). A history of Guillain-Barré syndrome (GBS) is a consideration with the following: 1) Td/Tdap: if GBS has occurred within 6 weeks of a tetanus-containing vaccine and decision is made to continue vaccination, give Tdap instead of Td if no history of prior Tdap; 2) Influenza vaccine (IIV or LAIV): if GBS has occurred within 6 weeks of a prior influenza vaccination, vaccinate with IIV if at high risk for severe influenza complications.

NOTE: Live attenuated influenza vaccine (LAIV4; FluMist) is not recommended by CDC's Advisory Committee on Immunization Practices for use in the U.S. for the 2017–18 influenza season.

8. Does the child or a family member have cancer, leukemia, HIV/AIDS, or any other immune system problem? *[LAIV, MMR, MMRV, RV, VAR]*

Live virus vaccines (e.g., MMR, MMRV, varicella, rotavirus, and LAIV) are usually contraindicated in immunocompromised children. However, there are exceptions. For example, MMR is recommended for asymptomatic HIV-infected children who do not have evidence of severe immunosuppression. Likewise, varicella vaccine should be considered for HIV-infected children with age-specific CD4+ T-lymphocyte percentage at 15% or greater, or for children 6–7 years with CD4+ T-lymphocyte counts of greater than or equal to 200 cell/µL. Varicella vaccine may be considered for HIV-infected children with age-specific CD4+ T-lymphocyte percentage of greater than or equal to 200 cells/µL. Varicella and MMR vaccines should not be given to a child or teen with a family history of congenital or hereditary immunodeficiency in first-degree relatives (e.g., parents, siblings) unless the immune competence of the potential vaccine recipient has been clinically substantiated or verified by a laboratory. Immunosuppressed children should not receive LAIV. Infants who have been diagnosed with severe combined immunodeficiency (SCID) should not be given a live virus vaccine, including rotavirus (RV) vaccine. Other forms of immunosuppression are a precaution, not a contraindication, to rotavirus vaccine. For details, consult ACIP recommendations.[1,6,7,8]

9. In the past 3 months, has the child taken medications that affect the immune system such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or had radiation treatments? *[LAIV, MMR, MMRV, VAR]*

Live virus vaccines (e.g., LAIV, MMR, MMRV, VAR) should be postponed until after chemotherapy or long-term high-dose steroid therapy has ended. For details and length of time to postpone, consult the ACIP statement.[1] Some immune mediator and immune modulator drugs (especially the antitumor-necrosis factor agents adalimumab, infliximab, and etanercept) may be immunosuppressive. The use of live vaccines should be avoided in persons taking these drugs.[1] To find specific vaccination schedules for stem cell transplant (bone marrow transplant) patients, see reference 9. LAIV, when recommended, can be given only to healthy non-pregnant people ages 2 through 49 years.

10. In the past year, has the child received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug? *[LAIV, MMR, MMRV, VAR]*

Certain live virus vaccines (e.g., LAIV, MMR, MMRV, varicella) may need to be deferred, depending on several variables. Consult the most current ACIP recommendations or the current Red Book for the most current information on intervals between antiviral drugs, immune globulin or blood product administration and live virus vaccines.[1,2]

11. Is the child/teen pregnant or is there a chance she could become pregnant during the next month? *[HPV, IPV, LAIV, MMR, MMRV, VAR]*

Live virus vaccines (e.g., MMR, MMRV, varicella, LAIV) are contraindicated one month before and during pregnancy because of the theoretical risk of virus transmission to the fetus.[1,2] Sexually active young women who receive a live virus vaccine should be instructed to practice careful contraception for one month following receipt of the vaccine.[7-10] On theoretical grounds, inactivated poliovirus vaccine should not be given during pregnancy; however, it may be given if risk of exposure is imminent (e.g., travel to endemic areas) and immediate protection is needed. Inactivated influenza vaccine and Tdap are both recommended during pregnancy. HPV vaccine is not recommended during pregnancy.

12. Has the child received vaccinations in the past 4 weeks? *[LAIV, MMR, MMRV, VAR, yellow fever]*

Children who were given either LAIV or an injectable live virus vaccine (e.g., MMR, MMRV, varicella, yellow fever) should wait 28 days before receiving another vaccination of this type. Inactivated vaccines may be given at the same time or at any spacing interval.

REFERENCES

1. CDC. General best practice guidelines for immunization. Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP) at www.cdc.gov/vaccines/hcp/acip-recs/downloads/general-recs.pdf.
2. AAP. Red Book: Report of the Committee on Infectious Diseases at www.aapredbook.org.
3. Latex in Vaccine Packaging: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/latex-table.pdf
4. Table of Vaccine Components: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.
5. CDC. Prevention and control of seasonal influenza with vaccines: Recommendations of the Advisory Committee on Immunization Practices – United States, 2017–18 Influenza Season at www.cdc.gov/mmwr/volumes/66/rr/pdfs/rr6602.pdf
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7. CDC. Prevention of varicella: Recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2007; 56 (RR-4).
8. Rubin LG, Levin MJ, Ljungman P. 2013 IDSA Clinical practice guideline for vaccination of the immunocompromised host. Clinical Infectious Diseases 2014;58(3):e44–100.
9. Tomblyn M, Einsele H, et al. Guidelines for preventing infectious complications among hematopoietic stem cell transplant recipients: a global perspective. Biol Blood Marrow Transplant 15:1143–1238; 2009 at www.cdc.gov/vaccines/pubs/hemato-cell-transplts.htm.
10. CDC. Notice to readers: Revised ACIP recommendation for avoiding pregnancy after receiving a rubella-containing vaccine. *MMWR* 2001; 50 (49).

Screening Checklist for Contraindications to Vaccines for Adults

PATIENT NAME _____

DATE OF BIRTH ____ / ____ / ____
month day year

For patients: The following questions will help us determine which vaccines you may be given today. If you answer "yes" to any question, it does not necessarily mean you should not be vaccinated. It just means additional questions must be asked. If a question is not clear, please ask your healthcare provider to explain it.

	yes	no	don't know
1. Are you sick today?	☐	☐	☐
2. Do you have allergies to medications, food, a vaccine component, or latex?	☐	☐	☐
3. Have you ever had a serious reaction after receiving a vaccination?	☐	☐	☐
4. Do you have a long-term health problem with heart disease, lung disease, asthma, kidney disease, metabolic disease (e.g., diabetes), anemia, or other blood disorder?	☐	☐	☐
5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem?	☐	☐	☐
6. In the past 3 months, have you taken medications that affect your immune system, such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments?	☐	☐	☐
7. Have you had a seizure or a brain or other nervous system problem?	☐	☐	☐
8. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	☐	☐	☐
9. For women: Are you pregnant or is there a chance you could become pregnant during the next month?	☐	☐	☐
10. Have you received any vaccinations in the past 4 weeks?	☐	☐	☐

FORM COMPLETED BY _____ DATE _____

FORM REVIEWED BY _____ DATE _____

Did you bring your immunization record card with you? **yes** ☐ **no** ☐

It is important for you to have a personal record of your vaccinations. If you don't have a personal record, ask your healthcare provider to give you one. Keep this record in a safe place and bring it with you every time you seek medical care. Make sure your healthcare provider records all your vaccinations on it.

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Technical content reviewed by the Centers for Disease Control and Prevention

Saint Paul, Minnesota ▪ 651-647-9009 ▪ www.immunize.org ▪ www.vaccineinformation.org

www.immunize.org/catg.d/p4065.pdf ▪ Item #P4065 (8/17)

Information for Healthcare Professionals about the Screening Checklist for Contraindications to Vaccines for Adults

Are you interested in knowing why we included a certain question on the screening checklist? If so, read the information below. If you want to find out even more, consult the references listed at the end.

1. Are you sick today? *[all vaccines]*

There is no evidence that acute illness reduces vaccine efficacy or increases vaccine adverse events.[1] However, as a precaution with moderate or severe acute illness, all vaccines should be delayed until the illness has improved. Mild illnesses (such as upper respiratory infections or diarrhea) are NOT contraindications to vaccination. Do not withhold vaccination if a person is taking antibiotics.

2. Do you have allergies to medications, food, a vaccine component, or latex? *[all vaccines]*

An anaphylactic reaction to latex is a contraindication to vaccines that contain latex as a component or as part of the packaging (e.g., vial stoppers, prefilled syringe plungers, prefilled syringe caps). If a person has anaphylaxis after eating gelatin, do not administer vaccines containing gelatin. A local reaction to a prior vaccine dose or vaccine component, including latex, is not a contraindication to a subsequent dose or vaccine containing that component. For information on vaccines supplied in vials or syringes containing latex, see reference 2; for an extensive list of vaccine components, see reference 3.

People with egg allergy of any severity can receive any recommended influenza vaccine (i.e., any IIV or RIV) that is otherwise appropriate for the patient's age. For people with a history of severe allergic reaction to egg involving any symptom other than hives (e.g., angioedema, respiratory distress), or who required epinephrine or another emergency medical intervention, the vaccine should be administered in a medical setting, such as a clinic, health department, or physician office. Vaccine administration should be supervised by a healthcare provider who is able to recognize and manage severe allergic conditions.[4]

3. Have you ever had a serious reaction after receiving a vaccination? *[all vaccines]*

History of anaphylactic reaction (see question 2) to a previous dose of vaccine or vaccine component is a contraindication for subsequent doses.[1] Under normal circumstances, vaccines are deferred when a precaution is present. However, situations may arise when the benefit outweighs the risk (e.g., during a community pertussis outbreak).

4. Do you have a long-term health problem with heart disease, lung disease, asthma, kidney disease, metabolic disease (e.g., diabetes), anemia, or other blood disorder? *[MMR, LAIV]*

A history of thrombocytopenia or thrombcytompenic purpura is a precaution to MMR vaccine. The safety of intranasal live attenuated influenza vaccine (LAIV) in people with these conditions has not been established. These conditions, including asthma in adults, should be considered precautions for the use of LAIV.

5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem? *[LAIV, MMR, VAR, ZOS]*

Live virus vaccines (e.g., LAIV, measles-mumps-rubella [MMR], varicella [VAR], zoster [ZOS]) are usually contraindicated in immunocompromised people. However, there are exceptions. For example, MMR vaccine is recommended and varicella vaccine should be considered for adults with CD4+ T-lymphocyte counts of greater than or equal to 200 cells/μL. Immunosuppressed people should not receive LAIV. For details, consult the ACIP recommendations.[4,5,6]

6. In the past 3 months, have you taken medications that affect your immune system, such as cortisone, prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments? *[LAIV, MMR, VAR, ZOS]*

Live virus vaccines (e.g., LAIV, MMR, VAR, ZOS) should be postponed until after chemotherapy or long-term high-dose steroid therapy has ended. For details and length of time to postpone, consult the ACIP statement.[1,5] Some immune mediator and immune modulator drugs (especially the antitumor-necrosis factor agents adalimumab, infliximab, and etanercept) may be immunosuppressive. The use of live vaccines should be avoided in persons taking these drugs (*MMWR* 2011;60 [RR-2]:23). To find specific vaccination schedules for stem cell transplant (bone marrow transplant) patients, see reference 7. LAIV can be given only to healthy non-pregnant people ages 2 through 49 years.

NOTE: Live attenuated influenza vaccine (LAIV4; FluMist), is not recommended by CDC's Advisory Committee on Immunization Practices for use in the U.S. during the 2017–18 influenza season.

7. Have you had a seizure or a brain or other nervous system problem? *[influenza, Td/Tdap]*

Tdap is contraindicated in people who have a history of encephalopathy within 7 days following DTP/DTaP given before age 7 years. An unstable progressive neurologic problem is a precaution to the use of Tdap. For people with stable neurologic disorders (including seizures) unrelated to vaccination, or for people with a family history of seizure, vaccinate as usual. A history of Guillain-Barré syndrome (GBS) is a consideration with the following: 1) Td/Tdap: if GBS has occurred within 6 weeks of a tetanus-containing vaccine and decision is made to continue vaccination, give Tdap instead of Td if no history of prior Tdap; 2) Influenza vaccine (IIV/LAIV): if GBS has occurred within 6 weeks of a prior influenza vaccine, vaccinate with IIV if at increased risk for severe influenza complications.

8. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug? *[LAIV, MMR, VAR, ZOS]*

Certain live virus vaccines (e.g., LAIV, MMR, VAR, ZOS) may need to be deferred, depending on several variables. Consult the most current ACIP recommendations for current information on intervals between antiviral drugs, immune globulin or blood product administration and live virus vaccines.[1]

9. For women: Are you pregnant or is there a chance you could become pregnant during the next month? *[HPV, IPV, MMR, LAIV, VAR, ZOS]*

Live virus vaccines (e.g., MMR, VAR, ZOS, LAIV) are contraindicated one month before and during pregnancy because of the theoretical risk of virus transmission to the fetus. Sexually active women in their childbearing years who receive live virus vaccines should be instructed to practice careful contraception for one month following receipt of the vaccine. On theoretical grounds, inactivated poliovirus vaccine should not be given during pregnancy; however, it may be given if risk of exposure is imminent and immediate protection is needed (e.g., travel to endemic areas). Inactivated influenza vaccine and Tdap are both recommended during pregnancy. Both vaccines may be given at any time during pregnancy but the preferred time for Tdap administration is at 27–36 weeks' gestation. HPV vaccine is not recommended during pregnancy.[1,4,5,6,8,9]

10. Have you received any vaccinations in the past 4 weeks? *[LAIV, MMR, VAR, yellow fever, ZOS]*

People who were given either LAIV or an injectable live virus vaccine (e.g., MMR, VAR, ZOS, yellow fever) should wait 28 days before receiving another vaccination of this type. Inactivated vaccines may be given at any spacing interval if they are not administered simultaneously.

REFERENCES

1. CDC. General best practice guidelines for immunization. Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP) at www.cdc.gov/vaccines/hcp/acip-recs/downloads/general-recs.pdf.
2. Latex in Vaccine Packaging: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/latex-table.pdf.
3. Table of Vaccine Components: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.
4. CDC. Prevention and control of seasonal influenza with vaccines: Recommendations of the Advisory Committee on Immunization Practices – United States, 2017–18 Influenza Season at www.cdc.gov/mmwr/volumes/66/rr/pdfs/rr6602.pdf.
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6. CDC. Prevention of varicella: Recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2007; 56 (RR-4).
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Cuestionario de contraindicaciones para vacunación de adultos

NOMBRE DEL PACIENTE _____

FECHA DE NACIMIENTO ____ / ____ / ____
mes día año

A los pacientes: Las siguientes preguntas nos ayudarán a determinar cuáles vacunas le podemos dar hoy. Si contesta "sí" a alguna pregunta, eso no siempre quiere decir que no lo deben vacunar. Simplemente quiere decir que hay que hacerle más preguntas. Si alguna pregunta no está clara, pida a su profesional de la salud que se la explique.

	sí	no	no sabe
1. ¿Está enfermo hoy?	☐	☐	☐
2. ¿Es alérgico a algún medicamento, alimento, a algún componente de las vacunas o al látex?	☐	☐	☐
3. ¿Tuvo alguna vez una reacción seria después de vacunarse?	☐	☐	☐
4. ¿Tiene algún problema de salud a largo plazo, como enfermedad del corazón, enfermedad de los pulmones, asma, enfermedad de los riñones, enfermedad metabólica (como la diabetes), anemia o algún otro trastorno de la sangre?	☐	☐	☐
5. ¿Tiene cáncer, leucemia, VIH/SIDA o algún otro problema del sistema inmunológico?	☐	☐	☐
6. ¿En los últimos 3 meses ha tomado medicamentos que afecten su sistema inmunológico, como prednisona, otros esteroides o medicamentos contra el cáncer; medicamentos para el tratamiento de la artritis reumatoide, la enfermedad de Crohn o la psoriasis; o ha tenido tratamientos de radiación?	☐	☐	☐
7. ¿Tuvo alguna vez convulsiones o problemas del cerebro o algún otro problema del sistema nervioso?	☐	☐	☐
8. Durante el año pasado, ¿le hicieron una transfusión de sangre o de productos de la sangre, o le dieron inmunoglobulina o gamaglobulina o un medicamento antiviral?	☐	☐	☐
9. Para las mujeres: ¿Está embarazada o hay alguna posibilidad de que quede embarazada en el próximo mes?	☐	☐	☐
10. ¿Le aplicaron alguna vacuna en las últimas 4 semanas?	☐	☐	☐

FORMULARIO LLENADO POR _____ FECHA _____

FORMULARIO REVISADO POR _____ FECHA _____

¿Trajo su comprobante de vacunación hoy? **sí** ☐ **no** ☐

Es importante que tenga un comprobante de vacunación personal. Si no lo tiene, pídale a su profesional de la salud que le dé uno. Guárdelo en un lugar seguro y llévelo todas las veces que reciba atención médica. Asegúrese de que su profesional de la salud escriba allí todas las vacunas que reciba.

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www.immunize.org/catg.d/p4065-01.pdf ▪ Item #P4065-01 Spanish (8/17)

Information for Healthcare Professionals about the Screening Checklist for Contraindications to Vaccines for Adults

Are you interested in knowing why we included a certain question on the screening checklist? If so, read the information below. If you want to find out even more, consult the references listed at the end.

1. Are you sick today? *[all vaccines]*

There is no evidence that acute illness reduces vaccine efficacy or increases vaccine adverse events.[1] However, as a precaution with moderate or severe acute illness, all vaccines should be delayed until the illness has improved. Mild illnesses (such as upper respiratory infections or diarrhea) are NOT contraindications to vaccination. Do not withhold vaccination if a person is taking antibiotics.

2. Do you have allergies to medications, food, a vaccine component, or latex? *[all vaccines]*

An anaphylactic reaction to latex is a contraindication to vaccines that contain latex as a component or as part of the packaging (e.g., vial stoppers, prefilled syringe plungers, prefilled syringe caps). If a person has anaphylaxis after eating gelatin, do not administer vaccines containing gelatin. A local reaction to a prior vaccine dose or vaccine component, including latex, is not a contraindication to a subsequent dose or vaccine containing that component. For information on vaccines supplied in vials or syringes containing latex, see reference 2; for an extensive list of vaccine components, see reference 3.

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3. Have you ever had a serious reaction after receiving a vaccination? *[all vaccines]*

History of anaphylactic reaction (see question 2) to a previous dose of vaccine or vaccine component is a contraindication for subsequent doses.[1] Under normal circumstances, vaccines are deferred when a precaution is present. However, situations may arise when the benefit outweighs the risk (e.g., during a community pertussis outbreak).

4. Do you have a long-term health problem with heart disease, lung disease, asthma, kidney disease, metabolic disease (e.g., diabetes), anemia, or other blood disorder? *[MMR, LAIV]*

A history of thrombocytopenia or thrombcytompenic purpura is a precaution to MMR vaccine. The safety of intranasal live attenuated influenza vaccine (LAIV) in people with these conditions has not been established. These conditions, including asthma in adults, should be considered precautions for the use of LAIV.

5. Do you have cancer, leukemia, HIV/AIDS, or any other immune system problem? *[LAIV, MMR, VAR, ZOS]*

Live virus vaccines (e.g., LAIV, measles-mumps-rubella [MMR], varicella [VAR], zoster [ZOS]) are usually contraindicated in immunocompromised people. However, there are exceptions. For example, MMR vaccine is recommended and varicella vaccine should be considered for adults with CD4+ T-lymphocyte counts of greater than or equal to 200 cells/μL. Immunosuppressed people should not receive LAIV. For details, consult the ACIP recommendations.[4,5,6]

6. In the past 3 months, have you taken medications that affect your immune system, such as cortisone, prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatments? *[LAIV, MMR, VAR, ZOS]*

Live virus vaccines (e.g., LAIV, MMR, VAR, ZOS) should be postponed until after chemotherapy or long-term high-dose steroid therapy has ended. For details and length of time to postpone, consult the ACIP statement.[1,5] Some immune mediator and immune modulator drugs (especially the antitumor-necrosis factor agents adalimumab, infliximab, and etanercept) may be immunosuppressive. The use of live vaccines should be avoided in persons taking these drugs (*MMWR* 2011;60 [RR-2]:23). To find specific vaccination schedules for stem cell transplant (bone marrow transplant) patients, see reference 7. LAIV can be given only to healthy non-pregnant people ages 2 through 49 years.

NOTE: Live attenuated influenza vaccine (LAIV4; FluMist), is not recommended by CDC's Advisory Committee on Immunization Practices for use in the U.S. during the 2017–18 influenza season.

7. Have you had a seizure or a brain or other nervous system problem? *[influenza, Td/Tdap]*

Tdap is contraindicated in people who have a history of encephalopathy within 7 days following DTP/DTaP given before age 7 years. An unstable progressive neurologic problem is a precaution to the use of Tdap. For people with stable neurologic disorders (including seizures) unrelated to vaccination, or for people with a family history of seizure, vaccinate as usual. A history of Guillain-Barré syndrome (GBS) is a consideration with the following: 1) Td/Tdap: if GBS has occurred within 6 weeks of a tetanus-containing vaccine and decision is made to continue vaccination, give Tdap instead of Td if no history of prior Tdap; 2) Influenza vaccine (IIV/LAIV): if GBS has occurred within 6 weeks of a prior influenza vaccine, vaccinate with IIV if at increased risk for severe influenza complications.

8. During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug? *[LAIV, MMR, VAR, ZOS]*

Certain live virus vaccines (e.g., LAIV, MMR, VAR, ZOS) may need to be deferred, depending on several variables. Consult the most current ACIP recommendations for current information on intervals between antiviral drugs, immune globulin or blood product administration and live virus vaccines.[1]

9. For women: Are you pregnant or is there a chance you could become pregnant during the next month? *[HPV, IPV, MMR, LAIV, VAR, ZOS]*

Live virus vaccines (e.g., MMR, VAR, ZOS, LAIV) are contraindicated one month before and during pregnancy because of the theoretical risk of virus transmission to the fetus. Sexually active women in their childbearing years who receive live virus vaccines should be instructed to practice careful contraception for one month following receipt of the vaccine. On theoretical grounds, inactivated poliovirus vaccine should not be given during pregnancy; however, it may be given if risk of exposure is imminent and immediate protection is needed (e.g., travel to endemic areas). Inactivated influenza vaccine and Tdap are both recommended during pregnancy. Both vaccines may be given at any time during pregnancy but the preferred time for Tdap administration is at 27–36 weeks' gestation. HPV vaccine is not recommended during pregnancy.[1,4,5,6,8,9]

10. Have you received any vaccinations in the past 4 weeks? *[LAIV, MMR, VAR, yellow fever, ZOS]*

People who were given either LAIV or an injectable live virus vaccine (e.g., MMR, VAR, ZOS, yellow fever) should wait 28 days before receiving another vaccination of this type. Inactivated vaccines may be given at any spacing interval if they are not administered simultaneously.

REFERENCES

1. CDC. General best practice guidelines for immunization. Best Practices Guidance of the Advisory Committee on Immunization Practices (ACIP) at www.cdc.gov/vaccines/hcp/acip-recs/downloads/general-recs.pdf.
2. Latex in Vaccine Packaging: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/latex-table.pdf.
3. Table of Vaccine Components: www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf.
4. CDC. Prevention and control of seasonal influenza with vaccines: Recommendations of the Advisory Committee on Immunization Practices – United States, 2017–18 Influenza Season at www.cdc.gov/mmwr/volumes/66/rr/pdfs/rr6602.pdf.
5. CDC. Measles, mumps, and rubella – vaccine use and strategies for elimination of measles, rubella, and congenital rubella syndrome and control of mumps. *MMWR* 1998; 47 (RR-8).
6. CDC. Prevention of varicella: Recommendations of the Advisory Committee on Immunization Practices. *MMWR* 2007; 56 (RR-4).
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Recommendations from the National Vaccine Advisory Committee: Standards for Adult Immunization Practice

National Vaccine Advisory Committee

The Advisory Committee on Immunization Practices (ACIP) makes recommendations for routine vaccination of adults in the United States.[1] Standards for implementing the ACIP recommendations for adults were published by the National Vaccine Advisory Committee (NVAC) in 2003[2] and by the Infectious Diseases Society of America in 2009.[3] In addition, NVAC published a report in 2012 outlining a pathway for improving adult immunization rates.[4] While most of these documents included guidelines for immunization practice, recent changes in the practice climate for adult immunization necessitated an update of existing adult immunization standards. Some of these changes include expansion of vaccination services offered by pharmacists and other community immunization providers both during and since the 2009 H1N1 influenza pandemic; vaccination at the workplace; increased vaccination by providers who care for pregnant women; and changes in the health-care system, including the Affordable Care Act (ACA), which requires first-dollar coverage of ACIP-recommended vaccines for people with certain private insurance plans, or those who are beneficiaries of expanded Medicaid plans.[5] The ACA first-dollar provision is expected to increase the number of adults who will be insured for vaccines. Other changes include expanding the inclusion of adults in state immunization information systems (IISs) (i.e., registries) and the Centers for Medicare & Medicaid Services Meaningful Use Stage 2 requirements, which mandate provider reporting of immunizations to registries, including reporting of adult vaccination in states where such reporting is allowed.[6] For the purposes of this report, provider refers to any individual who provides health-care services to adult patients, including physicians, physician assistants, nurse practitioners, nurses, pharmacists, and other health-care professionals.

While previous versions of the adult immunization standards have been published, recommendations for adult vaccination are published annually, and many health-care organizations have endorsed routine assessment and vaccination of adults, vaccination among adults continues to be low.[7–15] Several barriers to adult vaccination include:

- Lack of health-care provider and patient knowledge about the need for vaccinating both healthy and high-risk adults.
- Medical management of acute and chronic illnesses, which usually receives priority over preventive services.
- Some providers not offering vaccines or offering only a subset of vaccines recommended for adults, and many adult patients unaware of their recommended vaccines.

- Private and public payer payment for vaccines complicated for providers, and not all those who vaccinate adults are recognized as providers by third-party payers.
- Medicare setting limits on coverage for vaccines based on the type of plan. For example:
  - Fully reimbursed vaccines through Medicare Part B are limited to vaccines against influenza, pneumococcal, tetanus-diphtheria (Td) (as part of wound management but not routine booster doses), and hepatitis B (for certain intermediate and high-risk groups such as patients with end-stage renal failure or diabetes).[16]
  - Medicare Part D provides limited coverage for the remainder of vaccines recommended for adults, often requiring significant out-of-pocket costs to patients (e.g., zoster vaccine; tetanus, diphtheria, and pertussis vaccine; and routine booster doses of Td vaccines).[16]
  - Vaccines included in Medicare Part D plans are pharmacy or drug benefits rather than medical benefits. Because most medical providers are not enrolled as pharmacy providers, receiving reimbursement for these vaccines is a challenge. Many providers, both medical and nonmedical, experience complexities in dealing with billing processes and the level of payment for Part D claims. Pharmacist vaccinators are established providers for Part D vaccines but are still challenged by coverage variability in insurance plans.
- Medicaid vaccination coverage and authorized vaccines vary by state, with some states covering only a subset of vaccines recommended for adults by ACIP. Medicaid coverage of ACIP-recommended vaccines is further complicated by the Supreme Court decision allowing states to opt out of increased Medicaid coverage.[17]
- Out-of-pocket costs to patients are a known barrier. For example:
  - While the ACA removed out-of-pocket costs for many privately insured people, not all providers and patients are likely to be aware of this provision.
  - Some providers may not be eligible for reimbursement under some health insurance plans because they are not authorized as in-network providers for vaccination services.
  - Many adults remain uninsured.

National Vaccine Advisory Committee

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- Patients may see many different providers, including specialists who may not be vaccine providers. The presence of multiple providers of health services may complicate coordination of care and reduce the likelihood that patients' vaccination needs are routinely assessed and needed vaccines are offered.

Despite these barriers, a number of strategies have been shown to improve receipt of adult immunizations. One of the most important predictors of vaccination receipt among adults is a health-care provider's recommendation and offer of vaccine during the same visit. The importance of a provider recommendation for vaccination has been demonstrated repeatedly.[18–22] Other approaches shown to increase vaccination coverage include patient and provider reminder/recall systems; provider assessment and feedback about vaccination practices; use of standing orders or protocols; reducing patient out-of-pocket costs; worksite interventions with on-site, actively promoted vaccination services; and other community-based and health-care system-based interventions implemented in combination.[21]

The need to review and revise earlier standards is based on several factors:

- Emphasis on the role of all providers, even non-vaccinating providers, to assess immunization status and recommend needed vaccines was not included in earlier adult immunization standards documents and is generally not included in clinical training programs.
- Community vaccinators and pharmacists are increasingly recognized as integral to achieving higher adult vaccination rates.
- Reliance on electronic health records (EHRs) is increasing and there are meaningful use incentives for eligible medical providers to enter patient immunization information into IISs for Medicare and Medicaid EHR incentive payments.
- A change in communication strategies for educating and contacting patients, with the availability of the Internet and social media, is underway.
- New opportunities are afforded by the ACA to provide vaccination within the shifting landscape of vaccine financing. There is also a shift in payment models away from fee-for-service toward payment for better outcomes of care.
- Federal funds for immunization programs that had been used for underinsured children may become available for purchasing vaccines for uninsured adults as the number of children insured for vaccines increases due to implementation of the ACA.

As such, the NVAC recommends that the Assistant Secretary for Health promote the use of the 2013 updated NVAC Standards for Adult Immunization Practice by all health-care professionals and payers in the public and private sectors who provide care for adults.

STANDARDS FOR ADULT IMMUNIZATION PRACTICE

Every health-care provider, in all settings, has a fundamental responsibility to ensure that all patients are up-to-date with respect to recommended immunizations. The purpose of the Standards for Adult Immunization Practice, which are summarized in the Figure, is to provide guidance to adult health-care providers across the spectrum of health care. This section addresses the

Figure. Summary of 2013 National Vaccine Advisory Committee's standards for adult immunization practices

Audience	*Summary of standards*
All providers	• Incorporate immunization needs assessment into every clinical encounter. • Strongly recommend needed vaccine(s) and either administer vaccine(s) or refer patient to a provider who can immunize. • Stay up-to-date on, and educate patients about, vaccine recommendations. • Implement systems to incorporate vaccine assessment into routine clinical care. • Understand how to access immunization information systems (i.e., immunization registries).
Non-immunizing providers	• Routinely assess the immunization status of patients, recommend needed vaccine(s), and refer patient to an immunizing provider. • Establish referral relationships with immunizing providers. • Follow up to confirm patient receipt of recommended vaccine(s).
Immunizing providers	• Ensure professional competencies in immunizations. • Assess immunization status in every patient care and counseling encounter and strongly recommend needed vaccine(s). • Ensure that receipt of vaccination is documented in patient medical record and immunization registry.
Professional health-care-related organizations/ associations/health-care systems	• Provide immunization education and training of members, including trainees. • Provide resources and assistance to implement protocols and other systems to incorporate vaccine needs assessment and vaccination or referral into routine practice. • Encourage members to be up-to-date on their own immunizations. • Assist members in staying up-to-date on immunization information and recommendations. • Partner with other immunization stakeholders to educate the public. • Seek out collaboration opportunities with other immunization stakeholders. • Collect and share best practices for immunization. • Advocate policies that support adult immunization standards. • Insurers/payers/entities that cover adult immunization services should assure their network is adequate to provide timely immunization access and augment with additional vaccine providers if necessary.
Public health departments	• Determine community needs, vaccination capacity, and barriers to adult immunization. • Provide access to all ACIP-recommended vaccinations for insured and uninsured adults and work toward becoming an in-network provider for immunization services for insured adults. • Partner with immunization stakeholders and support activities and policies to improve awareness of adult vaccine recommendations, increase vaccination rates, and reduce barriers. • Ensure professional competencies in immunizations. • Collect, analyze, and disseminate immunization data. • Provide outreach and education to providers and the public. • Work to decrease disparities in immunization coverage and access. • Increase immunization registry access and use by vaccine providers for adult patients. • Develop capacity to bill for immunization of injured people. • Ensure preparedness for identifying and responding to outbreaks of vaccine-preventable diseases. • Promote adherence to applicable laws, regulations, and standards among adult immunization stakeholders.

ACIP = Advisory Committee on Immunization Practices

roles of all providers with regard to immunizations, including the role of all providers to conduct routine assessment of vaccination needs for their patients, recommend needed vaccines, and either administer needed vaccines or, for providers who currently do not stock all recommended vaccines, refer patients to places where they can get recommended vaccines.

1. Standards for all providers, including those who do and do not provide immunization services

Part of routine clinical care for all providers should include an assessment of their patients' immunization status and a recommendation to the patient and/or the patient's caregiver for needed vaccines. Assessment and recommendation can be accomplished through the following practices:

a. Emphasize the importance of immunizations during patient encounters, incorporate patient assessment of vaccine needs into routine clinical practice, and document vaccination status in patient medical records. IISs and EHRs should be referenced as sources of data about a patient's vaccine history.

b. Strongly recommend all immunizations that patients need.

c. Provide all recommended vaccines to patients who need them at the time of the visit. If the vaccines are not given or, if the provider does not have the vaccines in stock, refer the patient to a vaccine provider known to be able to provide the recommended vaccinations. Because vaccine uptake is much higher among patients when the vaccine is recommended and offered at the same visit, providers who are able to stock vaccines for their patients are strongly encouraged to do so.[18]

d. Ensure that they, and their practice staff, are up-to-date on their own vaccinations per ACIP health-care personnel vaccine recommendations[23] and consistent with professional guidelines. Examples of current professional association guidelines include the following:

   i. The American Nurses Association (ANA) has a longstanding policy supporting immunizations for nurses and all people across the life span. ANA believes that nurses have a professional and ethical obligation to be immunized because it protects both the health of the nurse and the health of his/her patients and community.[8]

   ii. The National Association of County and City Health Officials (NACCHO) urges health-care employers and local health departments to require influenza vaccination for all staff members as a condition of employment.[9]

   iii. The American Pharmacists Association recommends that its members be up-to-date on immunizations as a professional standard.[10]

   iv. The American Medical Association's policy supports the vaccination of health-care professionals against communicable diseases to prevent transmission to their patients.[11]

   v. The Infectious Diseases Society of America recommends that all health-care workers be fully immunized according to ACIP recommendations.[12]

   vi. The American Academy of Physicians Assistants recommends that physician assistants (PAs) should be immunized against vaccine-preventable diseases for which health providers are at high risk. Doing so not only protects PAs, but also protects patients by preventing provider-to-patient transmission.[13]

   vii. The American College of Physicians recommends that all health-care providers be immunized against influenza; diphtheria; hepatitis B; measles, mumps, and rubella; pertussis (whooping cough); and varicella (chickenpox) according to ACIP recommendations.[14]

   viii. The American College of Obstetricians and Gynecologists (ACOG) recommends that College Fellows have an ethical obligation to follow recommendations for vaccination themselves and other safety policies put into place by their local or national public health authorities, such as the Centers for Disease Control and Prevention (CDC) and ACOG.[15]

e. Implement systems to:

   i. Incorporate vaccination assessment into routine care for outpatients.

   ii. Identify patients for needed vaccines based on age, risk factor indications for vaccination, and prior vaccination history.

   iii. Incorporate vaccination assessment and appropriate vaccination of hospitalized patients and those in long-term care facilities with recommended vaccines, especially influenza and pneumococcal vaccines.

   iv. Ensure follow-up for needed vaccinations after hospital discharge.

f. Educate patients about vaccines they need using understandable language, including the vaccine information statements for those vaccines covered by the Vaccine Injury Compensation Program.

g. For providers in states that include adult immunization records in their state IIS or registry, understand how to access the IIS as a source to check for vaccines that a patient has already received or should have received. Checking the IIS at each patient encounter reduces the likelihood of unnecessary vaccinations and provides information about receipt of other vaccines and whether the patient has appropriately completed the vaccination series as recommended.

2. Standards for non-immunizing providers

Because data show that (*1*) patients are more likely to get vaccinated when vaccines are recommended by trusted health-care professionals and (*2*) vaccine uptake is higher when vaccine is provided at the same time, primary care providers are strongly urged to stock and provide all recommended adult vaccines. Providers whose facilities are unable to provide certain immunizations (e.g., medical specialists' offices, which do not routinely provide vaccines for adults) still have a significant role in ensuring that their patients receive needed vaccines. Non-vaccinating providers should:

a. Routinely assess whether their patients are up-to-date on recommended vaccinations, strongly recommend said vaccines, and refer patients to vaccine providers for needed vaccines.
b. Establish patient referral relationships with vaccine providers in their area.
    i. Ensure that referral location does not create other barriers for the patient.
        1. Ensure that the vaccine provider offers the recommended vaccines, and that the provider is eligible for payment by patient's insurer to minimize out-of-pocket costs for the patient and any delay in vaccination.
        2. Provide information to the patient during the visit about which vaccines are needed, including a prescription when necessary and the contact information for the vaccination referral location.
    ii. Ensure appropriate follow-up of vaccine receipt by the patient at the patient's next visit, and encourage the vaccine provider to document vaccination (e.g., in the IIS and/or the patient's medical record) and with the patient's primary care provider, if known.

3. Standards for immunizing providers

All providers who have a role as a primary source of health care for patients should stock all ACIP-recommended vaccines for adults. Standards for all providers who immunize adults include ensuring professional competencies in knowledge of vaccine recommendations, vaccine needs assessment, vaccine administration, vaccine storage and handling, documentation of vaccination, and communicating information about vaccination to the patient's medical home.

a. Observe professional competencies regarding immunizations by ensuring that vaccine providers:
    i. Are up-to-date on current ACIP vaccine recommendations, appropriate vaccine administration techniques, and vaccine storage and handling guidelines.
    ii. Have up-to-date, culturally competent materials for patient counseling about the benefits and risks of vaccinations.
    iii. Are knowledgeable regarding valid contraindications, adverse events, and reporting of adverse events.
    iv. Use correct vaccine administration techniques.
    v. Are knowledgeable about which vaccines may be administered at the same visit to reduce missed opportunities for vaccination.
    vi. Have systems in place and training for appropriate response to adverse event(s) that may occur after vaccination, including severe allergic reactions.
    vii. Have staff who are educated in appropriate vaccine storage and handling systems and vaccine monitoring in their practice.
b. Assess and strongly recommend vaccinations during every patient care and counseling encounter.
    i. Written vaccination assessment protocols are available and implemented after appropriate staff training.
    ii. Protocols or standing orders are used (when appropriate for the setting and patient type) to administer routinely recommended vaccines, and protocols are kept up-to-date.
    iii. Staff competencies in vaccine needs assessment, counseling, and vaccine administration as part of standing orders or protocols are periodically assessed.
    iv. Reminder recall systems are in place to remind providers and patients about

needed vaccines and to ensure that vaccine series are completed to optimize vaccination benefits.

c. Ensure receipt of vaccination is documented.
   i. Record receipt of vaccination in the patient's EHR.
   ii. Provide a record of vaccines administered to patients, either written or electronic.
   iii. Use the IIS to record administered vaccines in states that allow adult vaccination information to be entered into the registry.
   iv. If the vaccinator is not the patient's primary care provider, then communicate vaccine receipt with the patient's primary care provider, if known.

4. Standards for professional health-care-related organizations, associations, and health-care systems

Standards with respect to immunizations include:

a. Integrate educational information on immunizations into professional training, including training of students in undergraduate and postgraduate training programs. This training includes support for incorporating modules on immunization into medical, nursing, and pharmacy schools, as well as allied health profession curricula.
b. Provide resources and assistance for providers to implement protocols or standing orders, where feasible, and other systems changes to improve routine assessment of vaccine needs and vaccination.
c. Encourage their members, trainees, and students to ensure that their own vaccinations are up-to-date as a standard of the profession.
d. Assist their members, employees, trainees, and students in remaining current regarding ACIP immunization recommendations by providing updates through routine communications and continuing education.
e. Make educational materials for patients regarding vaccine recommendations available to their memberships.
f. Partner with community organizations, such as immunization coalitions or vaccine advocacy groups, to improve public awareness of adult immunizations.
g. Participate in collaboration opportunities with other members of the immunization community (including public health, public and private medical, nursing and pharmacy services providers, patient advocacy, health systems, and other entities).
h. Offer modules to help providers assess and improve adult vaccination coverage of their patients as a measure of quality improvement within clinical practices.
i. Provide resources to assist providers in implementing and operationalizing immunization services within their practices, including helping providers understand the payment for vaccines based on insurance type and benefit design (e.g., private insurance, Medicare Part B, or Medicare Part D).
j. Provide resources (i.e., forms and other tools) for collecting and sharing best practices among adult immunization stakeholders.
k. Advocate public policies that support these adult immunization standards.
l. Insurers/payers/entities that cover adult immunization services should ensure that their networks are adequate to provide timely immunization access and augment with additional vaccine providers, if necessary (e.g., public health departments, pharmacists, and worksites).

5. Standards for public health departments

Public health departments may provide vaccination services and, in that role, public health professionals should adhere to the standards of their profession. Additionally, the professional associations that represent public health professionals and public health departments (e.g., Association of State and Territorial Health Officials, NACCHO, Association of Immunization Managers, and the Council of State and Territorial Epidemiologists) should promote adherence to the standards of the public health profession, particularly as they relate to adult immunizations. Public health has additional roles in assessing immunization program needs and the impact of vaccination programs, including educating the public and providers about immunizations. These additional roles include the following:

a. Determine community needs and capacity for adult immunization administration and barriers for patient access.
   i. Work toward decreasing disparities in immunization access based on factors such as race/ethnicity, insurance status, poverty, and location (e.g., rural areas or medically underserved areas).
b. Develop policies and/or regulations (legislation) that promote high vaccination rates and reduce

immunization barriers for adult patients and their providers.

c. Immunization programs should collaborate with existing public health programs that provide clinical services, such as sexually transmitted disease control programs, substance abuse treatment services, and tuberculosis control programs to incorporate vaccine administration and recordkeeping.

d. Ensure professional competency by providing or supporting education to adult health-care providers on routine adult immunizations.

e. Maintain surveillance for vaccine-preventable diseases to recognize potential disease outbreaks or problems with vaccines and to assist in the control of vaccine-preventable diseases in the event of outbreaks.

f. Collect, analyze, and disseminate available data on vaccine coverage to the public and health-care providers in their jurisdiction to identify and address gaps in coverage.

g. Provide resources and assistance for vaccine providers to implement protocols or standing orders, where feasible, and other systems changes to improve routine assessment of vaccine needs and vaccination.

h. Provide best practice examples to health-care providers and collaborate with providers in implementing these best practices.

i. Provide subject-matter expertise to train and educate vaccine providers and their staff on vaccine recommendations, proper storage and handling, and proper vaccine administration.

j. Collaborate with providers to assist in implementing and operationalizing immunization services within their practices.

k. Partner with professional medical, pharmacy, nursing, and other provider organizations; health-care networks; community organizations; and advocacy groups (e.g., mental health services, diabetes educators, asthma educators, correctional facilities, and substance abuse providers) to:

    i. Increase awareness and knowledge of adult immunizations and methods to reach recommended target populations for immunization; and

    ii. Educate their members and trainees regarding immunizations.

l. Provide outreach and education to the public and providers about vaccines.

    i. Collaborate with professional medical, pharmacy, nursing, and other provider organizations; health-care networks; community organizations; business and civic groups; and advocacy groups (e.g., mental health services, diabetes educators, asthma educators, correctional facilities, and substance abuse providers) to:

        1. Increase public awareness and knowledge of adult immunizations and reach recommended target populations for immunization.

        2. Provide culturally competent public education through appropriate venues, including the use of social media and ethnic media.

m. Work toward including adults in all state IISs, reduce barriers to including adult vaccination records in IISs, and ensure that IISs meet new standards of EHR interoperability to track and maintain adult vaccination records.

n. Expand access to and provide training for IISs to all adult health-care providers.

o. Provide access to all ACIP-recommended vaccinations.

    i. Ensure capacity to provide all ACIP-recommended vaccines and immunization services for insured and uninsured adults.

    ii. Work toward becoming an in-network provider for immunization services for insured adults.

p. Ensure preparedness for, and investigate and work to control, outbreaks of vaccine-preventable diseases when they occur. Managing these outbreaks should include activities such as creating, maintaining, and practicing emergency preparedness plans for vaccine responses to outbreaks such as pandemic influenza.

q. Demonstrate accountability and good stewardship of public financing for vaccines.

r. Communicate information about vaccine shortages, when they occur, to providers and the public.

s. Communicate information on vaccine recalls and vaccine safety issues to providers and the public.

t. Promote adherence to applicable laws, regulations, and standards among adult immunization stakeholders.

CONCLUSION

The environment surrounding adult immunizations has changed dramatically since the last Standards for Adult Immunization Practices were issued by NVAC in 2003.[2] These updated and revised Standards for Adult Immunization Practice represent a continued effort by NVAC to advance action to improve adult immunization coverage rates in the U.S. aligned with its 2011 report, "A Pathway to Leadership for Adult Immunization: Recommendations of the National Vaccine Advisory Committee."[4] With these Standards, NVAC provides a concise description of desirable immunization practices that will improve the provision of adult immunizations in the U.S. As an evolution of the work from the National Adult and Influenza Immunization Summit established by CDC, the Immunization Action Coalition, and the National Vaccine Program Office, these revised standards have been widely reviewed by major professional organizations and other partners in adult immunization. NVAC recommends that the Assistant Secretary for Health promote the use of these updated Standards for Adult Immunization Practices by all health-care professionals and health-care systems in the public and private sectors who provide and pay for care for adults. NVAC firmly advocates that all providers follow these Standards and believes that these Standards will be useful to inform immunization practice and immunization policy development.

The National Vaccine Advisory Committee (NVAC) voted in favor of this report at the September 10, 2013, NVAC meeting. Initial drafts of this document were developed by a National Adult and Influenza Immunization Summit writing committee including Anu Bhatt, Carolyn Bridges, Karen Donoghue, Columba Fernandez, Rebecca Gehring, Laura Lee Hall, Donna Lazorik, Marie-Michele Leger, Trini Mathew, Debbye Rosen, Mitch Rothholz, Litjen Tan, and LaDora Woods.

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3. INFORMED REQUEST POLICY

Informed Request Policy

Vaccine Information Statements can be downloaded as a .pdf file and printed. http://www.cdc.gov/vaccines/pubs/vis/default.htm. VIS's in English and different languages can be found at http://www.immunize.org/vis/

After The Shots (simplified version)	English	3199	(07/14)
Después de las vacunas (After The Shots simplified version)	Spanish	3196	(07/14)
Georgia Vaccine Administration Record	English	25-IMM-002E	(11/17)
Refusal to Vaccinate Form	English	25-IMM-012E	(11/16)
Refusal to Vaccinate Form	Spanish	25-IMM-012S	(11/16)

INFORMED REQUEST POLICY

As providers of immunizations, it is important to furnish the vaccinee (or the parents/legal guardians of minors) with objective information on vaccine safety and the disease that the vaccine protects against, thereby making them active participants in decisions affecting their health or the health of their children. Vaccine Information Statements (VISs) are standardized to provide objective information about vaccine benefits and adverse events.

What are VISs?
VISs are developed by the staff of the Centers for Disease Control and Prevention (CDC) and undergo intense scrutiny by panels of experts for accuracy. Each VIS provides information to properly inform the adult vaccinee or, in the case of a minor, the child's parent or legal representative about the risks and benefits of each vaccine. VISs are not meant to replace interactions with health care providers who should attempt to answer questions and address concerns that the vaccinee or the parent/guardian may have.

VIS use is mandatory!
Before a health care provider (public or private) vaccinates a child or adult with a dose of any recommended childhood vaccine (DTaP, DT**,** Td, Tdap, MMR, MMRV, Varicella, Polio, Hib, hepatitis B, RV, human papillomavirus (HPV), pneumococcal conjugate (PCV13), meningococcal (**men b** ,conjugate and polysaccharide), hepatitis A, and influenza both Inactivated and Live, Intranasal vaccines), the provider is required by the National Childhood Vaccine Injury Act of 1986 to provide the most current copy of the VIS to either the adult vaccinee or the child's parent/legal guardian. If there is not a single VIS for a combination vaccine (e.g., Hib/hepatitis B), use the VISs for all the component vaccines.

A VIS is also available for the pneumococcal polysaccharide vaccine. Its use is not required by the National Childhood Injury Act, but is strongly encouraged-------and it must be used when giving vaccines purchased through a CDC contract (i.e. VFC vaccines).

State or local health departments or individual providers may place identifiers (such as form numbers) on the VISs but any other changes must be approved by CDC's National Immunization Program.

What to do with the VISs:

Some of the legal requirements concerning the use of VISs are as follows:

1) Before a routine vaccine is administered to anyone (including adults), you must give the patient or the parent/guardian a copy of the most current VIS available for that vaccine. Make sure you give your patient time to read the VIS prior to the administration of the vaccine and review the VIS with them.
2) Record on your patient's chart which VIS was given and the date that it was given.
3) Record on the patient's chart the publication date of the VIS (a date which appears on the lower right-hand corner of the VIS).

How to get VISs:
VISs are available upon request from the Immunization Action Coalition (IAC) and CDC websites. English and translated statements may also be downloaded from the following websites:
Centers for Disease Control (CDC)……. http://www.cdc.gov/vaccines/hcp/vis/current-vis.html
Immunization Action Coalition ..... www.immunize.org/vis

INFORMED REQUEST POLICY

Required Documentation:
Georgia law requires that vaccines administered to individuals of all ages must be documented in the Georgia Registry of Immunization Transactions and Services (GRITS). This legal requirement is referenced in the "Requirements of Law" section of the Immunization Program Manual under the Official Code of Georgia. Written documentation is required in the vaccine recipient's medical record (or in a permanent office file or log) of each immunization and the receipt by vaccine recipients (or their parents or legal representatives) of the appropriate VIS. The documentation shall consist of the following:

- vaccine administration date
- vaccine manufacturer and lot number
- name, title, and address of the person administering the vaccine (i.e., address where the medical record will be maintained)
- which VIS is given
- date printed on the appropriate VIS
- date the VIS was given to the vaccine recipient (or the parent/legal guardian)
- date vaccine was given, appropriate notation of the preparation given and date of administration should be provided on either an existing or newly issued Personal Immunization Record

It is recommended that Form 3199/3196, "After the Shots", or an equivalent description of common side effects be given to the patient or parent/guardian, along with a telephone number that may be called in the case of adverse events. A copy of form 3199/3196 is included in this section of the manual **or can be downloaded at http://www.immunize.org/handouts/discussing-vaccines-parents.asp**

It is also recommended that each vaccine be recorded on a client's personal immunization record. Personal Immunization Records may be ordered from the GA Immunization Program utilizing form 3184, the Request for Immunization Forms (see section 1). In addition, GRITS may be utilized to document an immunization record and can print out the clients' immunization history.

In Georgia, (in public health clinics) a parent or legal representative must sign an informed consent for vaccinations. **VISs are not consent forms.** In Georgia, the legal definition of a person authorized to make a request for immunization is very broad. Pertinent excerpts from the Official Code of Georgia, Annotated, Title 31, Chapter 9, 12/2001 cited as the Georgia Medical Consent Law are reproduced below:

Official Code of Georgia, Annotated 2002

31-9-2

(a) In addition to such other persons as may be authorized and empowered, any one of the following persons is authorized and empowered to consent, either orally or otherwise, to any surgical or medical treatment or procedures not prohibited by law which may be suggested, recommended, prescribed, or directed by a duly licensed physician:

(1) Any adult, for himself, whether by living will or otherwise
(1.1) Any person authorized to give such consent for the adult under a health care

INFORMED REQUEST POLICY

agency complying with Chapter 36 of Title 31, the "Durable Power of Attorney for Health Care Act"

(2) In the absence or unavailability of a living spouse, any parent, whether an adult or a minor, for his minor child;
(3) Any married person, whether an adult or a minor, for himself and for his spouse;
(4) Any person temporarily standing in loco parentis, whether formally serving or not, for the minor under his care; and any guardian, for his ward;
(5) Any female, regardless of age or marital status, for herself when given in connection with pregnancy, or the prevention thereof, or childbirth;
(6) Upon the inability of any adult to consent for himself and in the absence of any person to consent under paragraphs (2) through (5) of this subsection, the following persons in the following order of priority:
  (A) Any adult child for his parents;
  (B) Any parent for his adult child;
  (C) Any adult for his brother or sister; or
  (D) Any grandparent for his grandchild.

(b) Any person authorized and empowered to consent under subsection (a) of this Code section shall, after being informed of the provisions of this Code section, act in good faith to consent to surgical or medical treatment or procedures which the patient would have wanted had the patient understood the circumstances under which such treatment or procedures are provided.
(c) For purposes of this Code section, "inability of any adult to consent for himself" shall mean a determination in the medical record by a licensed physician after the physician has personally examined the adult that the adult "lacks sufficient understanding or capacity to make significant responsible decisions" regarding his medical treatment or the ability to communicate by any means such decisions.

Cross References –

Authority of court in juvenile proceeding to order that a child undergo medical examination or treatment, § 15-11-12.

Right of minor to obtain medical services for treatment of venereal disease on his consent alone. § 31-17-7 (a).

Official Code of Georgia, Annotated 2002

31-9-6.

(a) This chapter shall be liberally construed, and all relationships set forth in this chapter shall include the adoptive, foster, and step relations as well as blood relations and the relationship by common-law marriage as well as ceremonial marriage.

(b) A consent by one person authorized and empowered to consent to surgical or medical treatment shall be sufficient.

(c) Any person acting in good faith shall be justified in relying on the representations of any person purporting to give consent, including, but not limited to, his identity, his

INFORMED REQUEST POLICY

age, his marital status, his emancipation, and his relationship to any other person for whom the consent is purportedly given.

(d) A consent to surgical or medical treatment which discloses in general terms the treatment or course of treatment in connection with which it is given and which is duly evidenced in writing and signed by the patient or other person or persons authorized to consent pursuant to the terms of this chapter shall be conclusively presumed to be a valid consent in the absence of fraudulent misrepresentations of material facts in obtaining the same.

After the Shots…

Your child may need extra love and care after getting vaccinated. Some vaccinations that protect children from serious diseases also can cause discomfort for a while. Here are answers to questions many parents have after their children have been vaccinated. If this sheet doesn't answer your questions, call your healthcare provider.

Vaccinations may hurt a little… but disease can hurt a lot!

Call your healthcare provider right away if you answer "yes" to any of the following questions:

- ☐ Does your child have a temperature that your healthcare provider has told you to be concerned about?
- ☐ Is your child pale or limp?
- ☐ Has your child been crying for more than 3 hours and just won't quit?
- ☐ Is your child's body shaking, twitching, or jerking?
- ☐ Is your child very noticeably less active or responsive?

▶ *Please see page 2 for information on the proper amount of medicine to give your child to reduce pain or fever.*

What to do if your child has discomfort

I think my child has a fever. What should I do?

Check your child's temperature to find out if there is a fever. An easy way to do this is by taking a temperature in the armpit using an electronic thermometer (or by using the method of temperature-taking your healthcare provider recommends). If your child has a temperature that your healthcare provider has told you to be concerned about or if you have questions, call your healthcare provider.

Here are some things you can do to help reduce fever:

- Give your child plenty to drink.
- Dress your child lightly. Do not cover or wrap your child tightly.
- Give your child a fever- or pain-reducing medicine such as acetaminophen (e.g., Tylenol) or ibuprofen (e.g., Advil, Motrin). The dose you give your child should be based on your child's weight and your heathcare provider's instructions. See the dose chart on page 2. *Do not give aspirin.* Recheck your child's temperature after 1 hour. Call your healthcare provider if you have questions.

My child has been fussy since getting vaccinated. What should I do?

After vaccination, children may be fussy because of pain or fever. To reduce discomfort, you may want to give your child a medicine such as acetaminophen or ibuprofen. See the dose chart on page 2. *Do not give aspirin.* If your child is fussy for more than 24 hours, call your healthcare provider.

My child's leg or arm is swollen, hot, and red. What should I do?

- Apply a clean, cool, wet washcloth over the sore area for comfort.
- For pain, give a medicine such as acetaminophen or ibuprofen. See the dose chart on page 2. *Do not give aspirin.*
- If the redness or tenderness increases after 24 hours, call your healthcare provider.

My child seems really sick. Should I call my healthcare provider?

If you are worried **at all** about how your child looks or feels, call your healthcare provider!

HEALTHCARE PROVIDER: PLEASE FILL IN THE INFORMATION BELOW.

If your child's temperature is _____ °F or _____ °C or higher, or if you have questions, call your healthcare provider.

Healthcare provider phone number: _____

Technical content reviewed by the Centers for Disease Control and Prevention

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Saint Paul, Minnesota ▪ 651-647-9009 ▪ www.immunize.org ▪ www.vaccineinformation.org

www.immunize.org/catg.d/p4015.pdf ▪ Item #P4015 (7/14)

Medicines and Dosages to Reduce Pain and Fever

Choose the proper medicine, and measure the dose accurately.

1. Ask your healthcare provider or pharmacist which medicine is best for your child.
2. Give the dose based on your child's weight. If you don't know your child's weight, give the dose based on your child's age. Do not give more medicine than is recommended.
3. If you have questions about dosage amounts or any other concerns, call your healthcare provider.
4. Always use a proper measuring device. For example:
   - When giving acetaminophen liquid (e.g., Tylenol), use the device enclosed in the package. If you misplace the device, consult your healthcare provider or pharmacist for advice. Kitchen spoons are not accurate measures.
   - When giving ibuprofen liquid (e.g., Advil, Motrin), use the device enclosed in the package. Never use a kitchen spoon!

Take these two steps to avoid causing a serious medication overdose in your child.

1. Don't give your child a larger amount of acetaminophen (e.g., Tylenol) or ibuprofen (e.g., Motrin, Advil) than is shown in the table below. Too much of any of these medicines can be extremely dangerous.
2. When you give your child acetaminophen or ibuprofen, don't also give them over-the-counter cough or cold medicines. This can cause a medication overdose because cough and cold medicines often contain acetaminophen or ibuprofen. In fact, to be safe, don't ever give over-the-counter cough and cold medicines to your child unless you talk to your child's healthcare provider first.

Acetaminophen (Tylenol or another brand): How much to give?

Give every 4 to 6 hours, as needed, no more than 5 times in 24 hours (unless directed to do otherwise by your healthcare provider).

child's weight	child's age	OLD FORMULATIONS infants' drops 80 mg in each 0.8 mL or in each 1.0 mL	Infants' New formulation or children's liquid 160 mg in each 5 mL (1 tsp) Kitchen spoons are not accurate measures.	children's chewables 80 mg in each tab	junior strength 160 mg in each tab
6–11 lbs (2.7–5 kg)	0–3 mos		Advised dose* _____		
12–17 lbs (5.5–7.7 kg)	4–11 mos	No longer available for purchase in the U.S. Please discard old product.	½ teaspoon or 2.5 mL		
18–23 lbs (8.2–10.5 kg)	12–23 mos		¾ teaspoon or 3.75 mL		
24–35 lbs (10.9–15.9 kg)	2–3 yrs		1 teaspoon or 5 mL	2 tablets	
36–47 lbs (16.4–21.4 kg)	4–5 yrs		1½ teaspoon or 7.5 mL	3 tablets	
48–59 lbs (21.8–26.8 kg)	6–8 yrs		2 teaspoons or 10 mL	4 tablets	2 tablets
60–71 lbs (27.3–32.3 kg)	9–10 yrs		2½ teaspoons or 12.5 mL	5 tablets	2½ tablets
72–95 lbs (32.7–43.2 kg)	11 yrs		3 teaspoons or 15 mL	6 tablets	3 tablets

Ibuprofen (Advil, Motrin, or another brand): How much to give?

Give every 6 to 8 hours, as needed, no more than 4 times in 24 hours (unless directed to do otherwise by your healthcare provider).

child's weight	child's age	infants' drops 50 mg in each 1.25 mL	children's liquid 100 mg in each 5 mL (1 tsp Kitchen spoons are not accurate measures.	OLD FORMULATION children's chewables 50 mg in each tab	children's chewables or junior tablets 100 mg in each tab
less than 11 lbs (5 kg)	0–5 mos				
12–17 lbs (5.5–7.7 kg)	6–11 mos	1.25 mL	Advised dose* _____	No longer available for purchase in the U.S. Please discard old product.	
18–23 lbs (8.2–10.5 kg)	12–23 mos	1.875 mL	Advised dose* _____		
24–35 lbs (10.9–15.9 kg)	2–3 yrs		1 teaspoon or 5 mL		1 tablet
36–47 lbs (16.4–21.4 kg)	4–5 yrs		1½ teaspoon or 7.5 mL		1½ tablets
48–59 lbs (21.8–26.8 kg)	6–8 yrs		2 teaspoons or 10 mL		2 tablets
60–71 lbs (27.3–32.3 kg)	9–10 yrs		2½ teaspoons or 12.5 mL		2½ tablets
72–95 lbs (32.7–43.2 kg)	11 yrs		3 teaspoons or 15 mL		3 tablets

* **HEALTHCARE PROVIDER:** PLEASE FILL IN THE ADVISED DOSE.

Know Concentration before Giving Acetaminophen to Infants and Children

The Food and Drug Administration (FDA) is urging consumers to carefully read the labels of liquid acetaminophen marketed for infants to avoid giving the wrong dose to their children.

A less concentrated form of the popular medication is arriving on store shelves, and giving the wrong dose of acetaminophen can cause the medication to be ineffective if too little is given or cause serious side effects and, possibly, death if too much is given.

In an attempt to reduce the confusion over different strengths that have been blamed for past overdoses, some manufacturers are voluntarily offering only the less concentrated version for all children.

Until now, liquid acetaminophen marketed for infants has only been available in a stronger concentration that doesn't require giving the infants as much liquid with each dose.

But right now both concentrations of liquid acetaminophen are in circulation. Before giving the medication, parents and caregivers need to know whether they have the less concentrated version or the older, more concentrated medication. FDA is concerned that infants could be given too much or too little of the medicine if the different concentrations of acetaminophen are confused.

"Be very careful when you're giving your infant acetaminophen" says Carol Holquist, director of FDA's Division of Medical Error Prevention and Analysis.

Here's what the agency wants parents and caregivers to do:

More concentrated, still available

Drug Facts

Active Ingredient (in each 0.8 mL)	Purpose
Acetaminophen 80 mg	Pain reliever/fever reducer

Drug Facts

Active Ingredient (in each 1.0 mL)	Purpose
Acetaminophen 80 mg	Pain reliever/Fever reducer

Less concentrated, newly available

Drug Facts

Active Ingredient (in each 5 mL)	Purpose
Acetaminophen 160 mg	Pain reliever/Fever reducer

- Read the Drug Facts label on the package very carefully to identify the concentration of the liquid acetaminophen, the correct dosage, and the directions for use.
- Do not depend on a banner proclaiming that the product is "new." Some medicines with the old concentration also have this headline on their packaging.
- Use only the dosing device provided with the purchased product in order to correctly measure the right amount of liquid acetaminophen.
- Consult your pediatrician before giving this medication and make sure you're both talking about the same concentration.

Overdosing Has Been a Risk

An April 2011 report from FDA's Center for Drug Evaluation and Research (CDER) found that confusion caused by the different concentrations of liquid acetaminophen for infants and children was leading to overdoses that made infants seriously ill, with some dying from liver failure.

So to avoid dosing errors, some manufacturers voluntarily changed the liquid acetaminophen marketed for infants from 80 mg per 0.8mL or 80 mg per 1 mL to be the same concentration as the liquid acetaminophen marketed for children—160 mg per 5mL. This less concentrated liquid acetaminophen marketed for infants now has new dosing directions and

Courtesy of the FDA. Title and header edited by the Immunization Action Coalition (12/12)

"Be very careful when you're giving your infant or child acetaminophen."

may have a new dosing device in the box, such as an oral syringe.

But this is a voluntary change and some of the older, stronger concentrations of acetaminophen marketed for infants are still available and may remain available.

"There is still some on store shelves; there is still some in homes; and there is still some in distribution," says Holquist.

Why does this pose a danger?

If a pediatrician prescribes a 5 mL dose of the less concentrated liquid acetaminophen, but the parents administer a 5 mL dose of the more concentrated liquid acetaminophen, the child can receive a potentially fatal overdose during the course of therapy, Holquist explains.

Conversely, if a physician prescribes a dose based on the more concentrated liquid acetaminophen and the less concentrated medication is used, the child might not receive enough medication to fight a fever, she says.

FDA has issued a Drug Safety Communication (*www.fda.gov/Drugs/DrugSafety/ucm284741.htm*) with more information for consumers about how to avoid confusion and potential dosing errors with the different concentrations of liquid acetaminophen.

What Should You Do?

Adding to the confusion is the fact that that the box and the bottle may look much the same for both old and new versions of the medication, Holquist says.

Read the Drug Facts label to tell the difference between the two liquid acetaminophen products:

- Look for the "Active ingredient" section of the Drug Facts label usually printed on the back of an over-the-counter medication package.
- If the package says "160 mg per 5 mL" or "160 mg (in each 5 mL)", then this is the less concentrated liquid acetaminophen. This medication should come with an oral syringe to help you measure the dose.
- If the package says "80 mg per 0.8 mL" or "80 mg per 1 mL," then this is the more concentrated liquid acetaminophen. This product may come with a dropper.

If the dosing instructions provided by your healthcare provider differ from what is on the label, check with a healthcare professional before administering the medication. Do not rely on dosing information provided from other sources such as the Internet, old dosing charts, or family members.

It is important to understand that there is no dosing amount specified for children younger than 2 years of age. If you have an infant or child younger than 2 years old, always check with your healthcare provider for dosing instructions.

Acetaminophen is marketed for infants under brand names such as Little Fevers Infant Fever/Pain Reliever, Pedia Care Fever Reducer Pain Reliever and Triaminic Infants' Syrup Fever Reducer Pain Reliever. There are also store brands on the shelves.

Find this and other Consumer Updates at *www.fda.gov/ForConsumers/ConsumerUpdates*

Sign up for free e-mail subscriptions at *www.fda.gov/consumer/consumerenews.html*

Courtesy of the FDA. Title and header edited by the Immunization Action Coalition (12/12)

Después de las vacunas...

Es posible que su hijo necesite mucho amor y atención después de que lo vacunen. Algunas vacunas que protegen a los niños contra enfermedades serias también pueden causar molestias por algún tiempo. Aquí tiene respuestas a preguntas que tienen muchos padres después de que vacunan a sus hijos. Si esta hoja no contesta sus preguntas, llame a su profesional de la salud.

¡Las vacunas pueden doler un poquito... pero la enfermedad puede doler mucho!

Llame inmediatamente a su profesional de la salud si contesta "sí" a alguna de las siguientes preguntas:

- ☐ ¿Tiene su hijo una temperatura a la que debe prestar atención, según lo que le dijo su profesional de la salud?
- ☐ ¿Está su hijo pálido o sin fuerzas?
- ☐ ¿Ha estado su hijo llorando por más de 3 horas y no deja de llorar?
- ☐ ¿Está el cuerpo de su hijo tembloroso, agitado o dando sacudidas?
- ☐ ¿Está su hijo notablemente menos activo o alerta?

Qué hacer si su hijo siente molestias

Creo que mi hijo tiene fiebre. ¿Qué debo hacer?

Tómele la temperatura a su hijo para ver si tiene fiebre. Una manera fácil de hacerlo es tomarle la temperatura en la axila usando un termómetro electrónico (o usando el método de tomar la temperatura que le recomiende su profesional de la salud). Si su hijo tiene una temperatura que su profesional le dijo que le tiene que preocupar o si tiene preguntas, llame a su profesional de la salud.

Aquí tiene algunas cosas que puede hacer para ayudar a reducir la fiebre:

- Déle a su hijo mucho líquido para tomar.
- Vístalo con ropa ligera. No lo tape ni lo envuelva de manera ceñida.
- Dele a su hijo un medicamento que reduzca la fiebre o el dolor, como acetaminofeno (Tylenol, por ejemplo) o ibuprofeno (como Advil o Motrin). La dosis que le dé a su hijo debe estar basada en el peso del niño y en las instrucciones de su profesional de la salud. *No dé aspirina*. Vuelva a tomarle la temperatura a su hijo después de 1 hora. Su tiene preguntas llame a su profesional de la salud.

Mi hijo ha estado molesto desde que lo vacunaron. ¿Qué debo hacer?

Es posible que los niños estén molestos después de que los vacunen porque tienen dolor o fiebre. Para reducir las molestias puede darle a su hijo un medicamento como acetaminofeno o ibuprofeno. *No dé aspirina*. Si su hijo está molesto por más de 24 horas, llame a su profesional de la salud.

Mi hijo tiene la pierna o el brazo hinchado, caliente y rojo. ¿Qué debo hacer?

- Aplique una toallita limpia mojada con agua fresca en la parte dolorida, para aliviar la molestia.
- Para el dolor dé un medicamento como acetaminofeno o ibuprofeno, según las instrucciones de su profesional de la salud (vea el casillero abajo). *No dé aspirina*.
- Si el enrojecimiento o el dolor aumentan después de 24 horas, llame a su profesional de la salud.

Mi hijo parece estar realmente enfermo. ¿Debo llamar a mi profesional de la salud?

Si está preocupado, **aunque un poco,** por la manera en que luce o se siente su hijo, ¡llame a su profesional de la salud!

HEALTHCARE PROVIDER: PLEASE FILL IN THE INFORMATION BELOW.
(Profesional de la salud: Llene la información a continuación.)

If your child's temperature is _____°F or _____°C or higher, or if you have questions, call your healthcare provider.

Healthcare provider phone number: _____

Medication (if needed): _____
Name of medication/type of formulation

Give _____ every _____ hours as needed
dose or amount

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www.immunize.org/catg.d/p4014-01.pdf • Item #P4014-01 Spanish (7/14)

GEORGIA VACCINE ADMINISTRATION RECORD

Georgia Department of Public Health

Clinic Name/Address:

Patient Name: _____ **Record #:** _____

Date of Birth: _____ **Patient Age:** _____

* Site: **RA – Right Arm** **LA – Left Arm** **PO- Orally** **ID- Intradermal** **IN- Intranasal** **IM- Intramuscular** **SQ- Subcutaneous**
RT - Right Thigh **LT – Left Thigh**

Vaccine (Circle) **Place √ in box "C" if combination vaccine given (e.g. Comvax®)	VACCINE ADMINISTERED						VFC Status ***	VACCINE			VACCINE INFORMATION STATEMENTS (VIS)		Vaccine Administrator Signature
	Date mm/dd/yy	Patient Age	Dosage	Route	Site*	C**		Manufacturer	Lot Number	Expiration Date	Date VIS Published	Date VIS Provided	
DTaP or DT – 1				IM									
DTaP or DT – 2				IM									
DTaP or DT – 3				IM									
DTaP or DT – 4				IM									
DTaP or DT – 5				IM									
Tdap-1				IM									
Rotavirus-1				PO									
Rotavirus-2				PO									
Rotavirus-3				PO									
Td – 1				IM									
Td – 2				IM									
Hib – 1				IM									
Hib – 2				IM									
Hib – 3				IM									
Hib – 4				IM									
Hep B – 1				IM									
Hep B – 2				IM									
Hep B – 3				IM									
Polio – 1				SQ/IM									
Polio – 2				SQ/IM									
Polio – 3				SQ/IM									
Polio – 4				SQ/IM									
MMR – 1				SQ									
MMR – 2				SQ									
Varicella – 1				SQ									
Varicella – 2				SQ									
MCV4 -1				IM									
MCV4 -2				IM									
Men B -1				IM									
Men B -2				IM									
Men B -3				IM									
MPSV4				SQ									
Hep A - 1				IM									
Hep A - 2				IM									
PCV13 – 1				IM									
PCV13 – 2				IM									
PCV13 – 3				IM									
PCV13 – 4				IM									
Influenza –1 TIV/LAIV				IM/IN/ID									
Influenza –2 TIV/LAIV				IM/IN/ID									
Zoster - 1				SQ									
PPSV23 – 1				SQ/IM									
PPSV23 – 2				SQ/IM									
HPV – 1				IM									
HPV – 2				IM									
HPV - 3				IM									

DPH05/024H **Had chickenpox disease: Year** _____ **Age at time of disease:** _____ Form 25-IMM-002E

Revised 11/2017

Georgia Department of Public Health

ADVERSE REACTION (AR)

Date	Immunization	Reaction

You must file a Vaccine Adverse Event by calling 1-877-721-0366 or logging on to www.vaers.org

GEORGIA VACCINE ADMINISTRATION RECORD
Addendum

Vaccine (Circle) **Place √ in box **"C"** if combination vaccine given (e.g. Comvax®)	VACCINE ADMINISTERED						VFC Status ***	VACCINE			VACCINE INFORMATION STATEMENTS (VIS)		Vaccine Administrator Signature
	Date mm/dd/yy	Patient Age	Dosage	Route	Site*	C**		Manufacturer	Lot Number	Expiration Date	Date VIS Published	Date VIS Provided	

REFUSAL TO VACCINATE

Client Name _____ Client DOB _____

Parent/Guardian Name _____

Healthcare Provider's Name _____ Healthcare Provider's Address & Phone _____

My healthcare provider has advised that I / my child *(circle one)* should receive the following vaccines:

Recommended	Vaccinations	Declined
☐	Diphtheria, Tetanus, acellular Pertussis (**DTaP** or **Tdap**) Vaccine	☐
☐	Diphtheria Tetanus (**DT**) or Tetanus diphtheria (**Td**) Vaccine	☐
☐	*Haemophilus influenzae* type b (**Hib**) Vaccine	☐
☐	Hepatitis A Vaccine (**HAV**)	☐
☐	Hepatitis B Vaccine (**HBV**)	☐
☐	Human Papillomavirus Vaccine (**HPV**)	☐
☐	Inactivated Polio Virus Vaccine (**IPV**)	☐
☐	Influenza (**flu**) Vaccine	☐
☐	Measles-Mumps-Rubella (**MMR**) Vaccine	☐
☐	Meningococcal Vaccine (**MCV4**, **MenB**, **MPSV4**)	☐
☐	Pneumococcal Vaccine (**PCV** or **PPSV**)	☐
☐	Rotavirus Vaccine	☐
☐	Varicella (Chickenpox) Vaccine	☐
☐	Zoster Vaccine	☐
☐	Other _____	☐

I have read the Vaccine Information Statement(s) from the Centers for Disease Control and Prevention, which explain the vaccine(s) and the disease(s) they prevent. I have had the opportunity to discuss these with my healthcare provider, who has answered all of my questions regarding the recommended vaccine(s). I understand the following:

- The **purpose** of and the **need** for the recommended vaccine(s)
- The **risks and benefits** of the recommended vaccine(s)
- If (I) my child (do) does not receive the vaccine(s), **the consequences** may include:
  - Contracting the illness the vaccine should prevent (The outcomes of these illnesses may include but are not limited to one or more of the following: hospitalization, pneumonia, brain damage, meningitis, seizures, deafness, and death.)
  - transmitting the disease to others (If an outbreak of vaccine-preventable disease occurs at my child's school or child care and my child is not protected, he/she may not be permitted to return until risk of catching the disease has passed.)
- My healthcare provider, the Georgia Immunization Program, the American Academy of Pediatrics, the American Academy of Family Physicians, and the Centers for Disease Control and Prevention all strongly recommend that these vaccines be given according to the published Advisory Committee on Immunization Practices (ACIP) schedule. Nevertheless, I have decided at this time to decline the vaccine(s) recommended for me / my child, as indicated above, by checking the appropriate box under the column titled "declined."

I understand that failure to follow the recommendations about vaccination may endanger the health or life of me or my child and others with whom I or my child might come into contact.

I understand that I may discuss this issue with my (my child's) healthcare provider and that I may change my mind and accept vaccination for myself (my child) anytime in the future.

I understand that my refusal to have my child vaccinated does not exempt my child from Georgia school or child care facility immunization requirements and that he/she will be unable to attend school or child care without the required vaccinations.

Client/Parent/Guardian Signature _____ Date _____

Witness _____ Date _____

NEGATIVA A LA VACUNACIÓN

Nombre del cliente _____ Fecha de nacimiento del cliente _____

Nombre del (de la) padre/madre/tutor legal _____

Nombre del proveedor de atención médica _____ Dirección y teléfono del proveedor de atención médica _____

Mi proveedor de atención médica recomendó que yo/mi hijo(a) *(marque con un círculo)* recibiera las siguientes vacunas:

Recomendada	Vacunación	Rechazada
☐	Vacuna contra la difteria, el tétanos y la tos ferina acelular (**DTaP** o **Tdap**)	☐
☐	Vacuna contra la difteria- tétanos (**DT**) o el tétanos-difteria (**Td**)	☐
☐	Vacuna contra la *Haemophilus influenzae* tipo b (**Hib**)	☐
☐	Vacuna contra la hepatitis A (**HAV**)	☐
☐	Vacuna contra la hepatitis B (**HBV**)	☐
☐	Vacuna contra el virus del papiloma humano (**HPV**)	☐
☐	Vacuna de poliovirus inactivado (**IPV**)	☐
☐	Vacuna contra la influenza (**gripe**)	☐
☐	Vacuna contra el sarampión, las paperas y la rubeola (**MMR**)	☐
☐	Vacuna contra el meningococo (**MCV4**, **MenB**, **MPSV4**)	☐
☐	Vacuna contra el neumococo (**PCV** o **PPSV**)	☐
☐	Vacuna contra el rotavirus	☐
☐	Vacuna contra la varicela	☐
☐	Vacuna contra el herpes zóster (culebrilla)	☐
☐	Otras _____	☐

He leído la(s) Declaración(es) de Información sobre la(s) Vacuna(s), creada(s) por los Centros para el Control y la Prevención de Enfermedades, que explica(n) la(s) vacuna(s) y la(s) enfermedad(es) que ésta(s) previene(n). He tenido la oportunidad de hablar sobre este tema con mi proveedor de atención médica, quien ha respondido a todas mis preguntas acerca de la(s) vacuna(s) recomendada(s). Entiendo lo siguiente:

- El **propósito** y la **necesidad** de la(s) vacuna(s) recomendada(s)
- Los **riesgos y beneficios** de la(s) vacuna(s) recomendada(s)
- Si yo/mi hijo(a) recibo(e)/no recibo(e) la(s) vacuna(s), **las consecuencias** podrían incluir:
  - Contraer la enfermedad que la vacuna debería prevenir (Estas enfermedades podrían tener uno o más de los siguientes resultados: hospitalización, neumonía, daño cerebral, meningitis, convulsiones, sordera y muerte).
  - Transmitir la enfermedad a otros (Si se produce en la escuela o guardería de mi hijo(a) un brote de una enfermedad prevenible con vacunas y mi hijo(a) no está protegido(a), se le podría impedir que regrese hasta que el riesgo de contraer la enfermedad haya pasado).
- Mi proveedor de atención médica, el Programa de Inmunización de Georgia, la Academia Americana de Pediatría, la Academia Americana de Médicos de Familia y los Centros para el Control y la Prevención de Enfermedades recomiendan que estas vacunas se administren de acuerdo al calendario de vacunaciones publicado por el Comité Asesor sobre Prácticas de Inmunización (ACIP, por sus siglas en inglés); sin embargo, he decidido rechazar en este momento la(s) vacuna(s) recomendada(s) para mí/mi hijo(a), tal como lo indiqué anteriormente al marcar la casilla correspondiente bajo la columna titulada “rechazada”.

Entiendo que al no seguir las recomendaciones de vacunación, podría poner en peligro mi salud o vida y la de mi hijo(a), así como también la de otros con quienes yo o mi hijo(a) podríamos entrar en contacto.

Entiendo que puedo hablar sobre este tema con mi proveedor de atención médica (él de mi hijo/a) y que puedo cambiar de opinión y aceptar la vacunación para mí (mi hijo/a) en cualquier momento en el futuro.

Entiendo que mi negativa a vacunar a mi hijo(a) no lo(a) exime de los requisitos de vacunación para la escuela o guardería en Georgia y que él/ella no podrá asistir a la escuela o guardería si no cumple con estos requisitos de vacunación.

Firma del (de la) cliente/ padre/madre/tutor legal _____ Fecha _____

Testigo _____ Fecha _____

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4. ADVERSE EVENTS FOLLOWING IMMUNIZATIONS

Policy for Reporting Vaccine Adverse Events Following Immunizations

Handling of Emergencies Following the Administration of Vaccines

Vaccine Adverse Event Reporting System- Form VAERS (FDA)

Frequently Asked Questions about VAERS (**Go to Link http://vaers.hhs.gov/faqs.html**)

National Vaccine Injury Compensation Program Vaccine Injury Table

Vaccine Injury Compensation Program (VICP) **(Go to Link http://www.nvic.org/faqs/vaccine-injury-compensation.aspx)**

POLICY FOR REPORTING VACCINE ADVERSE EVENTS FOLLOWING IMMUNIZATION

The Vaccine Adverse Event Reporting System (VAERS) is a national vaccine safety surveillance program. The National Vaccine Injury Compensation Program is a separate program designed to compensate individuals or families of individuals, who have been injured by childhood vaccines. Reporting an event to VAERS does NOT file a claim for compensation.

PUBLIC HEALTH CLINICS

When the recipient of an immunizing agent is known to have experienced a problem that was serious enough to involve a visit to a physician, hospital or health care facility within 30 days after the immunization, that event is to be reported to the Immunization Program as soon as possible on Form **FDA VAERS-2.0 (6/17)**. A reproduction of Form **FDA VAERS-2.0 (6/17)** is included in this section and can be downloaded at www.vaers.hhs.gov.

Form FDA VAERS-2.0 should be mailed or faxed immediately to the Georgia Immunization Program. Copies may be sent to the District Health Unit as established by the district health authority.

Georgia Immunization Program
2 Peachtree Street, NW, Room 13-276
Atlanta, GA 30303

Phone 404-657-3158
FAX 404-657-1463

VAERS Reports alleging a death associated with immunization should be FAXED **immediately** to the Immunization Program. An autopsy report should be sent to the Immunization Program as soon as it is available.

After evaluation of the VAERS Report(s) by the Immunization Program staff, it may be necessary to communicate with the person who completed the form to request additional information.

PRIVATE CLINICS and COMMUNITY HEALTH CENTERS

Private physicians should report adverse events online at www.vaers.hhs.gov or mail Form FDA VAERS-2.0 (06/17) directly to:

VAERS
P. O. Box 1100
Rockville, MD 20849-1100

Phone 1-800-822-7967 ext. 214
FAX 301-217-9660

Private physicians may also submit vaccine adverse event data securely via the internet at www.vaers.org

★ATTENTION ALL PUBLIC CLINICS★
***Do not* send reports directly to the Centers for Disease Control and Prevention (CDC).**

HANDLING OF EMERGENCIES FOLLOWING THE ADMINISTRATION OF VACCINES

For the handling of emergencies following the administration of vaccines, the GA Immunization **Program** recommends the following:

1. Each district should follow the "Medical Emergency Procedures" included in the current State Nurse Protocol Manual or develop and utilize emergency protocols and procedures consistent with those outlined in the State Nurse Protocol.

2. Each district should utilize the Quality Assurance Standards for the **"Management of Adverse Medication Reactions"** that are outlined in the **"Quality Assurance/Quality Improvement for Public Health Nursing Practice Manual**."

VAERS Vaccine Adverse Event Reporting System
www.vaers.hhs.gov

Adverse events are possible reactions or problems that occur during or after vaccination. Items **2, 3, 4, 5, 6, 17, 18** and **21** are **ESSENTIAL** and should be completed. Patient identity is kept confidential. Instructions are provided on the last two pages.

INFORMATION ABOUT THE PATIENT WHO RECEIVED THE VACCINE (Use **Continuation Page** if needed).

1. Patient name: (first) _____ (last) _____
Street address: _____
City: _____ State: _____ County: _____
ZIP code: _____ Phone: ( ) _____ Email: _____

2. Date of birth: (mm/dd/yyyy) _____ 3. Sex: ☐ Male ☐ Female ☐ Unknown

4. Date and time of vaccination: (mm/dd/yyyy) _____ Time: hh:mm ☐AM ☐PM

5. Date and time adverse event started: (mm/dd/yyyy) _____ Time: hh:mm ☐AM ☐PM

6. Age at vaccination: ____Years ____Months 7. Today's date: (mm/dd/yyyy) _____

8. Is the report about vaccine(s) given to a pregnant woman?: ☐ No ☐ Unknown ☐ Yes
(If yes, describe the event, any pregnancy complications, and estimated due date if known in item 18).

9. Prescriptions, over-the-counter medications, dietary supplements, or herbal remedies being taken at the time of vaccination:

10. Allergies to medications, food, or other products:

11. Other illnesses at the time of vaccination and up to one month prior:

12. Chronic or long-standing health conditions:

INFORMATION ABOUT THE PERSON COMPLETING THIS FORM

13. Form completed by: (name) _____
Relation to patient: ☐ Healthcare professional/staff ☐ Patient (yourself) ☐ Parent/guardian/caregiver ☐ Other: _____
Street address: _____ ☐ Check if same as item 1.
City: _____ State: _____ ZIP code: _____
Phone: ( ) _____ Email: _____

14. Best doctor/healthcare professional to contact about the adverse event: Name: _____ Phone: ( ) _____ Ext: _____

INFORMATION ABOUT THE FACILITY WHERE VACCINE WAS GIVEN

15. Facility/clinic name: _____
Fax: ( ) _____
Street address: ☐ Check if same as item 13.
_____
_____
City: _____
State: _____ ZIP code: _____
Phone: ( ) _____

16. Type of facility: (Check one).
☐ Doctor's office or hospital
☐ Pharmacy or drug store
☐ Workplace clinic
☐ Public health clinic
☐ Nursing home or senior living facility
☐ School/student health clinic
☐ Other: _____
☐ Unknown

WHICH VACCINES WERE GIVEN? WHAT HAPPENED TO THE PATIENT?

17. Enter all vaccines given on the date listed in item 4: (Route is HOW vaccine was given, Body site is WHERE vaccine was given). Use **Continuation Page** if needed.

Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	Dose no. in series
select			select	select	select
select			select	select	select
select			select	select	select
select			select	select	select

18. Describe the adverse event(s), treatment, and outcome(s), if any: (symptoms, signs, time course, etc.)
Use **Continuation Page** if needed.

19. Medical tests and laboratory results related to the adverse event(s): (include dates)
Use **Continuation Page** if needed.

20. Has the patient recovered from the adverse event(s)?: ☐ Yes ☐ No ☐ Unknown

21. Result or outcome of adverse event(s): (Check all that apply).
☐ Doctor or other healthcare professional office/clinic visit
☐ Emergency room or emergency department visit
☐ Hospitalization: Number of days (if known) _____
Hospital name: _____
City: _____ State: _____
☐ Prolongation of existing hospitalization (vaccine received during existing hospitalization)
☐ Life threatening illness (immediate risk of death from the event)
☐ Disability or permanent damage
☐ Patient died: Date of death _____ (mm/dd/yyyy)
☐ Congenital anomaly or birth defect
☐ None of the above

ADDITIONAL INFORMATION (Use **Continuation Page** if needed).

22. Any other vaccines received within one month prior to the date listed in item 4:

Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	Dose no. in series
select			select	select	select
select			select	select	select

23. Has the patient ever had an adverse event following any previous vaccine?: (If yes, describe adverse event, patient age at vaccination, vaccination dates, vaccine type, and brand name).
☐ No ☐ Unknown ☐ Yes _____

24. Patient's race: (Check all that apply). ☐ American Indian or Alaska Native ☐ Asian ☐ Black or African American ☐ Native Hawaiian or Other Pacific Islander ☐ White ☐ Unknown ☐ Other: _____

25. Patient's ethnicity: ☐ Hispanic or Latino ☐ Not Hispanic or Latino ☐ Unknown

26. Immuniz. proj. report no.: (Health Dept use only). _____

COMPLETE ONLY FOR U.S. MILITARY/DEPARTMENT OF DEFENSE (DoD) RELATED REPORTS

27. Status at vaccination: ☐ Active duty ☐ Reserve ☐ National Guard ☐ Beneficiary ☐ Other: _____

28. Vaccinated at Military/DoD site: ☐ Yes ☐ No

SAVE

CONTINUATION PAGE (Use only if you need more space from the front page).

17. Enter all vaccines given on the date listed in item 4 (continued):					Dose no. in series
Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	
select			select	select	select
select			select	select	select
select			select	select	select
select			select	select	select

22. Any other vaccines received within one month prior to the date listed in item 4 (continued):					Dose no. in series
Vaccine (type and brand name)	Manufacturer	Lot number	Route	Body site	
select			select	select	select
select			select	select	select
select			select	select	select
select			select	select	select
select			select	select	select
select			select	select	select

Use the space below to provide any additional information (indicate Item number):

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SAVE

RETURN TO PAGE 1

COMPLETING THE VACCINE ADVERSE EVENT REPORTING SYSTEM (VAERS) FORM

GENERAL INSTRUCTIONS

- Submit this form electronically using the Internet. For instructions, visit www.vaers.hhs.gov/uploadfile/.
- If you are unable to submit this form electronically, you may fax it to VAERS at 1-877-721-0366.
- If you need additional help submitting a report you may call the VAERS toll-free information line at 1-800-822-7967, or send an email to info@vaers.org.
- Fill out the VAERS form as completely as possible and use the **Continuation Page** if needed. Use a separate VAERS form for each individual patient.
- If you do not know exact numbers, dates, or times, please provide your best guess. You may leave these spaces blank if you are not comfortable guessing.
- You can get specific information on the vaccine and vaccine lot number by contacting the facility or clinic where the vaccine was administered.
- Please report all significant adverse events that occur after vaccination of adults and children, even if you are not sure whether the vaccine caused the adverse event.
- Healthcare professionals should refer to the VAERS Table of Reportable Events at www.vaers.hhs.gov/reportable.html for the list of adverse events that must be reported by law (42 USC 300aa-25).
- Healthcare professionals treating a patient for a suspected vaccine adverse event may need to contact the person who administered the vaccine in order to exchange information and decide how best to complete and submit the VAERS form.

SPECIFIC INSTRUCTIONS

Items 2, 3, 4, 5, 6, 17, 18 and 21 are **ESSENTIAL** and should be completed.

- **Items 4 and 5**: Provide dates and times as specifically as you can and enter as much information as possible (e.g., enter the month and year even if you don't know the day). If you do not know the exact time, but know it was in the morning ("AM") or afternoon or evening ("PM"), please provide that information.
- **Item 6**: If you fill in the form by hand, provide age in years. If a child is less than 1 year old, provide months of age. If a child is more than 1 year old but less than 2 years old, provide year and months (e.g., 1 year and 6 months). If a child is less than 1 month of age when vaccinated (e.g., a birth dose of hepatitis B vaccine) then answer 0 years and 0 months, but be sure to include the patient's date of birth (Item 2) and date and time of vaccination (Item 4).
- **Item 8:** If the report is about a vaccine given to a pregnant woman, select "Yes" and describe the event, any pregnancy complications, and estimated due date if known in item 18. Otherwise, select "No" or "Unknown."
- **Item 9:** List any prescriptions, over-the-counter medications, dietary supplements, herbal remedies, or other non-traditional/alternative medicines being taken by the patient when the vaccine(s) was given.
- **Item 10:** List any allergies the patient has to medications, foods, or other products.
- **Item 11:** List any short-term or acute illnesses the patient had on the date of vaccination AND up to one month prior to this date (e.g., cold, stomach flu, ear infection, etc.). This does **NOT** include the adverse event you are reporting.
- **Item 12:** List any chronic or long-standing health conditions the patient has (e.g., asthma, diabetes, heart disease).
- **Item 13:** List the name of the person who is completing the form. Select the "Check if same as item 1" box if you are the patient or if you live at the same address as the patient. The contact information you provided in item 1 will be automatically entered for you. Otherwise, please provide new contact information.
- **Item 14:** List the doctor or other healthcare professional who is the best person to contact to discuss the clinical details of the adverse event.
- **Item 15:** Select the "Check if same as item 13" box if the person completing the form works at the facility that administered the vaccine(s). The contact information provided in item 13 will be automatically entered for you. Otherwise, provide new contact information.
- **Item 16:** Select the option that best describes the type of facility where the vaccine(s) was given.

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- **Item 17:** Include only vaccines given on the date provided in item 4. The vaccine route options include:
  - Injection/shot (intramuscular, subcutaneous, intradermal, jet injection, and unknown)
  - By mouth/oral
  - In nose/intranasal
  - Other (specify)
  - Unknown

  For body site, the options include:
  - Right arm
  - Left arm
  - Arm (side unknown)
  - Right thigh
  - Left thigh
  - Thigh (side unknown)
  - Nose
  - Mouth
  - Other (specify)
  - Unknown

  For vaccines given as a series (i.e., 2 or more doses of the same vaccine given to complete a series), list the dose number for the vaccine in the last column named "Dose no. in series."
- **Item 18:** Describe the adverse event(s), treatment, and outcome(s). Include signs and symptoms, when the symptoms occurred, diagnosis, and treatment. Provide specific information if you can (e.g., if patient had a fever, provide the temperature).
- **Item 19:** List any medical tests and laboratory results related to the adverse event(s). Include abnormal findings as well as normal or negative findings.
- **Item 20:** Select "Yes" if the patient's health is the same as it was prior to the vaccination or "No" if the patient has not returned to the same state of health prior to the vaccination, and provide details in item 18. Select "Unknown" if the patient's present condition is not known.
- **Item 21:** Select the result(s) or outcome(s) for the patient. If the patient did not have any of the outcomes listed, select "None of the above." Prolongation of existing hospitalization means the patient received a vaccine during a hospital stay and an adverse event following vaccination occurred that resulted in the patient spending extra time in the hospital. Life threatening illness means you believe this adverse event could have resulted in the death of the patient.
- **Item 22:** List any other vaccines the patient received within one month prior to the vaccination date listed in item 4.
- **Item 23:** Describe the adverse event(s) following any previous vaccine(s). Include patient age at vaccination, dates of vaccination, vaccine type, and brand name.
- **Item 24:** Check all races that apply.
- **Item 25:** Check the single best answer for ethnicity.
- **Item 26:** For health department use only.
- **Items 27 and 28:** Complete only for U.S. Military or Department of Defense related reports. In addition to active duty service members, Reserve and National Guard members, beneficiaries include: retirees, their families, survivors, certain former spouses, and others who are registered in the Defense Enrollment Eligibility Reporting System (DEERS).

GENERAL INFORMATION

- VAERS (www.vaers.hhs.gov) is a national vaccine safety monitoring system that collects information about adverse events (possible reactions or problems) that occur during or after administration of vaccines licensed in the United States.
- VAERS protects patient identity and keeps patient identifying information confidential.
- The Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule permits reporting of protected health information to public health authorities including the Centers for Disease Control and Prevention (CDC) and U.S. Food and Drug Administration (FDA) (45 CFR § 164.512(b)).
- VAERS accepts all reports without judging the importance of the adverse event or whether a vaccine caused the adverse event.
- Acceptance of a VAERS report by CDC and FDA does not constitute admission that the vaccine or healthcare personnel caused or contributed to the reported event.
- The National Vaccine Injury Compensation Program (VICP) is administered by the Health Resources and Services Administration (HRSA). The VICP is separate from the VAERS program and reporting an event to VAERS does not constitute filing a claim for compensation to the VICP (see www.hrsa.gov/vaccinecompensation/index.html).
- Knowingly filing a false VAERS report with the intent to mislead the Department of Health and Human Services is a violation of Federal law (18 U.S. Code § 1001) punishable by fine and imprisonment.

Frequently Asked Questions About VAERS **(Remove from manual)**

(**Update go to Link** https://vaers.hhs.gov/faq.html**)**

Vaccine Injury Table

Applies Only to Petitions for Compensation Filed under the National Vaccine Injury Compensation Program on or after March 21, 2017

(a) In accordance with section 312(b) of the National Childhood Vaccine Injury Act of 1986, title III of Public Law 99-660, 100 Stat. 3779 (42 U.S.C. 300aa-1 note) and section 2114(c) of the Public Health Service Act, as amended (PHS Act) (42 U.S.C. 300aa-14(c)), the following is a table of vaccines, the injuries, disabilities, illnesses, conditions, and deaths resulting from the administration of such vaccines, and the time period in which the first symptom or manifestation of onset or of the significant aggravation of such injuries, disabilities, illnesses, conditions, and deaths is to occur after vaccine administration for purposes of receiving compensation under the Program. Paragraph (b) of this section sets forth additional provisions that are not separately listed in this Table but that constitute part of it. Paragraph (c) of this section sets forth the qualifications and aids to interpretation for the terms used in the Table. Conditions and injuries that do not meet the terms of the qualifications and aids to interpretation are not within the Table. Paragraph (d) of this section sets forth a glossary of terms used in paragraph (c).

Vaccine	Illness, disability, injury or condition covered	Time period for first symptom or manifestation of onset or of significant aggravation after vaccine administration
I. Vaccines containing tetanus toxoid (*e.g.,* DTaP, DTP, DT, Td, or TT)	A. Anaphylaxis B. Brachial Neuritis	≤4 hours. 2-28 days (not less than 2 days and not more than 28 days).
	C. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	D. Vasovagal syncope	≤1 hour.
II. Vaccines containing whole cell pertussis bacteria, extracted or partial cell pertussis bacteria, or specific pertussis antigen(s) (*e.g.,* DTP, DTaP, P, DTP-Hib)	A. Anaphylaxis	≤4 hours.
	B. Encephalopathy or encephalitis	≤72 hours.
	C. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	D. Vasovagal syncope	≤1 hour.
III. Vaccines containing measles, mumps, and rubella virus or any of its components (*e.g.,* MMR, MM, MMRV)	A. Anaphylaxis B. Encephalopathy or encephalitis	≤4 hours. 5-15 days (not less than 5 days and not more than 15 days).
	C. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	D. Vasovagal syncope	≤1 hour.

Vaccine	Illness, disability, injury or condition covered	Time period for first symptom or manifestation of onset or of significant aggravation after vaccine administration
IV. Vaccines containing rubella virus (*e.g.,* MMR, MMRV)	A. Chronic arthritis	7-42 days (not less than 7 days and not more than 42 days).
V. Vaccines containing measles virus (*e.g.,* MMR, MM, MMRV)	A. Thrombocytopenic purpura	7-30 days (not less than 7 days and not more than 30 days).
	B. Vaccine-Strain Measles Viral Disease in an immunodeficient recipient	
	—Vaccine-strain virus identified	Not applicable.
	—If strain determination is not done or if laboratory testing is inconclusive	≤12 months.
VI. Vaccines containing polio live virus (OPV)	A. Paralytic Polio	
	—in a non-immunodeficient recipient	≤30 days.
	—in an immunodeficient recipient	≤6 months.
	—in a vaccine associated community case	Not applicable.
	B. Vaccine-Strain Polio Viral Infection	
	—in a non-immunodeficient recipient	≤30 days.
	—in an immunodeficient recipient	≤6 months.
	—in a vaccine associated community case	Not applicable.
VII. Vaccines containing polio inactivated virus (*e.g.,* IPV)	A. Anaphylaxis	≤4 hours.
	B. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	C. Vasovagal syncope	≤1 hour.
VIII. Hepatitis B vaccines	A. Anaphylaxis	≤4 hours.
	B. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	C. Vasovagal syncope	≤1 hour.

Vaccine	Illness, disability, injury or condition covered	Time period for first symptom or manifestation of onset or of significant aggravation after vaccine administration
IX. Haemophilus influenzae type b (Hib) vaccines	A. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	B. Vasovagal syncope	≤1 hour.
X. Varicella vaccines	A. Anaphylaxis	≤4 hours.
	B. Disseminated varicella vaccine-strain viral disease	
	—Vaccine-strain virus identified	Not applicable.
	—If strain determination is not done or if laboratory testing is inconclusive	7-42 days (not less than 7 days and not more than 42 days).
	C. Varicella vaccine-strain viral reactivation	Not applicable.
	D. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	E. Vasovagal syncope	≤1 hour.
XI. Rotavirus vaccines	A. Intussusception	1-21 days (not less than 1 day and not more than 21 days).
XII. Pneumococcal conjugate vaccines	A. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	B. Vasovagal syncope	≤1 hour.
XIII. Hepatitis A vaccines	A. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	B. Vasovagal syncope	≤1 hour.
XIV. Seasonal influenza vaccines	A. Anaphylaxis	≤4 hours.
	B. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	C. Vasovagal syncope	≤1 hour.
	D. Guillain-Barré Syndrome	3-42 days (not less than 3 days and not more than 42 days).
XV. Meningococcal vaccines	A. Anaphylaxis	≤4 hours.
	B. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	C. Vasovagal syncope	≤1 hour.
XVI. Human papillomavirus (HPV) vaccines	A. Anaphylaxis	≤4 hours.

Vaccine	Illness, disability, injury or condition covered	Time period for first symptom or manifestation of onset or of significant aggravation after vaccine administration
	B. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	C. Vasovagal syncope	≤1 hour.
XVII. Any new vaccine recommended by the Centers for Disease Control and Prevention for routine administration to children, after publication by the Secretary of a notice of coverage	A. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	B. Vasovagal syncope	≤1hour.

(b) *Provisions that apply to all conditions listed.* (1) Any acute complication or sequela, including death, of the illness, disability, injury, or condition listed in paragraph (a) of this section (and defined in paragraphs (c) and (d) of this section) qualifies as a Table injury under paragraph (a) except when the definition in paragraph (c) requires exclusion.

(2) In determining whether or not an injury is a condition set forth in paragraph (a) of this section, the Court shall consider the entire medical record.

(3) An idiopathic condition that meets the definition of an illness, disability, injury, or condition set forth in paragraph (c) of this section shall be considered to be a condition set forth in paragraph (a) of this section.

(c) *Qualifications and aids to interpretation.* The following qualifications and aids to interpretation shall apply to, define and describe the scope of, and be read in conjunction with paragraphs (a), (b), and (d) of this section:

(1) *Anaphylaxis.* Anaphylaxis is an acute, severe, and potentially lethal systemic reaction that occurs as a single discrete event with simultaneous involvement of two or more organ systems. Most cases resolve without sequela. Signs and symptoms begin minutes to a few hours after exposure. Death, if it occurs, usually results from airway obstruction caused by laryngeal edema or bronchospasm and may be associated with cardiovascular collapse. Other significant clinical signs and symptoms may include the following: Cyanosis, hypotension, bradycardia, tachycardia, arrhythmia, edema of the pharynx and/or trachea and/or larynx with stridor and dyspnea. There are no specific pathological findings to confirm a diagnosis of anaphylaxis.

(2) *Encephalopathy.* A vaccine recipient shall be considered to have suffered an encephalopathy if an injury meeting the description below of an acute encephalopathy occurs within the applicable time period and results in a chronic encephalopathy, as described in paragraph (d) of this section.

(i) *Acute encephalopathy.* (A) For children less than 18 months of age who present:

(*1*) Without a seizure, an acute encephalopathy is indicated by a significantly decreased level of consciousness that lasts at least 24 hours.

(*2*) Following a seizure, an acute encephalopathy is demonstrated by a significantly decreased level of consciousness that lasts at least 24 hours and cannot be attributed to a postictal state—from a seizure or a medication.

(B) For adults and children 18 months of age or older, an acute encephalopathy is one that persists at least 24 hours and is characterized by at least two of the following:

(*1*) A significant change in mental status that is not medication related (such as a confusional state, delirium, or psychosis);

(*2*) A significantly decreased level of consciousness which is independent of a seizure and cannot be attributed to the effects of medication; and

(*3*) A seizure associated with loss of consciousness.

(C) The following clinical features in themselves do not demonstrate an acute encephalopathy or a significant change in either mental status or level of consciousness: Sleepiness, irritability (fussiness), high-pitched and unusual screaming, poor feeding, persistent inconsolable crying, bulging fontanelle, or symptoms of dementia.

(D) Seizures in themselves are not sufficient to constitute a diagnosis of encephalopathy and in the absence of other evidence of an acute encephalopathy seizures shall not be viewed as the first symptom or manifestation of an acute encephalopathy.

(ii) *Exclusionary criteria for encephalopathy.* Regardless of whether or not the specific cause of the underlying condition, systemic disease, or acute event (including an infectious organism) is known, an encephalopathy shall not be considered to be a condition set forth in the Table if it is shown that the encephalopathy was caused by:

(A) An underlying condition or systemic disease shown to be unrelated to the vaccine (such as malignancy, structural lesion, psychiatric illness, dementia, genetic disorder, prenatal or perinatal central nervous system (CNS) injury); or

(B) An acute event shown to be unrelated to the vaccine such as a head trauma, stroke, transient ischemic attack, complicated migraine, drug use (illicit or prescribed) or an infectious disease.

(3) *Encephalitis.* A vaccine recipient shall be considered to have suffered encephalitis if an injury meeting the description below of acute encephalitis occurs within the applicable time period and results in a chronic encephalopathy, as described in paragraph (d) of this section.

(i) *Acute encephalitis.* Encephalitis is indicated by evidence of neurologic dysfunction, as described in paragraph (c)(3)(i)(A) of this section, plus evidence of an inflammatory process in the brain, as described in paragraph (c)(3)(i)(B) of this section.

(A) Evidence of neurologic dysfunction consists of either:

(*1*) One of the following neurologic findings referable to the CNS: Focal cortical signs (such as aphasia, alexia, agraphia, cortical blindness); cranial nerve abnormalities; visual field defects; abnormal presence of primitive reflexes (such as Babinski's sign or sucking reflex); or cerebellar dysfunction (such as ataxia, dysmetria, or nystagmus); or

(*2*) An acute encephalopathy as set forth in paragraph (c)(2)(i) of this section.

(B) Evidence of an inflammatory process in the brain (central nervous system or CNS inflammation) must include cerebrospinal fluid (CSF) pleocytosis (>5 white blood cells (WBC)/mm^3 in children >2 months of age and adults; >15 WBC/mm3 in children <2 months of age); or at least two of the following:

(*1*) Fever (temperature ≥ 100.4 degrees Fahrenheit);

(*2*) Electroencephalogram findings consistent with encephalitis, such as diffuse or multifocal nonspecific background slowing and periodic discharges; or

(*3*) Neuroimaging findings consistent with encephalitis, which include, but are not limited to brain/spine magnetic resonance imaging (MRI) displaying diffuse or multifocal areas of hyperintense signal on T2-weighted, diffusion-weighted image, or fluid-attenuation inversion recovery sequences.

(ii) *Exclusionary criteria for encephalitis.* Regardless of whether or not the specific cause of the underlying condition, systemic disease, or acute event (including an infectious organism) is known, encephalitis shall not be considered to be a condition set forth in the Table if it is shown that the encephalitis was caused by:

(A) An underlying malignancy that led to a paraneoplastic encephalitis;

(B) An infectious disease associated with encephalitis, including a bacterial, parasitic, fungal or viral illness (such as herpes viruses, adenovirus, enterovirus, West Nile Virus, or human immunodeficiency virus), which may be demonstrated by clinical signs and symptoms and need not be confirmed by culture or serologic testing; or

(C) Acute disseminated encephalomyelitis (ADEM). Although early ADEM may have laboratory and clinical characteristics similar to acute encephalitis, findings on MRI are distinct with ADEM displaying evidence of acute demyelination (scattered, focal, or multifocal areas of inflammation and demyelination within cerebral subcortical and deep cortical white matter; gray matter involvement may also be seen but is a minor component); or

(D) Other conditions or abnormalities that would explain the vaccine recipient's symptoms.

(4) *Intussusception.* (i) For purposes of paragraph (a) of this section, intussusception means the invagination of a segment of intestine into the next segment of intestine, resulting in bowel obstruction, diminished arterial blood supply, and blockage of the venous blood flow. This is characterized by a sudden onset of abdominal pain that may be manifested by anguished crying, irritability, vomiting, abdominal swelling, and/or passing of stools mixed with blood and mucus.

(ii) For purposes of paragraph (a) of this section, the following shall not be considered to be a Table intussusception:

(A) Onset that occurs with or after the third dose of a vaccine containing rotavirus;

(B) Onset within 14 days after an infectious disease associated with intussusception, including viral disease (such as those secondary to non-enteric or enteric adenovirus, or other enteric viruses such as Enterovirus), enteric bacteria (such as Campylobacter jejuni), or enteric parasites (such as Ascaris lumbricoides), which may be demonstrated by clinical signs and symptoms and need not be confirmed by culture or serologic testing;

(C) Onset in a person with a preexisting condition identified as the lead point for intussusception such as intestinal masses and cystic structures (such as polyps, tumors, Meckel's diverticulum, lymphoma, or duplication cysts);

(D) Onset in a person with abnormalities of the bowel, including congenital anatomic abnormalities, anatomic changes after abdominal surgery, and other anatomic bowel abnormalities caused by mucosal

hemorrhage, trauma, or abnormal intestinal blood vessels (such as Henoch Scholein purpura, hematoma, or hemangioma); or

(E) Onset in a person with underlying conditions or systemic diseases associated with intussusception (such as cystic fibrosis, celiac disease, or Kawasaki disease).

(5) *Chronic arthritis.* Chronic arthritis is defined as persistent joint swelling with at least two additional manifestations of warmth, tenderness, pain with movement, or limited range of motion, lasting for at least 6 months.

(i) Chronic arthritis may be found in a person with no history in the 3 years prior to vaccination of arthropathy (joint disease) on the basis of:

(A) Medical documentation recorded within 30 days after the onset of objective signs of acute arthritis (joint swelling) that occurred between 7 and 42 days after a rubella vaccination; and

(B) Medical documentation (recorded within 3 years after the onset of acute arthritis) of the persistence of objective signs of intermittent or continuous arthritis for more than 6 months following vaccination; and

(C) Medical documentation of an antibody response to the rubella virus.

(ii) The following shall not be considered as chronic arthritis: Musculoskeletal disorders such as diffuse connective tissue diseases (including but not limited to rheumatoid arthritis, juvenile idiopathic arthritis, systemic lupus erythematosus, systemic sclerosis, mixed connective tissue disease, polymyositis/determatomyositis, fibromyalgia, necrotizing vasculitis and vasculopathies and Sjogren's Syndrome), degenerative joint disease, infectious agents other than rubella (whether by direct invasion or as an immune reaction), metabolic and endocrine diseases, trauma, neoplasms, neuropathic disorders, bone and cartilage disorders, and arthritis associated with ankylosing spondylitis, psoriasis, inflammatory bowel disease, Reiter's Syndrome, blood disorders, or arthralgia (joint pain), or joint stiffness without swelling.

(6) *Brachial neuritis.* This term is defined as dysfunction limited to the upper extremity nerve plexus (*i.e.,* its trunks, divisions, or cords). A deep, steady, often severe aching pain in the shoulder and upper arm usually heralds onset of the condition. The pain is typically followed in days or weeks by weakness in the affected upper extremity muscle groups. Sensory loss may accompany the motor deficits, but is generally a less notable clinical feature. Atrophy of the affected muscles may occur. The neuritis, or plexopathy, may be present on the same side or on the side opposite the injection. It is sometimes bilateral, affecting both upper extremities. A vaccine recipient shall be considered to have suffered brachial neuritis as a Table injury if such recipient manifests all of the following:

(i) Pain in the affected arm and shoulder is a presenting symptom and occurs within the specified time-frame;

(ii) Weakness;

(A) Clinical diagnosis in the absence of nerve conduction and electromyographic studies requires weakness in muscles supplied by more than one peripheral nerve.

(B) Nerve conduction studies (NCS) and electromyographic (EMG) studies localizing the injury to the brachial plexus are required before the diagnosis can be made if weakness is limited to muscles supplied by a single peripheral nerve.

(iii) Motor, sensory, and reflex findings on physical examination and the results of NCS and EMG studies, if performed, must be consistent in confirming that dysfunction is attributable to the brachial plexus; and

(iv) No other condition or abnormality is present that would explain the vaccine recipient's symptoms.

(7) *Thrombocytopenic purpura.* This term is defined by the presence of clinical manifestations, such as petechiae, significant bruising, or spontaneous bleeding, and by a serum platelet count less than 50,000/mm^3 with normal red and white blood cell indices. Thrombocytopenic purpura does not include cases of thrombocytopenia associated with other causes such as hypersplenism, autoimmune disorders (including alloantibodies from previous transfusions) myelodysplasias, lymphoproliferative disorders, congenital thrombocytopenia or hemolytic uremic syndrome. Thrombocytopenic purpura does not include cases of immune (formerly called idiopathic) thrombocytopenic purpura that are mediated, for example, by viral or fungal infections, toxins or drugs. Thrombocytopenic purpura does not include cases of thrombocytopenia associated with disseminated intravascular coagulation, as observed with bacterial and viral infections. Viral infections include, for example, those infections secondary to Epstein Barr virus, cytomegalovirus, hepatitis A and B, human immunodeficiency virus, adenovirus, and dengue virus. An antecedent viral infection may be demonstrated by clinical signs and symptoms and need not be confirmed by culture or serologic testing. However, if culture or serologic testing is performed, and the viral illness is attributed to the vaccine-strain measles virus, the presumption of causation will remain in effect. Bone marrow examination, if performed, must reveal a normal or an increased number of megakaryocytes in an otherwise normal marrow.

(8) *Vaccine-strain measles viral disease.* This term is defined as a measles illness that involves the skin and/or another organ (such as the brain or lungs). Measles virus must be isolated from the affected organ or histopathologic findings characteristic for the disease must be present. Measles viral strain determination may be performed by methods such as polymerase chain reaction test and vaccine-specific monoclonal antibody. If strain determination reveals wild-type measles virus or another, non-vaccine-strain virus, the disease shall not be considered to be a condition set forth in the Table. If strain determination is not done or if the strain cannot be identified, onset of illness in any organ must occur within 12 months after vaccination.

(9) *Vaccine-strain polio viral infection.* This term is defined as a disease caused by poliovirus that is isolated from the affected tissue and should be determined to be the vaccine-strain by oligonucleotide or polymerase chain reaction. Isolation of poliovirus from the stool is not sufficient to establish a tissue specific infection or disease caused by vaccine-strain poliovirus.

(10) *Shoulder injury related to vaccine administration (SIRVA).* SIRVA manifests as shoulder pain and limited range of motion occurring after the administration of a vaccine intended for intramuscular administration in the upper arm. These symptoms are thought to occur as a result of unintended injection of vaccine antigen or trauma from the needle into and around the underlying bursa of the shoulder resulting in an inflammatory reaction. SIRVA is caused by an injury to the musculoskeletal structures of the shoulder (*e.g.* tendons, ligaments, bursae, etc.). SIRVA is not a neurological injury and abnormalities on neurological examination or nerve conduction studies (NCS) and/or electromyographic (EMG) studies would not support SIRVA as a diagnosis (even if the condition causing the neurological abnormality is not known). A vaccine recipient shall be considered to have suffered SIRVA if such recipient manifests all of the following:

(i) No history of pain, inflammation or dysfunction of the affected shoulder prior to intramuscular vaccine administration that would explain the alleged signs, symptoms, examination findings, and/or diagnostic studies occurring after vaccine injection;

(ii) Pain occurs within the specified time-frame;

(iii) Pain and reduced range of motion are limited to the shoulder in which the intramuscular vaccine was administered; and

(iv) No other condition or abnormality is present that would explain the patient's symptoms (*e.g.* NCS/EMG or clinical evidence of radiculopathy, brachial neuritis, mononeuropathies, or any other neuropathy).

(11) *Disseminated varicella vaccine-strain viral disease.* Disseminated varicella vaccine-strain viral disease is defined as a varicella illness that involves the skin beyond the dermatome in which the vaccination was given and/or disease caused by vaccine-strain varicella in another organ. For organs other than the skin, the disease must be demonstrated in the involved organ and not just through mildly abnormal laboratory values. If there is involvement of an organ beyond the skin, and no virus was identified in that organ, the involvement of all organs must occur as part of the same, discrete illness. If strain determination reveals wild-type varicella virus or another, non-vaccine-strain virus, the viral disease shall not be considered to be a condition set forth in the Table. If strain determination is not done or if the strain cannot be identified, onset of illness in any organ must occur 7- 42 days after vaccination.

(12) *Varicella vaccine-strain viral reactivation disease.* Varicella vaccine-strain viral reactivation disease is defined as the presence of the rash of herpes zoster with or without concurrent disease in an organ other than the skin. Zoster, or shingles, is a painful, unilateral, pruritic rash appearing in one or more sensory dermatomes. For organs other than the skin, the disease must be demonstrated in the involved organ and not just through mildly abnormal laboratory values. There must be laboratory confirmation that the vaccine-strain of the varicella virus is present in the skin or in any other involved organ, for example by oligonucleotide or polymerase chain reaction. If strain determination reveals wild-type varicella virus or another, non-vaccine-strain virus, the viral disease shall not be considered to be a condition set forth in the Table.

(13) *Vasovagal syncope.* Vasovagal syncope (also sometimes called neurocardiogenic syncope) means loss of consciousness (fainting) and postural tone caused by a transient decrease in blood flow to the brain occurring after the administration of an injected vaccine. Vasovagal syncope is usually a benign condition but may result in falling and injury with significant sequela. Vasovagal syncope may be preceded by symptoms such as nausea, lightheadedness, diaphoresis, and/or pallor. Vasovagal syncope may be associated with transient seizure-like activity, but recovery of orientation and consciousness generally occurs simultaneously with vasovagal syncope. Loss of consciousness resulting from the following conditions will not be considered vasovagal syncope: organic heart disease, cardiac arrhythmias, transient ischemic attacks, hyperventilation, metabolic conditions, neurological conditions, and seizures. Episodes of recurrent syncope occurring after the applicable time period are not considered to be sequela of an episode of syncope meeting the Table requirements.

(14) *Immunodeficient recipient.* Immunodeficient recipient is defined as an individual with an identified defect in the immunological system which impairs the body's ability to fight infections. The identified defect may be due to an inherited disorder (such as severe combined immunodeficiency resulting in absent T lymphocytes), or an acquired disorder (such as acquired immunodeficiency syndrome resulting from decreased CD4 cell counts). The identified defect must be demonstrated in the medical records, either preceding or postdating vaccination.

(15) *Guillain-Barré Syndrome (GBS).* (i) GBS is an acute monophasic peripheral neuropathy that encompasses a spectrum of four clinicopathological subtypes described below. For each subtype of GBS, the interval between the first appearance of symptoms and the nadir of weakness is between 12 hours and 28 days. This is followed in all subtypes by a clinical plateau with stabilization at the nadir of symptoms, or subsequent improvement without significant relapse. Death may occur without a clinical plateau. Treatment related fluctuations in all subtypes of GBS can occur within 9 weeks of GBS symptom onset and recurrence of symptoms after this time-frame would not be consistent with GBS.

(ii) The most common subtype in North America and Europe, comprising more than 90 percent of cases, is acute inflammatory demyelinating polyneuropathy (AIDP), which has the pathologic and electrodiagnostic features of focal demyelination of motor and sensory peripheral nerves and nerve roots. Another subtype called acute motor axonal neuropathy (AMAN) is generally seen in other parts of the world and is predominated by axonal damage that primarily affects motor nerves. AMAN lacks features of demyelination. Another less common subtype of GBS includes acute motor and sensory neuropathy (AMSAN), which is an axonal form of GBS that is similar to AMAN, but also affects the sensory nerves and roots. AIDP, AMAN, and AMSAN are typically characterized by symmetric motor flaccid weakness, sensory abnormalities, and/or autonomic dysfunction caused by autoimmune damage to peripheral nerves and nerve roots. The diagnosis of AIDP, AMAN, and AMSAN requires:

(A) Bilateral flaccid limb weakness and decreased or absent deep tendon reflexes in weak limbs;

(B) A monophasic illness pattern;

(C) An interval between onset and nadir of weakness between 12 hours and 28 days;

(D) Subsequent clinical plateau (the clinical plateau leads to either stabilization at the nadir of symptoms, or subsequent improvement without significant relapse; however, death may occur without a clinical plateau); and,

(E) The absence of an identified more likely alternative diagnosis.

(iii) Fisher Syndrome (FS), also known as Miller Fisher Syndrome, is a subtype of GBS characterized by ataxia, areflexia, and ophthalmoplegia, and overlap between FS and AIDP may be seen with limb weakness. The diagnosis of FS requires:

(A) Bilateral ophthalmoparesis;

(B) Bilateral reduced or absent tendon reflexes;

(C) Ataxia;

(D) The absence of limb weakness (the presence of limb weakness suggests a diagnosis of AIDP, AMAN, or AMSAN);

(E) A monophasic illness pattern;

(F) An interval between onset and nadir of weakness between 12 hours and 28 days;

(G) Subsequent clinical plateau (the clinical plateau leads to either stabilization at the nadir of symptoms, or subsequent improvement without significant relapse; however, death may occur without a clinical plateau);

(H) No alteration in consciousness;

(I) No corticospinal track signs; and

(J) The absence of an identified more likely alternative diagnosis.

(iv) Evidence that is supportive, but not required, of a diagnosis of all subtypes of GBS includes electrophysiologic findings consistent with GBS or an elevation of cerebral spinal fluid (CSF) protein with

a total CSF white blood cell count below 50 cells per microliter. Both CSF and electrophysiologic studies are frequently normal in the first week of illness in otherwise typical cases of GBS.

(v) To qualify as any subtype of GBS, there must not be a more likely alternative diagnosis for the weakness.

(vi) Exclusionary criteria for the diagnosis of all subtypes of GBS include the ultimate diagnosis of any of the following conditions: chronic immune demyelinating polyradiculopathy (CIDP), carcinomatous meningitis, brain stem encephalitis (other than Bickerstaff brainstem encephalitis), myelitis, spinal cord infarct, spinal cord compression, anterior horn cell diseases such as polio or West Nile virus infection, subacute inflammatory demyelinating polyradiculoneuropathy, multiple sclerosis, cauda equina compression, metabolic conditions such as hypermagnesemia or hypophosphatemia, tick paralysis, heavy metal toxicity (such as arsenic, gold, or thallium), drug-induced neuropathy (such as vincristine, platinum compounds, or nitrofurantoin), porphyria, critical illness neuropathy, vasculitis, diphtheria, myasthenia gravis, organophosphate poisoning, botulism, critical illness myopathy, polymyositis, dermatomyositis, hypokalemia, or hyperkalemia. The above list is not exhaustive.

(d) *Glossary for purposes of paragraph (c) of this section*—(1) *Chronic encephalopathy.* (i) A chronic encephalopathy occurs when a change in mental or neurologic status, first manifested during the applicable Table time period as an acute encephalopathy or encephalitis, persists for at least 6 months from the first symptom or manifestation of onset or of significant aggravation of an acute encephalopathy or encephalitis.

(ii) Individuals who return to their baseline neurologic state, as confirmed by clinical findings, within less than 6 months from the first symptom or manifestation of onset or of significant aggravation of an acute encephalopathy or encephalitis shall not be presumed to have suffered residual neurologic damage from that event; any subsequent chronic encephalopathy shall not be presumed to be a sequela of the acute encephalopathy or encephalitis.

(2) *Injected* refers to the intramuscular, intradermal, or subcutaneous needle administration of a vaccine.

(3) *Sequela* means a condition or event which was actually caused by a condition listed in the Vaccine Injury Table.

(4) *Significantly decreased level of consciousness* is indicated by the presence of one or more of the following clinical signs:

(i) Decreased or absent response to environment (responds, if at all, only to loud voice or painful stimuli);

(ii) Decreased or absent eye contact (does not fix gaze upon family members or other individuals); or

(iii) Inconsistent or absent responses to external stimuli (does not recognize familiar people or things).

(5) *Seizure* includes myoclonic, generalized tonic-clonic (grand mal), and simple and complex partial seizures, but not absence (petit mal), or pseudo seizures. Jerking movements or staring episodes alone are not necessarily an indication of seizure activity.

(e) *Coverage provisions.* (1) Except as provided in paragraph (e)(2), (3), (4), (5), (6), (7), or (8) of this section, this section applies only to petitions for compensation under the program filed with the United States Court of Federal Claims on or after February 21, 2017.

(2) Hepatitis B, Hib, and varicella vaccines (Items VIII, IX, and X of the Table) are included in the Table as of August 6, 1997.

(3) Rotavirus vaccines (Item XI of the Table) are included in the Table as of October 22, 1998.

(4) Pneumococcal conjugate vaccines (Item XII of the Table) are included in the Table as of December 18, 1999.

(5) Hepatitis A vaccines (Item XIII of the Table) are included on the Table as of December 1, 2004.

(6) Trivalent influenza vaccines (Included in item XIV of the Table) are included on the Table as of July 1, 2005. All other seasonal influenza vaccines (Item XIV of the Table) are included on the Table as of November 12, 2013.

(7) Meningococcal vaccines and human papillomavirus vaccines (Items XV and XVI of the Table) are included on the Table as of February 1, 2007.

(8) Other new vaccines (Item XVII of the Table) will be included in the Table as of the effective date of a tax enacted to provide funds for compensation paid with respect to such vaccines. An amendment to this section will be published in the FEDERAL REGISTER to announce the effective date of such a tax.

Vaccine Injury Compensation Program (VICP) **(Remove from manual)**

(**Update go to Link** http://www.nvic.org/faqs/vaccine-injury-compensation.aspx **)**

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SUMMARY OF IMMUNIZATION POLICIES RELATIVE TO GEORGIA LAW

Copies of the pertinent immunization sections of the Georgia law and Rules of the Department of Public Health are included in this section along with copies of the Immunization Certificate and accompanying Policy Guides. Copies are also posted on the Immunization Program web site under the school resources section. The following is a summary of policies that relate to the law and rules. For more detailed information, please refer to the copies of the law and rules.

I. Georgia Law and DPH Rules

A. Georgia Law (Official Code of Georgia, Annotated, Section 20-2-771, Section 49-4-182 and Section 49-4-183) defines the target population for which immunity to specified diseases is required and sets standards for the use of immunization certificates.

B. The law also charges the Department of Public Health (DPH) with responsibility for specifying which immunizations are required and the standards for the same. These are defined in the immunization section (Chapter 511-2-2) of the Rules of the Department of Public Health.

C. The DPH Rules define terms such as “Immunization,” “Physician,” and “Health Authority,” list the diseases for which immunity is required, and state the standards for issuing certificates of immunization based on the current ACIP Recommended Childhood Immunization Schedule.

D. Standards for the Georgia Department of Public Health (DPH) Certificates of Immunization are also defined on the GA DPH Certificate of Immunization (Form 3231) and the accompanying Policy Guide 3231REQ and Policy Guide 3231INS.

E. Georgia law requires immunization of a preschool age child as a condition of receipt of Temporary Assistance for Needy Families (TANF) benefits. The implementation of the law is the responsibility of the Department of Human Services (DHS) and it is administered by DHS Division of Family and Children Services. Proof of compliance will be provided on the GA DPH Certificate of Immunization (Form 3231).

F. Any county school superintendent, school principal, or a chief operating officer of a school or public or private daycare center or nursery who does not enforce the requirements or any parent or guardian who intentionally does not comply with the immunization requirements is subject to penalties as outlined in Subsection (h) of the Official Code of Georgia, Annotated, Section 20-2-771.

G. When persons in charge of child care facilities fail to improve unacceptable levels of compliance with the law, despite repeated requests by public health officials, Bright from the Start, Georgia Department of Early Care and Learning (DECAL) should be notified.

H. Any infant/child who is under the age of four and is attending child care must be age appropriately immunized with the required vaccines during the time of attendance. This means that the certificate for every child under four years of age must be marked with an expiration date that indicates the date the next immunization is due. Once a child is four years of age or older and has met the entry requirements for school, [kindergarten (5 year)], a copy of the Immunization Certificate which has been marked as “Complete for 6th grade” or “Complete for 7th Grade or higher and includes the vaccine administration dates, or dates of immunity through disease history or serology, may be utilized as documentation for both

SUMMARY OF IMMUNIZATION POLICIES RELATIVE TO GEORGIA LAW

school and child care facilities.

I. Children attending school (kindergarten through twelfth grade, or children ages five through nineteen if grade divisions are not used) or a childcare facility must be age appropriately immunized with all the required vaccines at the time of first entry into a school or facility in Georgia. "New entrant" is defined as any child entering a Georgia school or facility for the first time, or entering after having been absent for 12 months or 1 school year. This means that if a child is not "up-to-date" at the time of entry, he/she may attend school provided the certificate is marked with a current expiration date indicating that the child is in the process of receiving the required vaccines and doses. Once all grade level entry requirements have been met, the certificate must be replaced with a certificate marked "Complete for School Entry." (DPH Rules Chapter 511-2-2)

J. Children, who are entering a school or child care facility, may be granted a 30 day waiver of the certification requirement for a justified reason to accommodate the obtaining of immunization records. If necessary, this waiver may be extended from the date of first admittance or first attendance whichever is earlier for up to 90 calendar days for children transferring into the school system from out-of-state or entering kindergarten or the school system from out-of-state, provided the parent/guardian can show documentation from their provider or public health clinic that the child is in the process of receiving the required immunizations. A school or child care facility should maintain a file of those children who have been granted a 30 day waiver, and any extension of that waiver and should keep the file current. Children who have not submitted an Immunization Certificate by the end of the 30 day grace period should be excluded from further attendance until the appropriate Immunization Certificate is submitted.

II. Immunization Certificates

A. Physicians, Advanced Practice Registered Nurses, Physician Assistants [as authorized by O.C.G.A § 43-34-23 (b)] and qualified employees of a local health department or the State Immunization Program are responsible for certifying that a child has met all the immunization requirements for attendance to school/day care as stipulated by the DPH rules. This certification is documented by their signature.

B. Schools and child care facilities are responsible for filing and maintaining current certificates.

C. A Certificate of Immunization must be on file for each child attending any child care facility or school in Georgia, whether public or private. The certificates must be on site and available for inspection by health officials.

D. If a child attends more than one school/facility, a photocopy of the form must be submitted to the second school/facility.

SUMMARY OF IMMUNIZATION POLICIES RELATIVE TO GEORGIA LAW

E. When a provider utilizes computerized versions of the Immunization Certificate (Form 3231), it is the responsibility of that provider to have these versions approved by the Georgia Immunization Program. The certificates must include all the information that is illustrated on the hard copy of these forms. In addition, when the Georgia Immunization Program makes updates to these certificates, it is the responsibility of the provider to update their computerized versions to reflect these changes and have them approved by the state office.

F. Certificates should be marked as "Complete for K through 6th Grade" with or without an expiration date depending on child's age when certificate is issued or marked as "Complete for K through 6th Grade" and "Complete for 7th Grade or higher" once all requirements have been met.

G. A certificate marked as "Complete for 7th Grade or higher" does not expire.

H. A certificate marked with a "Date of Expiration" expires on the date indicated. A current certificate must be submitted within 30 days after the expiration date or the child must be excluded from attendance until a current certificate is submitted.

III. Immunization Reports

By law, an annual report is required for each facility. This report indicates the percentage of adequately immunized children attending that facility.

A. For child care facilities, district or local health personnel must conduct inventories (audits) at least once per year. Licensed child care facilities should maintain at least a 100% compliance level. Health Districts are responsible for working with facilities to obtain and maintain this compliance level. The State Immunization Program will provide district health personnel with a listing of all child care facilities known to Bright from the Start, Georgia Department of Early Care and Learning (DECAL). Completed Child Care Facilities Status Review forms should be submitted to the State Immunization Program according to the time frame assigned to each district. State Immunization Program Consultants will annually validate the results of the audits.

B. For schools, inventories (audits) of immunization records of all kindergarten and seventh grade students must be conducted at least once per year by health departments. Schools should maintain at least a 100% compliance level. Health Districts are responsible for working with schools to obtain and maintain this compliance level. Health Districts may establish their own methodologies for collection of information, utilizing school or other designated personnel, but they are ultimately responsible for the accuracy and completeness of the reports. If a health district collaborates with schools or other agencies to conduct the inventory, they are responsible for the training of the individuals who perform and complete the forms. The information must be summarized on the Immunization Inventory for Georgia Schools form and must be submitted to the State Immunization Program. Inventories must be completed so that reports will be received at the State Program office by the date specified by Program. State Immunization Program Consultants will annually validate the results of the audits.

SUMMARY OF IMMUNIZATION POLICIES RELATIVE TO GEORGIA LAW

IV. Exemptions

Exemptions: Georgia Law (Section 20-2-771) provides for two (2) types of exemptions from immunization requirements.

A. Medical: A medical exemption for a vaccine should be completed on the GA DPH Certificate of Immunization (Form 3231) only when there is a physical disability or condition that contraindicates immunization for that vaccine. O.C.G.A. § 20-2-771 (d) There must be an annual review of the medical exemption and certificates must be reissued with or without indication of the medical exemption.

B. Religious: For a child to be exempt from immunizations on religious grounds, the parent or legal guardian must furnish the school/facility with Affidavit of Religious Objection to Immunization (DPH Form 2208). The affidavit must be signed by the parent/legal guardian, notarized, dated, and signed by a Notary Public, kept on file in lieu of GA DPH Certificate of Immunization (Form 3231) and does not expire. (DPH Rules Chapter 511-2-2-.07)

Reference: The Official Code of Georgia, Annotated, Section 20-2-771(e):

GEORGIA CODE

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O.C.G.A. § 20-2-771

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*** Current through the 2017 Regular Session of the General Assembly. ***

TITLE 20. EDUCATION
CHAPTER 2. ELEMENTARY AND SECONDARY EDUCATION
ARTICLE 16. STUDENTS
PART 3. HEALTH

O.C.G.A. § 20-2-771 (2017)

§ 20-2-771. Immunization of students

(a) As used in this Code section, the term:

(1) "Certificate of immunization" means certification by a physician licensed under the laws of this state or by an appropriate official of a local board of health, on a form provided by the Department of Public Health, that a named person has been immunized in accordance with the applicable rules and regulations of the Department of Public Health.

(2) "Facility" means any public or private child care learning center or nursery intended for the care, supervision, or instruction of children.

(3) "Responsible official" means a county school superintendent, a school principal, or a chief operating officer of a school or facility.

(4) "School" means any public or private educational program or institution instructing children at any level or levels, kindergarten through twelfth grade, or children of ages five through 19 if grade divisions are not used.

(b) No child shall be admitted to or attend any school or facility in this state unless the child shall first have submitted a certificate of immunization to the responsible official of the school or facility. The responsible official of any school or facility may grant a 30-calendar day waiver of the certification requirement for a justified reason. The waiver may be extended from the date of first admittance or of first attendance, whichever is earlier, for up to 90 calendar days provided documentation is on file at the school or facility from the local health department or a physician specifying that an immunization sequence has been started and that this immunization time schedule can be completed within the 90 day waiver period, provided confirmation is received during the waiver period from the health department or physician that immunizations are being received as scheduled, and provided the student under waiver is a transfer student, who is defined as a student who moves from an out-of-state school system to a Georgia school system, or a student entering kindergarten or first grade from out of state. The waiver may not be extended beyond 90 calendar days; and upon expiration of the waiver, the child shall not be admitted to or be permitted to attend the school or facility unless the child submits a certificate of immunization.

(c) The Department of Public Health shall promulgate rules and regulations specifying those

diseases against which immunization is required and the standards for such immunizations. The school or facility shall maintain on file the certificates of immunization for all children attending the school or facility. All facilities shall file a report annually with the Department of Public Health. The report shall be filed on forms prepared by the Department of Public Health and shall state the number of children attending the school or facility, the number of children who did not submit certificates of immunization within the waiver period, and the number of children who are exempted from the certification requirement for medical or religious reasons.

(d) If, after examination by the local board of health or any physician licensed under the laws of this state or of any other state having comparable laws governing the licensure of physicians, any child to whom this Code section applies is found to have any physical disability which may make vaccination undesirable, a certificate to that effect issued by the local board of health or such physician licensed under the laws of this or such other state may be accepted in lieu of a certificate of immunization and shall exempt the child from the requirement of obtaining a certificate of immunization until the disability is relieved.

(e) This Code section shall not apply to a child whose parent or legal guardian objects to immunization of the child on the grounds that the immunization conflicts with the religious beliefs of the parent or guardian; however, the immunization may be required in cases when such disease is in epidemic stages. For a child to be exempt from immunization on religious grounds, the parent or guardian must first furnish the responsible official of the school or facility an affidavit in which the parent or guardian swears or affirms that the immunization required conflicts with the religious beliefs of the parent or guardian.

(f) During an epidemic or a threatened epidemic of any disease preventable by an immunization required by the Department of Public Health, children who have not been immunized may be excluded from the school or facility until (1) they are immunized against the disease, unless they present valid evidence of prior disease, or (2) the epidemic or threat no longer constitutes a significant public health danger.

(g) The requirement of a certificate of immunization shall become effective for all children entering or attending facilities on or after April 7, 1981. The certification requirement shall apply to all children entering or attending schools:

(1) On September 1, 1981, for all such children entering or attending kindergarten or the first, ninth, tenth, eleventh, or twelfth grades, or of the equivalent ages if grade divisions are not used;

(2) On September 1, 1982, for all such children entering or attending all grades, or of all ages if grade divisions are not used.

(h) Any responsible official permitting any child to remain in a school or facility in violation of this Code section, and any parent or guardian who intentionally does not comply with this Code section, shall be guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not more than $100.00 or by imprisonment for not more than 12 months. The Department of Public Health may adopt rules and regulations for the enforcement of this Code section. The Department of Public Health and the local board of health, or either of them, may institute a civil action in the superior court of the county in which the defendant resides for injunctive relief to prevent a threatened or continuing violation of any provision of this Code section.

HISTORY: Ga. L. 1880-81, p. 98, § 1; Ga. L. 1919, p. 288, § 87; Code 1933, § 32-911;

Ga. L. 1946, p. 206, § 2; Ga. L. 1957, p. 455, § 1; Ga. L. 1964, p. 499, § 6; Ga. L. 1968, p. 1436, § 1; Ga. L. 1972, p. 1069, § 3; Ga. L. 1973, p. 910, §§ 1, 2; Ga. L. 1978, p. 941, § 1; Ga. L. 1979, p. 1284, § 1; Ga. L. 1981, p. 756, § 1; Ga. L. 1987, p. 319, § 1; Ga. L. 2009, p. 453, § 1-4/HB 228; Ga. L. 2011, p. 705, § 6-3/HB 214; Ga. L. 2013, p. 135, § 12/HB 354.

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O.C.G.A. § 31-12-3.1

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*** Current through the 2017 Regular Session of the General Assembly. ***

TITLE 31. HEALTH
CHAPTER 12. CONTROL OF HAZARDOUS CONDITIONS, PREVENTABLE DISEASES, AND METABOLIC DISORDERS

O.C.G.A. § 31-12-3.1 (2017)

§ 31-12-3.1. Vaccination registry; reporting requirements, maintenance, and use

(a) The department, for purposes of establishing and maintaining a single repository of accurate, complete, and current vaccination records to be used in aiding, coordinating, and promoting effective and cost-efficient disease prevention and control efforts, shall establish and maintain a vaccination registry.

(b) Any person who administers a vaccine or vaccines licensed for use by the United States Food and Drug Administration to a person shall for each such vaccination provide to the department such data as are deemed by the department to be necessary and appropriate for purposes of the vaccination registry established pursuant to subsection (a) of this Code section, including, without limitation:

(1) The name of the person;

(2) The person's date and place of birth, including the name of the hospital where delivered, if applicable;

(3) The names and addresses of the person's parents or guardians if the person is 18 years of age or younger;

(4) The date of the vaccination and the specific type or types of vaccine or vaccines administered to the person on that date; and

(5) Complications or side effects resulting from a vaccination, if any.

Vaccination data reporting requirements, including without limitation the types of data required to be reported and the time and manner of reporting such data, shall begin after the registry has established linkages to vaccine providers and shall be established by the department in consultation with the United States Centers for Disease Control and Prevention, the Georgia chapter of the American Academy of Pediatrics, and the Georgia Academy of Family Physicians.

(c) The department shall utilize the registry to provide notices, whether by mail, telephone,

personal contact, or other means, to persons and to parents or guardians regarding their children or wards who are due or overdue for a particular type of vaccination according to recommended vaccination schedules. The department shall consult with medical services providers to determine the most effective and efficient manner of using the registry to provide such notices.

(d) Vaccination records for any person included within the vaccination registry shall be maintained as part of the registry until the person's death.

(e) Individually identifiable vaccination information regarding a person may be provided to the department by, or released by the department to, a local health department, hospital, physician, or other provider of medical services to the person or to a school or child care facility in which the person is enrolled if the person is 18 years of age or younger without the consent of the person or the person's parents or guardians. All persons shall be enrolled unless a specific exemption is requested by the person or the person's parent or guardian if the person is 18 years of age or younger. A parent or guardian may obtain and upon request to the department shall be provided with all individually identifiable vaccination registry information regarding his or her child or ward. Except as provided otherwise by this Code section, individually identifiable vaccination registry information shall be treated as confidential and shall not be released to a third party without consent of the person or the person's parent or guardian if the person is 18 years of age or younger.

(f) Nothing in this Code section shall:

(1) Prohibit the department from providing or publishing registry information in aggregate form for scientific, educational, or public health purposes, provided that such information is published without releasing or identifying individual names contained in the registry;

(2) Prohibit the department or any medical services provider from notifying a person or the person's parent or guardian if the person is 18 years of age or younger of the person's vaccination status or of a vaccination that is due or overdue according to recommended vaccination schedules; or

(3) Diminish a parent's or guardian's responsibility for having a child vaccinated properly.

(g) Any person, including but not limited to practitioners of the healing arts, submitting or obtaining in good faith vaccination reports or data to or from the department in compliance with the provisions of this Code section and any rules or regulations promulgated pursuant to this Code section shall not be liable for any civil damages therefor.

(h) The department is authorized to accept any grants, gifts, awards, and funds from government, public, and private sources to supplement any appropriation made for the purpose of funding the provisions of this Code section.

(i) The department is authorized and directed to promulgate such rules and regulations as are necessary and appropriate to implement the provisions of this Code section.

HISTORY: Code 1981, § 31-12-3.1, enacted by Ga. L. 1996, p. 646, § 1; Ga. L. 2004, p. 439, § 1.

O.C.G.A. § 49-4-182

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*** Current through the 2017 Regular Session of the General Assembly. ***

TITLE 49. SOCIAL SERVICES
CHAPTER 4. PUBLIC ASSISTANCE
ARTICLE 9. TEMPORARY ASSISTANCE FOR NEEDY FAMILIES

O.C.G.A. § 49-4-182 (2017)

§ 49-4-182. Temporary Assistance for Needy Families Program created

(a) There is created the Georgia Temporary Assistance for Needy Families Program, which shall be known as the "Georgia TANF Program." The purpose of such program is to provide necessary assistance to needy families with children on a temporary basis and to provide parents, legal guardians, or other caretaker relatives of children with the necessary support services to enable such parents, legal guardians, or caretaker relatives to become self-sufficient and leave the program as soon as possible. After an initial assessment and once the state determines an applicant is ready for work, applicants for assistance shall be required to engage in a work activity in accordance with Part A of Title IV of the federal Social Security Act, as amended, and the state plan as soon as possible after making application for assistance, but in any event no later than 24 months after first receiving cash assistance.

(b) Assistance shall be provided in accordance with the state plan and any future amendments thereto. Cash assistance to a recipient who is not a minor child and who is a head of a household or married to the head of a household shall be limited to a lifetime maximum of 48 months, whether or not consecutive, beginning January 1, 1997.

(c) Nothing in this article, the state plan, or any rules or regulations adopted pursuant to this article shall be interpreted to entitle any individual or any family to assistance under the Georgia TANF Program.

HISTORY: Code 1981, § 49-4-182, enacted by Ga. L. 1997, p. 1021, § 6.

O.C.G.A. § 49-4-183

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*** Current through the 2017 Regular Session of the General Assembly. ***

TITLE 49. SOCIAL SERVICES
CHAPTER 4. PUBLIC ASSISTANCE
ARTICLE 9. TEMPORARY ASSISTANCE FOR NEEDY FAMILIES

O.C.G.A. § 49-4-183 (2017)

§ 49-4-183. Administration of article by department; promulgation of rules and regulations by board; duties of department

(a) This article shall be administered by the Department of Human Services. The Board of Human Services shall issue such rules and regulations as may be necessary to administer this article properly and to comply with the requirements of Part A of Title IV of the federal Social Security Act, as amended, the state plan, and any future amendments to such Act or plan. The initial rules and regulations for the Georgia TANF Program shall be promulgated by the board pursuant to Chapter 13 of Title 50, the "Georgia Administrative Procedure Act," and specifically Code Section 50-13-4 no later than July 1, 1997.

(b) The board shall ensure that such rules and regulations provide for:

(1) Methods of administration necessary for the proper and efficient operation of the state plan for implementation of this article;

(2) Reasonable standards for determining eligibility and the extent of assistance available for recipients;

(3) Consideration of the income and resources of an applicant for assistance in determining eligibility;

(4) Personal responsibility obligations and work activity requirements consistent with Part A of Title IV of the federal Social Security Act, as amended, and the state plan, provided that programs included in the personal responsibility obligations established by the board shall include counseling on abstinence until marriage;

(5) Criteria which make an applicant ineligible to receive benefits under the Georgia TANF Program, including but not limited to those specified in Code Section 49-4-184;

(6) Specific conduct which would authorize the reduction or termination of assistance to a recipient, including but not limited to that specified in Code Section 49-4-185;

(7) Standards whereby certain obligations, requirements, and criteria will be waived for specific applicants or recipients based on hardship;

(8) An administrative hearing process with hearings to be conducted by the Office of State Administrative Hearings in accordance with Chapter 13 of Title 50, the "Georgia Administrative Procedure Act," and subsection (b) of Code Section 49-4-13;

(9) Safeguards which restrict the use and disclosure of information concerning applicants for and recipients of assistance under this article and in accordance with Code Section 49-4-14 and Part A of Title IV of the federal Social Security Act, as amended;

(10) Immunizations for specified diseases for preschool age children as a condition of assistance being provided for such children, and the schedule of and standards for administering such immunizations, including the presentation of a certificate of immunization, unless:

(A) There is appropriate evidence from the local health department or a physician that an immunization sequence has been started and can be completed within a period of up to 180 days, in which case a waiver of the immunization requirement for up to 180 days shall be granted;

(B) After examination by the local board of health or a physician, any preschool age child is found to have a physical disability which may make vaccination undesirable, in which case a certificate to that effect issued by the local board of health or the physician may be accepted in lieu of a certificate of immunization and shall exempt the child from obtaining a certificate of immunization until the disability is relieved;

(C) The parent or legal guardian furnishes an affidavit swearing or affirming that the immunization conflicts with the religious beliefs of the parent or legal guardian; or

(D) The implementation of such an immunization requirement violates any federal law or regulations or would result in the loss of any federal funds to this state; and

(11) The establishment and maintenance of individual development accounts. The funds in such accounts may be used for postsecondary educational expenses, the purchase of a first home, or business capitalization. The funds in such accounts shall not be considered in determining eligibility for cash assistance pursuant to 42 U.S.C. Section 604(h).

(c) The department shall:

(1) Supervise the administration of assistance pursuant to the Georgia TANF Program by the division of family and children services;

(2) Prescribe necessary forms and procedures to carry out the Georgia TANF Program, subject to the rules and regulations prescribed by the board pursuant to this article;

(3) Publish in print or electronically an annual report and such interim reports as may be necessary. The annual report and such interim reports shall be provided to the Governor and members of the General Assembly. The department shall not be required to distribute

copies of the annual report or the interim reports to the members of the General Assembly but shall notify the members of the availability of the reports in the manner which it deems to be most effective and efficient. The annual report and interim reports shall contain the following:

(A) The total TANF caseload count;

(B) Quarterly and annual TANF reports, in full, prepared for submission to the federal government;

(C) The percentage of the TANF caseload and the number of individuals given a hardship exemption from the lifetime limit on cash assistance and a categorization of the reasons for such exemptions;

(D) The number of individuals who received transportation assistance and the cost of such assistance;

(E) The number of individuals who received diversionary assistance in order to prevent their requiring TANF assistance and the categories and cost of such diversionary assistance, and job acceptance and retention statistics;

(F) The number of individuals denied assistance due to a serious violent felony conviction;

(G) The number of mothers under 19 years of age who received assistance and their percentage of the total TANF caseload;

(H) The number of children receiving subsidized child care and the total and average per recipient cost of child care provided to TANF recipients;

(I) Data on teen pregnancy prevention;

(J) The number of families sanctioned;

(K) The number of legal immigrants receiving TANF benefits by category of immigration status;

(L) The number of families no longer eligible because of time limits;

(M) Follow-up information on job retention and earnings; and

(N) An evaluation of the effect of Code Section 49-4-186 on the number of births to TANF recipient families.

The information required under this paragraph shall be provided on a county-by-county basis where feasible; and

(4) Develop a plan, on or before January 1, 1998, to provide incentives for employers to hire those TANF recipients who have difficulty in finding employment.

HISTORY: Code 1981, § 49-4-183, enacted by Ga. L. 1997, p. 1021, § 6; Ga. L. 1998, p. 128, § 49; Ga. L. 2005, p. 1036, § 39/SB 49; Ga. L. 2009, p. 453, §§ 2-2, 2-3/HB 228; Ga. L. 2010, p. 838, § 10/SB 388.

RULES OF THE DEPARTMENT OF PUBLIC HEALTH

CHAPTER 511-2-2

IMMUNIZATION OF SCHOOL CHILDREN

TABLE OF CONTENTS

511-2-2-.01 Definitions

(a)"Childcare facility" means any public or private day center or nursery intended for the care, supervision, or instruction of children, including pre-kindergarten programs;

(b)"County Board of Health" means a county board of health organized pursuant to O.C.G.A. Section 31-3-1et seq.;

(c)"Department" means the Georgia Department of Public Health;

(d)"Epidemic" means an outbreak, or rise in incidence rate, or spread of incidence of a contagious or infectious disease so as to constitute a clear and present risk of infection to the public at large or to congregated groups thereof;

(e)"Physician" means a practitioner of the healing arts licensed in accord with O.C.G.A. Section 43-34-20et seq. or the equivalent laws of the practitioner's jurisdiction if outside Georgia;

(f)"School" means any public or private educational program or institution instructing children at any level or levels, kindergarten through twelfth grade, or children of ages five through nineteen if grade divisions are not used;

(g)"Tdap vaccine" means a single vaccine that protects against tetanus, diphtheria, and pertussis.

511-2-2-.02 Immunization Required

(1) Except as otherwise provided, immunization against the following diseases shall be required of all children entering a school or childcare facility operating in the state:

(a)Diphtheria;

(b)Haemophilus influenzae type B (not required on or after the fifth birthday);

(c)Hepatitis A;

(d)Hepatitis B;

(e)Measles;

(f)Meningitis;

(g)Mumps;

(h)Pertussis;

(i)Pneumococcal (not required on or after the fifth birthday);

(j)Poliomyelitis;

(k)Rubella (German measles);

(l)Tetanus; and

(m)Varicella (chickenpox).

(2) A parent or guardian must submit a valid Certificate of Immunization for any child entering a school or childcare facility in the state of Georgia for the first time.

(3)School or childcare facility officials may allow a child without a valid certificate of immunization to attend for no more than 90 calendar days after the first day of attendance, provided that the parent or legal guardian either shows that that the child is in the process of completing required immunizations and that immunizations are being scheduled with the shortest intervals recommended in the current Official Immunization Schedules, or presents an affidavit of religious objection as provided in DPH Rule 511-2-2-.07.

(3) Effective July 1, 2014, for entrance into Georgia school grades kindergarten through twelve, students must have a total of two doses of measles vaccine, two doses of mumps vaccine, one dose of rubella vaccine and a total of two doses of varicella vaccine.

(4) Children attending any childcare facility must show evidence of protection against pneumococcal disease.

(5) Children born on or after January 1, 2006 who are attending any childcare facility or school must have proof of protection against hepatitis A disease (vaccination or serology).

(6) Requirements for hepatitis A, hepatitis B, measles, mumps, rubella, and varicella vaccines may be waived with serologic proof of immunity. Requirements for varicella vaccine may be waived also with a healthcare provider diagnosis of varicella disease or healthcare provider verification of history of varicella disease.

(7) Effective July 1, 2014, children born on or after January 1, 2002 who are attending seventh grade, and children who are new entrants into a Georgia school in grades eight through twelve, must have received one dose of Tdap vaccine.

(8) Effective July 1, 2014, children born on or after January 1, 2002 who are attending seventh grade, and children who are new entrants into a Georgia school in grades eight through twelve, must have received one dose of meningococcal conjugate vaccine.

511-2-2-.03 Official Immunization Schedules

(1) An immunization regimen equivalent to the current immunization schedule developed by the Advisory Committee on Immunization Practices (ACIP), adopted by the Department and published in the official state immunization program manual, shall be deemed the minimum regimen of immunization which satisfies the requirements of this Chapter. Immunization certified by County Boards of Health shall be accomplished in accord with the departmental immunization schedule.

(2) Any other immunization schedule which includes the immunizations itemized in Rule 511-2-2-.02, Immunizations Required, and equals or exceeds the minimum requirements of the Departmental Immunization Schedule shall be deemed to satisfy the requirement for issuance of a Certificate of Immunization.

(3) Copies of the Departmental Immunization Schedule may be obtained from the Department or County Board of Health.

511-2-2-.04 Certificate of Immunization

(1) A Certificate of Immunization may be issued by a physician, physician's assistant, advanced practice registered nurse, or qualified employee of a County Board of Health or the State Immunization Program, on a form provided by or approved by the Department, for any person that has been vaccinated against a specific disease in compliance with this Chapter.

(2) A Certificate of Immunization may be issued for a child who has not received all required immunizations with the conditions that the child is in the process of completing required immunizations and that immunizations are being scheduled with the shortest intervals recommended in the current Official Immunization Schedules. Such a certificate must be retained and monitored for currency by the school or childcare facility while the child continues in attendance and must be made available for inspection during normal business hours by authorized officials of the Department or County Board of Health.

(3) A certificate for a child who is in the process of receiving all required vaccines must show a date of expiration, which shall be the date on which the next required immunization is due or the date on which a medical exemption must be reviewed. A new certificate must then be obtained and submitted to the school or childcare facility within thirty days after the expiration date.

Children whose parents fail to renew said certificates within the time allotted shall not be permitted to continue in attendance.

(4) If a child transfers to another school or childcare facility, then the certificate of immunization shall be transferred to the new school or childcare facility. If a child ceases to attend without transfer, then the certificate shall be returned to the parent or guardian.

511-2-2-.05 Certificate of Immunization Issued for Child with Physical Disability

If a child has a physical disability, condition, or physiological idiosyncrasy which might cause a specific immunization to endanger life or health, then a physician may issue a Certificate of Immunization indicating "medical exemption." A Certificate of Immunization indicating medical exemption shall be valid for one year, and may be reissued from year to year until the physician determines that immunization or a specific immunization may finally be accomplished without danger to the child's health.

511-2-2-.06 Certificate of Immunization for a Child Immunized Outside of Georgia

A County Board of Health or physician may issue a Certificate of Immunization as provided by Rule 511-2-2-.04 upon receiving written proof attested to by a physician licensed by Georgia, a physician licensed in another state, or an authorized representative of a public health authority of another state or nation, that all required immunizations have been accomplished for the child. Such proof shall indicate each vaccine type administered and the date of each dose. A County Board of Health or physician may issue a Certificate of Immunization indicating medical exemption as provided by Rule 511-2-2-.05 upon receiving written proof attested to by a physician licensed by Georgia or another state that the child has a physical disability, condition, or physiological idiosyncrasy which might cause a specific immunization to endanger life or health.

511-2-2-.07 Religious Objections to Required Immunizations

(1) Except as provided in subsection (2) below, a child shall be exempt from the required immunizations if the parent or legal guardian has filed with the school or childcare facility a completed affidavit on DPH Form 2208.

(2) When the Department or a County Board of Health determines that an epidemic or the threat of an epidemic exists, the Department or Board shall immediately notify the governing authorities of all schools and childcare facilities within the affected area. Under those circumstances, the Department or Board may require immunization for those who object on the grounds of religious beliefs, and may prohibit attendance at schools or childcare facilities within the area by unimmunized children.

(3) Persons who wish to register a religious objection to the vaccination of their child shall do so using the following DPH Form 2208:

AFFIDAVIT OF RELIGIOUS OBJECTION TO IMMUNIZATION

[Name of parent or legal guardian] personally appeared before the undersigned notary public and swore or affirmed as follows:

1.I am the parent or legal guardian of [name of minor child].

2.I understand that the Georgia Department of Public Health requires children to obtain the following vaccinations before being admitted to a childcare facility or school: diphtheria; haemophilus influenzae type B (not required on or after the fifth birthday); hepatitis A; hepatitis B; measles; meningitis; mumps; pertussis (whooping cough); pneumococcal (not required on or after the fifth birthday); poliomyelitis; rubella (German measles); tetanus; and varicella (chickenpox).

3.I understand that the Georgia Department of Public Health has determined that these vaccinations are necessary to prevent the spread of dangerous diseases among the children and people of this State; that the required vaccinations are safe; that a child who does not receive these vaccinations is at risk of contracting those diseases; and that a child who does not receive those vaccinations is at risk of spreading those diseases to me, to other children in the childcare facility or school, and to other persons.

4.I sincerely affirm that vaccination is contrary to my religious beliefs, and that my objections to vaccination are not based solely on grounds of personal philosophy or inconvenience.

5.I understand that, notwithstanding my religious objections, my child may be excluded from childcare facilities or schools during an epidemic or threatened epidemic of any disease preventable by a vaccination required by the Georgia Department of Public Health, and that my child may be required to receive a vaccination in the event that such a disease is in epidemic stages.

This ____ day of _____, _____.

_____

Parent or Legal Guardian

Sworn and subscribed before me this ___ day of _____, _____.

_____

Notary Public

My commission expires _____.

HISTORICAL STATEMENT LISTING DATES FOR SCHOOL AND CHILDCARE IMMUNIZATION REQUIREMENTS AND OTHER VACCINE ISSUES

HISTORICAL STATEMENT LISTING

2/1977 Regulation requiring Immunization of Children as a Prerequisite to Admission to School becomes effective

1994 Second MMR required for entrance into 6th grade (Form 3189 introduced)

"Effective with the 1994-95 school year, for entrance into the sixth grade of schools in this state or at its equivalent age, the child must have at least one (1) additional dose of MMR vaccine, for a total of two (2) MMR vaccines administered on or after the child's first birthday and at least thirty (30) days apart."

[See DHR Rules 290-5-4-.02 (4) (b).]

4/1996 Legislation providing for the establishment of a statewide childhood immunization registry

1997-98 Hepatitis B vaccination requirement for all children born after 1-1-92 who are entering kindergarten (5 year old) or day care

"Effective date: 1997-98 school year for kindergarten entrants and September 1, 1997 for children entering child centers."

"Affected children: all children born after January 1, 1992 entering kindergarten or child care facility."

[See DHR Rules 290-5-4-.02 (4) (a) (3).]

[See Memorandum of January 17, 1997]

1997 Change to an IPV/OPV sequential schedule <u>recommended</u>

"…begin to implement the new schedule on February 1, 1997, or as soon as possible."

[See Memorandum of January 29, 1997]

2000 All IPV schedule routinely recommended. (No OPV available in the US as of 11/2000.)

"IPV is now the only polio vaccine recommended for routine use. A child should now receive IPV for all four scheduled doses."

[See Memorandum of January 14, 2000]

2000-01

- Requirement for 2nd measles/MMR for children entering a Georgia school for the first time

"Two doses of a measles-containing vaccine, one dose of mumps vaccine, and one dose of rubella vaccine is now required at the time of entry to school."

[See DHR Rules 290-5-4-.02 (4).]

HISTORICAL STATEMENT LISTING

2000-01 (cont'd)

- Varicella immunity required for entrance to school or attendance in Daycare
  "A child entering any child care facility or school in Georgia for the first time (at any age up to 19 years) must be age-appropriately immunized with all of the required vaccines (DTP, DTaP, DT, or Td; Hepatitis B; Hib; OPV or IPV; Measles, Mumps and Rubella or MMR; and Varicella)."
  [See DHR Rules 290-5-4-.02 (1).]

- Began use of Immunization Certificate (Form 3231) for admission to school and day care
  "Children attending child care or Pre-K programs on or after August 1, 2000 whose immunization certificate expires will need to have their immunization status evaluated, the recommended immunizations administered, and a new certificate (Form 3231) issued within thirty days after the certificate (Form 3227) expires."

  "A new Certificate of Immunization (Form 3231) will serve as a means of documenting the immunization status for children who will be admitted to any facility or school in Georgia for the first time on or after August 1, 2000. The new Certificate of Immunization (Form 3231) will replace the current certificates for school (Form 3032) and day care (Form 3227) and may be used any time on or after February 1, 2000."
  [See Memorandum of January 20, 2000, the Ga. Code, and current DHR Rules and Regulations posted on the GA Immunization Program website at http://health.state.ga.us/programs/immunization.asp

2001-02 Requirement for 6th graders to show proof of immunity to varicella
"The requirement for children to show proof of immunity against varicella prior to school entry and for attendance to day care was extended to include all students entering sixth grade (6th) or the age equivalent grade beginning 2001."
[See Memorandum of October 4, 2000]

5/2001 Began Td prioritization
"Two populations should be given priority for the administration of Td. The first are those who need treatment for acute wounds. The second priority is children between the ages of 7-18 who are traveling to a country where the risk for diphtheria is high."
[See Memorandum of May 1, 2001]

HISTORICAL STATEMENT LISTING

1/2002 Began PCV prioritization
"Interim Recommendations for Pneumococcal Conjugate Vaccine Prevnar®)"
[See Memorandum of January 4, 2002]

2/2002 Changes to ACIP General Recommendations. Most significant for audit purposes were the institution of the 4-day grace period and the publication of a minimum age and interval chart. A copy of the 2002 Recommended Schedule accompanied this mailout.
[See Memorandum of February 20, 2002 and the General Recommendations on Immunization, *MMWR*, February 8, 2002]

3/2002 Interim recommendations for prioritization of DTaP, varicella, MMR, and continued prioritization of Td and PCV. Recommendations were also made for the completion of immunization certificates (Forms 3231 and 3189) for school and day care attendance reflecting the deferred status of certain vaccines. Providers were strongly encouraged to institute or implement recall systems in order to immunize children as soon as vaccine supplies became available.
[See Memorandum of March 8, 2002]

6/2002 MMR and Td deferrals withdrawn. Recommendations were made for providers to start recalling children as soon as possible and to resume issuing regular certificates when deferred vaccines were administered.
[See Memorandum of June 6, 2002]

7/2002

- DTaP and varicella deferrals withdrawn
- Revision of 3231REQ and 3231INS. (NOTE: Form 3231 did not change.)
- Development of Standardized Statement for Form 3231 <u>for public health providers</u> to use in dealing with students whose original certificate (Form 3032) is lost

[See Memorandums of July 8, 2002; July 30, 2002; July 18, 2002; and July 18, 2002]

4/2003 Pediarix™ (DTaP-Hep B-IPV) made available through the Georgia Immunization Program.
[See memorandum of April 21, 2003]

5/2003 PCV deferral withdrawn.
[See memorandum of May 16, 2003]

10/2003 Revision of 3231, 3231 INS, 3231 REQ
[See memorandum of October 1, 2003]

HISTORICAL STATEMENT LISTING

2/2004 and 3/2004
Suspension of 4th dose of PCV, followed 3 weeks later by suspension of doses 3 and 4.
[E-mails on February 12, 2004 and March 2, 2004]

7/1/2004 Legislation passed expanding statewide childhood registry to birth to death lifetime registry

7/2004
Influenza vaccine ROUTINELY recommended for 6-23 month old children

[Recommended Childhood & Adolescent Immunization Schedule, July-December 2004]

9/2004 PCV deferrals withdrawn.
[E-mails on September 22, 2004]

7/2006 Rotavirus, MMRV, and Hepatitis A Vaccine Guidelines sent by memorandum
[E-mailed on July 24, 2006]

8/2006 Began shipments of rotavirus vaccine and MMRV vaccine to VFC providers

8/2006 Letter dated August 8, 2006 sent to all VFC Providers with information on MMRV and also documenting the categories of VFC-eligible children who could receive 2nd doses of varicella vaccine for the present time.

5/07 Memo signed by Dr. Stuart Brown, Director of the Division of Public Health, authorizing public health clinics to administer hepatitis A, hepatitis B, and HPV vaccines without parental consent to teens being seen in STD and Family Planning clinics.
[Memorandum dated May 4 2007]

5/07 Human papillomavirus vaccine (HPV) was shipped to public health clinics

7/2007 New vaccine requirements for school and childcare attendance, effective 7-1-07

- Children entering childcare, pre-K, and Head Start facilities will be required to show age appropriate vaccination against pneumococcal disease; and show proof of immunity to or vaccination against hepatitis A, if born on or after 1-1-06.
- Children entering a Georgia school for the first time, or those classified as “new entrants,” and those students entering the 6th grade, will have to show evidence of 2 doses of mumps vaccine (or immunity) and 2 doses of varicella vaccine (or immunity).

HISTORICAL STATEMENT LISTING

12/2007	National limited supply of Hib vaccine. ACIP defers booster dose
4/2008	Hib shortage and 3231 • In GRITS, if all other age-appropriate vaccines other than Hib are up-to-date, the 3231 will reflect an expiration date of 30 days prior to the child's 5th birthday. Once the child turns 5, a completed 3231 can be printed from GRITS as Hib is no longer recommended
5/2008	School and Daycare user given access and the ability to print up-to-date Form 3231 in GRITS
6/2008	Pentacel (DTap/IPV/Hib) made available through Georgia Immunization Program
2/2009	Statement from the Department of Health and Human Services regarding the decisions of the U.S. Court of Federal Claims in the Omnibus Autism Proceedings find no association between vaccines and autism
2/2009	ACIP HepA Overdue Changes and BOOSTRIX Max Age Change • The HepA dose 1 is now overdue at 2 years of age. HepA dose 2 is now overdue 7 months after dose 1, but no earlier than 2 years of age
2/2009	VFC sends communication letter addressing vaccine choice and switch from Rotateq to Rotarix vaccine
2/2009	Boostrix (manufactured by GlaxoSmithKline) is now licensed for adolescents and adults ages 10 through 64.
2/2009	Hib alert letter sent to Georgia Pediatricians by Dr. Elizabeth Ford regarding Hib Vaccine
2/2009	Hepatitis B vaccine supply limited
5/2009	Georgia Medical Practice Act adds language to allow medical assistants to give Injections
6/2009	Georgia Health Departments are approved for 3rd party billing
7/2009	CDC reinstated the Hib booster dose for children from 12-15 months. [Updated Recommendations for Use of *Haemophilus influenzae* Type b (Hib) Vaccine: Reinstatement of the Booster Dose at Ages 12--15 Months, June 26, 2009]
8/2009	GRITS algorithm for Pediarix vaccine changed. • The spacing of Pediarix vaccine doses for the hepatitis B antigen did not meet the minimum intervals between doses
2009	Flu Vaccine law (HB 217) *O.C.G.A. § 43-34-26.1* enacted

HISTORICAL STATEMENT LISTING

10/2009	ARRA (American Recovery and Reinvestment Act of 2009) grants funds used for purchase and / or administration fees for HPV, Hep A & B and Tdap (for post partum WIC mothers) for adult vaccines.
10/2009	Interim recommendations for prioritization of novel H1N1 vaccine established by CDC
10/2009	Novel H1N1 vaccine shipped to private and public approved H1N1 vaccine Providers
10/2009	FDA approved new indication for Gardasil to prevent genital warts in men and boys.
10/2009	FDA approved new vaccine (Cervarix, GlaxoSmithKline) for the prevention of cervical cancer.
10/2009	Merck issued announcement that the company will not resume production of monovalent measles, mumps, and rubella vaccines.
12/2009	FDA approved high-dose inactivated influenza vaccine (Fluzone High-Dose) for people ages 65 years and older.
2/2010	FDA approved pneumococcal 13-valent conjugate vaccine (Prevnar 13), which offers broader protection against Streptococcus pneumoniae. ACIP recommends use of PCV13 for 1) all children aged 2--59 months and 2) children aged 60--71 months with underlying medical conditions that increase their risk for pneumococcal disease or complications
2/2010	ACIP recommended universal Influenza vaccination for those 6 months of age and older.
10/2010	ACIP approved the following additional recommendations: 1) use of Tdap regardless of interval since the last tetanus- or diphtheria-toxoid containing vaccine, 2) use of Tdap in certain adults aged 65 years and older, and 3) use of Tdap in under-vaccinated children aged 7 through 10 years.
1/2011	ACIP approved updated recommendations for the use of meningococcal conjugate vaccines in adolescents and persons at high risk for meningococcal disease. Two new recommendations approved: 1) routine vaccination of adolescents, preferably at age 11 or 12 years, with a booster dose at age 16 years and 2) a 2-dose primary series administered 2 months apart for persons aged 2 through 54 years with persistent complement component deficiency

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7/2011	Georgia HB 303 granted advanced practice registered nurses and physician assistants the authority to sign off on certain documents relating to health care under delegation of authority by a physician.
7/15/2011	The VFC program will transition to a provider vaccine choice system 7/2011.
8/5/2011	(ACIP) recommends that persons aged 2 through 55 years at increased risk for meningococcal disease and all adolescents aged 11 through 18 years be immunized with meningococcal conjugate vaccine.
10/14/2011	ACIP recommends that children aged 9 through 23 months with certain risk factors for meningococcal disease receive a 2-dose series of MenACWY-D, 3 months apart.
10/14/2011	ACIP recommended that all previously unvaccinated adults aged 19 through 59 years with diabetes mellitus (type 1 and type 2) be vaccinated against hepatitis B as soon as possible after a diagnosis of diabetes is made. ACIP recommended that unvaccinated adults aged ≥60 years with diabetes may be vaccinated at the discretion of the treating clinician after assessing their risk and the likelihood of an adequate immune response to vaccination.
10/21/2011	Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine (Tdap) in Pregnant Women and Persons Who Have or Anticipate Having Close Contact with an Infant Aged <12 Months
12/23/2011	(ACIP) recommended routine use of quadrivalent human papillomavirus (HPV) vaccine (HPV4; Gardasil) in males aged 11 or 12 years. ACIP also recommended vaccination with HPV4 for males aged 13 through 21 years who have not been vaccinated previously or who have not completed the 3-dose series; males aged 22 through 26 years may be vaccinated.
1/2/2012	Varicella Cases should be reported to the State Epidemiology Department
6/29/2012	Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis (Tdap) Vaccine in Adults Aged 65 Years and Older — ACIP recommended Tdap for all adults aged 65 years and older.
9/8/2012	ACIP recommended that Afluria not be used in children younger than age 9 years. If no other age-appropriate TIV is available, Afluria may be considered for a child age 5 through 8 years at high risk for influenza complications, after risks and benefits have been discussed with the parent or guardian. Afluria should not be used in children younger than age 5 years.
10/12/2012	Use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine for Adults with Immunocompromising Conditions: ACIP recommends that adults aged ≥19 years with immunocompromising conditions, functional or anatomic asplenia, CSF leaks, or

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cochlear implants, and who have not previously received PCV13 orPPSV23, should receive a dose of PCV13 first, followed by a dose of PPSV23 at least 8 weeks later

10/1/2012 VFC Update– Reduced Pentacel and Daptacel shipments

1/25/2013 Infant Meningococcal Vaccination: ACIP recommends vaccination against meningococcal serogroups C and Y for children aged 6 weeks through 18 months at increased risk for meningococcal disease.

2/22/2013 Updated Recommendations for Use of Tdap (Tdap) in Pregnant Women - (ACIP) ACIP voted to recommend use of Tdap during every pregnancy

6/28/2013 ACIP recommends routine use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine Among Children Aged 6–18 Years with Immunocompromising Conditions such as functional or anatomic asplenia, cerebrospinal fluid (CSF) leaks, or cochlear implants who have not previously received PCV13. PCV13 should be administered to these children regardless of whether they received the 7-valent pneumococcal conjugate vaccine (PCV7) or the 23-valent pneumococcal polysaccharide vaccine (PPSV23).

1/14/2014 New Georgia vaccine requirement for school attendance. All students born on or after January 1, 2002 and entering, advancing or transferring into 7th grade in Georgia need proof of an adolescent pertussis (whooping cough) booster vaccination (called “Tdap”) and an adolescent meningococcal vaccination (MCV4).

6/20/2014 (ACIP) recommends a third meningococcal conjugate vaccine, MenACWY-CRM (Menveo), as an additional option for vaccinating infants aged 2 through 23 months at increased risk for meningococcal disease. Menveo is licensed for use in children aged 2 through 8 months.

7/19/2013 Updated Recommendations for Use of VariZIG . ACIP recommends administration of VariZIG as soon as possible after exposure to the varicella-zoster virus and within 10 days and extends the period of eligibility for previously recommended premature infants from exposures to varicella-zoster virus during the neonatal period to exposures that occur during the entire period for which they require hospital care for their prematurity.

9/19/2014 Use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine Among Adults Aged >65 Years: Both PCV13 and PPSV23 should be routinely administered in series to all adults aged ≥65 years. Routine use of PCV13 in adults aged ≥19 years with immunocompromising conditions, functional or anatomic asplenia, cerebrospinal

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fluid leak, or cochlear implants remain unchanged.

2/26/2015 February 26, 2015, the Advisory Committee on Immunization Practices (ACIP) recommended use of MenB vaccines among certain groups of persons aged ≥10 years who are at increased risk for serogroup B meningococcal disease. In October 2014, the Food and Drug Administration (FDA) licensed the first serogroup B meningococcal (MenB) vaccine (MenB-FHbp [Trumenba, Wyeth Pharmaceuticals, Inc.]) as a 3-dose series. In January 2015, FDA licensed a second MenB vaccine (MenB-4C [Bexsero, Novartis Vaccines]) as a 2-dose series. Both vaccines were approved for use in persons aged 10–25 years.

3/17/2015 The GRITS system is now capturing hepatitis B immune globulin (HBIG) administration details in a newly created 'HBIG' vaccine group. Hepatitis B immune globulin (HBIG) should be reported using the 'HBIG' vaccine group instead of the 'IG' vaccine group that was used previously.

03/2015 Use of 9-Valent Human Papillomavirus (HPV) Vaccine: 9vHPV, 4vHPV or 2vHPV can be used for routine vaccination of females aged 11 or 12 years and females through age 26 years who have not been vaccinated previously or who have not completed the 3-dose series. 9vHPV or 4vHPV can be used for routine vaccination of males aged 11 or 12 years and males age 21 years who have not been vaccinated previously or who have not completed the 3-dose series. ACIP recommends either 9vHPV or 4vHPV vaccination for men who have sex with men and immunocompromised persons (including those with HIV infection) through age 26 years if not vaccinated previously

7/12/2015 Use of Serogroup B Meningococcal Vaccines in Persons Aged ≥10 Years at Increased Risk for Serogroup B Meningococcal Disease: Recommendations of the Advisory Committee on Immunization Practices, 2015. This report summarizes information on MenB administration and provides recommendations and guidance for use of these vaccines among persons aged ≥10 years in certain groups who are at increased risk for serogroup B meningococcal disease, and reviews the evidence considered by ACIP to make these recommendations. Recommendations for broader use of MenB vaccines in adolescents and college students will be considered separately by ACIP.

8/01/2015 The Georgia Department of Public Health has a new immunization religious exemption form that parents will need to use for their child beginning with the 2015-2016 school year. Cite as Ga. Comp. Rules & Regs r. 511-2-2-.07
Authority: O.C.G.A. Secs. 31-2A-6, 20-2-771, 31-12-3, 49-5-12.
History. Original Rule entitled "Purpose" adopted. F. Sep. 20, 2013; eff. Oct. 10, 2013. Repealed: New Rule of same title adopted. F. Apr. 15, 2014; eff. May 5, 2014. Amended: F. May 27, 2015; eff. June 16, 2015.

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9/4/2015	Licensure of a Diphtheria and Tetanus Toxoids and Acellular Pertussis Adsorbed and Inactivated Poliovirus Vaccine and Guidance for Use as a Booster Dose. Quadracel is indicated for use as the fifth dose of DTaP and fourth or fifth dose of IPV in children aged 4 through 6 years who received DTaP-IPV-Hib (Pentacel) and/or DTaP (Daptacel) vaccine as the first 4 doses (2,3).
9/4/2015	Intervals between PCV13 and PPSV23 Vaccines: Recommendations of the Advisory Committee on Immunization Practices (ACIP) Weekly. On June 25, 2015, ACIP changed the recommended interval between PCV13 followed by PPSV23 (PCV13–PPSV23 sequence) from 6–12 months to ≥1 year for immunocompetent adults aged ≥65 years. Recommended intervals for all other age and risk groups remain unchanged.
09/04/15	Guidance for the use of Quadracel (DTaP+IPV combination vaccine) as a booster dose - ACIP recommendations
10/09/15	CDC Update: Shortened Interval for Postvaccination Serologic Testing of Infants Born to Hepatitis B-Infected Mothers - MMWR
10/23/15	Use of Serogroup B Meningococcal Vaccines in Adolescents and Young Adults: Recommendations of the Advisory Committee on Immunization Practices, 2015. MenB vaccine series may be administered to adolescents and young adults aged 16–23 years to provide short-term protection against most strains of serogroup B meningococcal disease. The preferred age for MenB vaccination is 16–18 years (recommendation Category B).
11/24/15	FDA licenses Fluad, injectable influenza vaccine (adjuvanted), for people age 65 years and older
12/14/15	FDA expands Gardasil 9 licensure to include males age 16-26 years
04/14/16	**FDA expands licensure of Trumenba MenB vaccine (Pfizer) administration to include 2-dose schedule and modification of the 3-dose schedule**
01/14/16	**FDA expands licensure of Hiberix to include children ages 6 weeks through 4 years**
06/10/16	**FDA approves Vaxchora, a live oral vaccine to prevent cholera for adult travelers**
06/22/16	**ACIP votes to not recommend the use of LAIV (FluMist) during the 2016–2017 influenza season**
08/25/16	**FDA expands licensure for Prevnar 13 to include people ages 18 through 49 years**

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11/04/16 New recommendation for all HIV-infected persons aged ≥2 months should routinely receive meningococcal conjugate vaccine; children aged <2 years should be vaccinated using a multidose schedule. Persons aged ≥2 years with HIV who have not been previously vaccinated should receive a 2-dose primary series of meningococcal conjugate vaccine.

12/16/16 New recommendations for use of a 2-dose HPV schedule for girls and boys who initiate the vaccination series at ages 9 through 14 years. Three doses remain recommended for persons who initiate the vaccination series at ages 15 through 26 years of age, or who are immunocompromised persons.

01/13/17 Guidance for Assessment of Poliovirus Vaccination Status and Vaccination of Children Who Have Received Poliovirus Vaccine Outside the United States

05/05/17 Recent manufacturing problems resulted in a shortage of the only U.S.-licensed yellow fever vaccine. This shortage is expected to lead to a complete depletion of yellow fever vaccine available for the immunization of U.S. travelers by mid-2017. CDC, the Food and Drug Administration (FDA), and Sanofi Pasteur are collaborating to ensure a continuous yellow fever vaccine supply in the United States.

05/19/17 Updated Recommendations for Use of MenB-FHbp Serogroup B Meningococcal Vaccine — Advisory Committee on Immunization Practices, 2016 MMWR. 2017;66(19);509-13. These recommendations are regarding use of the 2- and 3-dose schedules of MenB-FHbp vaccine (Trumenba) and replace previous ACIP recommendations for use of MenB-FHbp vaccine published in 2015.

07/14/17 Announcement: Implementation of the Vaccine Adverse Event Reporting System 2.0 Reporting Form MMWR. 2017;66(27);738. Transition to the VAERS 2.0 form is expected to be completed by the end of December 2017.

CERTIFICATE OF IMMUNIZATION

Child's Name (Last name first)

Birthdate

(Optional) Parent/Guardian Name (Last name first)

Date of Expiration

(Next required immunization or review of medical exemption due.)

☐ (Fill in X)
Complete For K through 6th Grade
Child must be ≥ 4 years and have met all requirements for school attendance.

☐ (Fill in X)
Complete For 7th Grade or higher
Fulfills requirements K through 6th grade AND must have Tdap and MCV4 documented

Unless specifically exempted by law, Georgia law (O.C.G.A. § 20-2-771) requires a certificate on file for each child in attendance in any school or child care facility in Georgia with penalties for failure to comply. Detailed instructions for this form and immunization requirements by age are spelled out in policy guides 3231INS and 3231REQ distributed by the Georgia Immunization Office.

VACCINE	DATE MM DD YY	DATE MM DD YY	DATE MM DD YY	DATE MM DD YY	DATE MM DD YY	DATE MM DD YY	Total Doses	Diagnosed	Serology +	History	Med. Exemption
Required Vaccines for School or Child Care Attendance											
DTP,DTaP, DT,Td											
Polio											
Hepatitis B											
Tdap											
MCV4											
HIB (Under Age 5)											
PCV (Under Age 5)											
Measles											
Mumps											
Rubella											
Hepatitis A (Born on/after 1/1/06)											
Varicella											
Recommended Vaccines (For Information Only)											
Rotavirus											
HPV (3 doses)											
Influenza											
Td (booster)											

SAMPLE

Notes:
A licensed Georgia physician, **Advanced Practice Registered Nurse, Physician Assistant** or qualified employee of a local Board of Health or the State Immunization Office is responsible for the content of this certificate. All dates must include month, day and year. In cases of natural immunity or Medical Exemption, the 4 digit year of infection, test or exemption must be filled in the appropriate box(es). ***The certificate is NOT valid without name and birthdate of the child, date of expiration OR "X" in Complete for School Attendance box, legible name and address of the physician, Advanced Practice Registered Nurse, Physician Assistant or health department, certified by signature and a date of issue.*** A school or facility official is responsible for keeping a current valid certificate on file for each child in attendance. A certificate must be replaced within 30 days after expiration. ***When a child leaves or transfers to another facility, the Certificate of Immunization should be given to a parent/guardian or sent to the new facility.***

Printed, Typed or Stamped Name, Address and Telephone # of Licensed Physician or Health Dept.

Certified by (Signature/Signature Stamp) **Date of Issue**

Policy Guide 3231INS
Standards for Issuing and Filing Certificates of Immunization
[Form 3231 (Rev. December 2017)]
For Georgia Facilities and Schools

Who is required to have the Certificate of Immunization (Form 3231)?

Children attending any childcare facility, pre-kindergarten, Head Start program, nursery, or school are required to have this form on file. This includes public and private operations and all enterprises, educational programs and institutions involved in the care, supervision or instruction of children. Certificates are required for all children through grade 12.

Who may issue certificates?

Only a **licensed Georgia physician**, **Advanced Practice Registered Nurse, Physician Assistant** or qualified employee of a local Board of Health or the State Immunization Office may issue this certificate. The physician, **APRN, PA** or health department is responsible for interpretation of and compliance with the requirements set forth in Chapter 511-2-2 of the *Rules of the Department of Public Health*.

How to file and maintain the certificates:

1. **A valid certificate for all children** must have the following information legibly completed:
   - Child's Name
   - Birth date
   - Name, address, and phone number of a Physician or Health Department
   - Certified by Signature
   - Date of Issue
   - Dates (month, date and year) in the vaccine history (dates vaccines administered) section and/or 4-digit year in the "diagnosed", "serology $^{+}$", "history" or "medical exemption" boxes.
2. **A valid certificate for children under 4 years of age must have**:
   - All of the information in item #1 and a "Date of Expiration" noted in the appropriate space.
3. **A valid certificate for a child age 4 through 10 years must have**:
   - All of the information in item #1
   - If **complete** for "K through 6th grade" requirements an "X" will be displayed in the "Complete for K through 6th Grade" box with no date of expiration
   - If **not** complete for K through 6th grade requirements an expiration date will display only.
4. **A valid certificate for a child age 10 years and older must have:**
   - All of the information in item #1
   - If **not** complete for "K through 6th grade" requirements an expiration date will display only
   - If **complete** for "K through 6th grade" requirements an "X" will display in the "Complete for K through 6th Grade" box with an expiration date
   - If **complete** for "7th grade requirements" an "X" will display in both the "Complete for K through 6th Grade" and "Complete for 7th Grade or higher" box. Valid certificates marked "Complete for 7th Grade or higher" do not expire.
5. **The certificate becomes invalid on the expiration date indicated. If a current certificate has not been submitted within 30 days after the expiration date, the child must be excluded from attendance until a current certificate is obtained.**
6. A school/facility official is responsible for keeping track of certificates with expiration dates and for notifying a parent/guardian of an upcoming expiration date and requesting that an up-to-date certificate be submitted**.**
7. A valid certificate of immunization must be kept on file by the school/facility and be available for inspection by health officials. The school/facility is **not** responsible for the accuracy of immunization information filled in by the certifying authority.
8. If a child attends more than one school/facility, a photocopy of this form must be on file at the second school/facility.
9. If a child leaves **or** transfers to another school/facility, this certificate should be given to a parent/guardian **or** sent to the new school/facility.
10. Any school/facility official who does not enforce the requirements and any parent/guardian who intentionally does not comply with the requirements shall be guilty of a misdemeanor. See *Official Code of Georgia Annotated, § 20-2-771(h)*

Instructions for completing certificates:

1. **ALL** dates **must** include month, day and year.
2. The "Child's Name" and **"**Birthdate" **must** be filled in.
3. The **"Date of Expiration"** is the date the child's next immunization is due **or** the date a review of the medical exemption is due.
   - This date **must** be filled in when a child is in the process of receiving the required number of vaccine doses appropriate for age as set forth in *Policy Guide 3231REQ, Vaccine Requirements for Attending Facilities and Schools in Georgia*.
   - The date filled in **is** the date a review of the medical exemption for a vaccine is due.
   - The "Date of Expiration" **must** be filled in if neither "Complete for School Attendance" box is marked or if there is an "X" in the "Complete for K through 6th Grade" box and the child is 10 years or older and has **not** met the vaccine requirements for seventh grade.
4. Put an "X" in the **"**Complete for K through 6th Grade" box **if** a child who is **four years of age or older** has completed all the immunization requirements for first time attendance in a **school** in Georgia as set forth in *Policy Guide 3231REQ, Vaccine Requirements for Attending Facilities and Schools in Georgia*. Note that requirements for kindergarten (age 5 years) **include** doses indicated by the ACIP for 4-6 years. The "Complete for K through 6th Grade" box **must** be filled in with an "X".
5. Put an "X" in the "Complete For 7th Grade or higher" box and the "Complete for K through 6th Grade" box if a child born on or after January 1, 2002 entering or transferring into 7th grade and any "new entrant" 8th through 12th grade has met all requirements for K through 6th grade and have proof of an adolescent pertussis (whooping cough) booster vaccination (called "Tdap") and an adolescent meningococcal vaccination (MCV4) as set forth in *Policy Guide 3231 REQ, Vaccine Requirements for Attending Facilities and Schools in Georgia.* Valid certificates marked "Complete for 7th Grade or higher" do not expire.
6. The Georgia Department of Public Health establishes the requirements for immunization for school/facility attendance in accord with the *Recommended Childhood Immunization Schedule, United States*, developed and approved annually by the Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP) and the American Academy of Family Physicians (AAFP). See *Policy Guide 3231REQ Vaccine Requirements for Attending Facilities and Schools in Georgia* for requirements for doses for age, minimum ages, and minimum intervals between doses for children who are behind schedule.
7. Hib and PCV13 vaccine are not required on or after the 5th birthday. The number of doses for both vaccines is dependent on age at first dose and/or the brand(s) of vaccine administered. If the "Complete for K through 6th Grade" box is marked for a child who **is** 4 years of age, dates for Hib and PCV13 vaccine must be filled in.
8. The Hepatitis A, Hepatitis B, Measles, Mumps, Rubella and Varicella vaccine requirements may be waived with serologic proof of immunity. Filling in a 4-digit year is required for each requirement waived.
9. For varicella vaccine, the dates for each dose given must be entered **or** the 4-digit year in **one** of the columns indicating "diagnosed" of disease, "serology" (serologic evidence of immunity), "history" of disease or "medical exemption" must be filled in. The Varicella vaccine requirement may be waived with: (a) a physician's diagnosis of disease; or (b) a health care provider's interpretation that a parent/guardian description of chickenpox disease history is indicative of past infection. Filling in a 4-digit year for the year of infection is required.
10. In the interest of having a more complete record, providers are requested to fill in dates of Recommended Vaccines the child has received, but are not required to do so.
11. The certificate is **not** valid without a printed, typed or stamped name, address, and phone number of the certifying authority in the certification section in the lower right corner. There **must** be a written or stamped licensed physician's signature, **APRN, PA** or a signature of a qualified employee of a local Board of Health or State Immunization Office on the "Certified by" signature line. **A stamp of a physician, APRN, or PA's signature with official title is permissible when cosigned by an office staff.**
12. The "Date of Issue" is the date a child's immunization status was reviewed and the certificate was issued. It **must** be filled in.
13. During times when vaccine shortages may necessitate deferral of doses of specific vaccines, the GA Immunization Program will follow the recommendations made by the ACIP and will send providers the interim plans for issuing certificates based on these temporary recommendations.

Exemptions:

The Official Code of Georgia provides for only two types of exemptions from immunization requirements:

1. **Medical:** Medical exemption for a vaccine should be filled in only when there is a physical disability or condition that contraindicates immunization for that particular vaccine. There must be an annual review of medical exemptions, and certificates must be reissued with or without indication of exemption. *O.C.G.A. §20-2-771(d)*
2. **Religious:** For a child to be exempt from immunizations on religious grounds, the parent or guardian must furnish the school/facility with a notarized **Affidavit of Religious Objection to Immunization (DPH Form 2208)**. The school/facility must keep the affidavit on file and available for inspection by health officials in lieu of the Georgia Immunization Certificate (Form 3231). The affidavit does not expire. *O.C.G.A. §20-2-771(e)* **Religious exemption paperwork on file prior to August 2015 is acceptable and does not need to be replaced.**

Certificate ordering and computer-generated facsimiles:

1. Certificates of Immunization (Form 3231) can be downloaded from the Georgia Registry of Immunization Transactions and Services website at https://dph.georgia.gov/georgia-immunization-registry-grits. To gain access to GRITS and enrollment information email the GRITS Help Desk at dph-immreg@dph.ga.gov.
2. Computerized versions of the Certificate of Immunization (Form 3231) must contain all the information included in the current form provided by the Georgia Department of Public Health and must be approved by the Georgia Immunization Office prior to use. References: Official Code of Georgia Annotated, § 20-2-771 and Rules of the **Department of Public Health**, Chapter 511-2-2.

Policy Guide 3231REQ

Vaccine Requirements for Attending Facilities and Schools in Georgia

Relative to the Certificate of Immunization (Form 3231)

Required Doses for Attendance in Facilities and Schools For Children Who Started Immunizations Before Age 7 Years*

Required Vaccines with footnote numbers in [ ]	2 Months of Age	4 Months of Age	6 Months of Age	12 Months of Age	15 Months of Age	18 Months of Age	24 Months of Age	4-6 Yrs.* (School Entry)	**Total Doses Required** For Checking Complete For School Attendance Box on Immunization Certificate**
[1] DTP, DTaP, DT	1	2	3	4				5	**4 or 5 (See Footnote [1])**
[2]Hepatitis B	1	2	3						**3 (See Footnote [2])**
[3]Hib PRP-T or	1	2	3	4					**N/A for school (See Footnote [3])**
[3]Hib PRP-OMP	1	2		3					**N/A for school (See Footnote [3])**
[4]Polio	1	2	3					4	**3 or 4 (See Footnote [4])**
[5]MMR				1				2	**2 (See Footnote [5])**
[6] Varicella				1				2	**2 (See Footnote [6])**
[7] PCV	1	2	3	4					**N/A for school (See Footnote [7])**
[8] Hepatitis A				1			2		**(See Footnote [8])**

*These requirements were established in accordance with the current Recommended Childhood and Catch-Up Immunization Schedules, United States. (See references on reverse side.) Georgia requirements for Kindergarten (5 years) include doses indicated for 4-6 years.

**Children who are behind schedule may attend while in the process of completing the requirements with minimum intervals as indicated below.

Minimum Ages For Initial Immunization And Minimum Intervals Between Doses

Vaccine	Minimum Age For For First Dose	Minimum interval from dose 1 to 2	Minimum interval from dose 2 to 3	Minimum interval from dose 3 to 4	Minimum interval from dose 4 to 5
[1] DTP/DTaP (DT)	6 weeks	1 month	1 month	6 months	See Footnote [1]
[2] Hepatitis B	birth	1 month	See Footnote [2]	N/A	N/A
[3]Hib(Primary Series)					
PRP-T (ActHIB)	6 weeks	1 month	1 month	See Footnote [3]	N/A
PRP-OMP (Pedvax)	6 weeks	1 month	See Footnote [3]	N/A	N/A
[4] Polio	6 weeks	1 month	1 month	See Footnote [4]	N/A
[5] MMR	12 months	1 month	N/A	N/A	N/A
[6] Varicella	12 months	3 months	N/A	N/A	N/A
[7] PCV	6 weeks	1 month	1 month	See Footnote [7]	N/A
[8] Hepatitis A	12 months	6 months			

With respect to these intervals, 1 month is a minimum of 4 weeks or 28 days.

Don't restart any series, no matter how long since the previous dose. Doses given ≤ 4 days before the minimum age or the minimum interval may be counted as valid. Two different live vaccines must be given on the same day or spaced at least 28 days apart.

[1] One dose of DTP/DTaP/DT must be on or after the 4th birthday. If the 4th dose was on or after the 4th birthday, the 5th dose is not needed. The 4th dose should be administered a minimum of 6 months after the 3rd dose. However, the 4th dose does not need to be repeated if administered ≥ 4 months after dose 3. Total doses of diphtheria and tetanus toxoids should not exceed 6 before the 7th birthday.

[2] The 3rd dose of Hepatitis B vaccine should be given a minimum of 4 months after the 1st dose and 2 months after the 2nd dose and not before 24 weeks of age.

[3] The number of doses of Hib depends on age at 1st dose and brand of vaccine given. The last dose in the series, whether 3rd or 4th, should be given at least 2 months after the previous dose and not before 12 months of age. Hib is required for children younger than 5 years attending facilities. Hib is not required for admission to kindergarten (5 years) through grade 12 and is not indicated for children who have reached the 5th birthday. One dose is sufficient if it is given at age 15 months or later. Brand names for PRP-T is ActHIB. The brand name for PRP-OMP is Pedvax Hib and the Hib component of Comvax(Hepatitis B-Hib) is Pedvax Hib.

[4] Booster dose must be given on or after the 4th birthday and a 6 month interval is required between the last dose of the primary series and the booster dose. If the 3rd dose of all IPV or all OPV series is given on or after the 4th birthday, a 4th dose is not required provided there is a 6 month interval since the previous dose.

[5] The MMR requirement is 2 doses of measles vaccine, 2 doses of mumps vaccine and 1 dose of rubella vaccine . The vaccines may be given as MMR or MMRV (combined antigens) or as single antigens. single antigens.

[6] The varicella requirement is for 2 doses of varicella-containing vaccine for entry into any level, K-12. (**See Side 2 of REQ, Footnote [4]**).These may be administered as single dose varicella or in combination as MMRV.

[7] The number of doses in the PCV series depends on age at 1st dose. The last dose in the series should be given at least 2 months after the previous dose and not before 12 months of age.

[8] Hepatitis A vaccine should be administered to all children born on or after 1-1-06.

Policy Guide 3231REQ

Vaccine Requirements for Attending Facilities and Schools in Georgia

Relative to the Certificate of Immunization (Form 3231)

Required Doses for Attendance in Schools For Children Who Started Immunizations At Age 7 Years or Older*

Required Vaccines** with footnote numbers in [ ]	First Visit	1 Month After First	1 Month After Second	1 Month After Third	4 Months After First	6 Months After Previous	**Total Doses Required*** For Checking Complete For School Attendance Box on Immunization Certificate**
[1]Hepatitis B Engerix 10 mcg or Recombivax 5 mcg	1	2			3		**3 (See Footnote [1])**
Recombivax 10 mcg (11-15 years only)	1				2		**2 (See Footnote [1])**
[2]Polio	1	2	3			4 or 3	**4 or 3 (See Footnote [2])**
[3]MMR	1	2					**2 (See Footnote [3])**
[4]Varicella	1	2					**2 (See Footnote [4])**
[5]Td/Tdap	1(Tdap)	2(Td)				3(Td)	**3 (See Footnote [5])**
[6] Meningococcal	1						**1 (See Footnote [6])**

*These requirements were established in accordance with the current Recommended Childhood Immunization Schedule, United States. See References.
**There are other vaccines included in the Childhood Immunization Schedule that are recommended routinely but are not required in GA for child care or school attendance.
***Children who are behind schedule may attend while in the process of completing requirements with minimum intervals indicated above. With respect to these intervals, 1 month is a minimum of 4 weeks or 28 days.

Footnotes:

[1] The 3rd dose of Hepatitis B Engerix-B 10 mcg or Recombivax-HB 5 mcg should be given a minimum of 4 months after the 1st dose and 2 months after the 2nd dose. A 3rd dose is not needed when 2 doses of Adult Recombivax-HB 10 mcg are given when a child is 11-15 years old and the 2 doses are at least 4 months apart. Documentation of the vaccine brand of this alternate schedule is very important, especially when issuing the 3231 certificate.

[2] If the 3rd dose of all IPV or OPV series is given on or after the 4th birthday, a 4th dose is not required provided there is a 6 month interval since the previous dose.

[3] The MMR requirement is 2 doses of measles vaccine, 2 doses of mumps vaccine and 1 dose of rubella vaccine . The vaccines may be given as MMR or MMRV (combined antigens) or as single antigens.

[4] Two doses of varicella vaccine are required for children entering school at any level, K-12, for the first time. For children already enrolled, the second dose is required at 6th grade. If given before age 12, the doses should be separated by 3 months, however, the 2nd dose does not need to be repeated if administered≥ 1 month after 1st dose. If given on or after the 13th birthday, the doses should be separated by 4 or more weeks.

[5] One dose of Tdap is required for 7th grade. Tdap can be administered regardless of the interval since the last Td. If a primary series is indicated, one dose preferably the first dose, should be Tdap. A dose of Tdap given on or after the 7th birthday meets school requirement.

[6] One dose of MCV4 is required for 7th grade; administer MCV4 vaccine routinely at age 11-12 years. A dose of MCV4 given on or after the 10th birthday meets school requirement.

References:

Official Code of Georgia Annotated, Section 20-2-771
Rules of the Department of Public Health, Chapter **511-2-2**
Georgia Immunization Program Manual
Georgia VFC Program Manual
Recommendations of the Advisory Committee on Immunization Practices (ACIP)
The Red Book - Report of the Committee on Infectious Diseases

Recommended Childhood & Catch-Up Immunization Schedules, U.S.:
Centers for Disease Control and Prevention
American Academy of Pediatrics (AAP)
Approved by ACIP, AAP and American Academy of Family Physicians (AAFP)

Rev. 07/2014

Summary of Georgia Immunization Requirements for Child Care & School Attendance

These charts are based on the ACIP Recommendations and Georgia Requirements; for more detailed information including dose schedules and minimum time intervals; please refer to Georgia Form 3231REQ and Table 1 of the ACIP General Recommendations, *MMWR*, January 28, 2011.

Required Number of Doses for Children Who Started Immunizations before Age 7 Years

Required Vaccines	2 mo	4 mo	6 mo	12 mo	15 mo	18 mo	24 mo	4-6 years	5-6 yrs of age Total Doses Required for School Entry
DTP, DT, DTaP	1	2	3	4				5	4 or 5 (if #4 dose given on or after 4th birthday, #5 not needed)
Hep B	1	2	3						3
Hib (ActhiB)	1	2	3	4					Required for Child Care and Pre-K only
or * Hib (PedvaxHIB or Comvax)	1	2		3					
**Polio	1	2	3					4	3or 4 (4th dose of polio on or after 4th birthday required for children born on or after 1-1-06)
***MMR				1				2	2
Varicella				1				2	2
PCV	1	2	3	4					Required for Child Care & Pre-K only
Hep A				1			2		2 Required for children born on or after 1-1-06

*If PedvaxHIB or Comax is administered at ages 2 and 4 months, a dose at 6 months is not indicated.

**The final dose in the series should be administered on or after the fourth birthday and at least 6 months following the previous dose. If 4 doses are administered prior to age 4 years a fifth dose should be administered at age 4 through 6 years. (MMWR 2009; 58(30) :829-30)

***State requirement is for 2 doses each of measles and mumps, and 1 dose of rubella vaccine. Second dose may be given before age 4 years, provided at least 4 weeks have **elapsed since first dose.**

Required Number of Doses for Children Who Started Immunizations after Age 7 Years

Required Vaccines	First Visit	1 Mo After 1st Dose	1 Mo After 2nd Dose	1 Mo After 3rd Dose	4 Mo After 1st Dose	6 Mo After Previous Dose	Total Doses Required
*Hep B	1	2			3*		3
**Polio	1	2	3			3 or 4	3 or 4
***MMR	1	2					2
Varicella	1	2					2
****Tdap/Td	1(Tdap)	2(Td)				3(Td)	3
*****MCV4	1						1

*If child received 2 doses of adult Recombivax-HB 10 mcg between the ages of 11-15 yrs and the doses are separated by at least 4 months, dose 3 is not needed.

** The final dose in the series should be administered on or after the fourth birthday and at least 6 months following the previous dose. A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose.

*** State requirement is for 2 doses each of measles and mumps, and 1 dose of rubella vaccine.

****State requirement is for 1 dose of Tdap booster for 7th grade; Td is recommended for remaining additional doses to complete series

***** State requirement is for 1 dose of MCV4 for 7th grade

(Rev. 01/2014)

Georgia Department of Public Health

AFFIDAVIT OF RELIGIOUS OBJECTION TO IMMUNIZATION

_____ personally appeared before the undersigned notary public and swore or affirmed as follows:

1. I am the parent or legal guardian of _____ (name of minor child) born _____ (date of birth).

2. I understand that the Georgia Department of Public Health requires children to obtain the following vaccinations before being admitted to a child care facility or school: diphtheria; haemophilus influenzae type B (not required on or after the fifth birthday); hepatitis A; hepatitis B; measles; meningitis; mumps; pertussis (whooping cough); pneumococcal (not required on or after the fifth birthday); poliomyelitis; rubella (German measles); tetanus; and varicella (chickenpox).

3. I understand that the Georgia Department of Public Health has determined that these vaccinations are necessary to prevent the spread of dangerous diseases among the children and people of this State; that the required vaccinations are safe; that a child who does not receive these vaccinations is at risk of contracting those diseases; and that a child who does not receive those vaccinations is at risk of spreading those diseases to me, to other children in the child care facility or school, and to other persons.

4. I sincerely affirm that vaccination is contrary to my religious beliefs, and that my objections to vaccination are not based solely on grounds of personal philosophy or inconvenience.

5. I understand that, notwithstanding my religious objections, my child may be excluded from child care facilities or schools during an epidemic or threatened epidemic of any disease preventable by a vaccination required by the Georgia Department of Public Health, and that my child may be required to receive a vaccination in the event that such a disease is in epidemic stages.

This ____ day of _____, 20____.

_____
Parent or Legal Guardian

Sworn and subscribed before me this ___ day of _____, 20____.

_____
Notary Public

My commission expires _____.

Georgia Department of Public Health

DECLARACIÓN DE JURADA DE OBJECIÓN RELIGIOSA A LA INMUNIZACIÓN

_____ compareció en persona ante el notario público abajo firmante y juró y afirmó como sigue:

1. Soy el padre, madre o tutor legal de _____ (nombre del menor de edad), nacido el _____ (fecha de nacimiento).

2. Entiendo que el Departamento de Salud Pública de Georgia requiere que los niños obtengan las siguientes vacunas antes de ser admitidos a una guardería o escuela: difteria, *haemophilus influenzae* tipo B (no requerida después de cumplidos los cinco años); hepatitis A; hepatitis B; sarampión, meningitis; paperas; tos ferina (tos convulsa); neumocócica (no requerida después de cumplidos los cinco años); poliomielitis; rubéola (sarampión alemán); tétano; y varicela.

3. Entiendo que el Departamento de Salud Pública de Georgia determinó que dichas vacunas son necesarias para prevenir la transmisión de enfermedades peligrosas entre los niños y las personas que residen en este estado; que las vacunas requeridas son seguras; que los niños que no reciben estas vacunas están en riesgo de contraer dichas enfermedades; y que los niños que no reciben dichas vacunas están en riesgo de transmitirme dichas enfermedades, al igual que a otros niños en la guardería o escuela y a otras personas.

4. Afirmo con sinceridad que la vacunación es contraria a mis creencias religiosas y que mis objeciones a la vacunación no están basadas solamente en motivos de filosofía personal o inconvenientes.

5. Entiendo que, independientemente de mis objeciones religiosas, mi hijo(a) podría ser excluido(a) de las guarderías o escuelas durante una epidemia o epidemia inminente de cualquier enfermedad que pueda prevenirse mediante una vacuna requerida por el Departamento de Salud Pública de Georgia, y que se le podría requerir a mi hijo(a) que reciba una vacuna en el caso de que dicha enfermedad se encuentre en una etapa epidémica.

Hoy el ____ de _____, de 20____.

_____

Padre, madre o tutor legal (en letra de molde)

_____

Firmado y jurado ante mí en este día ___ de_____, de 20____.

Notario Público

Mi comisión expira _____.

Immunization Requirements and Recommendations for University System of Georgia Students

Proof of Immunization or Naturally-Acquired Immunity Required for Some or All Students			
Vaccine	**Requirement**	**Required for:**	**Notes**
Measles (Rubeola)	- 2 doses of live measles containing vaccine (combined measles-mumps-rubella or "MMR" meets this requirement), with first dose at 12 months of age or later and second dose at least 28 days after the first dose, **or** - Laboratory/serologic evidence of immunity	Students born in 1957 or later	1) Guidelines exist for vaccination of persons with altered immunocompetence[1]. 2) For students born before 1957, proof of immunity may be required if enrolled in health care curriculum.
Mumps	- 2 doses of live mumps containing vaccine (combined measles-mumps-rubella or "MMR" meets this requirement), with first dose at 12 months of age or later and second dose at least 28 days after the first dose, **or** - Laboratory/serologic evidence of immunity	Students born in 1957 or later	1) Guidelines exist for vaccination of persons with altered immunocompetence[1]. 2) For students born before 1957, proof of immunity may be required if enrolled in health care curriculum.
Rubella (German Measles)	- 1 dose at 12 months of age or later (MMR meets this requirement), **or** - Laboratory/serologic evidence of immunity	Students born in 1957 or later	1) Guidelines exist for vaccination of persons with altered immunocompetence[1]. 2) For students born before 1957, proof of immunity may be required if enrolled in health care curriculum.

Proof of Immunization or Naturally-Acquired Immunity Required for Some or All Students			
Vaccine	**Requirement**	**Required for:**	**Notes**
Varicella (Chicken Pox)	- 2 doses spaced at least 3 months apart if both doses are given before the student's 13th birthday, **or** - 2 doses at least 4 weeks apart, If first dose given after the student's 13th birthday: **or** - Reliable history of varicella disease ("chicken pox"), **or** - Laboratory/serologic evidence of immunity **or** - History of herpes zoster (shingles)	All U.S born students born during or after 1980 All foreign born students regardless of year born	1) Guidelines exist for vaccination of persons with altered immunocompetence[1]. 2) For students born before 1980, proof of immunity may be required if enrolled in health care curriculum.
Tetanus, Diphtheria Pertussis (Whooping Cough)	- One dose of Tdap for persons if they have not previously received Tdap. **or** - One Td **booster** dose if it has been 10 years after receiving Tdap.	All students	1) Tdap can be administered regardless of interval since the last tetanus or diphtheria toxoid-containing vaccine. 2) Tetanus/diphtheria containing boosters are recommended every 10 years throughout adulthood. A single dose of Tdap is recommended to replace a single dose of Td. 3) Students who are unable to document a primary series of 3 doses of tetanus/diphtheria containing vaccine (DTaP, DTP, or Td) are strongly advised to complete a 3-dose primary series.

Proof of Immunization or Naturally-Acquired Immunity Required for Some or All Students			
Vaccine	**Requirement**	**Required for:**	**Notes**
Hepatitis B	- 3 dose hepatitis B series (0, 1-2, and 4-6 months), **or** - 3 dose combined hepatitis A and hepatitis B series (0, 1-2, and 6-12 months), **or** - 2 dose hepatitis B series of Recombivax™ (0 and 4-6 months, given at 11-15 years of age), **or** - Laboratory / serologic evidence of immunity or prior infection	**Required** for all students who will be 18 years of age or less at matriculation. It is **strongly recommended** that all students, regardless of their age at matriculation, discuss hepatitis B immunization with their health care provider.	May be required (along with recommended post-vaccine serologic testing) for students in the health sciences, regardless of age at matriculation.

Signed Documentation Stating that Student Has Received the Vaccine OR Reviewed Information Provided as Required by House Bill 504 Required for Some Students			
Vaccine	**Requirement**	**Required for:**	**Notes**
Meningococcal ACWY (MCV4)	- 1 dose meningococcal conjugate vaccine (MCV4) for unvaccinated persons **or** - 1 **booster** dose of meningococcal conjugate vaccine (MCV4) for persons who received initial dose of MCV4 more than five years prior to admittance. **or** Signed documentation that student (or parent or guardian if student <18 years old) has received and reviewed information about meningococcal disease as required by O.C.G.A.§ 31-12-3.2	Newly admitted freshmen or matriculated students planning to reside in university managed campus housing or residing in sorority or fraternity houses.	1) Effective July 1, 2015, HB 504 amended Code Section 31-12-3.2 of the Official Code of Georgia Annotated, relating to meningococcal disease vaccinations and disclosures "In accordance with the recommendations of the Advisory Committee on Immunization Practices of the Centers for Disease Control and Prevention, newly admitted students who are 18 years of age or older residing in campus housing as defined by the postsecondary educational institution or residing in sorority or fraternity houses shall be required to sign a document provided by the postsecondary educational institution stating that he or she has received vaccination against meningococcal disease not more than five years prior to such admittance or reviewed the information provided as required by subsection (a) of this Code section. If a student is a minor, only a parent or guardian may sign such document."

Immunization Recommended for All Students		
Vaccine	**Recommended Schedule**	**Notes**
Meningococcal B (Men B)	- 2 dose Men B series of Bexsero™ (0 and 1-2 months), **or** - 3 dose Men B series of Trumenba™ (0, 1-2, and 6-12 months)	**Consider** for unvaccinated students younger than 23 yrs
Influenza	- Annual vaccination at the start of influenza season (October – March)	**Strongly recommended** for students with medical conditions such as diabetes, asthma, or immunodeficiencies, as well as for students residing in dormitories or other group living situations or who are members of athletic teams.
Human Papillomavirus (HPV)	- 3 dose HPV series. Dose #2 given 4-8 wks after dose #1, and dose #3 is given 6 mos after dose #1 (at least 10 wks after dose #2).	**Strongly recommended** for all unvaccinated males and females through age 26 yrs.
Hepatitis A	- 2 dose hepatitis A series (0 and 6-12 months), **or** - 3 dose combined hepatitis A and hepatitis B series (0, 1-2, and 6-12 months)	**Strongly recommended** for: persons traveling to countries where hepatitis A is moderately or highly endemic, men who have sex with men, users of injectable and noninjectable drugs, persons with clotting-factor disorders, and persons with chronic liver disease
Pneumococcal Polysaccharide	- 1 dose for persons < 65 yrs if have chronic illness or other risk factor including but not limited to: diabetes, asthma, asplenia, sickle cell disease, cochlear implant recipient, HIV infection or other immunocompromising condition **or** - 1 dose for unvaccinated persons ≥ 65yrs	Revaccination with pneumococcal polysaccharide vaccine every 5 yrs after persons is 65 yrs, is **NOT** recommended[1]
Other Vaccines	- Other vaccines may be recommended for students with underlying medical conditions and students planning international travel. Students meeting these criteria should consult with their physicians or health clinic regarding additional vaccine recommendations.	

References:

1. For guidance on specific conditions, refer to www.cdc.gov/vaccines/hcp/acip-recs/index.html.

Additional Resources:

CDC. Recommended Immunization Schedules for Teens and Preteens: www.cdc.gov/vaccines/schedules/easy-to-read/preteen-teen.html

CDC. Recommended Adult Immunization Schedule: www.cdc.gov/vaccines/schedules/easy-to-read/adult.html

Georgia Department of Public Health, Immunization Program: http://dph.georgia.gov/immunization-section

Immunization Action Coalition: www.immunize.org/

American College Health Association (ACHA). www.acha.org/ACHA/Resources/Topics/Vaccine.aspx

UNIVERSITY SYSTEM OF GEORGIA

REQUIRED

CERTIFICATE OF IMMUNIZATION

(Return this to the institution)

Return documentation to the college or university that you are applying to. Retain a copy of the completed form for your records.

STUDENT INFORMATION

Student ID: _____ - _____ - _____

Name: (Last)_____(First)_____(Middle)_____

Address: _____

City: _____ State: _____ Country: _____ Zip Code: _____

Term/Year of Application: _____ Age at time of application: _____ Date of Birth: _____/_____/_____

REQUIRED IMMUNIZATION INFORMATION *(See the Immunization Requirements & Recommendations for USG Students documentation)*

VACCINE	DATE MM/DD/YYYY	DATE MM/DD/YYYY	DATE MM/DD/YYYY	HISTORY	DATE OF POSITIVE LAB/SEROLOGIC EVIDENCE
MMR[1]	/ /	/ /			
Measles[1]	/ /	/ /			/ /
Mumps[1]	/ /	/ /			/ /
Rubella[1]	/ /	/ /			/ /
Varicella[3]	/ /	/ /		(or history of Varicella) / /	
Tetanus-Diphtheria Pertussis (Whooping Cough)[4]	/ / Tdap	/ / Td Booster[4]			
Hepatitis B[2]	/ /	/ /	/ /	Type Series: ☐ 2 Dose Series ☐ 3 Dose Series	/ /

1—Not required if born before 1957. 2—Only required of students who are 18 years of age or younger at time of expected matriculation.
3—Required for all US born students born in 1980 or later; all foreign born students regardless of year born. 4 – Td booster only necessary if ≥ 10 years since Tdap dose.

PERMANENT OR TEMPORARY IMMUNIZATION EXEMPTION

☐ This student is exempt from the above immunizations on the ground of permanent medical contraindication.

☐ This student is temporarily exempt from the above immunization until _____/_____/_____.

CERTIFICATION OF HEALTH CARE PROVIDER *(This information is required)*

Name: _____ Signature: _____

Address: _____

Date of Issue: _____/_____/_____ Telephone: _____

EXEMPTIONS

Check the appropriate box, sign, and date if you are claiming exemption of the immunization requirement for one of the following reasons:

☐ I affirm that Immunization as required by the University System of Georgia is in conflict with my religious beliefs. I understand that I am subject to exclusion in the event of an outbreak of a disease for which immunization is required.

Student Signature: _____ Date: _____/_____/_____

☐ I declare that I will be enrolling in ONLY courses offered by distance learning. I understand that if I register for a course that is offered on-campus or at a campus-managed facility this exemption becomes void and I will be excluded from class until I provide proof of immunization.

Student Signature: _____ Date: _____/_____/_____

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DIPHTHERIA FACT SHEET

Agent: Toxigenic strains of *Corynebacterium diphtheriae* biotype *mitis, gravis, intermedius*, or *belfanti.*

Brief Description: In the United States, diphtheria is an uncommon infection of the upper respiratory tract. Respiratory diphtheria is insidious and initial symptoms include a sore throat, difficulty swallowing, malaise, and low-grade fever. The hallmark of respiratory diphtheria is the presence of an exudate that organizes into a tough, grayish-white pseudo-membrane over the tonsils, the pharynx or larynx. The pseudo-membrane is strongly adherent to the underlying tissue, and attempts to dislodge it usually results in bleeding. Inflammation of cervical lymph nodes and surrounding soft-tissue swelling of the neck result in a “bull-neck” appearance and are a sign of moderate to severe disease. The membrane may progressively extend into the larynx and trachea and cause airway obstruction, which, if left untreated, can be fatal. Absorption of diphtheria toxin from the site of infection can cause systemic complications, including damage to the myocardium, nervous system and kidneys. Asymptomatic nasopharyngeal infection (carriage) occurs in the general population despite vaccination. In the United States, severe diphtheria infection has been documented to occur more frequently in American Indian and homeless populations.

Areas with Endemic Diphtheria*†:

REGION	COUNTRIES
Africa	Algeria, Angola, Egypt, Eritrea, Ethiopia, Guinea, Niger, Nigeria, Sudan, Zambia, and other sub-Saharan countries
Americas	Bolivia, Brazil, Colombia, Dominican Republic, Ecuador, Haiti, and Paraguay
Asia/South Pacific	Bangladesh, Bhutan, Burma (Myanmar), Cambodia, China, India, Indonesia, Laos, Malaysia, Mongolia, Nepal, Pakistan, Papua New Guinea, Philippines, Thailand, and Vietnam
Middle East	Afghanistan, Iran, Iraq, Saudi Arabia, Syria, Turkey, and Yemen
Eastern Europe	Albania, Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan

*Although diphtheria disease is rare in the United States, it appears that C. diphtheria continues to circulate in areas of the country with previously endemic diphtheria. In 1996, 10 isolates of C. diptheriae were obtained from persons in a Native American community in South Dakota. Eight of these isolates were toxigenic.
† The last case of diphtheria in the U.S. occurred in New York State in 2012. The last case prior to that was in 2003 in a traveler returned to Pennsylvania from Haiti.

Reservoir: Human carriers are the reservoir for C. diphtheria and are usually asymptomatic.

Mode of Transmission: Transmission is most often person-to-person via respiratory tract droplets from an infected patient or carrier. Rarely, transmission may occur from skin lesions or articles soiled with discharges from lesions of infected persons (fomites).

Incubation Period: 2 to 5 days (range, 1 – 10 days).

Period of Communicability: Transmission may occur as long as virulent bacilli are present in discharges and lesions. The time is variable, but without antibiotics, organisms usually persist 2 weeks or less and seldom more than 4 weeks. Chronic carriers may shed organisms for 6

months or more. Effective antibiotic therapy promptly terminates shedding. Chronic carriers are rare but may shed organisms for 6 months or more.

Temporal Pattern: In temperate areas, diphtheria most frequently occurs during winter and spring.

Case Classification:

- **Probable:** In the absence of a more likely diagnosis, an upper respiratory tract illness with an adherent membrane of the nose, pharynx, tonsils, or larynx; and absence of laboratory confirmation; and lack of epidemiologic linkage to a laboratory-confirmed case of diphtheria.

- **Confirmed**: An upper respiratory tract illness with an adherent membrane of the nose, pharynx, tonsils, or larynx; and any of the following: isolation of *Corynebacterium diphtheria* from the nose or throat; or histopathologic diagnosis of diphtheria; or epidemiologic linkage to a laboratory-confirmed case of diphtheria.

  An epidemiologically linked case is one in which the patient has had contact with one or more persons who have or had the disease, and transmission of the agent by the usual modes of transmission is plausible. A case may be considered epidemiologically linked to a laboratory-confirmed case if at least one case in the chain of transmission is laboratory confirmed.

- **Carrier:** An asymptomatic person with laboratory confirmed *C. diphtheria* isolated from the nasopharynx.

Comment: Cutaneous diphtheria should not be reported. Respiratory disease caused by nontoxigenic *C. diphtheria* should be reported as diphtheria. All diphtheria isolates, regardless of association with disease, should be sent to the Diptheria Laboratory, National Center for Immunization and Respiratory Diseases (NCIRD), CDC.

Laboratory testing:
Diagnostic tests used to confirm infection include isolation of C. diphtheriae by culture and toxigenicity testing. Although no other tests for diagnosing diphtheria are commercially available, CDC can perform a polymerase chain reaction (PCR) test on clinical specimens to confirm infection with a toxigenic strain. PCR is particularly useful if nonviable C. diphtheriae organisms are present in clinical specimens that are obtained from a patient after antibiotic therapy has been initiated.

- **Isolation of C. diphtheriae by culture**

  Isolation of *C. diphtheriae* by culture is essential for confirming diphtheria. However, even if the patient's culture is negative, isolation of *C. diphtheriae* from close contacts may help confirm the diagnosis of the case. Clinical specimens for culture should be taken from the nose or nasopharynx, and throat from all persons with suspected diphtheria and their close contacts. If possible, swabs also should be taken from beneath

the membrane, or a piece of the membrane should be removed. Specimens for culture should be obtained as soon as diphtheria (involving any site) is suspected, even if treatment with antibiotics has already begun.

After *C. diphtheriae* has been isolated toxigenicity testing should be performed to determine whether the organisms produce diphtheria toxin. Demonstration of toxin production confirms a case of diphtheria.

- **Polymerase chain reaction (PCR) testing**

  Isolation of *C.diphtheriae* may not always be possible because many patients will have received antibiotics before diagnosis of diphtheria is considered. PCR allows for detection of the regulatory gene for toxin production and the diphtheria toxin gene on nonviable organisms. Additional clinical specimens (nasophyrangeal and throat swabs, pieces of membrane, biopsy tissue) for PCR testing should be collected when specimens are being collected for culture.

  NOTE: PCR does not demonstrate production of diphtheria toxin but only detection of the diphtheria toxin gene. A positive PCR test in the absence of a positive culture does not meet the laboratory criteria for classifying a case as confirmed diphtheria.

- **MALDI-Tof**

  Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-Tof) is an additional technology that can be used to rapidly identify bacterial species such as *C. diphtheriae*. The technique requires an isolate in order to identify the protein composition of microbial cells. However, this form of testing only confirms the bacterial species, does not confirm diphtheria toxin production, and is not available at the CDC Pertussis and Diphtheria Laboratory.

Diagnostic Testing:

***Diphtheria culture and PCR testing at the Georgia Public Health Laboratory and/or CDC is available by special arrangement only. To receive pre-approval and make arrangements for either diphtheria culture or PCR testing, the District Health office or Georgia Department of Public Health must be contacted at 404-657-2588 or 1-866-PUB-HLTH after business hours.**

A. Culture

NOTE: The laboratory must be informed that you suspect diphtheria. A special medium containing tellurite is required for isolation of this organism.

1. Specimen: Throat, nasopharyngeal and/or pseudo-membrane swab and/or a piece of the pseudo-membrane.

- Polyester, rayon or nylon swabs should be used (**Cotton-tipped or calcium alignate swabs are not acceptable**)

2. Outfits: Culture referral outfit, order #505, and Streptococcus outfit, order #560.
3. Lab Form: GPHL Form found here https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf
   - On the GPHL Form under "Bacteriology" check the box labeled 1135: Forward to CDC and specify Diphtheria culture.
4. Transport requirements: The swabs should be placed in transport media such as Amies or Stuart and shipped overnight with ice packs. Dry swabs submitted in silica gel sachets are also acceptable. Pseudo-membrane should be placed in sterile saline (not formalin) and shipped overnight with ice packs.
5. Toxigenicity testing will be performed at CDC.

B. Polymerase Chain Reaction (PCR)

1. Specimen: Throat, nasopharyngeal and/or pseudo-membrane swab and/or a piece of the pseudo-membrane.
   - Polyester, rayon or nylon swabs should be used (**Cotton-tipped or calcium alignate swabs are not acceptable**)
2. Outfits: Culture referral outfit, order #505, and Streptococcus outfit, order #560.
3. Lab Form: GPHL Form found here https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf
   - On the GPHL Form under "Molecular Biology" check the box labeled 499100 Forward to CDC and specify Diphtheria PCR.
4. Transport requirements: The swabs should be placed in transport media such as Amies or Stuart and shipped overnight with ice packs. Dry swabs submitted in sterile containers or silica gel sachets are also acceptable. Pieces of pseudo-membrane may also be submitted for PCR. Pseudo-membrane should be placed in sterile saline (not formalin) and shipped overnight with ice packs.
5. Toxigenicity testing will be performed at CDC.

C. Isolates

Isolates of *C. Diptheriae* may be submitted for confirmation and toxigenicity testing in the Elek assay. Pure isolates should be cultured on tryptic soy agar slants (TSA), blood agar slants, or other common agar slants. Isolates should be sent overnight at ambient temperature.

For more specific laboratory testing information, please see: http://www.cdc.gov/diphtheria/downloads/dip-collection.pdf

Vaccination: Primary diphtheria immunization with diphtheria-tetanus toxoids-acellular pertussis vaccine (DTaP) is recommended for all persons at least 6 weeks old but less than7 years of age and without a history of contraindications. DTaP is the preferred vaccine for all doses in the infant and childhood vaccination series (including completion of the series in children who have received one or more doses of whole-cell DTP). The primary vaccination with DTaP series consists of a three-dose series, administered at ages 2, 4, and 6 months, with a minimum interval of 4 weeks between the first three doses. The fourth dose (first booster) is

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recommended at 15-18 months of age to maintain adequate immunity during preschool years. The fifth dose (second booster) is recommended for children aged 4-6 years to confer continued protection against disease during the early years of schooling.

Adolescents 11-18 years of age should receive a single dose of Tdap instead of Td for booster immunization against tetanus, diphtheria, and pertussis if they have completed the recommended childhood DTP/DTaP vaccination series. Thereafter, routine booster doses of Td vaccine should be given at 10-year intervals. Adolescents and adults who have never been vaccinated against diphtheria should receive a primary series of three doses of Td. The first dose should be administered at least 4 weeks apart, and the third dose 6-12 months after the second dose. For added protection against pertussis, Tdap can substitute for any one dose in the 3-dose primary series.

For added protection against pertussis, adults 19 years and older should receive a single dose of Tdap (ADACEL®, BOOSTRIX®) to replace a single routine booster dose of Td, if they received their last dose of Td 10 or more years earlier and have not previously received a dose of Tdap.

Treatment of infected people: Diphtheria antitoxin (of equine origin) should be given when diphtheria is suspected, **without waiting for laboratory confirmation**. The recommended dosage and route of administration depend on the extent and duration of disease. Detailed recommendations can be obtained from the Georgia Department of Public Health and CDC. Antitoxin is only available for treatment of clinical cases through CDC. The responsible health-care provider should contact the State Epidemiology Section at (404) 657-2588, or if after hours 1-800 PUB-HLTH, to request antitoxin, obtain authorization for its release and make arrangements for transport.

Antimicrobial therapy is also required to eradicate carriage of C. diphtheria, to limit transmission, and to halt further production of diphtheria toxin. However, **it is not a substitute for antitoxin** in clinical cases of diphtheria**.** Treatment with erythromycin or penicillin is administered as a 14-day course.

Care of Close Contacts:
Close contacts of a persons suspected to have respiratory diphtheria should be identified promptly. CDC's "Information for Close Contacts" found at http://www.cdc.gov/diphtheria/downloads/close-contacts.pdf can be used to identify and interview close contacts. Contact tracing should begin in the household and can usually be limited to household members and other people with a history of direct, habitual close contact (including kissing or sexual contacts, healthcare workers exposed to nasopharyngeal secretions, people sharing utensils or kitchen facilities, and people taking care of children.

For close contacts (regardless of their immunization status) the following measures should be taken:

1. Surveillance for 10 days for evidence of disease; antitoxin should be given at the first sign(s) of illness.
2. Perform nose and throat cultures for C. diphtheria to identify carriers

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3. Oral erythromycin* (40-50 mg/kg/day) for 10 days (maximum 2g/day) or a single IM injection of benzathine penicillin G (600,000 U for children <30 kg and 1.2 million U for children >30 kg and adults).
4. Immunization, as appropriate (complete primary series if <3 doses and give booster if last dose >5 years ago).

*Persons who cannot be relied upon to complete the oral course of erythromycin or who cannot be kept under surveillance should receive benzathine penicillin G and a dose of DTaP or Tdap depending on their age.

Treatment of carriers: Close contacts found by culturing to be carriers should have received antibiotics and vaccine as per the recommendations for close contacts above. Those who need to complete the vaccine series should receive follow-up to ensure completion of the series. Follow-up cultures should be performed as per the CDC recommendations.

Investigation: Additional guidelines for investigating a suspected case and for managing contacts are published and are referenced below. Management of close contacts of suspected cases should include screening for possible respiratory or cutaneous diphtheria, obtaining nasopharyngeal cultures for *C. diphtheriae*, administering prophylactic antibiotics, treatment and follow-up of carriers, assessing diphtheria vaccination status, and administering any necessary vaccinations.

Reporting: Report all suspect, probable, and confirmed cases **IMMEDIATELY** by phone to the local health department, District Health Office, or the State Epidemiology Section at 404-657-2588. If calling after regular business hours, it is very important to report cases to the Epidemiology Section by calling 1-866-PUB-HLTH. After a verbal report has been made, please enter the case information into the State Electronic Notifiable Disease Surveillance System (SENDSS) at http://sendss.state.ga.us, or complete and mail a CDC Diphtheria Worksheet found here http://www.cdc.gov/diphtheria/downloads/dip-wksht.pdf.

Reported Cases of Diphtheria in Georgia, 2008-2017

Year	Number of Cases
2008	0
2009	0
2010	0
2011	0
2012	0
2013	0
2014	0
2015	0
2016	0
2017	0

References:

1. American Academy of Pediatrics. Diphtheria. In: Pickering, LK, Baker CJ, Kimberlin DW, Long SS, eds. 2015 Red Book: Report of the Committee on Infectious Diseases. Elk Grove Village, IL: American Academy of Pediatrics; 2015: 325-329.

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2. Centers for Disease Control and Prevention. Diphtheria. Manual for the surveillance of vaccine-preventable diseases. Centers for Disease Control and Prevention, Atlanta, GA, 2015.
3. Heymann, ed. Diphtheria. In: Control of Communicable Diseases Manual. 18th Ed. Washington, DC: American Public Health Association, 2004: pp. 171-176.
4. Farizo KM, Strebel PM, Chen RT, et al. Fatal respiratory disease due to Corynebacterium diphtheriae: Case report and review of guidelines for management, investigation, and control. Clin Infect Dis 1993; 16:59-68.

Links:

- CDC Diphtheria Fact Sheet – http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/dip.pdf
- CDC National Center for Immunization and Respiratory Diseases – http://www.cdc.gov/vaccines/

HEPATITIS A FACT SHEET

Agent: Hepatitis A virus (HAV)

Brief Description: An acute infectious disease with onset of any sign or symptom consistent with viral hepatitis, such as fever, fatigue, malaise, loss of appetite, nausea, vomiting, abdominal pain, dark urine and jaundice (yellowing of the skin and eyes). The disease varies widely in severity ranging from asymptomatic to a mild illness without jaundice lasting one to two weeks in children, to severe debilitating illness and lasting several weeks with prolonged convalescence in adults. Recovery is generally complete and without complication.

Reservoir: Humans are the only natural reservoir.

Mode of Transmission: The primary mode of transmission is by the fecal-oral route. This includes ingestion of fecally contaminated water or ice; raw or undercooked shellfish; fruits, vegetables, and other foods eaten uncooked that may have become contaminated during handling. Contact with stool from infected infants and toddlers during diaper changes that is not immediately followed by thorough hand washing is a common means of spread to daycare and household contacts. Waterborne transmission of hepatitis A is more common in places with inadequate sewage disposal and water treatment, such as can be found in developing nations. Sexual contact can spread the virus. In rare cases bloodborne transmission occurs.

Incubation Period: Average 28-30 days; Range 15-50 days.

Clinical Case Definition: An acute illness with

- Discrete onset of symptoms, **and**
- Jaundice, dark urine or elevated serum aminotransferase levels (ALT >200 IU/L)

Laboratory criteria for diagnosis:
Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) positive. Note that a person may remain IgM positive for six months or longer after infection, which makes it difficult to determine the timing of infection in a person who has been asymptomatic.

Diagnostic Testing:
Serology

1. Specimen: Serum/blood, >6 ml collected in serum separator tube (SST)
2. Outfits: Outfit 0500
3. Lab Form: Form 3583
4. Lab Tests Performed: Anti-HAV IgG and Anti-HAV IgM
5. Lab: State Immunology Laboratory (GPHL)
6. Transport requirements: All specimens should be centrifuged and transported as soon as possible. Refrigerate if specimen must be held overnight. In extremely hot weather, transport on ice packs. Specimens >14 days old or hemolyzed will be rejected.

Case Classification:

Confirmed: A case that meets the clinical case definition and is laboratory confirmed
-or-
A case that meets the clinical case definition and occurs in a person who has an epidemiologic link to a person who has laboratory-confirmed hepatitis A (i.e., daycare, household or sexual contact with an infected person during the 15-50 days before the onset of symptoms).

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Period of Communicability: Hepatitis A virus is highly infective, requiring only a few virus particles to cause infection. The virus is present in the highest quantity in stool during the latter half of the incubation period (7-14 days prior to onset of illness). Most cases are not infectious after the first week of jaundice.

Vaccine: Three inactivated vaccines are currently available to protect against infection with hepatitis A virus (HAV). Protection begins two to four weeks after the first dose of hepatitis A vaccine. A second dose is considered necessary for long-term protection. Two vaccines, HAVRIX® and VAQTA®, are currently licensed for persons 12 months of age and older and are available in two formulations based on the recipient's age. The third vaccine, TWINRIX®, is a hepatitis A and hepatitis B combination vaccine licensed for persons 18 years of age or older. Pre-exposure hepatitis A vaccine is recommended for all children at 12 to 23 months of age, persons traveling to or working in countries that have high or intermediate rates of hepatitis A, close contacts of newly arriving international adoptees, persons with chronic liver disease or clotting factor disorders, men who have sex with men, users of injection and noninjection drugs, persons who work with HAV-infected primates or with HAV in laboratory settings, and any person who wishes to be immune to hepatitis A. Infants 6-11 months of age traveling to countries outside the United States for which protection against hepatitis A is recommended should receive a single dose of hepatitis A vaccine. After they reach 12 months of age, the full 2-dose vaccine series should be administered as recommended. Post-exposure vaccine use is listed below. For more detailed vaccination information, see Hepatitis A Vaccine Guidelines in Chapter 2 of this manual.

Treatment: No specific therapy for HAV infection is available, other than supportive care. Hepatitis A is usually self-limiting.

Post-exposure Prophylaxis of Contacts: Depending on age of contact, immune globulin (IG) or hepatitis A vaccine should be offered after exposure to hepatitis A, if it can be given within 14 days of last exposure to the case as indicated below:

- Unvaccinated persons who live in the same household, or who are intimate and/or sex partners of a diagnosed case
- Daycare center-associated cases as follows:
  - Unvaccinated children who attend the same room as a diagnosed case
  - Susceptible workers who change diapers in a daycare center with a diagnosed case
- Inmates in the same cell in a detention center
- Foodhandlers who work with the acute case

When a food worker has acute infection, consideration may be given to prophylaxis of patrons if prophylaxis can be given within 14 days of last exposure and the case worked while having diarrhea and/or having questionable hygienic practices, combined with having contact with ready-to-eat foods. **Consult the Epidemiology Section at (404) 657-2588 promptly in these instances.** For contacts younger than 12 months of age, older than 40 years of age, those who are immunocompromised, and persons with chronic liver disease, give IG as a single dose of 0.1 ml per kilogram of body weight within 14 days after exposure to hepatitis A. Immune globulin is **NOT** recommended for hepatitis A exposure for business, office or school contacts, or household visitors (e.g., neighbors and relatives) who do not meet the above criteria. When

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IG is not readily available, hepatitis A vaccine can be given to contacts older than 40 years of age.

Investigation: Complete the hepatitis case report in SendSS (State Electronic Notifiable Disease Surveillance System) at https://sendss.state.ga.us to aid in the investigation. Conduct an assessment of the patient for high-risk activities (food handler, daycare attendee/provider, healthcare provider) and hygienic practices such as hand washing. Determine whether the case worked while experiencing diarrhea. Assess the need for immune globulin (IG) or vaccine as indicated above for contacts of the case patient, and educate case contacts regarding the risk of hepatitis A virus transmission. Investigate the source of the infection. Attention should be paid to sanitation and potential fecal contamination via food or water. Advise hepatitis A vaccine for international travelers, men who have sex with men, persons with chronic liver disease, and others who will be at increased risk of exposure to hepatitis A in the future. **Special evaluation is indicated for outbreaks in institutional settings and hepatitis in food handlers. Consult the Epidemiology Section at (404) 657-2588 promptly in these instances.**

Reporting: Report acute, laboratory-confirmed cases **IMMEDIATELY** by phone to the local health department, District Health Office, or the Epidemiology Section at 404-657-2588. If calling after regular business hours, reports can be made to 1-866-PUB-HLTH (782-4584). After a verbal report has been made, please transmit the case information electronically through the State Electronic Notifiable Disease Surveillance System (SendSS) at https://sendss.state.ga.us. Please complete all data fields in SendSS, including the case report form.

Reported Cases of Acute Hepatitis A in Georgia, 2001-2016

Year	Number of Cases
2001	927*
2002	509
2003	776*
2004	318
2005	216
2006	56
2007	67
2008	61
2009	54
2010	38
2011	27
2012	44
2013	32
2014	24
2015	30
2016	37

***Note:** Large outbreaks were documented in 2001 and 2003.

References:

1. Centers for Disease Control and Prevention. Prevention of Hepatitis A through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2006; 55(RR7): 1-23.

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2. Heymann, ed. Hepatitis, Viral. In: Control of Communicable Diseases Manual. 18th ed. Washington, DC: American Public Health Association, 2004: 247-253.
3. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions Under Public Health Surveillance. *MMWR* Vol. 46(RR10): 1-55.
4. Centers for Disease Control and Prevention. Update: Prevention of Hepatitis A After Exposure to Hepatitis A Virus and in International Travelers. Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2007; 56(41): 1080-1084.
5. Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases (Pink Book) 13th Edition. 2015; 135-148.
6. Kimberlin D, et al, eds. Hepatitis A. In: 2015 Red Book: Report of the Committee on Infectious Diseases. 30th Ed. Elk Grove Village, IL: American Academy of Pediatrics; 2015: pp. 391-399.
7. Centers for Disease Control and Prevention. Updated Dosing Instructions for Immune Globulin (Human) GamaSTAN S/D for Hepatitis A Virus Prophylaxis. MMWR, September 15, 2017; 66(36); 959-960.
8. Advisory Committee on Immunization Practices (ACIP). Vaccines to Prevent Hepatitis A. VFC resolution adopted and effective February 22, 2018.

Links:

- CDC Hepatitis A Fact Sheet – http://www.cdc.gov/hepatitis
- ACIP resolution - https://www.cdc.gov/vaccines/programs/vfc/downloads/resolutions/hepa-02-18-2.pdf

HEPATITIS A Q&A

What is hepatitis A?

Hepatitis A is a liver disease caused by a specific virus. The hepatitis A virus (HAV) is one of several viruses known to cause hepatitis (liver inflammation) in humans. Prior to 2006, several hundred cases were reported in Georgia each year, with the last large outbreak occurring in 2003.

Who gets hepatitis A?

Anyone who has not previously been infected with or vaccinated against hepatitis A can become infected. Certain persons at increased risk of exposure to hepatitis A include:

- Children and employees of child care centers where a child or employee has hepatitis A
- Persons who share a household or have sexual contact with someone with hepatitis A
- Travelers to developing countries where hepatitis A is common and where clean water and proper sewage disposal are not readily available; and
- Residents and staff of institutions for disabled children where a resident or an employee has hepatitis A.

How is the hepatitis A virus spread?

The hepatitis A virus enters through the mouth, multiplies in the body and is passed in the feces. The virus is fairly hardy and can be carried on an infected person's hands and spread by direct contact, or by consuming food or drink that has been handled by the individual. In some cases, consuming untreated or inadequately treated water contaminated with improperly treated sewage can spread it. Eating raw or undercooked shellfish (e.g., mussels, oysters, and clams) is another way one can become infected.

What are the symptoms of hepatitis A?

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In outbreak settings, three of every four persons infected with hepatitis A virus have symptoms. When the symptoms are present, they usually develop suddenly and may include fatigue, poor appetite, fever and vomiting. Urine may become darker in color, and then jaundice (a yellowing of the skin and whites of the eyes) may appear. The disease is rarely fatal and most people recover in a few weeks without any complications. Infants and young children tend to be asymptomatic or have very mild symptoms and are less likely to develop jaundice than are older children and adults. Not everyone who is infected will have all of the symptoms, but adults are more likely to have symptoms.

How soon do symptoms appear?
The symptoms usually begin to appear three to four weeks after exposure, but the onset of symptoms may range from two to seven weeks after exposure.

When and for how long is an infected person able to spread the virus?
The contagious period begins one to two weeks before the symptoms appear and may extend up to a week after illness or jaundice (a yellow color of the skin and whites of the eyes) begins.

Does past infection with hepatitis A make a person immune?
Yes. Once an individual recovers from hepatitis A, he or she is immune for life and does not continue to carry the virus. Additionally, vaccination against hepatitis A is thought to provide lifelong protection against infection.

What is the treatment for hepatitis A?
There are no special medicines to treat a person once the symptoms appear. Generally, bed rest is all that is needed. Occasionally an ill person with severe vomiting and/or diarrhea is hospitalized for rehydration.

How can hepatitis A be prevented?
An important way to prevent spread of hepatitis A is careful handwashing after using the toilet. Infected people should not handle foods served to others during the contagious period. Household members or others who have not been immunized, but are in close contact with an infected person, should promptly call a doctor or the health department to determine whether a shot of immune globulin or hepatitis A vaccine can decrease their chances of becoming ill. There are three effective vaccines that protect against infection with hepatitis A virus. Persons in higher risk groups (e.g. travelers to developing countries) may wish to consider being vaccinated. All children should be vaccinated at 12 months of age. Adults ages 18 years and older who are susceptible to both hepatitis A and hepatitis B can be vaccinated with the combination vaccine, Twinrix®. Please contact the Georgia Immunization Program at (404) 657-3158 for current vaccine recommendations.

Where can I get additional information on hepatitis A?
Contact the Georgia Department of Public Health, Epidemiology Section at 404-657-2588. The following web sites may be useful:

- GDPH hepatitis web page – http://dph.georgia.gov/viral-hepatitis
- CDC hepatitis web page – http://www.cdc.gov/hepatitis

HEPATITIS B FACT SHEET

Agent: Hepatitis B Virus (HBV)

Brief Description: Exposure to HBV may result in transient or chronic infections, either of which can be asymptomatic. Hepatitis B can present as an acute infectious disease with fever, malaise, loss of appetite, vague abdominal discomfort, nausea and vomiting, sometimes arthralgia and rash, often progressing to jaundice. Liver enzyme levels are markedly elevated. Fever may be absent or mild. Severity ranges from asymptomatic cases detectable only by liver enzyme tests, to fatal cases of acute hepatic necrosis.

The likelihood of developing a chronic HBV infection is affected by age at time of infection. Fewer than 5% of acutely infected adults in the U.S. develop chronic infection after the acute phase, compared with 25% (with HBeAg-negative mothers) to 90% (HBeAg-positive mothers) of perinatally infected infants. Chronically infected persons are at increased risk for developing cirrhosis and/or primary hepatocellular carcinoma, leading to end-stage liver disease later in life.

Reservoir: Humans

Mode of Transmission: HBV is usually transmitted by contact with the blood, semen, or vaginal secretions of an infected person. HBV may also be found in saliva and other body fluids. The virus must be introduced through broken skin or come into contact with mucous membranes for infection to occur. In addition, percutaneous transmission of HBV can occur through blood or blood product transfusion, needle sharing, hemodialysis, acupuncture, tattooing, and needlesticks. Indirect inoculation of HBV can also occur via inanimate objects, as the virus can remain viable outside the body for at least 7 days.

Incubation Period: Varies from 45-180 days – usually between 60 and 90 days.

Clinical Case Definition: An acute illness with:

- Discrete onset of symptoms, **and**
- Jaundice or elevated serum aminotransferase levels (ALT >200 IU/L), **or**
- Documented seroconversion (negative to positive HBsAg) in the previous 12 months.

Lab Criteria for Diagnosis:

1. IgM antibody to hepatitis B core antigen (anti-HBc) positive and/or hepatitis B surface antigen (HBsAg) positive **and**
2. IgM anti-HAV negative (if done)

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Interpretation of the Hepatitis B Serology Panel

Tests	Results	Interpretation
HBsAg Anti-HBc (IgG + IgM) Anti-HBs	negative negative negative	Susceptible to hepatitis B infection
HBsAg Anti-HBc (IgG + IgM) Anti-HBs	negative negative or positive positive	Immune to hepatitis B infection
HBsAg Anti-HBc (total) Anti-HBc (IgM) Anti-HBs	positive positive positive negative	Acutely infected with hepatitis B
HBsAg Anti-HBc (IgG or total) Anti-HBc (IgM) Anti-HBs	positive positive negative negative	Chronically infected with hepatitis B
HBsAg Anti-HBc (IgG + IgM) Anti-HBs	negative positive negative	Four interpretations possible*

* Interpretations possible for isolated positive Anti-HBc (IgG + IgM or total)

1. May be recovering from acute HBV infection (in the “core window phase” before anti-HBs appears);
2. May be distantly immune, and the test is not sensitive enough to detect very low levels of anti-HBs in serum;
3. May have a false positive anti-HBc; or
4. May be chronically infected with HBV and have an undetectable level of HBsAg in the serum.

HBeAg is tested in the presence of HBsAg and, if present, is a marker of intense virus production.

Diagnostic Testing:

1. Specimen: Serum/blood, >6 ml collected in serum separator tube (SST)
2. Outfits: Outfit 0500
3. Lab Form: Form 3583
4. Lab Tests Performed: HBsAg, anti-HBs, HBeAg, and total anti-HBc (IgG). Georgia Public Health Lab (GPHL) in Decatur does not currently offer anti-HBc IgM, but this is available through commercial laboratories.
5. Lab: GPHL Immunology Laboratory, hospital laboratories, and private clinic laboratories.
6. Transport requirements: All specimens should be centrifuged and transported as soon as possible. Refrigerate if specimen must be held overnight. In extremely hot weather, transport on ice packs. Specimens >14 days old or hemolyzed will be rejected.

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Case Classification

- **Confirmed:** A case that meets the clinical case definition is laboratory confirmed, and is not known to have chronic hepatitis B. Persons who have chronic hepatitis or persons identified as HBsAg positive should not be reported as having acute viral hepatitis unless they have evidence of an acute illness compatible with viral hepatitis or documented seroconversion.

Comment: Also reportable (in addition to acute hepatitis B): (1) all newly identified HBsAg-positive infections, (2) all HBsAg-positive pregnant women.

Period of Communicability: All persons who are HBsAg positive are potentially infectious. Blood can be infective many weeks before the first onset of symptoms and remain infective through the acute clinical course of the disease. For chronically infected people, the infectivity varies from highly infectious (HBeAg positive) to potentially infectious (anti-HBe positive).

Vaccination: Three vaccines are currently available to protect against infection with HBV. Two vaccines, ENGERIX-B® and RECOMBIVAX HB®, are currently licensed for persons of all ages, beginning at birth. The third vaccine, TWINRIX®, is a hepatitis A and hepatitis B combination vaccine licensed for adults 18 years of age or older. Vaccination is recommended for all infants as part of the routine childhood immunization schedule. The series is comprised of 3 doses at 0, 1-2, and 6-18 months. (Monovalent HepB vaccine should be used for doses given before age 6 weeks.)

Dose one: within 24 hours of birth for medically stable infants weighing ≥2,000 grams (for infants <2,000 grams, administer 1 dose at chronological age 1 month or hospital discharge).
Dose two: between 1 month and 4 months (minimum 4 weeks after 1st dose)
Dose three: between 6 months and 18 months (minimum 16 weeks after 1st dose, and 8 weeks after 2nd dose, but no earlier than 24 weeks of age). For more detailed vaccination information, see Hepatitis B Vaccine Guidelines in Chapter 2 of this manual.

All children should be vaccinated by 11-12 years of age. Risk of hepatitis B infection increases in the adolescent years, so catch-up vaccination is recommended for children, adolescents and young adults, especially in certain sub-populations, such as Alaska Natives, Asian and Pacific Islanders, and immigrants from countries with high HBV prevalence. In addition, the following categories of high-risk adults should be immunized:

1. Heterosexuals with >1 sex partner in the last 6 months, or who have a sexually transmitted disease
2. Men who have sex with men (MSM)
3. Household contacts and sex partners of HBsAg-positive people
4. Injection drug users (IDU)
5. Healthcare personnel, and others with occupational risk of infection through exposure to blood (including but not limited to public safety workers, trainees in medicine, dentistry, nursing, and laboratory technology)
6. Residents and staff of facilities for developmentally disabled persons.
7. Staff of non-residential child care and school programs attending to HBsAg-positive developmentally disabled children.
8. Hemodialysis patients
9. Patients with bleeding disorders.
10. Household members of adoptees who are HBsAg positive
11. International travelers to areas with high or intermediate rates of HBV infection

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12. Inmates of juvenile detention centers or long-term correctional facilities
13. Persons with HIV infection
14. Persons with diabetes mellitus (Type 1 or Type 2)

Note: See Chapter 2 of this Manual for list of persons eligible for state-supplied vaccine in Public Health clinics.

Although recommended in infancy, the vaccine series can be given at any time. A lapse in immunization does not require restarting the series. Studies have demonstrated vaccine efficacy with one-year intervals between doses. Vaccine should be given intramuscularly. The deltoid (arm) is recommended for persons >18 months old, and anterolateral thigh for infants and children 18 months or younger. Administration in the buttocks or by the intradermal route is not recommended at any age.

Treatment: No specific therapy for acute HBV infection is available, other than supportive care. Several drugs are licensed for treatment of chronic hepatitis B in the USA.

Post-exposure Prophylaxis: Passive immunization with hepatitis B immune globulin (HBIG) and active immunization with hepatitis B vaccine are both used to prevent infection. To be effective, HBIG must be given as soon as possible after exposure (within 7 days after blood exposure and 14 days after sexual exposure). HBIG is available commercially and may be provided by the Georgia Immunization Program under certain specific conditions. (See Chapter 2 for table entitled, "Eligibility Criteria for Vaccines Supplied by the GA Immunization Program for Children, Adolescents, and Adults.") Consult with the Hepatitis Program in the Epidemiology Section to verify whether HBIG is warranted.

Post-exposure prophylaxis should be considered in the following situations:

1. Perinatal exposure to HBsAg-positive mother
2. Percutaneous or permucosal exposure to blood
3. Sexual exposure to a HBsAg-positive individual
4. Known exposure to an acute hepatitis B case

Investigation: Collect information about possible exposures, including high-risk behavior during the period 45-180 days before the onset of illness. Particular emphasis should be placed on 60-90 days before symptom onset. Investigators should identify contacts that could benefit from hepatitis B vaccination or HBIG. Special attention should be paid to the presence of hepatitis B among women of childbearing age, since post-exposure prophylaxis with hepatitis B vaccine and HBIG soon after birth is 90-95% effective in preventing infection in the infant with attendant likelihood of chronic disease (see Perinatal Hepatitis B Prevention Guidelines section for complete details).

Follow-up: All new cases of hepatitis B should be re-tested for HBsAg after six months to determine whether infection has cleared or a chronic infection is present. Those persons still HBsAg-positive are considered confirmed chronic carriers and should be counseled accordingly and referred for maintenance care. Refer to the Perinatal Hepatitis B Prevention Guidelines for detailed follow-up recommendations of HBsAg-positive women, their infants, and sexual and household contacts.

Reporting:

- Report all cases of acute hepatitis B, newly identified HBsAg-positive carriers, and HBsAg-positive pregnant women **WITHIN SEVEN DAYS** electronically through the State Electronic Notifiable Disease Surveillance System (SendSS) at

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https://sendss.state.ga.us. Complete all data fields in SendSS, including the case report form.

- For all cases of acute hepatitis B, complete the hepatitis case report in SendSS at https://sendss.state.ga.us to aid in the investigation. Chronic hepatitis B infections are also reportable in SendSS.
- Report all HBsAg-positive prenatal tests and all HBsAg-positive children less than 24 months of age to the state Perinatal Hepatitis B Prevention Program via SendSS.

Reported Cases of Acute Hepatitis B in Georgia, 2001-2016

Year	Number of Cases
2001	389
2002	442
2003	512
2004	444
2005	203
2006	198
2007	157
2008	187
2009	142
2010	156
2011	142
2012	113
2013	100
2014	105
2015	122
2016	100

References:

1. Kimberlin D, et al, eds. Hepatitis B. In: 2015 Red Book: Report of the Committee on Infectious Diseases. 30th Ed. Elk Grove Village, IL: American Academy of Pediatrics; 2015: pp. 400-423.
2. Heymann D, ed. Viral Hepatitis B. In: Control of Communicable Diseases Manual. 18th ed. Washington, DC: American Public Health Association, 2004: pp. 253-261.
3. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions Under Public Health Surveillance. *MMWR* 1997; 46(RR-10): 1-55.
4. CDC. Hepatitis B. National Center for Infectious Diseases, Division of Viral and Rickettsial Diseases. 01/01/1996.
5. CDC. Recommendations of the Immunization Practices Advisory Committee. Prevention of Perinatal Transmission of Hepatitis B Virus: Prenatal Screening of all Pregnant Women for Hepatitis B Surface Antigen. *MMWR* 1988; 37(22): 341-6,351.
6. CDC. Notice to Readers: Availability of Hepatitis B Vaccine That Does Not Contain Thimerosal as a Preservative. *MMWR* 1999; 48(35): 780-782.
7. CDC. A comprehensive immunization strategy to eliminate transmission of hepatitis B virus infection in the United States: recommendations of the Advisory Committee on Immunization Practices (ACIP);
   Part 1: Immunization of Infants, Children, and Adolescents. MMWR 2005; 54 (No.RR-16)
   Part 2. Immunization of Adults. MMWR 2006:55(No.RR-16)
8. Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases (Pink Book) 13th Edition. 149-174.

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9. Centers for Disease Control and Prevention. Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. MMWR, January 12, 2018, Vol.67 (No.RR-1): 1-31.

Links:

- Georgia Immunization Program – http://dph.georgia.gov/immunization-section
- CDC National Immunization Program – http://www.cdc.gov/vaccines/vac-gen/safety/default.htm
- CDC Hepatitis Branch – http://www.cdc.gov/hepatitis
- GDPH Acute Disease Epidemiology Section, Hepatitis Program – http://dph.georgia.gov/viral-hepatitis

HEPATITIS B Q&A

What is hepatitis B?

Hepatitis B is a liver disease caused by a specific virus. The hepatitis B virus (HBV) is one of several viruses known to cause hepatitis (liver inflammation) in humans. HBV is completely unrelated to the viruses that cause hepatitis A, C, or other non-A, non-B, non-C hepatitis. The HBV may cause mild illness or result in no symptoms, but can also cause lifelong infection, cirrhosis of the liver, liver cancer, liver failure, and death.

Who gets hepatitis B?

All people, regardless of age or residence, may be at risk for hepatitis B. Those at greatest risk include:

- Healthcare and public safety workers with risk for contact with blood and blood-contaminated body fluids
- Current or recent injection drug users (IDU)
- Men who have sex with men (MSM)
- Sexually active persons not in a long-term, mutually monogamous relationship (more than one partner in past 6 months)
- Patients seeking evaluation or treatment for STDs
- Sex partners and household contacts of people infected with HBV
- Residents and staff of facilities for the developmentally disabled
- Persons with HIV infection
- Persons with end-stage renal disease
- Persons with diabetes mellitus
- Infants born to mothers who are infected with HBV
- Children of individuals born in Southeast Asia, Africa, the Amazon Basin in South America, the Pacific Islands, and the Middle East
- International travelers to endemic regions
- Persons who have spent time in correctional facilities

If you are at risk for HBV infection, ask your health care provider about hepatitis B vaccine.

How is hepatitis B virus spread?

Hepatitis B virus can be found in the blood, semen and, to a lesser extent, saliva and other body fluids of an infected person. It is spread by direct contact with infected body fluids, usually by

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needlestick injury or sexual contact. The virus can also be transmitted from mother to baby at birth. HBV is not spread by casual contact.

What are the symptoms of hepatitis B?
The symptoms of hepatitis B include fatigue, poor appetite, fever, vomiting, and occasionally joint pain, hives or rash. Urine may become darker in color, and jaundice (yellowing of the skin and whites of the eyes) may appear. Some individuals may experience few or no symptoms.

How soon do symptoms appear?
The symptoms may appear two to six months after exposure, but usually within three months.

When and for how long is a person able to spread the virus?
The virus can be found in blood and other body fluids several weeks before symptoms appear, and it generally persists for several months afterwards. Some people with HBV infection may become long-term carriers of the virus, and may be able to spread the virus over many years.

What is the hepatitis B carrier state?
Some persons infected with HBV never fully recover and carry the virus for the rest of their lives. These persons have chronic infection and are sometimes referred to as carriers. They can infect other household and sexual contacts throughout their lives. Among adolescents and adults who get hepatitis B, 5%-10% develop a lifelong infection. When young children are infected, the risk of lifelong infection is much higher (up to 90%). An estimated one million people have lifelong hepatitis B virus infections in the United States today.

Why is hepatitis B a problem for pregnant women and their babies?
Pregnant women may have HBV in their blood without knowing it and can pass it on to their babies at birth, if their infants are not vaccinated at birth. If unvaccinated, many of these babies develop lifelong HBV infections and can pass the virus on to others throughout their lives. At first, babies may not look or feel sick, but as they grow up, they may have liver damage. About 25% of babies who develop lifelong HBV infections die prematurely of liver disease or liver cancer.

What is the treatment for acute hepatitis B infection?
There are no special medicines that can be used to treat a person once the symptoms appear. Generally, bed rest as needed is recommended for acute hepatitis B infection.

What precautions should hepatitis B chronic carriers take?
Hepatitis B carriers should follow standard hygienic practices to ensure that their blood and other body fluids do not directly contaminate close contacts. Carriers must not share razors, toothbrushes, glucose monitors, insulin needles, or any other object that may become contaminated with blood. Susceptible household members, particularly sex partners, should be immunized with hepatitis B vaccine. It is important for carriers to inform their dentists and health care providers. Medications are available to treat persons with chronic hepatitis B, but they don't work for everyone. Persons with chronic HBV infection should be monitored and referred to a specialist for management of the disease, if indicated.

How can hepatitis B be prevented?
Preventing hepatitis B is important because of the risk of lifelong infection leading to serious liver problems. A vaccine has been used since 1982 to prevent hepatitis B. The vaccine is usually given in a series of three shots. Hepatitis B vaccine is safe, effective, and is recommended for

- All babies, beginning at birth
- Everyone 18 years of age and younger

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- Adults over 18 years of age who are at risk for HBV infection
- Persons whose jobs expose them to human blood

Where can I get additional information on hepatitis B?
Contact the Georgia Department of Public Health, Epidemiology Section, at 404-657-2588. The following websites may be useful:

- GDPH Acute Disease Epidemiology Section, Hepatitis Program – http://dph.georgia.gov/viral-hepatitis
- Georgia Immunization Program –http://dph.georgia.gov/immunization-section
- CDC National Immunization Program – http://www.cdc.gov/vaccines/vac-gen/safety/default.htm
- CDC Hepatitis Branch – http://www.cdc.gov/hepatitis

For needlestick accidents and blood exposures, medical providers can call the National Clinicians' Post-Exposure Prophylaxis Hotline (PEPline) 24 hours a day, 7 days a week at: 1-888-448-4911

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE FACT SHEET

Agent: *Haemophilus influenzae* is a bacterium often found in the upper respiratory tract of humans. *H. influenzae* is divided into several strains based on the presence of a polysaccharide capsule virulence factor. Encapsulated strains are considered "typeable" (types A, B, C, D, E, and F), while non-encapsulated strains are non-typeable.

Brief Description: *H. influenzae* causes a variety of illnesses. Typeable strains, especially type B ("Hib") and type F, have been commonly associated with invasive disease, including meningitis, epiglottitis, pneumonia, septic arthritis, cellulitis, osteomyelitis, pericarditis, and bacteremia. Historically, type B was a common, devastating pathogen, especially in children; however, since the widespread use in the U.S. of conjugate vaccines against Hib, cases caused by Hib have decreased drastically. Non-typeable *H. influenzae* is occasionally associated with otitis media, pneumonia, sinusitis, conjunctivitis, aggravation of chronic obstructive pulmonary disease, neonatal and maternal sepsis, and bacteremia.

Reservoir: Humans.

Mode of Transmission: Spread occurs through airborne droplets or by direct contact with infectious secretions. Between 30% and 80% of people are carriers of non-typeable *H. influenzae*, while approximately 2% are carriers of types A, C, D, E, and F and less than 1% carry type B (in a vaccinated population). Illness may occur in carriers when host immunity is compromised for some reason.

Incubation Period: Unknown, possibly 2-4 days.

Period of Communicability: As long as organisms are present, which may be for a prolonged period even without nasal discharge. Cases are considered non-infectious 24-48 hours after starting effective antibiotic therapy.

Temporal Pattern: Several studies in the prevaccine era described a bimodal seasonal pattern in the United States, with one peak during September through December and a second peak during March through May.

Case Classification:

- **Probable**: Meningitis WITH detection of *Haemophilus influenzae* type b antigen in cerebrospinal fluid [CSF]

- **Confirmed**: Isolation of *Haemophilus influenzae* from a normally sterile body site (e.g., cerebrospinal fluid [CSF], blood, joint fluid, pleural fluid, pericardial fluid)

  OR

  Detection of *Haemophilus influenzae*-specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., cerebrospinal fluid [CSF], blood, joint fluid, pleural fluid, pericardial fluid), using a validated polymerase chain reaction (PCR) assay

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE FACT SHEET

Comment: Positive antigen detection test results from urine or serum samples are unreliable for diagnosis of H. influenza disease.

Laboratory Testing: Isolation of *H. influenzae* from a normally sterile site (e.g., blood or cerebrospinal fluid or, less commonly, joint, pleural, or pericardial fluid); or detection of *Haemophilus influenzae*-specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., blood or CSF), using a validated polymerase chain reaction (PCR) assay; or . Detection of *Haemophilus influenzae* type b antigen in cerebrospinal fluid [CSF]

Diagnostic Testing:

1. Specimen: Blood, CSF, or other sterile site for culture; pure specimen for serotyping.
2. Outfits: Sterile vial for isolation and identification; culture referral order #0505 for serotyping.
3. Lab Form: Form 3583.
4. Lab Test Performed: Bacterial isolation and identification; *H. influenzae* serotyping.
5. Lab Performing Test: Isolation and identification is usually performed at hospital or private labs; serotyping is performed at the GPHL Bacteriology Section in Decatur.

Vaccination: A conjugate vaccine for Hib has been licensed for use in the U.S. since the mid-1980s. Children should get Hib vaccine at 2, 4, 6, and 12-15 months of age (if PRP-OMP vaccine is used, the dose at 6 months is not required). Children over 5 years of age usually do not need Hib vaccine. Older children or adults with sickle cell disease, HIV/AIDS, removal of the spleen, bone marrow transplant, or undergoing chemotherapy should also receive Hib vaccine. For more detailed vaccination information, see *Haemophilus Influenzae* Vaccine Guidelines in Chapter 2 of this manual.

Treatment: The 2015 Red Book recommends a third-generation cephalosporin such as ceftriaxone or cefotaxime for initial treatment. The patient should be given rifampin before discharge from the hospital to ensure elimination of the organism if a regimen other than ceftriaxone or cefotaxime was used to treat illness.

Prophylaxis and Follow-Up of Contacts [disease caused by type B (Hib) only]:

- Observe contacts under 4 years old (especially infants) for indications of illness and provide prompt medical attention should signs and symptoms appear.
- Rifampin prophylaxis is warranted for all household contacts, including adults, in households with:
    a. One or more infants <12 months of age who has not received the primary series
    b. A child 1-3 years of age who is unimmunized or incompletely immunized
    c. An immunocompromised child.
- When two or more cases of invasive disease have occurred within 60 days at a day care facility or school which un-immunized or under-immunized children attend, administration of rifampin to all attendees and supervisory personnel is controversial. Efforts should be made to ensure that all day care attendees under 5 years of age are fully vaccinated.
- Dosage of rifampin for prophylaxis:
    a. Age <1 month: 10 mg/kg once daily for 4 days;
    b. Age ≥1 month: 20 mg/kg once daily for 4 days, maximum daily dose 600 mg.

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE FACT SHEET

c. For adults, each dose is 600 mg.
d. Rifampin can be administered to infants and children suspended in simple syrup or as a dry powder mixed with applesauce.

Investigation: Identification of young children who are close contacts of cases and assessment of their vaccination status may help identify persons who should receive antimicrobial prophylaxis and who need to be immunized. In particular, household and day care classroom contacts should be immediately identified.

Reporting: Report all confirmed cases of invasive *H. influenzae* IMMEDIATELY electronically though the State Electronic Notifiable Disease Surveillance System (SENDSS) at http://sendss.state.ga.us . All isolates should be immediately forwarded to the Georgia Public Health Laboratory (GPHL) to determine whether or not the case is Hib.

Reported Cases of Invasive *Haemophilus influenzae* in Georgia, 2005-2016

Year	Number of Cases
2005	112
2006	123
2007	128
2008	151
2009	162
2010	168
2011	139
2012	186
2013	166
2014	138
2015	212
2016	172

References:

1. American Academy of Pediatrics. Haemophilus influenzae Infections. In: Kimberlin DW, Brady MT, Jackson MA, Long SS.eds Red Book: 2015 Report of the Committee on Infectious Diseases. 30th Ed. Elk Grove Village, IL: American Academy of Pediatrics; 2015: 369-376.
2. Haemophilus influenzae, invasive disease 2015 Case Definition http://wwwn.cdc.gov/nndss/conditions/haemophilus-influenzae-invasive-disease/case-definition/2015/, accessed 9-9-15.
3. Epidemiology and Prevention of Vaccine-Preventable Diseases, 12th edition. Centers for Disease Control and Prevention: Atlanta, GA, 2011.
4. Manual for the Surveillance of Vaccine-Preventable Diseases. Centers for Disease Control and Prevention: Atlanta, GA, 2009.
5. Heymann, ed. Haemophilus Meningitis. In: Control of Communicable Diseases Manual. 18th ed. Washington, DC: American Public Health Association, 2004: 366-368.
6. Mandell, Bennett, and Dolin. The Principles and Practice of Infectious Diseases. 5th Ed., Philadelphia, PA, 2000:pp. 2369-2376.

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE FACT SHEET

7. Urwin G, et al. Invasive disease due to *Haemophilus influenzae* serotype f: clinical and epidemiologic characteristics in the *H. influenzae* serotype b vaccine era. Clin Infect Dis 1996; 22:1069-1076.

Links:

- CDC *Haemophilus influenzae* type b – http://www.cdc.gov/vaccines/vpd-vac/hib/default.htm
- CDC National Center for Immunization and Respiratory Diseases – http://www.cdc.gov/vaccines/
- *Haemophilus influenzae* type B Vaccine – http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/hib.pdf

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE QUESTIONS & ANSWERS

What is invasive *Haemophilus influenzae* disease?
Invasive *Haemophilus influenzae* disease is a serious disease caused by bacteria. Before *Haemophilus influenzae* type B (Hib) vaccine, Hib disease was the leading cause of bacterial meningitis among children under 5 years old in the United States. Today invasive disease is less common, and is more often caused by serotypes that are not prevented by the Hib vaccine (types A, C, D, E, F, and non-typeable).

Who gets invasive *Haemophilus influenzae* disease?
Before the introduction of the Hib vaccine, almost all invasive infections were among children under 5 years of age and were caused by serotype B. Two-thirds of cases were among children less than 18 months of age. Due to high vaccination rates, Hib invasive disease is now less common among children, although invasive disease due to all serotypes continues to occur at low levels in children and adults, especially those with underlying medical conditions.

How is *Haemophilus influenzae* spread?
The bacteria spread from person to person via airborne droplets or direct contact with respiratory secretions. If the bacteria stay in the person's nose and throat, the person probably will not get sick. Sometimes the bacteria spread into the lungs or the bloodstream, and then *Haemophilus influenzae* can cause serious problems.

What are the symptoms of invasive *Haemophilus influenzae* disease?
Invasive *Haemophilus influenzae* disease can affect different organ systems of the body. The most common types of disease include meningitis (infection of the brain and spinal cord coverings, which can lead to lasting brain damage and deafness); pneumonia; severe swelling in the throat, which makes it difficult to breathe; infections of the blood, joints, bones, and covering of the heart; and death.

How soon after contact could illness develop?
This is uncertain. The period is probably short, from 2-4 days.

When and for how long is a person able to spread *Haemophilus influenzae*?
As long as the bacteria are present, which could be for a prolonged period of time. Within 24-48 hours after beginning treatment with appropriate antibiotics, a person should no longer be able to spread the infection.

How can a person find out if he or she has invasive *Haemophilus influenzae* disease?
A doctor may take a sample of blood or spinal fluid from an ill person to conduct laboratory tests.

What is the treatment for invasive *Haemophilus influenzae* disease?
Hospitalization is generally necessary. A doctor will prescribe antibiotics for treatment.

How can invasive *Haemophilus influenzae* disease be prevented?
For type B *Haemophilus influenzae*, the Hib vaccine can prevent disease. Children should get Hib vaccine at 2, 4, 6, and 12-15 months of age (if the PRP-OMP vaccine is used, the dose at 6 months is not required). If a dose is missed, the next dose should be given as soon as possible; there is no need to start over. Hib vaccine may be given at the same time as other vaccines. Children over 5 years old usually do not need Hib vaccine. Older children or adults with sickle cell disease, HIV/AIDS, removal of the spleen, bone marrow transplant, or undergoing

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE QUESTIONS & ANSWERS

chemotherapy should get the Hib vaccine. Vaccines have not yet been developed to prevent disease caused by other serotypes of *H. influenzae.*

Other ways to prevent invasive *Haemophilus influenzae* disease include regular handwashing, good hygiene, and disposal of soiled tissues after use.

Where can I get additional information on invasive *Haemophilus influenzae* disease?
Contact the Georgia Department of Public Health, Epidemiology Section, by email at gaepinfo@dhr.state.ga.us or call 404 657-2588. If you have internet access, the following sites may be useful:

- CDC *Haemophilus influenzae* type b – http://www.cdc.gov/vaccines/vpd-vac/hib/default.htm
- CDC National Center for Immunization and Respiratory Diseases – http://www.cdc.gov/vaccines/
- *Haemophilus influenzae* type B Vaccine – http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/hib.pdf

MEASLES (RUBEOLA) FACT SHEET

Prior to the introduction of vaccine in 1963 measles was a common childhood illness in the U.S., and most people developed natural immunity before adulthood. As a result, persons born in the U.S. prior to 1957 are considered to have presumptive immunity to measles. Following the adoption of a two dose immunization schedule with MMR vaccine in 1989, measles incidence declined to record low levels, and in 2000 measles was declared no longer endemic in the U.S. Cases of measles continue to occur in the U.S. as a result of importation of the virus from other countries, with occasional secondary spread most often among unvaccinated or partially vaccinated persons. Immunity must remain high in a population if an absence of endemic transmission of measles is to be sustained. However, in addition to maintaining high vaccination rates, prompt recognition, reporting, and investigation of cases and contacts is essential to halt the spread of imported disease.

Agent: Measles virus (paramyxovirus)

Brief Description: Measles begins with a prodrome which lasts 2-4 days and is characterized by fever, malaise, cough, coryza (runny nose and watery eyes), and conjunctivitis (eye inflammation and redness). Small spots with white or bluish white centers on an erythematous (red) base in the mouth (buccal mucosa or soft palate) called Koplik spots are specific for measles and may be seen on oral exam between day 2 and 6. A characteristic red, blotchy, palpable (maculopapular) rash appears on the third to the seventh day and typically begins on the face (at the hairline) and spreads over the body (may include the palms and soles), becoming generalized, and may coalesce in areas. The rash lasts 4 to 7 days and is typically not itchy. Complications that may result include diarrhea, otitis media (middle ear infection), pneumonia, and encephalitis (inflammation of the brain and/or spinal cord).

Reservoir: Humans.

Mode of Transmission: Measles is transmitted person to person by respiratory droplets and through direct contact with nasal and throat secretions or items freshly soiled with these secretions. Airborne transmission via aerosolized droplet nuclei can also occur in enclosed areas up to two hours after an infected person has occupied the area. Measles is one of the most communicable infectious diseases.

Incubation Period: Commonly10 to 12 days from exposure to prodrome (range, 7 to 21 days). The rash usually appears approximately 14 days after exposure.

Period of Communicability: Measles is highly infectious, with greater than 90% secondary attack rates among persons who are susceptible. Measles can be transmitted from 4 days before to 4 days after the appearance of the rash.

Temporal Pattern: In temperate areas, measles disease occurs primarily in late winter or spring.

Clinical Case Definition:

An acute illness characterized by:

- generalized, maculopapular rash lasting ≥3 days; and
- temperature ≥ 101.0° F (38.3° C); and

MEASLES (RUBEOLA) FACT SHEET

- cough, coryza, and/or conjunctivitis.

Case Classification:

- **Probable:** In the absence of a more likely diagnosis, an illness that meets the clinical description with
  - no epidemiologic linkage to a laboratory-confirmed measles case; and
  - noncontributory or no measles laboratory testing.

- **Confirmed:** An acute febrile rash illness with:
  - isolation of measles virus from clinical specimen; or
  - detection of measles virus-specific nucleic acid from a clinical specimen using polymerase chain reaction; or
  - IgG seroconversion or a significant rise in measles immunoglobulin M antibody; or
  - direct epidemiologic linkage to a case confirmed by one of the methods above.

  *Comment: Two probable cases that are epidemiologically linked would be considered confirmed cases, even in the absence of laboratory confirmation.

Epidemiologic classification of internationally-imported and U.S.-acquired

- **Internationally imported case:** An internationally imported case is defined as a case in which measles results from exposure to measles virus outside the United States as evidenced by at least some of the exposure period (7-21 days before rash onset) occurring outside the United States and rash onset occurring within 21 days of entering the United States and there is no known exposure to measles in the U.S. during that time.

All other cases are considered U.S.-acquired

- U.S.-acquired case: An U.S.-acquired case is defined as a case in which the patient had not been outside the United States during the 21 days before rash onset or was known to have been exposed to measles within the United States.

  Genotype identification by a WHO reference laboratory (CDC or a public health laboratory that has validated their measles virus sequence analysis) is required to distinguish wild type from vaccine strain if vaccinated within 18 days of rash onset.

U.S.-acquired cases are sub-classified into four mutually exclusive groups:

  - **Import-linked case:** Any case in a chain of transmission that is epidemiologically linked to an internationally imported case.

  - Imported-virus case: a case for which an epidemiologic link to an internationally imported case was not identified, but for which viral genetic evidence indicates an imported measles genotype, i.e., a genotype that is not

occurring within the United States in a pattern indicative of endemic transmission.

An endemic genotype is the genotype of any measles virus that occurs in an endemic chain of transmission (i.e., lasting ≥12 months). Any genotype that is found repeatedly in U.S.-acquired cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.

- Endemic case: a case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of measles virus transmission that is continuous for ≥12 months within the United States.

- Unknown source case: a case for which an epidemiological or virological link to importation or to endemic transmission within the United States cannot be established after a thorough investigation. These cases must be carefully assessed epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the United States.

Note: Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.

Note: U.S.-acquired cases may be classified further into two mutually exclusive groups:

- **Out-of-state importation:** an out-of-state imported case is defined as a case in which measles resulted from exposure to measles virus outside of the state of Georgia, as evidenced by at least some of the exposure period (at least 7-21 days before rash onset) occurring outside of Georgia and rash onset occurring within 21 days of entering Georgia, and there is no known exposure to measles in Georgia.

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- **In-state acquired:** an in-state case is defined as a case in which measles resulted from exposure to measles virus within the state of Georgia, as evidenced by at least some of the exposure period (at least 7-21 days before rash onset) occurring in Georgia.

Laboratory testing:

Laboratory confirmation is essential for all outbreaks and all sporadic measles cases. Diagnostic tests used to confirm infection include isolation of the measles virus by culture; polymerase chain reaction (PCR); and serologic testing. Detection of measles-specific IgM antibody and measles RNA by real-time RT-PCR are the most common methods for confirmation of measles infection. Efforts should be made to obtain a serum sample and throat swab (or nasopharyngeal swab) from suspected cases at first contact. Urine samples may also contain virus and when feasible to do so, collection of both respiratory and urine samples can increase the likelihood of

detecting virus. DPH staff is available for consultation and can assist with confirmatory testing as needed for measles.

Because measles is a rare disease in the United States, even with the excellent laboratory tests available, false positive results for measles IgM will occur. To minimize the problem of false positive laboratory results, it is important to restrict case investigation and laboratory tests to patients most likely to have measles (i.e., those who meet the clinical case definition, especially if they have risk factors for measles, such as being unvaccinated, recent history of travel abroad, without an alternative explanation for symptoms, for example epi-linked to known parvovirus case) or those with fever and generalized maculopapular rash with strong suspicion of measles.

During a measles investigation when community awareness is increased, many cases of febrile rash illness may be reported as suspected measles, and the magnitude of the situation may be exaggerated if these cases are included in the absence of laboratory confirmation. This is particularly important as the investigation is ending; at that point, laboratory confirmation should be sought for all suspected cases. Rarely, suspected cases may include vaccinated individuals. For these cases, laboratory confirmation may be challenging. An overview of diagnostic tools is described below.

- **Virus isolation and measles RNA detection (RT-PCR)**

  Clinical specimens for real-time polymerase chain reaction (RT-PCR) and virus isolation should be collected at the same time as samples taken for serologic testing. The preferred specimens for virus isolation or RT-PCR are throat or nasopharyngeal swabs, but urine may also contain virus. Virus isolation and RNA detection are more likely to be successful when the specimens are collected early (ideally within three days of rash onset, but up to ten days post rash may be successful). Isolation of measles virus in culture or detection of measles RNA by RT-PCR in clinical specimens confirms the diagnosis of measles. However, a negative culture or negative RT-PCR results do not rule out measles because both methods are much affected by the timing of specimen collection and the quality and handling of the clinical specimens.

  Successful isolation of measles virus in culture or direct detection of measles RNA by RT-PCR in the clinical sample is particularly helpful for case confirmation when serology results are inconclusive

- **Serologic testing**

  The GDPH can provide guidance regarding available laboratory services. At the direction of the GDPH, health care providers and state and local health departments may send serum specimens from suspected measles cases to the CDC measles laboratory. For detailed information on blood collection and shipping, refer to the GDPH measles website.

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Diagnostic Testing: (See Measles Specimen Collection and Submission Guidelines)

***The Georgia Division of Public Health strongly recommends the collection of serum for measles IgM/IgG AND collection of a throat swab and urine specimen to confirm a measles case. To coordinate specimen collection and laboratory submission, call your District or County Health Department. Please do not send specimens directly to the Georgia Public Health Laboratory (GPHL) or the Centers for Disease Control and Prevention (CDC).**

A. Serology
   1. Specimen Needed: Blood – 7-10 mL of blood collected during the acute phase of illness and 7-10 mL collected 14-30 days later
   2. GPHL Form: # 3583
   3. Lab Test Performed: Measles IgG (acute and convalescent) **and** IgM titers. Be sure to request the IgM titer with the acute phase draw so that case confirmation can be accomplished in a timely manner. (**Note**: On Form #3583 be sure to request Rubeola (Measles) IgG and IgM AND Rubella IgG and IgM)
   4. Lab Performing Test: Immunology Laboratory, Georgia Public Health Laboratory (GPHL) in Decatur; Immunology Laboratory, Centers for Disease Control and Prevention
   5. Transport requirements: blood must be centrifuged and the serum transferred into a transport tube for shipment. Keep specimens cold (4°C or 39°F) and ship overnight to GPHL. **Do not freeze serum samples**.

B. Culture or Polymerase Chain Reaction (PCR)
   1. Specimen Needed: Urine, nasopharyngeal swab or throat swabs – collect at same time as samples for serology (best if within 3 days after rash onset but up to 7 days after rash onset is acceptable).
   2. Form: # 3583
   3. Lab Test Performed: Culture (62040), PCR (416000)
   4. Lab Performing Test: Virology Laboratory, Georgia Public Health Laboratory (GPHL) in Decatur; Molecular Biology Laboratory, GPHL
   5. Transport: The nasopharyngeal or throat swab must be placed in viral transport media. Keep samples cold (4°C or 39°F). Ship the viral specimens using ice packs or dry ice.

Immunity:

Acceptable presumptive evidence of measles immunity includes at least one of the following:

1. Written documentation of adequate vaccination: receipt of one or more doses of a measles-containing vaccine administered on or after the first birthday for preschool-age children and adults not at high risk, and two doses of measles-containing vaccine for school-age children and adults at high risk for exposure transmission (i.e., health care personnel, international travelers, and students at post-high school educational institutions); or

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2. Laboratory evidence of immunity; or
3. Birth before 1957 (for healthcare providers this does not suffice as evidence of immunity)
4. Laboratory confirmation of disease

Vaccination: The current recommendation is a two-dose schedule. The first dose should be given at 12 through 15 months of age and the second dose at four through six years (school entry). Both doses can be given as MMR or MMRV vaccine. For any child older than six who has not received one or both doses, any opportunity to immunize should be utilized.

Travel Recommendations: Children aged 6-11 months who travel internationally should receive one dose of MMR vaccine optimally at least two weeks prior to travel. Because serologic response to the measles component of the vaccine varies among infants aged 6-11 months, children vaccinated before age 12 months should receive two additional doses of MMR or MMRV vaccine on or after the first birthday according to the routine recommended schedule.

Children aged ≥12 months and adults who plan to travel outside the United States should receive two doses of MMR vaccine, separated by at least 28 days. Other presumptive evidence of immunity includes laboratory evidence, or birth before 1957, or laboratory confirmation of disease.

Post-exposure Prophylaxis: Measles vaccine is effective in preventing infection or modifying the severity of illness if given within 72 hours of exposure. Immune globulin (IG) may prevent or modify disease and provide temporary protection if given within 6 days of exposure. Transmission is likely in households, schools, and other institutions. Immune globulin (IG) may be especially indicated for susceptible contacts in these settings, particularly contacts younger than 1 year of age and immunocompromised contacts.

Treatment: Supportive care only.

Investigation:

Measles and rubella must be ruled out whenever illness involving fever and rash are reported. The investigation must be started immediately when a potential case is identified. Essential components of the case investigation include the following:

a. Obtain a detailed history of illness progression and a rash description
b. Obtain a detailed travel history
c. Establish a diagnosis by obtaining laboratory specimens for serology, viral isolation and PCR as early as possible **(consult with GDPH regarding the case before collecting and submitting specimens)**
d. Obtain an accurate and complete immunization history.
e. Identify the source of infection and transmission setting.
f. Assess potential transmission and identify contacts.
g. For symptomatic contacts, obtain specimens for serology, virus isolation and PCR if measles is suspected.
h. Refer to GA Department of Public Health website for measles investigation and outbreak protocol

MEASLES (RUBEOLA) FACT SHEET

https://dph.georgia.gov/sites/dph.georgia.gov/files/ADES_Measles_Protocol_FINAL%20%282%29.pdf

Initial response to the report of suspected measles:

1. Call the State Epidemiology Section (404) 657-2588 **IMMEDIATELY**. If after business hours, report suspect case to 1-866- PUB-HLTH.
2. Contact the parent(s) or guardian and reporting physician immediately to obtain a detailed clinical and exposure history of the patient.
    - Ask parent(s) about any out-of-town travel or visitors during the 7-21 days prior to rash onset.
    - Identify any person(s) or group(s) exposed by the patient 4 days before to 4 days after rash onset.
3. Complete the Measles Case Report Form (https://dph.georgia.gov/sites/dph.georgia.gov/files/ADES_Measles_Case_Report_Form_2015.pdf) Read the instructions carefully and complete as much of the form as possible. Do not leave any item blank. If information is not available, enter “none” or “NA”. The following should be collected during case investigations:
    - Demographic information
    - Reporting source
        a. county, district
        b. earliest date reported
        c. date case investigated started
    - Clinical details, including
        a. Date of onset of symptoms
        b. date of rash onset
        c. rash duration and presentation
        d. symptoms
        e. complications
        f. hospitalization
    - Outcome (case survived or died)
        a. Date of death
    - Laboratory information
        a. date of collection of specimens for serology testing
        b. serologic test results
        c. date of collection of specimen for virus isolation
        d. virus isolation test results
    - Vaccination status
        a. number of doses of measles vaccine received
        b. date(s) of measles vaccinations
        c. manufacturer name
        d. vaccine lot number
        e. if not vaccinated, reason
    - Epidemiologic
        a. transmission setting

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b. source of infection (e.g., age, vaccination status, relationship to case-patient, country/state of residence, laboratory testing, onset dates, etc.)
c. source of exposure (contact with probable or confirmed case, or contact with immigrants or travelers)
d. import status (international import, indigenous, out-of-state import, linked or traced to an international importation)
e. residency (does the patient reside in the U.S.)
f. travel history
g. setting (i.e., is case part of an outbreak or is it a sporadic case)

Fax the completed worksheet and any pertinent lab results to the State Epidemiology Section (404) 657-2608. **Do not wait for laboratory confirmation to fax the report.**

Outbreak Control Strategy: All reports of suspected measles cases should be **investigated rapidly.** Control activities should not be delayed until laboratory results on suspected cases are received. A measles outbreak exists in a community whenever there is **one confirmed** case of measles. Once this occurs, preventing dissemination of measles depends on promptly vaccinating susceptible persons and limiting the number of exposures to infectious cases. All persons who cannot readily provide documentation of measles immunity (see ACIP Statement on Measles Prevention, dated 5/22/98) should be vaccinated or excluded from the setting (e.g. school). Documentation of vaccination is adequate only if the date of vaccination is provided. Persons who have been exempted from measles vaccination for medical or religious reasons should be excluded from the outbreak area for at least 21 days after the onset of rash in the last case of measles.

- **Institution-based outbreaks**

  During outbreaks in day care centers, elementary, middle, junior and senior high schools, colleges and other institutions of higher education, a program of mandatory revaccination with MMR vaccine should be conducted in the affected schools. Revaccination should include all students and their siblings and all school personnel born in or after 1957 who cannot provide documentation of receipt of two doses of measles-containing vaccine on or after their first birthday or other evidence of measles immunity. Students and personnel receiving their first dose as part of an outbreak control program may be immediately readmitted to school. A second dose should be given in 28 days. If there is an unconfirmed but clinically compatible case in a school, the response should be phased in. Reimmunization should be recommended but not mandatory until the case is confirmed. Proceed with the epidemiologic work on the case. Search for a source, immunize siblings and close contacts when appropriate, ensure an adequate supply of vaccine and begin to prepare for a school-based clinic. At this point, it is very important to implement daily active surveillance of absenteeism of two or more days and any rashes should be followed up on immediately. New cases signal the immediate need for school-based clinics and the exclusion of children and staff who do not have two documented doses of measles vaccine.

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- **Outbreaks among preschool-age children**
  The risk of complications from measles is high among infants less than one (1) year of age. Therefore, considering the benefits and risks, vaccination with measles vaccine is recommended for infants as young as six (6) months of age when exposure to measles is considered likely. MMR may be used in children before the first birthday if monovalent measles vaccine is not readily available. Infants vaccinated before the first birthday should be revaccinated when they are 12 months old and at school entry to ensure adequate protection. Exposed children less than six months of age should receive measles IG. Individuals who receive MMR vaccine or IG as PEP should be monitored for signs and symptoms consistent with measles for at least one incubation period. **Please consult GDPH prior to making post-exposure prophylaxis recommendations.**

- **Medical Settings**

  If an outbreak occurs in a healthcare facility, all employees (including volunteers, trainees, nurses, physicians, technicians, receptionists, and other clerical and support staff) are at an increased risk of exposure to measles, and all persons who work in such facilities in any capacity should be immune to measles to prevent any potential outbreak. All employees who were born in or after 1957 who cannot provide documentation of receipt of two doses of measles vaccine on or after their first birthday or other evidence of immunity to measles should receive a dose of measles vaccine. Personnel born before 1957 without documentation of measles immunity should receive one dose of MMR. Serologic screening of healthcare workers during an outbreak to determine measles immunity is not recommended, because stopping measles transmission requires the rapid vaccination of susceptible healthcare workers, which can be impeded by the need to screen and wait for results. Susceptible personnel who have been exposed should be relieved from direct patient contact from the 5th to the 21st day after the exposure, regardless of whether they received vaccine or immunoglobulin after the exposure. Those who become ill should be relieved from patient contact for seven days after they develop a rash.

Reporting: Report all suspected, probable, or confirmed cases **IMMEDIATELY** by phone to the local health department, District Health Office, or the State Epidemiology Section at 404-657-2588. If calling after regular business hours, it is very important to report cases to 1-866-PUB-HLTH. After verbal report has been made, please transmit the case information electronically through the State Electronic Notifiable Disease Surveillance System (SENDSS) at http://sendss.state.ga.us. Note: Please be sure to complete all data fields in SENDSS,

MEASLES (RUBEOLA) FACT SHEET

Reported Cases of Measles in Georgia, 2001-2014

Year	Number of Cases
2001	1
2002	3
2003	1
2004	1
2005	0
2006	0
2007	0
2008	1
2009	1
2010	1
2011	0
2012	2
2013	0
2014	0
2015	1
2016	0

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Links:

- GDPH Measles Fact Sheet – http://dph.georgia.gov/sites/dph.georgia.gov/files/MeaslesQandA.pdf

MEASLES (RUBEOLA) FACT SHEET

- GA Public Health, Epidemiology Section Measles Information – http://dph.georgia.gov/measles

MEASLES (RUBEOLA) QUESTIONS & ANSWERS

MEASLES Q&A

What is measles?

Measles, also known as rubeola, is a highly contagious viral infection.

What are the symptoms of measles?

Measles typically begins with a fever, followed by cough, runny nose, sore throat and/or red, watery eyes. Two or three days after symptoms begin, tiny white spots may appear inside the mouth. Three to five days after symptoms begin a rash appears. The rash begins as flat red spots that appear on the face at the hairline and spread downward to the neck, trunk, arms, legs, and feet. Small raised bumps may also appear on top of the flat red spots. The spots may become joined together as they spread from the head to the rest of the body. When the rash appears, a person's fever may spike to more than 104ºF. After a few days, the fever subsides and the rash fades.

Is measles still common in the U.S.?

Measles was declared eliminated from the United States in 2000. This was possible thanks to a highly effective vaccination program and better measles control in the Americas. However, measles is still common in many other countries and may be brought into the U.S. by unvaccinated travelers. Keeping U.S. measles immunization levels high is critical to preventing measles outbreaks.

Who gets measles?

People who have never received a measles-mumps-rubella (MMR) vaccine or who are not up-to-date on their MMR have the highest risk of acquiring measles. Particularly, children less than 12 months of age, who are not old enough to receive MMR, and immunocompromised persons have an increased risk.

What complications are associated with measles?

Complications from measles are more common among children less than 5 yrs. of age and adults 20 yrs. of age and older and are highest in infants, unimmunized pregnant women, and immunocompromised persons. Diarrhea, middle ear infection, and pneumonia are the most commonly reported complications. More severe, but less common complications include inflammation of the brain (encephalitis), seizures and death.

How is measles spread?

Measles is spread by air-borne droplets when an infected person coughs or sneezes, and through direct contact with respiratory secretions or items freshly soiled with these secretions. Airborne spread can also occur up to two hours after an infected person has occupied an enclosed area.

MEASLES (RUBEOLA) QUESTIONS & ANSWERS

Can a person who had measles get measles again?

No. Permanent immunity is acquired after getting the disease.

How long is a person with measles contagious?

A person with measles can spread it to others from four days before their rash appears to four days after it appears.

How long can a person have measles?

Generally, the fever resolves after 2 to 4 days, and the rash resolves in 5 to 6 days.
The length of recovery depends on whether other complications are associated with the illness.

How is measles treated?

There is no specific treatment for measles. Treatment for measles is mainly supportive. People with measles need bed rest, fluids, and control of fever. Children with complications need specific treatment and should be under the care of a physician.

What tests are available to diagnose measles?

A diagnosis of measles should be confirmed through laboratory testing by your physician, and reported to the health department right away. This requires the collection and testing of blood, urine and/or throat samples. Results are most accurate if testing occurs during the beginning stages of the disease.

Is there a vaccine for measles?

Yes. The measles vaccination is usually combined with mumps and rubella (MMR) or mumps, rubella, and varicella (MMRV)

- Children should receive two doses of MMR vaccine: the first at 12 to 15 months of age and the second at 4 to 6 years of age. (During a measles outbreak, children may receive the second dose as soon as four weeks after the first dose, no matter how old they are.)
- All adults who have not had measles or a measles shot should receive MMR vaccine, particularly if they were born in 1957 or later.
- Certain adults (such as healthcare workers) should receive two doses of measles/MMR vaccine to make sure they're protected.

My child has been exposed to measles, what should I do?

If you think your child has been exposed to measles contact your doctor immediately. If your child has not been vaccinated, measles vaccine may prevent disease if given within 3 days after exposure. Immune globulin (IG) may prevent or modify disease and provide temporary protection if given within 6 days of exposure in persons who cannot have the vaccine.

Is it okay to take my child to public places (i.e. grocery store, daycare, playground)?

MEASLES (RUBEOLA) QUESTIONS & ANSWERS

If your child has been diagnosed with measles you should keep your child at home and away from public places until the disease has resolved (approximately 4 days after rash onset). All contact with persons who lack measles immunity, are immunocompromised, or pregnant should be avoided. Note: Call your physician's office ahead of time to inform them that you are bringing in a child that has possibly been exposed to measles or has measles. This will allow the office to take precautions to assure no other children are exposed.

How can measles be prevented?

Routine vaccination is the best way to prevent measles. However, additional steps to prevent the spread of disease may include:

- Avoiding close contact with others who are coughing or ill
- Washing hands often
- Covering coughs and sneezes with a tissue or cough and sneeze into your sleeve
- Stay home if ill
- Seek medical attention if measles-like symptoms develop

MEASLES (RUBEOLA) SPECIMEN COLLECTION & SUBMISSION GUIDELINES

A case of measles is a **public health emergency**. Contact public health **immediately** when the diagnosis of measles is suspected.. A clinical diagnosis of measles is unreliable; suspect cases of measles must be laboratory confirmed. Confirmation of acute infection can be determined by the presence of serum immunoglobulin M (IgM), a four-fold rise in serum immunoglobulin G (IgG) titer between acute and convalescent phase specimens, a positive PCR, and/or the isolation of measles virus from a throat or urine specimen.

The Georgia Division of Public Health strongly recommends the **collection of serum for measles IgM/IgG AND collection of a throat swab and urine specimen to confirm a measles case**. To coordinate specimen collection and laboratory submission, call your District or County Health Department. **Please do not send specimens directly to the Georgia Public Health Laboratory (GPHL) or the Centers for Disease Control and Prevention (CDC).**

Specimen Collection Instructions

Serologic Testing: Collect as soon as possible when measles infection is suspected, preferably at the onset of rash.

- Collect 7-10 ml of blood in a red top or serum separator tube (SST)
  Acute serum (IgM and first IgG)
  Convalescent serum (second IgG)
- SST tubes must be centrifuged and the serum transferred into a transport tube for shipment.
- Keep specimens cold (4° C or 39° F) and ship overnight service. **Do not freeze serum samples.**

Viral Testing: Collect a urine and throat swab at the same time as serology. Virus is most frequently recovered within the first 3 days following rash onset, but up to 7 days after rash onset is acceptable. If a few days have passed since resolution of the rash collect only a urine specimen.

Throat Swabs

- Use a **viral transport kit** if possible (such as that used to isolate influenza or herpes simplex virus)
- Collect a throat swab by rubbing the posterior oropharynx with a dry sterile cotton swab
- Place swab in a tube containing 2-3 mls of viral transport medium or other sterile isotonic solution (phosphate buffered saline or cell culture medium).
- Keep samples cold (4° C or 39° F)
- Ship the viral specimens using ice packs or dry ice*. Avoid freeze-thaw cycles.

Urine Specimens

- Collect 10-15 ml of urine in a screw top sterile container
- Keep samples cold (4° C or 39° F)
- Ship the viral specimens using ice packs or dry ice*. Avoid freeze-thaw cycles.

*If shipment contains both serum and viral specimens, ship together by overnight service on cold packs (do not freeze serum)

MEASLES (RUBEOLA) SPECIMEN COLLECTION & SUBMISSION GUIDELINES

Laboratory Submission Instructions

1. Notify your District Public Health Office or the Vaccine Preventable Disease Epidemiology Unit **immediately**.

2. Label the specimen containers (transport media, urine, and/or blood) with the patient's name, date of birth, and date of specimen collection (**UNAPPROVED OR UNLABELED SPECIMENS WILL NOT BE TESTED)**

3. Complete the Georgia Public Health Laboratory Submission Form found at: https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf with the following information:
   a. Submitter code (if known), address, phone and fax number, and contact name Patient name, address, phone number, date of birth, sex, race, and ethnicity (if available)
   b. Date of specimen collection, source, type of specimen, clinical history and information
   c. If requesting IgM and/or IgG, under "Immunology" check **ALL** of the following boxes: 1510 Rubella IgG; 1515 Rubella IgM; 1520 Rubeola IgG; and 1525 Rubeola IgM
   d. If requesting a culture, under "Virology" check the box labeled 62040 Measles Culture/IFA
   e. If requesting a PCR, under "Molecular Biology" check the box labeled 416000 Measles (RT-PCR)

   NOTE: A separate submission form needs to be completed for **EACH** specimen submitted (i.e. if two specimens are collected – one for culture and one for PCR , two GPHL submission forms need to be completed).

4. Ship specimens overnight by courier or Federal Express on ice packs. If the shipment is delayed, refrigerate specimens at 2-8 ºC (or 36-46 ºF) and transport the next day on ice packs by first class mail, common carrier, or courier.

5. Ship specimens to the following address:

   Georgia Public Health Laboratory
   1749 Clairmont Road
   Decatur, GA 30033-4050
   ATTN: Bacteriology Laboratory

Contact Information

- For specimen outfit requests call the Georgia Public Health Laboratory at 404-327-7921
- For questions related to specimen collection and transport: contact local or district public health or the State VPD Epidemiology Unit, 404-657-2588

MEASLES (RUBEOLA)
SPECIMEN COLLECTION & SUBMISSION GUIDELINES

Interpretation of Measles Laboratory Test Results

- Serology
  - IgM: Measles infection is confirmed using measles IgM antibody testing of serum samples collected as soon as possible after symptom onset. A positive IgM test result indicates current/very recent infection or reinfection. As with any lab test, there can be false positive test results.

  - IgG: IgG alone is not diagnostic unless you obtain both an acute (can be done as soon after onset as the patient is seen, but ideally four to five days after onset of symptoms) and convalescent (from two to four weeks after onset) blood specimen for serologic tests to determine if a four-fold rise in IgG antibody titer has occurred (e.g., from 1:40 to 1:320). In vaccinated persons it may not be possible to detect a four-fold rise in measles IgG antibody titer in paired serum samples (acute and convalescent). In such persons, the existing IgG will begin to rise soon after exposure and infection. At the time of onset of symptoms and collection of the acute serum, the IgG may already be quite elevated, and obviate the 4fold rise observed in the convalescent serum specimen.

- PCR
  - Sequence analysis of an RT-PCR product derived from a virus isolate or from clinical material confirms a presumptive positive PCR result and provides epidemiologically important information

- Viral Culture
  - Isolation of measles virus from any clinical specimen constitutes laboratory confirmation of measles

MUMPS (INFECTIOUS PAROTITIS) SPECIMEN COLLECTION & SUBMISSION GUIDELINES

Agent: Mumps virus.

Brief Description: An illness with acute onset of unilateral or bilateral swelling of the parotid gland or other salivary gland(s) (parotitis), and without other apparent cause. Symptoms such as myalgia, anorexia, malaise, headache, and low-grade fever may precede parotitis by several days. Asymptomatic infections also occur; parotitis is present in only 30-40% of infected persons. Not all cases of parotitis – especially sporadic ones – are due to mumps infection; however, mumps is the only known cause of epidemic parotitis. Complications can include meningitis, arthritis, inflammation of the testicles or ovaries, inflammation of the pancreas and deafness.

Reservoir: Humans.

Mode of Transmission: Airborne, by droplet spread, or by direct contact with saliva of an infected person.

Incubation Period: 14 to 18 days, (range 14-25 days)

Period of Communicability: Persons with mumps are usually considered infectious from 2 days before until 4 days after onset of parotitis. However, virus has been isolated from saliva from 7 days before parotitis and 9 days after onset of illness.

Clinical Case Definition: An illness with acute onset of unilateral or bilateral tender, self-limited swelling of the parotid or other salivary gland(s), lasting greater than or equal to 2 days, and without other apparent cause.

Case Classification:

- **Suspected:**
  - parotitis, acute salivary gland swelling, orchitis, or oophoritis unexplained by another more likely diagnosis,

  or
  - a positive lab result with no mumps clinical symptoms (with or without epidemiological linkage to a confirmed or probable case).

- **Probable:**
  - Acute parotitis or other salivary gland swelling lasting at least 2 days, or orchitis or oophoritis unexplained by another more likely diagnosis, in:
    - a person with a positive test for serum anti-mumps IgM antibody, or
    - a person with epidemiologic linkage to another probable or confirmed case or linkage to a group/community defined by public health during an outbreak of mumps.

- **Confirmed**:
  - A positive mumps laboratory confirmation for mumps virus with RT-PCR or culture in a patient with an acute illness characterized by any of the following:
    - Acute parotitis or other salivary gland swelling, lasting at least 2 days

MUMPS (INFECTIOUS PAROTITIS) SPECIMEN COLLECTION & SUBMISSION GUIDELINES

- Aseptic meningitis
- Encephalitis
- Hearing loss
- Orchitis
- Oophoritis
- Mastitis
- Pancreatitis

Case classification for import status

- **Internationally imported case:** An internationally imported case is defined as a case in which mumps results from exposure to mumps virus outside the United States as evidenced by at least some of the exposure period (12-25 days before onset of parotitis or other mumps-associated complications) occurring outside the United States and the onset of parotitis or other mumpsassociated complications within 25 days of entering the United States and no known exposure to mumps in the U.S. during that time. All other cases are considered U.S.-acquired cases.

- **U.S.-acquired case***:* A U.S.-acquired case is defined as a case in which the patient had not been outside the United States during the 25 days before onset of parotitis or other mumps-associated complications or was known to have been exposed to mumps within the United States.

  U.S.-acquired cases are sub-classified into four mutually exclusive groups:

  - **Import-linked case**: Any case in a chain of transmission that is epidemiologically linked to an internationally imported case.

  - **Imported-virus case:** A case for which an epidemiologic link to an internationally imported case was not identified but for which viral genetic evidence indicates an imported mumps genotype (i.e., a genotype that is not occurring within the United States in a pattern indicative of endemic transmission). An endemic genotype is the genotype of any mumps virus that occurs in an endemic chain of transmission (i.e., lasting ≥12 months). Any genotype that is found repeatedly in U.S.-acquired cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.

  - **Endemic case**: A case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of mumps virus transmission continuous for ≥12 months within the United States.

  - **Unknown source case:** A case for which an epidemiological or virological link to importation or to endemic transmission within the U.S. cannot be established after a thorough investigation. These cases must be carefully assessed

epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the U.S.

Laboratory testing:

If mumps is suspected, laboratory testing should be performed. Acute mumps infection can be detected by the presence of serum mumps IgM, a significant rise in IgG antibody titer in acute and convalescent-phase serum specimens, IgG seroconversion, positive mumps virus culture, or detection of virus by real-time reverse transcriptase polymerase chain reaction (rRT-PCR). However, in both unvaccinated and vaccinated persons, false positive results can occur because assays may be affected by other diagnostic entities that cause parotitis. In addition, laboratory confirming the diagnosis of mumps in highly vaccinated populations may be challenging, and serologic tests should be interpreted with caution because false negative results in vaccinated persons (i.e., a negative serologic test in a person with true mumps) are common. With previous contact with mumps virus either through vaccination (particularly with two doses) or natural infection, serum mumps IgM test results may be negative; IgG test results may be positive at the initial blood draw; and viral detection in RT-PCR or culture may have low yield if the buccal swab is collected more than three days after parotitis onset. Therefore, mumps cases should not be ruled out by negative laboratory results. These challenges are discussed in more detail below.

- **Virus detection (real-time RT-PCR and culture)**

  Mumps virus can be detected from fluid collected from the parotid duct, other affected salivary gland ducts, the throat, from urine, and from cerebrospinal fluid (CSF). Parotid duct swabs yield the best viral sample. This is particularly true when the salivary gland area is massaged approximately 30 seconds prior to swabbing the buccal/parotid duct, so that the specimen contains the secretions from the parotid or other salivary duct glands. Efforts should be made to obtain the specimen as soon as possible after onset of parotitis or meningitis. Clinical specimens should ideally be obtained within three days and not more than eight days after parotitis onset.

  Urine samples are less likely than oral specimens to contain sufficient virus copies or virus infected cells for culture or detection by molecular methods, and therefore are not preferred.

  - Unvaccinated persons: Virus may be isolated from the buccal mucosa until 11-14 days after salivary enlargement; however, viral isolation is most likely to be successful just prior to and within the first three days of parotitis onset.

  - Vaccinated persons: In order to optimize virus yield, emphasis should be placed on obtaining mumps clinical specimens from buccal mucosa within 1 to 3 days after onset of symptoms (usually parotitis).

    In the case of specimens for virus culture or PCR assay, immediately place specimens in a cold storage container and transport to the laboratory.

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- **Serologic testing**

  The serologic tests available for laboratory confirmation of mumps acute infection and confirmation of previous exposure to mumps vary among laboratories.

  At the initial visit, a serum specimen should be obtained to test for mumps IgM antibodies.

  - If the acute-phase specimen is positive for IgM, a second specimen is not necessary.
  - A second negative IgM does not rule out mumps unless the IgG result is also negative.

  Paired serum specimens may also be used to demonstrate seroconversion from negative to positive from acute to convalescent, which is considered a positive diagnostic result for mumps. In unvaccinated individuals, a four-fold increase in IgG titers is also considered a positive diagnostic result for mumps, but these are rarely done.

- **Tests for IgM antibody**

  Enzyme immunoassay (EIA): a highly specific test for diagnosing acute mumps infection. The use of the IgM capture EIA is preferred over the Immunofluorescence assay (IFA).

  Immunofluorescence assay (IFA): a test that is relatively inexpensive and simple, but the IFA format is particularly susceptible to interference by high levels of mumps-specific IgG. Reading the test requires considerable skill and experience since this nonspecific staining may cause false positive readings if the serum is not treated with an agent to remove human IgG antibody.

  Note: *Commercially available EIA kits and IFA antibody assays for detection of mumps IgM are not currently FDA-approved. Therefore, each laboratory must validate these tests independently.*

- **Serum collection and timing of the mumps IgM response**

  Unvaccinated persons: IgM antibody is detectable within 5 days after onset of symptoms, reaches a maximum level about a week after onset, and remains elevated for several weeks or months. If an acute-phase serum sample collected ≤3 days after parotitis onset is negative for IgM, testing a second sample collected 5-7 days after symptom onset is recommended since the IgM response may require more time to develop.

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Vaccinated persons: Patients that mount a secondary immune response to mumps, as seen in most previously vaccinated persons, may not have an IgM response or it may be transient and not detected depending on the timing of specimen collection. Because of this, a high number of false negative results may occur in previously vaccinated individuals. False positive IgM results may also occur and appear to be more prevalent with certain IgM test formats, such as the IFA. There is some evidence that serum collected ≥10 days after parotitis onset may improve the ability to detect IgM among persons who have received one or two doses of MMR vaccine. However, persons with a history of mumps vaccination may not have detectable mumps IgM antibody regardless of the timing of specimen collection.

- **Tests for IgG antibody**

  Tests for IgG antibody may be used for mumps diagnosis or for testing mumps immunity. A variety of tests for IgG antibodies to mumps are available and include EIA, IFA, and plaque reduction neutralization. The specific criteria for documenting an increase in titer depend on the test.

- **Diagnosis of Mumps with IgG**

  IgG testing for laboratory confirmation of mumps requires the demonstration of seroconversion from negative to positive by EIA or a four-fold rise in the titer of antibody against mumps as measured in plaque-reduction neutralization assays or similar quantitative assays. The tests for IgG antibody should be conducted on both acute- and convalescent-phase specimens at the same time. The same type of test should be used on both specimens. EIA values are not titers, and increases in EIA values do not directly correspond to titer rises.

  Unvaccinated persons: In unvaccinated persons, IgG antibody increases rapidly after onset of symptoms and is long lasting.

  Vaccinated persons: In vaccinated persons, the IgG may already be quite elevated in the acute-phase blood sample which frequently prevents detection of a four-fold rise in IgG titer in the convalescent serum specimen.

- **Testing Mumps Immunity with IgG**

  A single serum sample tested for mumps-specific IgG is not useful for diagnosing acute mumps infections. The presence of mumps-specific IgG, as detected using a serologic assay (EIA or IFA), is considered evidence of mumps immunity but does not necessarily predict the presence of neutralizing antibodies or protection from mumps disease.

Diagnostic Testing:
Please refer to “Mumps Laboratory Testing Guidance”

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Vaccination: Live attenuated mumps virus vaccine is recommended for persons ≥ 12 months of age unless medically contraindicated or unless a person is immune as defined by documentation of 1) immunization with at least one dose of live mumps vaccine on or after the first birthday, 2) serological evidence of mumps immunity, 3) physician diagnosis of mumps, or 4) birth before 1957. Under the current 2-dose schedule, most children and adolescents receive two doses of mumps-containing vaccine. Mumps vaccine, as MMR or MMRV, is recommended at 12-15 months of age and 4-6 years of age. For more detailed vaccination information, see Measles, Mumps, and Rubella Vaccine Guidelines in Chapter 2 of this manual.

Post-exposure Prophylaxis: There is no evidence that giving mumps vaccine provides protection to those already exposed. However, in those susceptible persons who were exposed but not infected, the vaccine will provide future immunity, and its use in these situations is not contraindicated.

Treatment: Supportive only.

Investigation:
. The investigation must be started immediately when a potential case is identified. Essential components of the case investigation include the following:

a. Obtain a detailed history of illness progression and description of parotid swelling
b. Obtain a detailed travel history
c. Establish a diagnosis by obtaining laboratory specimens for serology, viral isolation and PCR as early as possible **(consult with GDPH regarding the case before collecting and submitting specimens)**
d. Obtain an accurate and complete immunization history.
e. Identify the source of infection and transmission setting.
f. Assess potential transmission and identify contacts.
g. For symptomatic contacts, obtain specimens for serology, virus isolation and PCR if mumps is suspected.

Initial response to the report of suspected mumps:

1. Call the State Epidemiology Section (404) 657-2588 **IMMEDIATELY**. If after business hours, report suspect case to 1-866- PUB-HLTH.
2. Contact the parent(s) or guardian and reporting physician immediately to obtain a detailed clinical and exposure history of the patient.
   - Ask parent(s) about any out-of-town travel or visitors during the 7-21 days prior to parotid swelling
3. Complete the Mumps Case Report Form. Read the instructions carefully and complete as much of the form as possible. Do not leave any item blank. If information is not available, enter “none” or “NA”. The following should be collected during case investigations:
   - Demographic information
   - Reporting source
     a. county, district
     b. earliest date reported
     c. date case investigated started

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- Clinical details, including
    a. Date of onset of symptoms
    b. date of rash onset
    c. rash duration and presentation
    d. symptoms
    e. complications
    f. hospitalization
- Outcome (case survived or died)
    a. Date of death
- Laboratory information
    a. date of collection of specimens for serology testing
    b. serologic test results
    c. date of collection of specimen for virus isolation
    d. virus isolation test results
- Vaccination status
    a. number of doses of mumps vaccine received
    b. date(s) of mumps vaccinations
    c. manufacturer name
    d. vaccine lot number
    e. if not vaccinated, reason
- Epidemiologic
    a. transmission setting
    b. source of infection (e.g., age, vaccination status, relationship to case-patient, country/state of residence, laboratory testing, onset dates, etc.)
    c. source of exposure (contact with probable or confirmed case, or contact with immigrants or travelers)
    d. import status (international import, indigenous, out-of-state import, linked or traced to an international importation)
    e. residency (does the patient reside in the U.S.)
    f. travel history
    g. setting (i.e., is case part of an outbreak or is it a sporadic case)

Fax the completed worksheet and any pertinent lab results to the State Epidemiology Section (404) 657-2608. **Do not wait for laboratory confirmation to fax the report.**

Outbreak Control: The main strategy for controlling a mumps outbreak is to define the at-risk population and transmission setting, and to rapidly identify and vaccinate susceptible persons or, if a contraindication exists, to exclude susceptible persons from the setting to prevent exposure and transmission.

Reporting: Report all probable or confirmed cases **IMMEDIATELY** by phone to the local health department, District Health Office, or the State Epidemiology Section at 404-657-2588. If calling after regular business hours, it is very important to report cases to the Epidemiology Section answering service or call 1-866 PUB-HLTH. After verbal report has been made, please transmit the case information electronically through the State Electronic Notifiable Disease Surveillance

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System (SENDSS). Please be sure to complete all data fields in SENDSS including the case report form.

Reported Cases of Mumps in Georgia, 2001-2017*

Year	Number of Cases
2001	9
2002	2
2003	3
2004	2
2005	2
2006	4
2007	0
2008	4
2009	1
2010	5
2011	5
2012	6
2013	16
2014	2
2015	3
2016	17
2017	110

*Data are provisional and subject to change

References:

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MUMPS (INFECTIOUS PAROTITIS) SPECIMEN COLLECTION & SUBMISSION GUIDELINES

Georgia Department of Public Health

MUMPS LABORATORY TESTING GUIDANCE

Testing Method	Buccal Swab	Serum	Urine*
RT-PCR§	X		X
IgM or IgG Serology		X	
Viral Isolation (Culture)	X		X

*Collect only if the patient has orchitis (inflammation of the testicles) or oophoritis (inflammation of the ovaries)
§RT-PCR is the preferred method for confirming an acute mumps case; a buccal swab is the preferred sample.
Only patients with symptoms consistent with mumps will be considered for RT-PCR or IgM testing at the Georgia Public Health Laboratory (GPHL).

Health care providers must contact their local or district public health department to obtain mumps testing approval.

Collect specimens as soon as mumps is suspected

Buccal or Throat (Oropharyngeal) Swab

- Massage the parotid gland (the space near the upper rear molars between the cheek and teeth) for 30 seconds prior to swabbing.
- Vigorously swab the parotid area with a sterile synthetic swab (e.g. Dacron). Synthetic swabs are preferred over cotton swabs.
- Place swab in a tube containing 2-3 ml of viral transport medium or other sterile isotonic solution (phosphate buffered saline or cell culture medium).
- The swab can be broken off and left in the tube.
- Detailed buccal swabbing instructions are available at https://www.cdc.gov/mumps/lab/detection-mumps.html

Serum IgM or IgG testing

- Adults: Collect 7-10 ml of blood in a red top or serum separator tube (SST).
- Children: Collect at least 3 ml of blood in a red top or serum separator tube (SST)
- SST tubes must be centrifuged and the serum transferred into a transport tube for shipment.

Urine

- **Collect urine ONLY if the patient has orchitis (testicular swelling) or oophoritis (ovary swelling).**
- Collect 10-15 ml of urine in a screw top sterile container

Specimen Storage and Shipping

- Samples should be maintained at 4°C (39°F) and shipped on cold packs within 72 hours.

Specimen submission to the Georgia Public Health Laboratory requires prior consultation with your local public health department.

To ship approved specimens:

- Label all specimens (transport media, urine, and/or blood) with the patient's name, date of birth, and date of specimen collection **(UNAPPROVED OR UNLABELED SPECIMENS WILL NOT BE TESTED)**
- Complete the Georgia Public Health Laboratory Submission Form found at: https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf
- If requesting IgM and/or IgG, under "Immunology" check **BOTH** of the following boxes:
  - Mumps IgG W15550 Decatur OR W15550 Waycross
  - **AND** 1570 Refer to CDC. Write Mumps IgM in the space next to Refer to CDC.
- If requesting a PCR, under "Molecular Biology" check the box labeled 413000 Mumps (RT-PCR)
- If requesting viral isolation (culture), under "Virology" check the box labeled 60000 Mumps Culture/IFA
- **A separate submission form needs to be completed for EACH specimen submitted**

Ship approved specimens to:

Georgia Public Health Laboratory
1749 Clairmont Road
Decatur, GA 30033-4050
ATTN: Molecular Biology

In addition to GPHL, specimens can be submitted to commercial laboratories for testing. At this time, Quest Diagnostics is the only commercial lab that performs mumps PCR.

For questions about specimen collection, submission, or shipping contact local or district public health or call 1-866-PUB-HLTH

NEISSERIA MENINGITIDIS FACT SHEET (MENINGOCOCCUS)

Brief Description: *Neisseria meningitidis* is a gram-negative diplococcus that can cause a variety of clinical syndromes, but is most often associated with meningitis. Meningococcal serogrouping is based on the antigenic structure of the polysaccharide capsule, with five serogroups causing the majority of disease: A, B, C, Y, and W-135.

Reservoir: Humans

Mode of Transmission: Spread through respiratory droplets, normally requiring direct contact with saliva and respiratory secretions. Up to 5%-10% of people may be asymptomatic carriers with nasopharyngeal colonization.

Incubation Period: 2 to 10 days, commonly 3-4 days

Laboratory Criteria for Diagnosis: Isolation of *N. meningitidis* from a normally sterile site (e.g., blood, cerebrospinal fluid (CSF), or less commonly, joint fluid). Invasive disease may take a variety of forms, including septicemia, meningitis, pneumonia, or septic arthritis. Gram stain of CSF showing gram-negative diplococci suggests meningococcus, and rt-PCR is useful for detection of Neisseria meningitidis DNA.

Serotype testing:

1. Specimen: Blood, CSF, or other sterile site for culture; pure specimen for typing
2. Outfits: sterile vial for isolation and identification; culture referral order #0505 for serotyping
3. Lab Form: #3583
4. Lab Test Performed: *Neisseria meningitidis* serogrouping
5. Lab Performing Test: Special Bacteriology Laboratory; Georgia Public Health Laboratory (GPHL) in Decatur

Class Classification:

- Suspected: clinical purpura fulminans in the absence of a positive blood culture or gram-negative diplococci (not yet identified) isolated from a normally sterile body site
- Probable: Detection of *N. meningitidis* in formalin-fixed tissue by immunohistochemistry (IHC) or in CSF by latex agglutination
- Confirmed: Isolation of *N. meningitidis* from a normally sterile site or from purpuric lesions; or Detection of *N. meningitidis*-specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., blood or CSF), using a validated polymerase chain reaction (PCR) assay

Period of Communicability: As long as organisms are present in discharge from the nose and mouth. Cases are considered non-infectious 24 hours after starting effective antibiotic therapy.

NEISSERIA MENINGITIDIS Q&A
(Meningococcal Disease)

What is meningococcal disease?

Meningococcal disease is caused by the *Neisseria meningitidis* bacteria. These bacteria are found only in humans. These are multiple meningococcal serogroups (types), but the most important of these are A, B, C, Y, & W-135. The two most common forms of meningococcal disease are: meningitis, a bacterial infection of the fluid and covering of the spinal cord and brain; and septicemia (meningococcemia), an infection of the bloodstream.

Who is at risk?

Household and other close contacts exposed to a person with meningococcal disease within 7 days before onset of illness are at high risk and should receive antibiotic prophylaxis (see "Investigation" below). Outbreaks have occurred among college students and in daycares, however only 5% of cases are associated with outbreak with the rest being sporadic cases. In addition to routine vaccination of adolescents, ACIP also recommends vaccination for people who have complement component deficiencies, people without a functioning spleen, microbiologists who routinely are exposed to isolates of *N. meningitidis*, military recruits, and people who travel to or reside in areas in which meningococcal disease is epidemic. Rates of meningococcal disease are highest during infancy, then fall during childhood, rising again during adolescence.

How are meningococcal bacteria spread?

The bacteria are transmitted from person-to-person in secretions from the nose and throat. Exposure to oral secretions may occur during close social contact such as kissing or sharing utensils, or to medical personnel through unprotected contact during intubation or mouth-to-mouth resuscitation. They are not spread by casual contact or by simply breathing the air near an infected person, but require close contact. The bacteria can live outside the body for only a few minutes; so, if the germs contaminate a desk or book, they soon die and won't infect a person who touches it later. As many as 2 in 10 people carry the bacteria in the back of the nose and throat at any given time, especially in winter. Why only a very small number of those who have the bacteria in their nose and throat develop disease while others remain healthy is not understood.

What are the symptoms?

Meningitis is characterized by high fever, headache, and stiff neck. Other symptoms may include nausea, vomiting, confusion, sleepiness, and sensitivity to light. Sepsis causes high fever, low blood pressure, and severe malaise and shock. Meningococcal sepsis is sometimes associated with a characteristic petechial or purpuric rash. Petechiae are pinpoint spots that do not blanch with pressure, and purpura are patches of discoloration similar to bruises. Both are caused by bleeding into the skin.

How can meningococcal disease be prevented?

Besides vaccination according to established guidelines, general meningococcal prevention measures include avoiding first and second-hand tobacco smoke, using cough etiquette, and minimizing shared saliva.

Who should be vaccinated?

ACIP recommends routine vaccination with a quadrivalent meningococcal conjugate vaccine (MenACWY) for adolescents aged 11 or 12 years, with a booster dose at age 16 years. College freshmen living in dormitories are at increased risk for disease and should be vaccinated with MCV4 before college entry if they have not been vaccinated previously.

ACIP also recommends that persons age 2 to 55 years who are at increased risk for meningococcal disease be vaccinated with MCV4; MPSV4 is recommended for adults 56 years and older who are at increased risk. This includes travelers to or residents of countries in which the disease is hyperendemic or epidemic, and individuals who have terminal complement component deficiencies or asplenia. Vaccination recommendations for children with asplenia, sickle cell, or complement deficiency are complex. Refer to the footnotes of the Recommended Immunization Schedule for Persons aged 0 through 18 years – United States, 2015. For guidelines on booster doses among persons with high-risk conditions, refer to *MMWR* 2013 / 62(RR02);1-22, available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6202a1.htm. For other catch-up recommendations for these persons, and complete information on use of meningococcal vaccines, including guidance related to vaccination of persons at increased risk of infection, see MMWR March 22, 2013 / 62(RR02);1-22, available at http://www.cdc.gov/mmwr/pdf/rr/rr6202.pdf.

Vaccination:

A meningococcal polysaccharide vaccine (MPSV4) was licensed in 1981 to protect against serogroups A, C, Y and W-135, for persons ages 2 years and older. In 2005, a meningococcal conjugate vaccine (MCV4) was licensed for use in persons ages 11 to 55, which protects against the same four serogroups. MCV4 is the preferred product for individuals aged 2 through 55, and MPSV4 should be used for adults 56 and older. As of January 2015, two vaccines are licensed by the FDA that cover serogroup B for specified risk groups. Persons ages 2 through 55 with persistent complement component deficiency or asplenia should receive an initial series of 2 doses of MCV4, 2 months apart, with a booster every 5 years. Persons with complement component deficiencies or asplenia age 56 and older should receive one dose of MPSV4 and a booster every 5 years. A bivalent vaccine that provides protection against meningococcal serogroups C and Y along with Haemophilus influenzae type b (Hib) Hib-MenCY-TT is licensed for use in children aged 6 weeks through 18 months with persistent complement component deficiency.

As of January 2015, two vaccines are licensed by the FDA that cover serogroup B. MenB vaccine should be administered as either a 2-dose series of MenB-4C or a 3-dose series of MenB-FHbp. The same vaccine product should be used for all doses. They are recommended for certain persons aged ≥10 years who are at increased risk for meningococcal disease should receive MenB vaccine. These persons include:

- Persons with persistent complement component deficiencies.¶
- Persons with anatomic or functional asplenia.**
- Microbiologists routinely exposed to isolates of *Neisseria meningitidis*.
- Persons identified as at increased risk because of a serogroup B meningococcal disease outbreak.

MenB vaccines are not licensed for children aged <10 years and are not currently recommended for children aged 2 months–9 years or other groups. For more information on vaccines against serotype B and appropriate administration of the vaccine, reference http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6422a3.htm.

For full information on ACIP recommendations for the various meningococcal vaccines, refer to the ACIP guideline document: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6202a1.htm.

Reporting: Report all confirmed cases of invasive *N. meningitidis* IMMEDIATELY electronically through the State Electronic Notifiable Disease Surveillance System (SENDSS) at https://sendss.state.ga.us. All isolates should be forwarded to the Georgia Public Health Laboratory (GPHL) for serotyping.

Reported cases of invasive *Neisseria meningitidis* in Georgia Residents, 2006-2016 (Source: SENDSS)

Year	Number of cases
2006	21
2007	26
2008	18
2009	31
2010	12
2011	15
2012	11
2013	12
2014	15
2015	16
2016	14

Investigation: The Bacterial Meningitis and Sepsis Investigation and Control Manual (found at http://dph.georgia.gov/neisseria-meningitidis) should be used to investigate suspected, probable, and confirmed cases of *Neisseria meningitidis.* Household members and close contacts in the 7 days before illness onset should be given prophylactic antibiotics; close contact is defined as having direct contact with saliva and respiratory secretions, such as kissing, sharing utensils or beverages, etc. Individuals who frequently slept or ate in the same dwelling as the ill person during the 7 days before illness onset should receive chemoprophylaxis. Also at risk are healthcare workers who performed mouth-to-mouth resuscitation or unprotected intubation up to 7 days before illness onset. The risk of secondary cases is highest within a few days after the index case occurs, but after 14 days, risk of secondary disease returns to baseline and prophylaxis is of little value.

Prophylaxis and Follow-Up of Contacts: Prophylaxis should be administered as soon as possible after exposure to a meningococcal disease case, and must occur within 14 days.

Ciprofloxacin 500 to 750 mg PO once may be given to adults >18 years of age to eliminate nasopharyngeal carriage of *N. meningitidis*. Do not give to pregnant or lactating women

Rifampin is the preferred antibiotic for children and non-pregnant adults:

- Non-pregnant adults: 600 mg PO q12h for 4 doses
- Infants and children > 1 months: 10mg/kg (maximum 600mg) PO q12h for 4 doses
- Infants < 1 month old: Rifampin 5mg/kg PO q12h for 4 doses

Ceftriaxone should be given only if the client cannot take Rifampin:

- Adults and children age 15 or older: 250 mg IM, once
- Children < 15 years old: 125mg IM, once

Immunization with the appropriate meningococcal vaccine should be recommended according to guidelines above as a possible adjunct to chemoprophylaxis during an outbreak of a vaccine-preventable strain.

References:

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PERTUSSIS SPECIMEN COLLECTION & SUBMISSION

Agent: *Bordetella pertussis* bacterium

Brief Description: Pertussis is an endemic disease worldwide that is most common in children and can be especially severe in infants less than 6 months of age. Children usually get pertussis from a symptomatic household member (e.g. older sibling, parent). Outbreaks occur periodically. Incidence and mortality rates declined markedly in the four decades following the introduction of the vaccine in the 1940s. The disease shows cyclical peaks every 3-5 years with recent occurrences in 2005 and 2010. National surveillance has shown an upward trend in disease incidence among 7 and 10 year olds, despite vaccination.

Reservoir: Humans

Mode of Transmission: Transmitted person- to-person by droplets produced from a cough or sneeze or by direct contact with secretions from the respiratory tract. Pertussis is highly contagious, with 80% secondary attack rates among susceptible household contacts.

Incubation Period: Typically 7-10 days (range 4-21 days) following exposure.

Signs and Symptoms: Pertussis typically begins with mild upper respiratory tract symptoms of runny nose, sneezing, and a mild cough (catarrhal stage). The cough becomes more severe over the next 1-2 weeks and develops into paroxysmal episodes (paroxysmal stage), often with a characteristic inspiratory whoop and commonly followed by vomiting (post-tussive vomiting). Fever is absent or minimal. Apnea and/or difficulty feeding frequently occurs in young infants, and may be the sole manifestation of early stage pertussis in this age group. Symptoms wane gradually over weeks to months (convalescent stage). Infants less than six months of age, adolescents, and adults often will not have the typical whoop. In mild cases adolescents and adults may have prolonged cough without paroxysms. The duration of classic pertussis is 6 to 10 weeks. Antimicrobial agents may alleviate the disease but only if given during the catarrhal stage. After the cough is established, antimicrobial agents are recommended primarily to limit the spread of *B. pertussis* organisms to others.

Illness Progression:

Catarrhal	Paroxysmal	Convalescent
1-2 weeks	1-6 weeks	Weeks - Months

Period of Communicability: Pertussis is highly communicable in the early catarrhal stage before the paroxysmal cough stage. Thereafter, communicability decreases becoming negligible in about 3 weeks. Pertussis is most transmissible during the catarrhal period (1-2 weeks prior to paroxysmal cough onset) through the first 3 weeks after cough onset (approximately 21 days).

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Temporal Pattern: Pertussis has no distinct seasonal pattern, but it may increase in the summer and fall.

Susceptibility and Resistance: Susceptibility of nonimmunized individuals is universal. Cases can occur in previously immunized children, adolescents and adults. Infection with pertussis confers prolonged immunity, but re-infection can occur.

Protection of Contacts: Generally, post exposure antimicrobial prophylaxis is recommended for all household contacts. Other contacts are evaluated and managed on a case-by-case basis. Pertussis immunizations should be reviewed and updated, although vaccination may not prevent infection if given after exposure. Close contacts younger than 7 years of age who have not received 5 doses of Diphtheria, Tetanus toxoid, and acellular Pertussis vaccine (DTaP) or have not received a DTaP dose within 3 years should be given a dose as soon after exposure as possible. Children as young as 7 can be given a single dose of Tdap if they have missed one or more doses of DTaP. *See below or Public Health Nursing Protocol for post exposure chemoprophylaxis options*.

TABLE 4. Recommended antimicrobial treatment and postexposure prophylaxis for pertussis, by age group

	Primary agents			Alternate agent*
Age group	**Azithromycin**	**Erythromycin**	**Clarithromycin**	**TMP-SMZ**
<1 month	Recommended agent. 10 mg/kg per day in a single dose for 5 days (only limited safety data available.)	Not preferred. Erythromycin is associated with infantile hypertrophic pyloric stenosis. Use if azithromycin is unavailable; 40–50 mg/kg per day in 4 divided doses for 14 days	Not recommended (safety data unavailable)	Contraindicated for infants aged <2 months (risk for kernicterus)
1–5 months	10 mg/kg per day in a single dose for 5 days	40–50 mg/kg per day in 4 divided doses for 14 days	15 mg/kg per day in 2 divided doses for 7 days	Contraindicated at age <2 months. For infants aged ≥2 months, TMP 8 mg/kg per day, SMZ 40 mg/kg per day in 2 divided doses for 14 days
Infants (aged ≥6 months) and children	10 mg/kg in a single dose on day 1 then 5 mg/kg per day (maximum: 500 mg) on days 2–5	40–50 mg/kg per day (maximum: 2 g per day) in 4 divided doses for 14 days	15 mg/kg per day in 2 divided doses (maximum: 1 g per day) for 7 days	TMP 8 mg/kg per day, SMZ 40 mg/kg per day in 2 divided doses for 14 days
Adults	500 mg in a single dose on day 1 then 250 mg per day on days 2–5	2 g per day in 4 divided doses for 14 days	1 g per day in 2 divided doses for 7 days	TMP 320 mg per day, SMZ 1,600 mg per day in 2 divided doses for 14 days

* Trimethoprim sulfamethoxazole (TMP–SMZ) can be used as an alternative agent to macrolides in patients aged ≥2 months who are allergic to macrolides, who cannot tolerate macrolides, or who are infected with a rare macrolide-resistant strain of *Bordetella pertussis*.

Isolation/Quarantine: Droplet precautions should be used for known cases. Cases should be removed from the presence of young children and infants, especially nonimmunized infants, until the case has received at least 5 days of an appropriate antibiotic. Cases who do not receive antibiotics should be isolated for 3 weeks. Inadequately immunized close contacts less than 7 years of age should be excluded from school, day care, and public gatherings for 21 days after last exposure or until the cases and contacts have received at least 5 days of an appropriate antibiotic.

Clinical Case Definition

PERTUSSIS SPECIMEN COLLECTION & SUBMISSION

A cough illness lasting at least 2 weeks (14 days) with one or more of the following:

- Paroxysms of coughing
- Inspiratory "whoop"
- Post-tussive vomiting
- Apnea (with or without cyanosis) (FOR INFANTS AGED <1 YEAR ONLY)

Case Classification

- **Probable:** Meets the clinical case definition, is not laboratory-confirmed, and is not epidemiologically-linked to a laboratory-confirmed case OR

  FOR INFANTS AGED < 1 YEAR ONLY:
  - Acute cough illness of any duration with at least one of the following signs or symptoms:
    - Paroxysms of coughing, OR
    - Inspiratory "whoop", OR
    - Posttussive vomiting, OR
    - Apnea (with or without cyanosis)

    AND
    - Polymerase chain reaction (PCR) positive for pertussis, OR

  FOR INFANTS AGED < 1 YEAR ONLY:
  - Acute cough illness of any duration with at least one of the following signs or symptoms:
    - Paroxysms of coughing, OR
    - Inspiratory "whoop", OR
    - Posttussive vomiting, OR
    - Apnea (with or without cyanosis)

    AND
    - Contact with a laboratory-confirmed case of pertussis

- **Confirmed:**
  - A person with an acute cough illness of any duration who is culture-positive for B. pertussis; OR
  - A case that meets the clinical case definition and is confirmed by polymerase chain reaction (PCR) OR
  - A case that meets the clinical definition and is epidemiologically-linked directly to a case confirmed by either culture or PCR.

Case Classification Comments:

*Note: An illness meeting the clinical case definition should be classified as "probable" rather than "confirmed" if it occurs in a patient who has contact with an infant aged <1 year who is Polymerase chain reaction (PCR) positive for pertussis and has ≥ 1 sign or symptom and cough duration< 14 days (classified as "probable" case).

PERTUSSIS SPECIMEN COLLECTION & SUBMISSION

Laboratory testing:
Pertussis should be considered in the differential diagnosis of patients presenting with prolonged cough with cyanosis, vomiting or apnea, regardless of vaccination history. Nasopharyngeal secretions are the optimal specimens for isolating the pertussis bacterium and obtaining a lab confirmed diagnosis. Nasopharyngeal swabs for culture and polymerase chain reaction (PCR) should be collected as soon as possible after onset of symptoms and prior to antibiotic treatment. The time of collection will greatly impact the ability to detect B. pertussis. There is a greater likelihood of positive cultures and/or PCR in the first two weeks of symptomatic infection than during later weeks of illness. However, PCR may detect organisms for a prolonged period of time regardless of viability. Confirmatory laboratory testing should be performed on all suspect or probable cases.

- **Isolation of B. pertussis by culture**

  Isolation of *B. pertussis* by bacterial culture remains the gold standard for diagnosing pertussis. A positive culture for *B. pertussis* confirms the diagnosis of pertussis. Culture of the organism is also necessary for antimicrobial susceptibility testing and molecular typing.

  Although bacterial culture is specific for diagnosis, it is relatively insensitive. Fastidious growth requirements make *B. pertussis* difficult to isolate. Isolation of the organism using direct plating is most successful during the catarrhal stage (i.e., first 1-2 weeks of cough). Success in isolating the organism declines if the patient has received prior antibiotic therapy effective against *B. pertussis*, if specimen collection has been delayed beyond the first 2 weeks of illness, and if the patient has been vaccinated.

  All persons with suspected cases of pertussis should have a nasopharyngeal aspirate or swab obtained from the posterior nasopharynx for culture. For *B. pertussis*, nasopharyngeal aspirates will yield similar or higher rates of recovery than nasopharyngeal swabs; throat and anterior nasal swabs yield unacceptably low rates of recovery. Therefore, specimens should be obtained from the posterior nasopharynx, not the throat. Specimens should be obtained using polyester, rayon, nylon, or calcium alginate (not cotton) swabs and should be plated directly onto selective culture medium or placed in transport medium. Regan-Lowe agar is generally used for culture; half-strength Regan-Lowe should be used as the transport medium. Specimens should be transported on cold packs and plated at the laboratory within 24 hours.

- **Polymerase chain reaction (PCR) testing**

  Polymerase Chain Reaction (PCR) is an important tool for timely diagnosis of pertussis and is increasingly available to clinicians. PCR is a molecular technique used to detect DNA sequences of the Bordetella pertussis bacterium, and unlike culture, does not require viable (live) bacteria present in the specimen.

Despite these advantages, PCR can give results that are falsely-negative or falsely-positive. PCR results can be optimized by avoiding some of the more common pitfalls leading to inaccurate results. Although early signs and symptoms of pertussis are often non-specific, only patients with signs and symptoms consistent with pertussis should be tested. Asymptomatic contacts of confirmed cases should not be tested and testing of contacts should not be used for post-exposure prophylaxis decisions. Falsely-positive results may also occur as a result of specimen contamination, which can occur during specimen collection and testing. The timing of PCR testing for pertussis can significantly affect its ability to accurately diagnose the disease. PCR has optimal sensitivity during the first 3 weeks of cough when bacterial DNA is still present in the nasopharynx. After the fourth week of cough, the amount of bacterial DNA rapidly diminishes, which increases the risk of obtaining falsely-negative results.

Since its inclusion in the case definition in 1997, the proportion of cases confirmed by PCR has increased substantially, and many laboratories now use only PCR to confirm pertussis. However, as of March 2014, there are no standardized PCR assays for pertussis, and assay procedures, as well as sensitivity and specificity, can vary greatly between laboratories. Thus, interpretation criteria for diagnosis vary. Interpretation of PCR results, especially those with high cycle threshold (Ct) values should be done in conjunction with an evaluation of signs and symptoms and available epidemiological information.

While PCR is increasingly used as the sole diagnostic test for pertussis, CDC recommends that PCR be used in conjunction with culture when feasible, rather than as an alternative test. Even when a laboratory has validated its PCR method, culturing for B. pertussis should continue; this is especially important to confirm the circulation of B. pertussis when an outbreak is suspected. State laboratories should retain the capability to culture pertussis.

Collection methods for PCR are similar to those for culture, and often the same sample can be used for both tests. However, calcium alginate swabs cannot be used to collect nasopharyngeal specimens for PCR. Swabs used solely for PCR (and not culture) testing may be placed in a sterile tube for transport to the laboratory. Use of liquid transport media is discouraged due to the risk of specimen contamination.

- **Serologic Testing**

Commercial serologic tests for pertussis infection can be helpful for diagnosis, especially later in illness. However, there is no commercial kit approved by the FDA for diagnostic use. Cutoff points for diagnostic values of immunoglobulin (Ig) G antibody to pertussis toxin (PT) have not been established, and current IgA and IgM assays lack adequate sensitivity and specificity. In the absence of recent immunization, an elevated serum IgG antibody to PT after 2 weeks of onset of cough is suggestive of recent *B. pertussis* infection. An increasing titer or a single

IgG anti-PT value of approximately 100 IU/mL or greater (using standard reference sera as a comparator) can be used for diagnosis. As of December 2014, positive serology results from commercial laboratories are not confirmatory for the purpose of reporting. A single-point serologic assay has been validated at the Massachusetts state public health laboratory for persons aged 11 years or older and is used for clinical diagnosis and reporting in that state only. A serologic test performed at CDC or at the Massachusetts state laboratory might be used to help investigate outbreaks. In states other than Massachusetts, cases meeting the clinical case definition that are serologically positive but not culture or PCR positive should be reported as probable cases.

- **Direct Fluorescent Antibody (DFA) Testing**

  Direct fluorescent antibody (DFA) testing of nasopharyngeal secretions is sometimes used to screen for pertussis; however, CDC no longer recommends DFA for diagnosing pertussis. Cases meeting the clinical case definition that are DFA positive but not culture or PCR positive should be reported as probable cases.

Diagnostic Testing:

***Pertussis culture and PCR testing at the Georgia Public Health Laboratory and/or CDC is available by special arrangement only. To receive pre-approval and make arrangements for either pertussis culture or PCR testing, the District Health office or Georgia Department of Public Health must be contacted at 404-657-2588 or 1-866-PUB-HLTH after business hours.**

A. Culture

1. Specimen: Nasopharyngeal swab or aspirate
   - Dacron, rayon or nylon swabs should be used (**Cotton-tipped or calcium alignate swabs are not acceptable**)
2. Outfits: Culture referral outfit, order #505
3. Lab Form: GPHL Form found here https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf
   - On the GPHL Form under "Bacteriology" check the box labeled 1050: Pertussis Culture **AND** 1040: Pertussis Direct Fluorescent Antibody.
4. Transport requirements: The swabs should be placed in Regan Lowe transport media and shipped overnight with ice packs.

B. Polymerase Chain Reaction (PCR)

1. Specimen: Nasopharyngeal swab or aspirate
   - Dacron, rayon or nylon swabs should be used (**Cotton-tipped or calcium alignate swabs are not acceptable**)
5. Lab Form: GPHL Form found here https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf

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2.
   - On the GPHL Form under "Molecular Biology" check the box labeled 414000: Bordetella pertussis (RT-PCR)
3. Transport requirements: The swabs should be placed in a sterile container and shipped overnight with ice packs.

Vaccination: Beginning in 1996 acellular pertussis vaccines were recommended for all doses in the pertussis vaccine series, replacing the whole-cell vaccines which previously had been used. All acellular vaccines are combined with diphtheria and tetanus toxoid (DTaP vaccine). Children should receive four doses of vaccine, with the first three doses administered at 4- to 8-week intervals, beginning at 6 weeks to 2 months of age. The fourth dose should be given 6-12 months after the third dose (17-20 months for Daptacel). Children who receive four doses of DTaP before their fourth birthday should receive a booster dose of DTaP at 4 to 6 years of age. In children younger than seven years old, DTaP vaccines efficacy ranges from 71% to 84%. Tdap vaccine is a formulation licensed for use in persons ages 10-64, and should be given as a one-time dose in lieu of a booster dose of Td. For more detailed vaccination information for either Tdap or DTaP, see Diphtheria, Tetanus, and Pertussis Vaccine Guidelines in Chapter 2 of this manual.

Investigation:
Once notified of a suspect pertussis case:

1. Contact case/guardian AND health care provider IMMEDIATELY to obtain a detailed description of the clinical presentation.
   a. Use the Pertussis Case Report Form to assist in interviewing the case/guardian

2. Determine whether the case has clinically compatible signs and symptoms

3. If the case-patient has clinically compatible signs and symptoms, employ the control guidelines detailed below

4. Assist with the coordination of specimen collection (See Appendix B) if necessary
   a. If the case-patient has been coughing for 1-2 weeks, collect a specimen for culture and/or PCR testing at the Georgia Public Heatlh Laboratory (GPHL).
   b. If the case-patient has been coughing for 3 weeks collect a specimen for PCR

   (NOTE: State Epi approval must be obtained before any pertussis specimen is submitted to GPHL for testing)

5. Report/ensure reporting of case in SendSS

6. Update the SendSS record in a timely manner with new or additional information as it becomes available. Finalize SendSS record when case investigation is complete.

   NOTE: The final interview should be completed 14 days after the cough onset. If you are notified of a suspect pertussis case-patient with a recent cough onset (< 14 days)

investigate the case IMMEDIATELY and follow-up 14 days after the cough onset date to assess whether the case-patient coughed for ≥ 14 days. This is required for case definition/reporting criteria.

7. In the event of death, obtain and send copies of hospital discharge summary, death certificate and autopsy report

Control Guidelines

1. Investigate reports of suspect pertussis IMMEDIATELY

2. If the clinical case definition is met (probable or confirmed), regard as true pertussis.

3. Ensure cases have received antimicrobial treatment to help limit spread of the disease to others and that they are excluded and isolated from group activity settings (e.g. schools, day-care centers, work place, camps, etc.) until they have received at least 5 days of an appropriate course of antibiotics for pertussis

    a. In health care settings, use of droplet precautions is recommended.

4. Determine period of communicability (one week before to two weeks after cough onset) using the Period of Communicability Timeline

5. Identify exposed close contacts, including household contacts, child care contacts, etc. Note: Patients with pertussis are highly infectious; attack rates among exposed, nonimmune household contacts are as high as 80%--90%.

6. Identify high risk exposed close contacts.

    a. High risk contact definition (contacts at highest risk of severe disease or transmitting disease to others at high risk)
        - Infants <1 year of age
        - Pregnant women
        - Caregivers and household contacts of infants (e.g., family members, friends, or babysitters who spend time caring for an infant)
        - All those attending or working in a childcare setting (i.e. same room)
        - Healthcare workers who care for infants <1 year of age or pregnant/postpartum women
        - Unimmunized/underimmunized children and
        - Immunocompromised persons

7. Administer or coordinate the administration of antibiotics to close contacts within three weeks (21 days) of exposure, regardless of vaccination history

a. Refer contacts for prophylaxis to their primary care physician, the health department, or follow DPH Nursing Protocol for obtaining prophylaxis from the contact's pharmacy.

8. Household and other close contacts should be treated prophylactically with appropriate antimicrobial therapy. The recommended antimicrobial agents and dosing regimens for postexposure prophylaxis are the same as those for treatment of pertussis

   a. Defining "close contacts" outside the household is especially challenging. Therefore, outside household environments, the risk for secondary transmission of pertussis should be evaluated on a case-by-case basis and decisions to recommend prophylaxis should be based on infectiousness of the case, transmission setting, risk for transmission to others, and risk status of the contacts.

   b. Specific definitions of a contact for purposes of pertussis control are problematic and will vary according to the situation. Transmission can be expected with the following situations:

      - Direct face-to-face contact for a period (not defined) with a case-patient who is symptomatic (e.g., in the catarrhal or paroxysmal period of illness);

      - Shared confined space in close proximity for a prolonged period of time, such as >1 hour, with a symptomatic case-patient; or

      - Direct contact with respiratory, oral, or nasal secretions from a symptomatic case-patient (e.g., an explosive cough or sneeze in the face, sharing food, sharing eating utensils during a meal, kissing, mouth-to-mouth resuscitation, or performing a full medical exam including examination of the nose and throat).

9. If period of prophylaxis has passed (three weeks, except in high risk cases), counsel contacts to call their health provider if they develop respiratory symptoms and/or cough so antimicrobial treatment/exclusion can be implemented immediately.

10. Vaccinination is not post-exposure prophylaxis, but encourage all household and close contacts to be up-to-date on their pertussis vaccinations.
    a. If possible, coordinate vaccination at the local health department.

11. Conduct surveillance for secondary cases and contacts.
    a. If necessary, a letter may be sent out to notify close contacts/guardians of possible exposure (Appendix E).

* Note that the steps are not ordered by priority since several of these steps are conducted simultaneously.

PERTUSSIS SPECIMEN COLLECTION & SUBMISSION

Reporting: Report all suspect, probable, and confirmed cases **IMMEDIATELY** by phone to the local health department, District Health Office, or the State Epidemiology Section at 404-657-2588. If calling after regular business hours, it is very important to report cases to the Epidemiology Section by calling 1-866-PUB-HLTH. After a verbal report has been made, please enter the case information into the State Electronic Notifiable Disease Surveillance System (SENDSS) at http://sendss.state.ga.us, or complete and mail the Pertussis Case Report Form.

Reported Pertussis Cases (Probable and Confirmed) in Georgia, 2008-2016

Year	Number of Cases
2008	116
2009	230
2010	247
2011	180
2012	330
2013	269
2014	408
2015	241
2016	190

References:

1. American Academy of Pediatrics. Pertussis. In: Pickering, LK, Baker CJ, Kimberlin DW, Long SS, eds. 2015 Red Book: Report of the Committee on Infectious Diseases. Elk Grove Village, IL: American Academy of Pediatrics; 2015: .
2. Centers for Disease Control and Prevention. Pertussis. Manual for the surveillance of vaccine-preventable diseases. Centers for Disease Control and Prevention, Atlanta, GA, 2015.
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4. CDC. Recommended Antimicrobial Agents for Treatment and Postexposure Prophylaxis of Pertussis, 2005 Guidelines. *MMWR* Vol. 54(RR-14), 2005:1-16.
5. CDC. Updated Recommendations for the Use of Tetanus Toxoid, Reduced Diptheria Toxoid and Acellular Pertussis (Tdap) Vaccine from the Advisory Committee on Immunization Practices, 2010. *MMWR* 2011;60(01):13-15.

Links:

- CDC Pertussis – http://www.cdc.gov/vaccines/pubs/pinkbook/pert.html
- Recommended Antimicrobial Agents for the Treatment and Postexposure Prophylaxis of Pertussis - http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5414a1.htm

APPENDIX 1: PERTUSSIS SPECIMEN COLLECTION AND SUBMISSION

Pertussis should be considered in the differential diagnosis of patients presenting with prolonged cough with cyanosis, vomiting or apnea, regardless of vaccination history. Nasopharyngeal secretions are the

PERTUSSIS SPECIMEN COLLECTION & SUBMISSION

optimal specimens for isolating the pertussis bacterium and obtaining a lab confirmed diagnosis. Nasopharyngeal swabs for culture and polymerase chain reaction (PCR) should be collected as soon as possible after onset of symptoms and prior to antibiotic treatment. The time of collection will greatly impact the ability to detect *B. pertussis*. There is a greater likelihood of positive cultures and/or PCR in the first two weeks of symptomatic infection than during later weeks of illness. However, PCR may detect organisms for a prolonged period of time regardless of viability. Confirmatory laboratory testing should be performed on **all** suspect or probable cases.

The Georgia Department of Public Health strongly recommends the collection of a nasopharyngeal (NP) swab to confirm a pertussis case**.** The preferred methods for laboratory diagnosis of pertussis are culture and polymerase chain reaction (PCR) and it is recommended that BOTH tests be performed.

***Pertussis culture and PCR testing at the Georgia Public Health Laboratory is available by special arrangement only. To receive pre-approval and make arrangements for either pertussis culture or PCR testing, the District Health office or Georgia Department of Public Health must be contacted at 404-657-2588.**

A. Specimen Collection Instructions

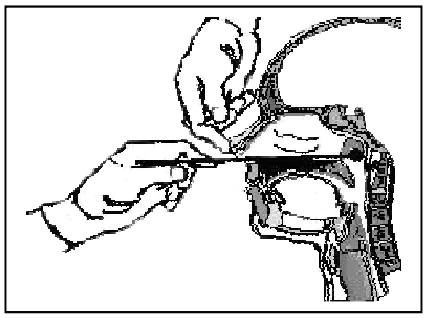
Nasopharyngeal Swab Collection

A video detailing how to collect a nasopharyngeal swab can be found at: http://www.cdc.gov/pertussis/clinical/diagnostic-testing/specimen-collection.html.

Materials – Consult your Local or District Health Department or the Vaccine Preventable Disease Epidemiology Unit for the following:

- Polyester (Dacron), rayon, or nylon-flocked swab (**Cotton-tipped or Calcium alginate swabs are not acceptable**)
- Regan-Lowe transport media
  - Store at 2-8 degrees Celsius (or 36-46 degrees Fahrenheit) in a refrigerator
  - Remove from refrigerator and warm to room temperature

Collection



- Have patient sit with head against a wall or lie down, as patients have a tendency to pull away during this procedure
- Insert swab into one nostril straight back (**not upwards**) and continue along the floor of the nasal passage for several centimeters until reaching the nasopharynx. **The distance from the nose to the ear gives an estimate of the distance the swab should be inserted.** Do not force swab if obstruction is encountered before reaching the nasopharynx remove swab and try the other side.
- Rotate the swab gently for 5-10 seconds to loosen the epithelial cells.

Culture:

Remove swab and immediately inoculate Regan-Lowe transport media by inserting the swab at least ½ inch below the surface of the media. Bend or clip the wire swab handle to fit the transport medium tube and reattach the cap securely.

PCR:

PERTUSSIS SPECIMEN COLLECTION & SUBMISSION

Remove swab and immediately place in a dry sterile container. Bend or clip the wire swab handle to fit the container. **NOTE: A dry swab, not in Regan Lowe media, is acceptable for PCR testing.**

- Specimen should be transported at refrigerator temperature and received by the laboratory as soon as possible and within one day from time of collection.

Laboratory Submission Instructions

1. Notify your District Public Health Office or the Vaccine Preventable Disease Epidemiology Unit **immediately**.

2. Label the specimen transport tube(s) with the patient's name, date of birth, and date of specimen collection (**UNAPPROVED OR UNLABELED SPECIMENS WILL NOT BE TESTED)**

6. Complete the Georgia Public Health Laboratory Submission Form found at: https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf
3. with the following information:
   a. Submitter code (if known), address, phone and fax number, and contact name
   b. Patient name, address, phone number, date of birth, sex, race, and ethnicity (if available)
   c. Date of specimen collection, source, type of specimen, clinical history and information
   d. If requesting a culture, under "Bacteriology" check the box labeled 1050 Pertussis Culture
   e. If requesting a PCR, under "Molecular Biology" check the box labeled 414000 Bordetella pertussis (RT-PCR)

   NOTE: A submission form needs to be completed for **EACH** specimen submitted (i.e. if two specimens for culture and PCR were collected, two GPHL submission forms need to be completed).

4. Ship specimens overnight by courier or Federal Express on ice packs. If the shipment is delayed, refrigerate specimens at 2-8 °C (or 36-46 °F) and transport the next day on ice packs by first class mail, common carrier, or courier.

5. Ship specimens to the following address:

   Georgia Public Health Laboratory
   1749 Clairmont Road
   Decatur, GA 30033-4050
   ATTN: Bacteriology Laboratory

Contact Information

- Additional lab forms are available at http://dph.georgia.gov/lab
- For questions related to specimen collection and transport: contact local or district public health or the State VPD Epidemiology Unit, 404-657-2588

PERTUSSIS SPECIMEN COLLECTION & SUBMISSION

Pertussis Laboratory Testing Procedures and Interpretation of Results

Culture

Cultures are held 7 days from the date of inoculation and read daily. Nasopharyngeal swabs received in transport medium tubes are inoculated immediately onto Regan-Lowe plates and incubated. After the final day of incubation, if no colonies typical of *B. pertussis* or *B parapertussis* are present, the culture is reported as negative for these organisms. A positive culture report is based upon typical colony morphology, biochemicals and direct fluorescent antibody testing (DFA) Positive cultures or cultures overgrown with mold or normal flora are reported immediately upon detection, and results are telephoned to the submitter.

Both culture and PCR are recommended for diagnosis of B. pertussis whenever possible. A positive culture is considered confirmatory and is the most reliable. " False negative" culture results may follow from any procedures that render the organisms nonviable, such as improper handling of plates and transport medium after collection or prolonged antibiotic treatment.

PCR

The GPHL currently offers a multitarget PCR assay validated by the CDC, for qualitative detection of Bordetella pertussis, B. parapertussis, and B. holmesii DNA extracted from clinical specimens or culture isolates by real-time PCR. Most commercial laboratories use a single target PCR for IS481, which is present in multiple copies in B. pertussis and in lesser quantities in B. holmesii and B. bronchiseptica. Because this DNA sequence is present in multiple copies, IS481 is especially susceptible to falsely-positive results. Use of the GPHL multiple target assay improves specificity of PCR assays for pertussis. When requesting commercial PCR testing, clinicians are encouraged to inquire about which PCR target or targets are used by their laboratories. Interpretation of commercial PCR results, should be done in conjunction with an evaluation of signs and symptoms and available epidemiological information, as their specificity can vary greatly.

PERTUSSIS QUESTIONS & ANSWERS

Pertussis Questions and Answers

For Parents & Caregivers

What is pertussis?

Pertussis, commonly known as whooping cough, is a highly contagious bacterial infection that is characterized by severe coughing. It is one of the most common vaccine-preventable diseases in the United States.

What are the symptoms of pertussis?

The first symptoms of pertussis are similar to a cold: a runny nose, sneezing, possibly a low-grade fever and a cough. After one or two weeks, the cough becomes severe as noted by the following:

- The cough occurs in sudden, uncontrollable bursts where one cough follows the next without a break for breath.
- Some children will make a high-pitched whooping sound when breathing in after a coughing episode. Whooping is less common in infants and adults.
- Coughing episodes may cause vomiting.
- Young infants may not cough but instead have difficulty feeding, gagging, vomiting and apnea (periods where infant stops breathing).
- Children may appear well in between coughing episodes.

Who gets pertussis?

Anyone can get pertussis! Pertussis is most commonly diagnosed in infants and young children, though adults account for more than half of all cases. Children and infants often get pertussis from older siblings or adults who might not know they have the disease.

What complications are associated with pertussis?

Pertussis in infants is often severe. Infants are more likely than older children or adults to develop complications. The most common complication of pertussis is bacterial pneumonia. Rare complications include seizures, inflammation of the brain, and death.

How is pertussis spread?

Pertussis is spread by respiratory droplets when an infected person coughs or sneezes. In general, a person is at greatest risk of getting the disease if they are in close contact with someone with pertussis for a prolonged period of time.

How long is a person with pertussis contagious?

Pertussis is most contagious early in the illness. Persons who have pertussis, who have completed five days of appropriate antibiotics are no longer contagious. Without treatment, infected persons can spread pertussis during the first 3 weeks they are coughing. Children with pertussis should be kept out of daycare and school until they are no longer contagious.

How long can a person have pertussis?

A person can have pertussis for as long as 3 months. Treatment with antibiotics prevents further spread of the disease, but does not immediately resolve the symptoms.

What tests are available to diagnose pertussis?

Your healthcare provider can perform tests to confirm the diagnosis of pertussis. To test for pertussis, the nasal passages are swabbed. Material on the swab is then examined in the lab for the presence of pertussis bacteria.

How is pertussis treated?

Antibiotics, if started early, may help reduce the severity of symptoms. Treatment with antibiotics may not resolve symptoms, but will prevent the spread of disease to others.

DPH Georgia Department of Public Health

Have questions? **Talk with your Doctor.**

www.health.state.ga.us/pertussis/

PERTUSSIS QUESTIONS & ANSWERS

Pertussis Questions and Answers

For Parents & Caregivers

Is there a vaccine for pertussis?

Yes. There are two pertussis vaccines (DTaP and Tdap). Both vaccines are given in combination with tetanus and diphtheria. Your age determines which vaccine you should receive.

- DTaP vaccine is given to **children through 6 years of age**. Children should receive shots at 2, 4, 6, and 15-18 months of age, and at 4 to 6 years of age.
- **Children 7 through 10 years** who are not fully vaccinated against pertussis should receive a single dose of Tdap. Children who have never received any doses, or don't know if they have, should receive a series of three vaccinations containing tetanus and diphtheria toxoids, and one of these should be Tdap.
- **Adolescents 11 through 12** years should receive a single dose of Tdap, which is usually given at their pre-adolescent check-up.
- **Adolescents 13 through 18** years who missed getting the Tdap should get it the next time they see their health care provider.
- **Adults age 19 through 64** years should receive a single dose of Tdap. This is especially important if they will be in contact with infants younger than 1 year of age.
- **Adults 65 years and older** who have or anticipate having close contact with an infant younger than 1 year of age should receive a single dose of Tdap. It can also be given to other adults who wish to be protected against pertussis disease.
- **Pregnant women** who have not received a Tdap vaccination should receive Tdap in the late second or third trimester for **each** pregnancy irrespective of past history of Tdap receipt. Women who do not receive Tdap during pregnancy should get their Tdap vaccination right after delivery.

Timing of Tdap: If you haven't received Tdap yet but have received Td vaccine recently, you should get Tdap. Ask your health care provider for Tdap at your next visit.

My child has been exposed to pertussis, what should I do?

If you think your child has been exposed to pertussis contact your doctor immediately. A doctor can prescribe post-exposure medication that will prevent further spread of disease and may modify the severity of disease, if given within 3 weeks of exposure.

Is it okay to take my child to public places (ie. grocery store, daycare, playground)?

If you think your child has been exposed to pertussis you should avoid taking him or her to public places until a doctor refutes or confirms pertussis. If your child has a current pertussis infection, you should avoid taking him or her to public places until the disease has resolved (after completing 5 days of antibiotics or 21 days after cough onset). All contact with unimmunized children, immunocompromised persons or pregnant women should be avoided.

Children with pertussis should be kept out of daycare and school until they are no longer contagious.

Can a person who has been fully immunized get pertussis?

People whose immunizations are up-to-date can get pertussis. Immunity from receiving the pertussis vaccine decreases over time, so adolescents and adults who were fully immunized as children do not have full protection from pertussis. Adolescents and adults should receive Tdap, a pertussis booster vaccine, to increase their immunity.

How can pertussis be prevented?

Routine vaccination is the best way to prevent pertussis. However, additional steps to prevent the spread of disease may include:

- Avoiding close contact with others who are coughing or ill
- Washing hands often
- Covering coughs and sneezes with a tissue or cough and sneeze into your sleeve
- Stay at home if ill
- Seek medical attention if pertussis-like sytmptoms develop

DPH Georgia Department of Public Health

Have questions? **Talk with your Doctor.**

www.health.state.ga.us/pertussis/

POLIOMYELITIS FACT SHEET
(INFANTILE PARALYSIS, POLIO)

Agent: Poliovirus serotypes 1, 2, and 3.

Brief Description: Poliomyelitis is a highly contagious disease caused by three serotypes of poliovirus. Infection with poliovirus results in a spectrum of clinical manifestations from inapparent infection to nonspecific febrile illness, aseptic meningitis, paralytic disease, and death. Two phases of acute poliomyelitis can be distinguished: a nonspecific febrile illness (minor illness) followed, in a small proportion of patients, by aseptic meningitis and/or paralytic disease (major illness). The ratio of cases of inapparent infection to paralytic disease among susceptible individuals ranges from 100:1 to 1000:1 or more.

Reservoir: Humans

Mode of Transmission: Person-to-person spread of poliovirus via the fecal-oral route is the most important route of transmission, although the oral-oral route is possible.

Incubation Period: The incubation period for nonparalytic poliomyelitis is 3 to 6 days. For the onset of paralysis in paralytic poliomyelitis, the incubation period usually is 7 to 21 days.

Period of Communicability: Poliovirus is highly infectious, with seroconversion rates among susceptible household contacts of children nearly 100%, and greater than 90% among susceptible household contacts of adults. Persons infected with poliovirus are most infectious from 7 to 10 days before and after the onset of symptoms, but poliovirus may be present in the stool from 3 to 6 weeks.

Temporal Pattern: Poliovirus infection typically peaks in the summer months in temperate climates. There is no seasonal pattern in tropical climates.

Case definition:

A. Paralytic Poliomyelitis

<u>Probable:</u> Acute onset of flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss.

<u>Confirmed:</u> Acute onset of a flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss; AND in which the patient

- has a neurologic deficit 60 days after onset of initial symptoms, or
- has died, or
- has unknown follow-up status

Comment: All suspected cases of paralytic poliomyelitis are reviewed by a panel of expert consultants before final classification occurs. Confirmed cases are then further classified based on epidemiologic and laboratory criteria.

POLIOMYELITIS FACT SHEET
(INFANTILE PARALYSIS, POLIO)

B. Non-paralytic poliovirus infection

Confirmed: Any person without symptoms of paralytic poliomyelitis in whom a poliovirus isolate was identified in an appropriate clinical specimen, with confirmatory typing and sequencing performed by the CDC Poliovirus laboratory, as needed.

Laboratory Testing:

Case confirmation is based on a clinical definition. However, a probable case can be supported by laboratory information. Diagnosis is made by isolation of the organism from throat, stool, rectum, cerebrospinal fluid (CSF), or blood. The highest probability of isolation is achieved when two stool and throat specimens are obtained twenty-four hours apart. These should be sent to the Georgia Public Health Laboratory (GPHL) for primary isolation. The state laboratory will forward isolates to the Centers for Disease Control and Prevention (CDC) for Polymerase Chain Reaction (PCR) and antibody blocking testing to determine intratypic variation. This will determine whether a paralytic polio case is derived from wild-type or vaccine related virus.

- **Virus Isolation**

  The likelihood of poliovirus isolation is highest from stool specimens, intermediate from pharyngeal swabs, and low from blood or spinal fluid. Isolation of virus from the cerebrospinal fluid (CSF) is diagnostic but is rarely accomplished. Because virus shedding can be intermittent and to increase the probability of poliovirus isolation, at least two stool specimens and two throat swabs should be obtained 24 hours apart from patients with suspected poliomyelitis as early in the course of the disease as possible (i.e., immediately after poliomyelitis is considered as a possible differential diagnosis), and ideally within the first 14 days after onset of paralytic disease. Specimens should be sent to the Georgia Public Health Laboratory for primary isolation on appropriate cell lines.

  To increase the probability of poliovirus isolation, at least two stool specimens should be obtained 24 hours apart from patients with suspected poliomyelitis as early in the course of disease as possible (ideally within 14 days after onset).

  Isolation of wild poliovirus constitutes a public health emergency and appropriate control efforts must be initiated immediately (in consultation among health-care providers, the state and local health departments, and CDC).

- **Serologic Testing**

  Serology may be helpful in supporting the diagnosis of paralytic poliomyelitis. An acute serum specimen should be obtained as early in the course of disease as possible, and a convalescent specimen should be obtained at least three weeks later. A four-fold neutralizing antibody titer rise between the acute and convalescent specimens suggests poliovirus infection.

- **Cerebrospinal fluid (CSF) analysis**

POLIOMYELITIS FACT SHEET
(INFANTILE PARALYSIS, POLIO)

The cerebrospinal fluid usually contains an increased number of leukocytes—from 10 to 200 cells/mm3 (primarily lymphocytes) and a mildly elevated protein, from 40 to 50 mg/100 ml. These findings are nonspecific and may result from a variety of infectious and noninfectious conditions. Detection of poliovirus in CSF is very uncommon.

Diagnostic Testing:

*** To coordinate specimen collection and laboratory submission, call your District or County Health Department. Please do not send specimens directly to the Georgia Public Health Laboratory (GPHL) or the Centers for Disease Control and Prevention (CDC).**

A. Culture
1. Specimen Needed: Stool (≥ 1 g), throat or nasopharyngeal swab, rectal swab, CSF (2 ml)
2. GPHL Form: #3583
3. Lab Test Performed: Viral culture/identification for poliovirus (60040) and Virology CDC Sendout (60160)
4. Lab Performing Test: State Virology Laboratory, Georgia Public Health Laboratory (GPHL) in Decatur, followed by intratypic differentiation performed at the CDC.
5. Transport Requirements: Collect within 72 hours of onset of symptoms; freeze at -20ºC and ship on dry ice.
    a. Throat or nasopharyngeal swab should be placed in viral transport medium
    b. Do not dilute cerebrospinal fluid

Comment: Isolation of wild-type virus constitutes a public health emergency and appropriate control measures must be initiated immediately (in consultation between health care providers, state and local health departments, and CDC).

B. Serology
1. Specimen Needed: Acute and convalescent sera, or whole blood.
    a. Acute sera: 2-3 ml collected as soon as possible after onset of illness.
    b. Convalescent sera: 2-3 ml whole blood collected 14-21 days after acute phase of illness.
2. GPHL Form: #3583
3. Lab Test Performed: Neutralizing antibody titers to poliovirus serotype 1, 2, and 3.
4. Lab Performing Test: CDC with prior arrangement by the Georgia Public Health Laboratory. Do not submit specimens directly to CDC. All specimens must be submitted to the Georgia Public Health Laboratory.
5. Transport Requirements: Freeze at -20ºC and ship on dry ice

Vaccination: There are two types of polio vaccine: the Inactivated Polio Vaccine (IPV) and the Oral Polio Vaccine (OPV). IPV is given intramuscularly or subcutaneously, and OPV, a live attenuated virus, is given orally. Oral polio vaccine (OPV) is no longer routinely recommended in the United States because of the continued risk for vaccine-associated paralytic poliomyelitis (VAPP), the absence of indigenous disease, and the low risk for wild poliovirus importation into the United States. OPV is no longer available for routine vaccination in the U.S.

The Advisory Committee for Immunization Practices (ACIP) recommends a four-dose schedule of IPV for routine immunization of infants and children given at 2 months, 4 months, 6-18

POLIOMYELITIS FACT SHEET
(INFANTILE PARALYSIS, POLIO)

months, and 4-6 years of age. For more detailed vaccination information see Polio Vaccine Guidelines in Chapter 2 of this manual.

Most adults in the United States are at low risk for polio due to immunizations received in childhood. Certain adults are at high risk however, and should be vaccinated. These adults are:

1. Travelers to areas or countries where polio may be epidemic or endemic.
2. Members of communities with disease caused by wild-type polio.
3. Laboratory workers handling specimens that may contain wild-type polio.
4. Health-care personnel in close contact with patients who may be excreting wild-type polio.
5. Unvaccinated adults whose children will be receiving oral poliovirus vaccine.

Treatment: Supportive

Investigation: The State Epidemiology Section will give instructions regarding investigation when a case is reported by phone. The following information should be collected as part of the investigation:

1. Complete the Polio Case Report Form (http://www.cdc.gov/vaccines/pubs/surv-manual/appx/appendix14-2-polio-wrsht.pdf) Read the instructions carefully and complete as much of the form as possible. Do not leave any item blank. If information is not available, enter “none” or “NA”. The following should be collected during case investigations:
    - Demographic information
        a. name
        b. age
        c. sex
        d. race
        e. occupation
        f. address (county, city and zip code)
    - Reporting source
        a. county, district
        b. earliest date reported
        c. date case investigated started
    - Clinical details, including
        a. Date of onset of symptoms
        b. date of onset of paralysis
        c. symptoms
        d. complications
        e. hospitalization
        f. description of the illness progression
    - Outcome (case survived or died)
        a. Date of death
    - Laboratory information
        a. date of collection of specimens for serology testing
        b. serologic test results
        c. date of collection of specimen for virus isolation
        d. virus isolation test results
    - Immunization History

POLIOMYELITIS FACT SHEET
(INFANTILE PARALYSIS, POLIO)

a. number of doses of polio vaccine received
b. date(s) of polio vaccinations
c. vaccine type (i.e. combination vaccine)
d. manufacturer name
e. vaccine lot number
f. Information on the number, site and types of injections given at either the time of vaccination or within 30 days after vaccination
g. if not vaccinated, reason

- Exposure History
  a. History of recent travel of the patient or a close contact outside of the United States to an endemic or epidemic area for poliomyelitis.
  b. History of contact with any known cases of poliomyelitis and the date of contact, if applicable.
  c. History of receipt of OPV by the patient within 30 days prior to onset, including the date of receipt and the lot number of the vaccine.
  d. History of contact within 30 days prior to onset of symptoms with any person who received OPV within the last 60 days prior to onset, including the date of contact, the nature of the contact, the date the contact received OPV, the lot number of the vaccine, the age of the contact, and the relationship to the patient. Information regarding the contact's prior history of immunization with IPV should also be collected.

Reporting: Report all suspect, probable, and confirmed cases **IMMEDIATELY** by phone to the local health department, District Health Office, or the State Epidemiology Section at 404-657-2588. If calling after regular business hours, it is very important to report cases to the Epidemiology Section by calling 1-866-PUB-HLTH. After a verbal report has been made, please enter the case information into the State Electronic Notifiable Disease Surveillance System (SENDSS) at http://sendss.state.ga.us, or complete and mail a CDC Polio Worksheet found here http://www.cdc.gov/vaccines/pubs/surv-manual/appx/appendix14-2-polio-wrsht.pdf.

Reported Cases of Polio in Georgia, 2001-2016

Year	Number of Cases
2001	0
2002	0
2003	0
2004	0
2005	0
2006	0
2007	0
2008	0
2009	0
2010	0
2011	0
2012	0
2013	0
2014	0
2015	0

POLIOMYELITIS FACT SHEET
(INFANTILE PARALYSIS, POLIO)

2016	0

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2. CDC. Case Definitions for Infectious Conditions Under Public Health Surveillance. *MMWR* Vol. 46(RR10); 1997: 1-55.
3. Centers for Disease Control and Prevention. Manual for the surveillance of vaccine-preventable diseases. Centers for Disease Control and Prevention, Atlanta, GA, 2013.
4. Centers for Disease Control and Prevention. Poliomyelitis Prevention in the United States. Updated Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* Vol. 49(RR-5); 2000: 1-22.
5. CDC: Updated Recommendations of the ACIP Regarding Routine Poliovirus Vaccination. *MMWR* Vol. 58(30); 829-830.
6. Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Hamborsky J, Kroger A, Wolfe S, eds. 13th ed. Washington DC: Public Health Foundation, 2015:297-310.

Links:

- CDC National Center for Immunization and Respiratory Diseases - http://www.cdc.gov/vaccines/pubs/pinkbook/polio.html

POLIOMYELITIS QUESTIONS AND ANSWERS
(INFANTILE PARALYSIS, POLIO)

POLIOMYELITIS Q&A
(Infantile paralysis, Polio)

What is polio?

Polio is caused by a virus that lives in the intestinal tract and sometimes in the throat. Polio was eliminated from the United States in 1979. However, polio still exists in some developing countries.

What are the symptoms of polio?

Infection with poliovirus can range from inapparent to a severe paralytic disease that may result in death. Symptoms include fever, malaise, headache, nausea and vomiting, excruciating muscle pain and stiffness in the neck and back.

What health problems does polio cause?

Most people recover from polio without any problems. However, approximately 4 to 8 percent of those with polio develop health problems such as meningitis and less than 1 percent develop permanent paralysis.

How is polio diagnosed?

Polio can only be diagnosed with laboratory testing. Taking samples from the stool or throat are common ways to test for polio.

Who gets polio?

Anyone who has not been vaccinated can get the disease. However, polio is more common in infants and young children and occurs under conditions of poor hygiene. Though, paralysis is more common and more severe when infection occurs in older individuals. In exceedingly rare cases, oral polio vaccine can cause paralytic polio in a person who receives the vaccine (one in every 2.4 million doses).

How is polio spread?

The poliovirus is found in the stool and throat. It is spread through contact with the stool of an infected person (for instance, by changing diapers). Poliovirus must be swallowed to cause infection. This can happen when hands that are contaminated with stool are put in the mouth.

How soon after infection do symptoms appear?

The incubation period is usually 6 to 20 days, with a range of 3 to 35 days.

When and for how long is a person able to spread the poliovirus?

Patients are most infectious from 7 to 10 days before and after the onset of symptoms. However, patients are potentially contagious as long as the virus is present in the throat and

POLIOMYELITIS QUESTIONS AND ANSWERS
(INFANTILE PARALYSIS, POLIO)

feces. The virus persists in the throat for approximately one week after onset of illness and is excreted in feces for 3 to 6 weeks.

Does past infection with polio make a person immune?

There are three types of poliovirus. Lifelong immunity usually depends on which type of virus one is infected with. Second attacks are rare and result from infection with a poliovirus of a different type than the first attack.

What is the treatment for polio?

There is presently no treatment for polio. Treatment involves supportive care.

Is there a vaccine for polio?

Yes. The inactivated polio vaccine, or IPV, is very effective.

- Children usually receive three doses of IPV vaccine at 2, 4, and 6 months of age.
- Booster doses are given again at 4 to 6 years of age.
- In the United States, polio vaccination is generally unnecessary for person 18 years of age or older.
- In the case of travel to areas where polio disease exists, adults should receive a booster dose.
- In the rare case of an outbreak in a local area, previously vaccinated adults involved in the outbreak should receive a booster dose of polio vaccine. If they have never been vaccinated, a three-dose series of polio vaccine is recommended.

How can polio be prevented?

Maintaining high levels of polio immunization in the community is the single most effective preventive measure. Two types of polio vaccine are available: trivalent oral polio vaccine (OPV) and inactivated polio vaccine (IPV). However, in the United States IPV is the vaccine of choice and OPV is not readily available. Contact the Georgia Immunization Program at 404-657-3158 for current vaccine recommendations.

Where can I get additional information on polio?

Contact the Georgia Department of Public Health, State Epidemiology Section by calling 404 657-2588.

RUBELLA FACT SHEET
(German Measles)

Agent: Rubella virus.

Brief Description: Rubella is a viral illness caused by a togavirus of the genus *Rubivirus* and is characterized by a mild, maculopapular rash. The rubella rash occurs in 50%-80% of rubella-infected persons and is sometimes misdiagnosed as measles or scarlet fever. Children usually develop few or no constitutional symptoms, but adults may experience a 1-5-day prodrome of low-grade fever, headache, malaise, mild coryza, and conjunctivitis. Postauricular, occipital and posterior cervical lymphadenopathy is characteristic and precedes the rash by 5-10 days. Arthralgia or arthritis may occur in up to 70% of adult women with rubella. Rare complications include thrombocytopenic purpura and encephalitis. Rubella is transmitted through direct or droplet contact from nasopharyngeal secretions and has an average incubation period of 17 days (range: 12-23 days). Persons with rubella are most infectious when rash is erupting, but they can shed virus from 7 days before to 7 days after rash onset.

When rubella infection occurs during pregnancy, especially during the first trimester, serious consequences can result. These include miscarriages, fetal deaths/stillbirths, and a constellation of severe birth defects known as congenital rubella syndrome (CRS). The most common congenital defects are cataracts, heart defects and hearing impairment.

Reservoir: Humans.

Mode of Transmission: Contact with nasopharyngeal secretions of infected persons. Infection is transmitted by droplet spread or direct contact with patients. Infants with congenital rubella syndrome shed large quantities of virus from body secretions for up to one year, and can therefore serve as a source of infection for susceptible persons caring for them. Rubella may also be transmitted by sub-clinical cases (approximately 30% to 50% of all rubella infections).

Incubation Period: 14 days, (range 12-23 days)

Period of Communicability: Rubella is moderately contagious. The disease is most contagious as the rash is erupting, but can be transmitted about 1 week before to 5-7 days or more after onset of rash. Infected children should be excluded from school until 7 days after rash onset.

Temporal Pattern: In temperate areas, incidence is usually highest in late winter and early spring.

Case Classification:

- **Suspected:** Any generalized rash illness of acute onset that does not meet the criteria for probable or confirmed rubella or any other illness.

- **Probable:** In the absence of a more likely diagnosis, an illness characterized by all of the following:

  - acute onset of generalized maculopapular rash; and
  - temperature ≥ 99.0ºF or 37.2ºC, if measured; and
  - arthralgia, arthritis, lymphadenopathy, or conjunctivitis; and
  - lack of epidemiologic linkage to a laboratory-confirmed case of rubella; and

RUBELLA FACT SHEET (German Measles)

- noncontributory or no serologic or virologic testing

- **Confirmed**: A case with or without symptoms who has laboratory evidence of rubella infection confirmed by one or more of the following:
  - isolation of rubella virus; or
  - detection of rubella-virus specific nucleic acid by polymerase chain reaction; or
  - significant rise between acute-and convalescent-phase titers in serum rubella immunoglobulin G antibody level by any standard serologic assay; or
  - positive serologic test for rubella immunoglobulin M (IgM) antibody,*†

  OR

  An illness characterized by all of the following:

  - acute onset of generalized maculopapular rash; and
  - temperature ≥ 99.0ºF or 37.2ºC; and
  - arthralgia, arthritis, lymphadenopathy, or conjunctivitis; and
  - epidemiologic linkage to a laboratory-confirmed case of rubella.

* Not explained by MMR vaccination during the previous 6-45 days.

† Not otherwise ruled out by more specific testing in a public health laboratory.

Lab testing:
Clinical diagnosis of rubella is unreliable, therefore, cases must be laboratory confirmed. Virus detection and serologic testing can be used to confirm acute or recent rubella infection.

- **Virus detection (RT-PCR)**

  Rubella virus can be detected from nasal, throat, urine, blood, and cerebrospinal fluid specimens from persons with rubella. The best results come from throat swabs. Cerebrospinal fluid specimens should be reserved for persons with suspected rubella encephalitis. Efforts should be made to obtain clinical specimens for virus detection from all case-patients at the time of the initial investigation. Virus may be detected from 1 week before to 2 weeks after rash onset. However, maximum viral shedding occurs up to day 4 after rash onset.

- **Serologic testing**

  The serologic tests available for laboratory confirmation of rubella infections and immunity vary among laboratories. Enzyme immunoassays (EIA) are the most commonly used and widely available diagnostic test for rubella IgG and IgM antibodies and are sensitive and relatively easy to perform. EIA is the preferred testing method for IgM, using the capture technique, although indirect assays are also acceptable.

  Latex agglutination (LA) tests appear to be sensitive and specific for screening when performed by experienced laboratory personnel. Other tests in limited use to detect

rubella-specific IgM include hemagglutination inhibition (HI) and immunofluorescent antibody (IFA) assay.

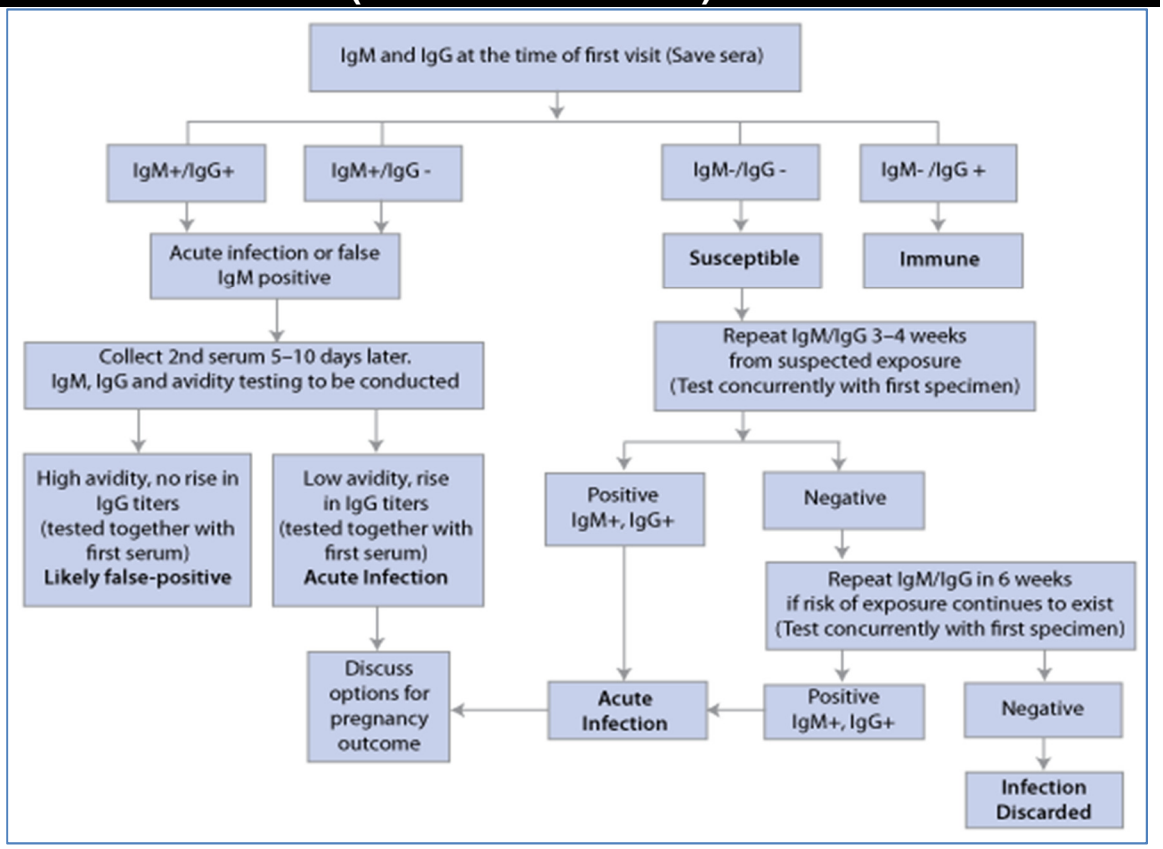
- **Detection of IgM antibody**

  Rubella-specific IgM can usually be detected 4-30 days after onset of illness, and often for longer. Sera should be collected as early as possible after onset of illness. However, IgM antibodies may not be detectable before day 5 after rash onset. In case of a rubella IgM-negative result in specimens taken before day 5, serologic testing should be repeated on a specimen collected after day 5.

  Because rubella incidence is low, a high proportion of IgM-positive tests will likely be false positive. False-positive serum rubella IgM tests may occur due to the presence of rheumatoid factors (indicating rheumatologic disease) or cross-reacting IgM, or infection with other viruses. Avidity testing (see below) and detection of wild-type rubella virus can be used to resolve uncertainties in the serologic evaluation of suspected cases.

  Particular care should be taken when rubella IgM is detected in a pregnant woman with no history of illness or contact with a rubella-like illness. Although this is not recommended, many pregnant women with no known exposure to rubella are tested for rubella IgM as part of their prenatal care. If rubella test results are IgM-positive for persons who have no or low risk of exposure to rubella, additional laboratory evaluation should be conducted. Laboratory evaluation is similar to that described in the IgM-positive section below.

RUBELLA FACT SHEET
(German Measles)



- **Detection of IgG antibody (significant rise or avidity) for diagnostic testing**

  To detect a significant rise in rubella-specific IgG concentration, the first serum should be obtained as soon as possible after onset of illness and the second serum sample should be collected about 7-21 days after the first specimen. In most rubella cases, rubella IgG is detectable by 8 days after rash onset. Tests for IgG antibody should be conducted on both acute-and convalescent-phase specimens at the same time with the same test.

  Assays for IgG avidity are useful to distinguish the difference between recent and past rubella infections. Low avidity is associated with recent primary rubella infection, whereas high avidity is associated with past infection or reinfection. Avidity tests are not routine tests and should be performed in reference laboratories.

- **Detection of IgG antibody to screen for rubella immunity**

  A single serologic IgG test may be used to determine the rubella immune status of persons whose history of rubella disease or vaccination is unknown. The presence of serum IgG rubella-specific antibodies indicates immunity to rubella.

RUBELLA FACT SHEET (German Measles)

Diagnostic Testing:

***Rubella PCR and serologic testing at the Georgia Public Health Laboratory and/or CDC is available by special arrangement only. To receive pre-approval and make arrangements for either rubella PCR or serologic testing, the District Health office or Georgia Department of Public Health must be contacted at 404-657-2588 or 1-866-PUB-HLTH after business hours.**

A. Virus Detection (RT-PCR)

The type and number of specimens sent varies for each case based on rash onset and suspicion level.

- On day 0-5 of rash, collect a throat swab*
- On day 6-9 of rash, collect a throat swab and a urine specimen**

*If a throat swab cannot be collected, a nasal specimen can be sent instead; however, a throat swab is the preferred specimen for rubella PCR testing. If case is clinically compatible and reports an exposure to rubella or has had recent travel, attempt collection of all three specimens (throat, nasal and urine).

**If date of specimen collection is already more than nine days past rash onset, PCR is less likely to detect viral presence and may give false negative results.

1. Specimen: Throat, nasopharyngeal and/or urine
   - Polyester, rayon or nylon swabs should be used (**Cotton-tipped or calcium alignate swabs are not acceptable**)
2. Lab Form: GPHL Form found here https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf
   - On the GPHL Form under "Molecular Biology" check the box labeled 4990100: Refer to CDC and specify rubella RT-PCR.
3. Transport requirements: The swabs should be placed in viral transport media (VTM) and shipped overnight with ice packs.

B. Serologic Testing
1. Specimen: Serum in a purple topped tube.
2. Lab Form: GPHL Form found here https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf
   - On the GPHL Form under "Immunology" check the boxes labeled 1510 Rubella IgG; 1515 Rubella IgM; 1520 Rubeola IgG; 1525 Rubeola IgM; and 1570 Forward to CDC and specify Rubella Avidity Testing.
3. Transport requirements: Serum should be shipped overnight with ice packs. **Do not freeze serum samples**.

Vaccination: Children should receive rubella vaccine at 12-15 months of age, and 4-6 years of age. It is usually given combined with measles and mumps vaccine as MMR or MMRV. Adults

RUBELLA FACT SHEET (German Measles)

born in 1957 or later should receive at least one dose of MMR vaccine unless they have documentation of vaccination with at least one MMR, or other acceptable evidence (laboratory results) of immunity to measles, mumps, and rubella. Efforts should be made to identify and vaccinate susceptible adolescents and adults, particularly women of childbearing age who are not pregnant. Women who are pregnant or who plan to become pregnant within one month should not receive the vaccine, due to the theoretical risk for causing birth defects in the developing fetus. Emphasize vaccinating susceptible males and females in colleges, employment and health care settings. For more detailed vaccination information, see Measles, Mumps, and Rubella Vaccine Guidelines in Chapter 2 of this manual.

Post-exposure Prophylaxis: Live attenuated vaccine given after exposure **has not** been demonstrated to prevent illness. However, non-pregnant people exposed to rubella may still theoretically benefit from the vaccine if given up to three days after exposure. Immunization of a person who is incubating natural rubella or who already is immune is not associated with increased risk of adverse effects. The risk of congenital rubella when a pregnant woman is exposed is significant. Exposed pregnant women **should not** be given live virus vaccine. An intramuscular dose of 20 ml of immune globulin (IG) may decrease clinically apparent infection, but no studies show that such a dose protects the fetus. It should only be used in cases where therapeutic abortion is not an option.

Treatment: None.

Investigation:

Measles and rubella must be ruled out whenever illness involving fever and rash are reported. The investigation must be started immediately when a potential case is identified. Essential components of the case investigation include the following:

a. Obtain a detailed history of illness progression and a rash description
b. Obtain a detailed travel history
c. Establish a diagnosis by obtaining laboratory specimens for serology and viral isolation as early as possible **(consult with GDPH regarding the case before collecting and submitting specimens)**
d. Obtain an accurate and complete immunization history.
e. Identify the source of infection and transmission setting.
f. Assess potential transmission and identify contacts.
g. For symptomatic contacts, obtain specimens for serology, virus isolation and PCR if rubella is suspected.

Initial response to the report of suspected rubella:

1. Call the State Epidemiology Section (404) 657-2588 **IMMEDIATELY**. If after business hours, report suspect case to 1-866- PUB-HLTH.
2. Contact the parent(s) or guardian and reporting physician immediately to obtain a detailed clinical and exposure history of the patient.
    - Ask parent(s) about any out-of-town travel or visitors during the 7-21 days prior to rash onset.
    - Identify any person(s) or group(s) exposed by the patient 4 days before to 4 days after rash onset.

RUBELLA FACT SHEET
(German Measles)

3. Complete the Rubella Case Report Form (Read the instructions carefully and complete as much of the form as possible. Do not leave any item blank. If information is not available, enter "none" or "NA".) The following should be collected during case investigations:
    - Demographic information
    - Reporting source
        a. county, district
        b. earliest date reported
        c. date case investigated started
    - Clinical details, including
        a. Date of onset of symptoms
        b. date of rash onset
        c. rash duration and presentation
        d. symptoms
        e. complications
        f. hospitalization
    - Outcome (case survived or died)
        a. Date of death
    - Laboratory information
        a. date of collection of specimens for serology testing
        b. serologic test results
        c. date of collection of specimen for virus isolation
        d. virus isolation test results
    - Vaccination status
        a. number of doses of rubella vaccine received
        b. date(s) of rubella vaccinations
        c. manufacturer name
        d. vaccine lot number
        e. if not vaccinated, reason
    - Epidemiologic
        a. transmission setting
        b. source of infection (e.g., age, vaccination status, relationship to case-patient, country/state of residence, laboratory testing, onset dates, etc.)
        c. source of exposure (contact with probable or confirmed case, or contact with immigrants or travelers)
        d. import status (international import, indigenous, out-of-state import, linked or traced to an international importation)
        e. residency (does the patient reside in the U.S.)
        f. travel history
        g. setting (i.e., is case part of an outbreak or is it a sporadic case)

Fax the completed worksheet and any pertinent lab results to the State Epidemiology Section (404) 657-2608. **Do not wait for laboratory confirmation to fax the report.**

Outbreak Investigation:

Strategies to control rubella outbreaks include defining at-risk populations, ensuring susceptibles are rapidly vaccinated, and maintaining active surveillance for new cases.

RUBELLA FACT SHEET
(German Measles)

Outbreak control measures should be implemented immediately when **one case of rubella is confirmed** in a community.

Reporting: Report all suspect, probable, and confirmed cases **IMMEDIATELY** by phone to the local health department, District Health Office, or the State Epidemiology Section at 404-657-2588. If calling after regular business hours, it is very important to report cases to the Epidemiology Section by calling 1-866-PUB-HLTH. After a verbal report has been made, please enter the case information into the State Electronic Notifiable Disease Surveillance System (SENDSS) at http://sendss.state.ga.us, or complete and mail the Rubella Case Report Form.

Reported Cases of Rubella in Georgia, 2001-2016

Year	Number of Cases
2001	1
2002	0
2003	0
2004	1
2005	0
2006	0
2007	0
2008	0
2009	0
2010	0
2011	0
2012	0
2013	0
2014	0
2015	0
2016	0

References:

1. American Academy of Pediatrics. Rubella. In: Pickering, LK, Baker CJ, Kimberlin DW, Long SS, eds. 2009 Red Book: Report of the Committee on Infectious Diseases. Elk Grove Village, IL: American Academy of Pediatrics; 2012: 629-634.
2. CDC. Case Definitions for Infectious Conditions Under Public Health Surveillance. *MMWR* Vol. 46(RR10), 1997: 1-55.
3. Centers for Disease Control and Prevention. Rubella. Manual for the surveillance of vaccine-preventable diseases. Centers for Disease Control and Prevention, Atlanta, GA, 2012.

Links:

- CDC's Epidemiology and Prevention of Vaccine-Preventable Diseases – http://www.cdc.gov/vaccines/pubs/pinkbook/rubella.html

RUBELLA QUESTIONS & ANSWERS (German Measles)

RUBELLA Q&A
(German measles)

What is rubella?

Rubella, also called German measles, is a rash illness caused by a virus.

What are the symptoms of rubella?

Symptoms of rubella include a rash, low-grade fever, cough, and swollen glands behind the ears and in the neck. The rash generally appears first on the face and moves from head to foot. The rash usually lasts for 3 days. Rubella symptoms can include joint pain — especially among adult females. Up to half of all persons infected with rubella do not have symptoms.

What health problems does rubella cause?

Most healthy children and adult males recover from rubella without any problems. However, many adults with rubella — especially women — get sore or swollen joints. This joint pain usually lasts for less than one month. Having joint pain longer than that is rare.

If a pregnant woman who is not immune to rubella is infected with rubella before the 21st week of her pregnancy, the baby may develop congenital rubella syndrome, which can cause serious health problems. Often these include: stillbirth, miscarriage, premature delivery, deafness, mental retardation, bone changes, and liver and spleen damage. Some of these problems are noticed at birth or within the first 2 years of life. Others, such as diabetes, may occur later in childhood. The good news is that congenital rubella syndrome is now rare in the United States due to widespread use of rubella vaccine.

How is rubella diagnosed?

Because rubella looks like many other rash illnesses, it can only be diagnosed with laboratory testing. Taking samples of blood, urine, or fluid from the nose and throat are common ways to test for rubella.

Who gets rubella?

Anyone who has not been vaccinated or has not had rubella can get the disease. Because there are people throughout the world and in the United States that are not vaccinated, it is possible that infected travelers can carry rubella to non-vaccinated people

Is there a vaccine for rubella?

Yes. The rubella vaccination is usually combined with measles and mumps (MMR).

RUBELLA QUESTIONS & ANSWERS (German Measles)

- Children should receive MMR shots at 12 to 15 months of age. (They should have a second dose of the MMR vaccine at 4 to 6 years of age to be fully protected against rubella.)
- All adults who have not had rubella or a rubella shot should receive an MMR vaccination.
- All non-pregnant women of childbearing age should receive rubella vaccine if they are not already immune. This will protect future children from the risk and severe consequences of congenital rubella syndrome.
- Pregnant women who do not have immunity should be vaccinated after their baby is born.

How is rubella spread?

The virus is found in fluids from the mouth and nose of someone with rubella. The virus is spread when fluid containing the virus gets in your nose, mouth, or eyes. This can happen when a person with rubella coughs or sneezes near you, or by touching the fluid and then touching your eyes, nose, or mouth.

The period between exposure to the virus and onset of illness is usually 16 to 18 days, but can range from 14 to 21 days.

When and for how long is a person able to spread rubella?

A person with rubella can spread the virus to others during the period from 7 days before until 7 days after the rash appears.

What can be done to prevent the spread of rubella?

Vaccination is the best way to prevent the spread of rubella. Widespread immunization against rubella is critical to controlling the spread of the disease and preventing birth defects caused by congenital rubella syndrome. In addition everyone should:

- Avoid close contact with others who are ill
- Wash their hands often
- Stay at home if ill

STREPTOCOCCUS PNEUMONIAE FACT SHEET
(Invasive Disease, Reported Syndrome and Susceptibility Information)

Agent: *Streptococcus pneumoniae* (Pneumococcus)

Brief Description: *Streptococcus pneumoniae* causes many clinical syndromes, depending on the site of infection (e.g., acute otitis media, pneumonia, bacteremia, or meningitis). Pneumococci may be resistant to one or several antibiotics, including penicillin, doxycycline, erythromycin, azithromycin, trimethoprim-sulfamethoxazole, and cephalosporins. Invasive disease caused *S. pneumoniae* is notifiable with microbial susceptibility information requested.

Reservoir: Humans. The pneumococcus asymptomatically colonizes the nasopharynx of 5-40% of healthy people.

Mode of Transmission: By droplet spread, direct oral contact, or through contact with articles freshly soiled with respiratory discharges. Person-to-person transmission of the organism is common, but illness among casual contacts and attendants is infrequent. Infection can also occur from auto-inoculation among previously asymptomatic carriers. Disease results when the organism multiplies locally (e.g., otitis media), multiplies after aspiration (pneumonia) or invades a sterile site (e.g., central nervous system or bloodstream).

Incubation Period: Variable. For pneumococcal pneumonia, approximately 1 to 3 days.

Laboratory Criteria for Diagnosis:
For invasive disease:

- Isolation of *S. pneumoniae* from a normally sterile site (e.g., blood, cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid)

Case Classification:

- Suspect: Any reported case lacking confirmation of isolation of *Streptococcus pneumoniae* from a normally sterile body site.
- Confirmed: Isolation of *Streptococcus pneumoniae* from a normally sterile body site in a person of any age.

Period of Communicability: The period of communicability for pneumococcal disease is unknown, but presumably transmission can occur as long as the organism appears in respiratory secretions.
Vaccine: The polyvalent pneumococcal polysaccharide vaccine (PPSV23) is recommended for all adults over age 65 and any individuals 2 years of age or older with chronic medical conditions that place them at high risk for pneumococcal disease. PPSV is not effective in children under age 2. The 13-valent pneumococcal conjugate vaccine (PCV13) was licensed for use in February 2010 and is recommended for infants and young children up to five years of age, all adults age 65 and older, and people between ages 6 and 64 with certain underlying medical conditions. PPV23, PCV7, and PCV13 provide protection against commonly resistant pneumococcal strains. For more detailed vaccination information, see Pneumococcal Vaccine Guidelines in Chapter 2 of this manual.

Treatment: Sensitivities of strains isolated from normally sterile sites should be determined because of the prevalence of drug-resistant pneumococci. Where diagnostic facilities are limited and delay in treatment could prove fatal, antibiotic treatment should be started presumptively based on clinical signs.

STREPTOCOCCUS PNEUMONIAE FACT SHEET
(Invasive Disease, Reported Syndrome and Susceptibility Information)

Reporting: Report all confirmed cases of invasive *Streptococcus pneumoniae* WITHIN 7 DAYS electronically though the State Electronic Notifiable Disease Surveillance System (SENDSS) at http://sendss.state.ga.us. Please be sure to complete all data fields. Antibiotic susceptibilities are also reportable though SendSS for *S. pneumoniae*.

References and Further Reading:

1. Use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine Among Adults Aged ≥65 Years: Recommendations of the Advisory Committee on Immunization Practices (ACIP)*MMWR* 2014 63(47): 822-825http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6337a4.htm
2. Outbreaks of Pneumococcal Pneumonia Among Unvaccinated Residents in Chronic-Care Facilities—Massachusetts, October 1995, Oklahoma, February 1996, and Maryland, May-June 1996. *MMWR* 1997; 46(03): 60-62.
3. Heymann, ed. Pneumonia. In: Control of Communicable Diseases Manual. 19th ed. Washington, DC: American Public Health Association, 2008:
4. Effects of New Penicillin Susceptibility Breakpoints for Streptococcus pneumoniae --- United States, 2006—2007. MMWR 2008 / 57(50);1353-1355 Mandell, Bennett, and Dolin. The Principles and Practice of Infectious Diseases. 5th Ed., Philadelphia, PA, 2000:pp. 2128-2147.

Links:

- CDC *Streptococcus pneumoniae* Fact Sheet – http://www.cdc.gov/pneumococcal/clinicians/clinical-features.html
- CDC Antimicrobial Resistance Web Site – http://www.cdc.gov/drugresistance/
- Alliance for the Prudent Use of Antibiotics --- http://www.tufts.edu/med/apua/
- Vaccine Information Statement – Pneumococcal Conjugate Vaccine – http://www.cdc.gov/vaccines/hcp/vis/vis-statements/pcv13.html

STREPTOCOCCUS PNEUMONIAE FACT SHEET
(Invasive Disease, Reported Syndrome and Susceptibility Information)

STREPTOCOCCUS PNEUMONIAE Q&A
(Pneumococcal disease)

What is invasive *Streptococcus pneumoniae*?
Streptococcus pneumoniae (also called pneumococcus) is a bacterium that frequently causes pneumonia (lung infection), otitis media (ear infection), bloodstream infection, and meningitis. Invasive *S. pneumoniae* infections affect body sites that normally contain no bacteria at all, such as blood, spinal fluid, joint, pleural, or pericardial fluid.

Who gets pneumococcal infections?
Pneumococcal disease is most common at the extremes of age. Infections are also more common and severe in people with weakened immune systems such as persons undergoing chemotherapy or with HIV infection, or people with chronic diseases such as sickle cell disease, diabetes, chronic lung disease, or congestive heart failure. Blacks, American Indians and Alaska Natives are also at higher risk.

What are the symptoms of a pneumococcal infection?
Symptoms of pneumococcal pneumonia include abrupt onset of fever, shaking chills, chest pain, productive cough, shortness of breath, and weakness. Signs of pneumococcal meningitis include headache, drowsiness, vomiting, irritability, fever, stiff neck, and seizures. Ear infection can cause fever and ear pain or discharge.

How soon do symptoms appear?
Symptoms of infections caused by pneumococcus take a minimum of 1 to 3 days to develop after exposure.

When and for how long is a person able to spread *S. pneumoniae*?
A person can spread the organism as long as the pneumococci are present in the discharges from the nose and mouth. Illness among casual contacts of a person with pneumococcal disease is infrequent.

How can pneumococcal disease be prevented?
Two pneumococcal vaccines are available. PPSV23 protects against infections caused by common strains of *S. pneumoniae*. It is recommended for everyone age 65 and olde, and for people age 2 years and older with underlying health conditions making them more susceptible to *S. pneumoniae* infections. The other pneumococcal vaccine, PCV13, prevents disease in infants and young children but is also recommended in people age 65 and older and people between age 6-64 with certain health conditions. .

What is drug-resistant *Streptococcus pneumoniae*?
Drug-resistant *Streptococcus pneumoniae* (DRSP) are strains of the common bacterium *S. pneumoniae* (also called pneumococcus) that have become resistant to a variety of antibiotics. Some strains are resistant to only one antibiotic, while other strains are resistant to many antibiotics, making infection with these strains more difficult to treat.

How common is DRSP?

STREPTOCOCCUS PNEUMONIAE FACT SHEET
(Invasive Disease, Reported Syndrome and Susceptibility Information)

Surveillance studies by the Centers for Disease Control and Prevention have shown that in the U.S., DRSP strains have been increasing in frequency since 1987. In some communities, 30% of *S. pneumoniae* isolates are resistant to at least one drug, and strains causing infections may be resistant to several antibiotics. DRSP strains in Georgia are more common than in many other parts of the U.S.

What caused these strains of bacteria to become resistant to antibiotics?
Many experts believe that overuse of antibiotics contributes to the development of DRSP strains. Antibiotics are sometimes used to treat infections caused by viruses (such as colds and bronchitis), which are not killed by antibiotics. Once DRSP is in the community, use of antibiotics may “select” the resistant strains for survival.

Where can I get additional information on pneumococcal disease?
Contact the Georgia Division of Public Health, Epidemiology Section by phone at 404 657-2588. The following web sites may also be useful:

- http://www.cdc.gov/pneumococcal/clinicians/clinical-features.htmlCDC Antimicrobial Resistance Web Site – http://www.cdc.gov/drugresistance/

TETANUS FACT SHEET
(LockJaw)

Agent: The bacterium, *Clostridium tetani*.

Brief Description: Tetanus is an acute, potentially fatal disease that is characterized by generalized increased rigidity and convulsive spasms of skeletal muscles. Tetanus is caused by the spore-forming bacterium Clostridium tetani. C. tetani spores (the dormant form of the organism) are found in soil and in animal and human feces. The spores enter the body through breaks in the skin, and germinate under low-oxygen conditions. Puncture wounds and wounds with a significant amount of tissue injury are more likely to promote germination. The organisms produce a potent toxin tetanospasmin which is absorbed into the bloodstream. The toxin then reaches the nervous system, causing painful and often violent muscular contractions. The muscle stiffness usually first involves the jaw (lockjaw) and neck, and later becomes generalized. Tetanus is a noncommunicable disease—it is not transmitted from one person to another.

Reservoir: Intestines of humans, as well as the intestines of horses and other animals, in which the organism is a normal inhabitant. Tetanus spores are ubiquitous in the environment and can contaminate wounds of all types. Soil or fomites contaminated with animal and human feces can also be reservoirs.

Mode of Transmission: Tetanus spores are introduced into the body through: (1) puncture wounds; (2) lacerations, burns, trivial or unnoticed wounds in which fecally-contaminated soil containing C. tetani spores penetrates body tissues; or (3) by injected contaminated street drugs.

Incubation Period: The incubation period ranges from 3 to 21 days, usually about 8 days. In general the further the injury site is from the central nervous system, the longer is the incubation period. Shorter incubation periods are associated with a higher chance of death. In neonatal tetanus, symptoms usually appear from 4 to 14 days after birth, averaging about 7 days.

Period of Communicability: Tetanus is not transmitted from person to person. It is the only vaccine-preventable disease that is infectious but not contagious.

Clinical Case Definition: In the absence of a more likely diagnosis, an acute illness with muscle spasms or hypertonia and diagnosis of tetanus by a health care provider; or death, with tetanus listed on the death certificate as the cause of death or a significant condition contributing to death.

Case Classification:

- **Probable:** A clinically compatible case, as reported by a healthcare professional.

There is no definition for confirmed tetanus.

Laboratory Criteria for Diagnosis: There is no diagnostic laboratory test for tetanus; the diagnosis is entirely clinical. C. tetani is recovered from wounds in only about 30% of cases, and the organism is sometimes isolated from patients who do not have tetanus. Serologic results obtained before TIG is administered can support susceptibility if they demonstrate very low or undetectable anti-tetanus antibody levels. However, tetanus can occur in the presence of “protective” levels of antitoxin (>0.1 IU by standard ELISA); therefore, serology cannot exclude the diagnosis of tetanus.

Diagnostic Testing: Not indicated.

TETANUS FACT SHEET
(LockJaw)

Vaccination: Primary tetanus immunization with diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP) is recommended for all persons at least 6 weeks old, but < 7 years of age, for whom the vaccine is not contraindicated. For those with allergies to pertussis vaccine, a diphtheria and tetanus toxoid vaccine is available (DT). The primary vaccination consists of a three-dose series, administered at ages 2, 4, and 6 months. The fourth dose (first booster) is recommended at 15-18 months of age to maintain adequate immunity during preschool years. The fifth dose (second booster) is recommended for children aged 4-6 years to confer continued protection against disease during the early years of schooling. Routine tetanus booster immunization, with tetanus toxoid usually combined with adult-diphtheria toxoid (Td), is recommended for all persons ≥ 7 years of age every 10 years. Persons aged 10-64 years may get a one-time dose of Tdap (tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis) in lieu of one booster dose of Td. For more detailed vaccination information, see Diphtheria, Tetanus, and Pertussis Vaccine Guidelines in Chapter 2 of this manual.

Medical Management: All wounds should be cleaned. Necrotic tissue and foreign material should be removed. If tetanic spasms are occurring, supportive therapy and maintenance of an adequate airway are critical.

Tetanus immune globulin (TIG) is recommended for persons with tetanus. TIG can only help remove unbound tetanus toxin. It cannot affect toxin bound to nerve endings. A single intramuscular dose of 500 units is generally recommended for children and adults, with part of the dose infiltrated around the wound if it can be identified. Intravenous immune globulin (IVIG) contains tetanus antitoxin and may be used if TIG is not available.

Because of the extreme potency of the toxin, tetanus disease does not result in tetanus immunity. Active immunization with tetanus toxoid should begin or continue as soon as the person's condition has stabilized.

Wound Management: Antibiotic prophylaxis against tetanus is neither practical nor useful in managing wounds; proper immunization plays the more important role. The need for active immunization, with or without passive immunization, depends on the condition of the wound and the patient's immunization history (see MMWR 2006; 55 [RR-17] for details). Rarely have cases of tetanus occurred in persons with a documented primary series of tetanus toxoid.

Persons with wounds that are neither clean nor minor, and who have had fewer than 3 prior doses of tetanus toxoid or have an unknown history of prior doses should receive TIG as well as Td or Tdap. This is because early doses of toxoid may not induce immunity, but only prime the immune system. The TIG provides temporary immunity by directly providing antitoxin. This ensures that protective levels of antitoxin are achieved even if an immune response has not yet occurred.

History of adsorbed tetanus toxoid (doses)	Clean minor wounds Tdap or Td†	Clean minor wounds TIG§	All other wounds* Tdap or Td†	All other wounds* TIG§
less than 3 or unknown	Yes	No	Yes	Yes
3 or more doses¶	No**	No	No††	No

* Such as (but not limited to) wounds contaminated with dirt, feces, soil, and saliva; puncture wounds; avulsions; and wounds resulting from missiles, crushing, burns, and frostbite.

† For children younger than 7 years of age, DTaP is recommended; if pertussis vaccine is contraindicated, DT is given. For persons 7-9 years of age, Td is recommended. For persons >10 years, Tdap is preferred to Td if the patient has never received Tdap and

TETANUS FACT SHEET
(LockJaw)

has no contraindication to pertussis vaccine. For persons 7 years of age or older, if Tdap is not available or not indicated because of age, Td is preferred to TT.
§ TIG is human tetanus immune globulin. Equine tetanus antitoxin should be used when TIG is not available.
¶ If only three doses of fluid toxoid have been received, a fourth dose of toxoid, preferably an adsorbed toxoid, should be given. Although licensed, fluid tetanus toxoid is rarely used.
** Yes, if it has been 10 years or longer since the last dose.
†† Yes, if it has been 5 years or longer since the last dose. More frequent boosters are not needed and can accentuate side effects.

Investigation: The Tetanus Surveillance Worksheet may be used as a guideline. The investigation should include identification of age at onset, the circumstances of any previous injury, tetanus toxoid vaccination history, and determination of the patient's status (alive, dead) at one-month after onset of disease.

Reporting: Report all suspect, probable, and confirmed cases **IMMEDIATELY** by phone to the local health department, District Health Office, or the State Epidemiology Section at 404-657-2588. If calling after regular business hours, it is very important to report cases to the Epidemiology Section by calling 1-866-PUB-HLTH. After a verbal report has been made, please enter the case information into the State Electronic Notifiable Disease Surveillance System (SENDSS) at http://sendss.state.ga.us, or complete and mail a CDC Tetanus Worksheet found here http://www.cdc.gov/vaccines/pubs/surv-manual/appx/appendix18-2-tet-wrsht.pdf.

Reported Cases of Tetanus in Georgia, 2001-2016

Year	Number of Cases
2001	0
2002	0
2003	0
2004	2
2005	0
2006	0
2007	2
2008	0
2009	0
2010	0
2011	0
2012	0
2013	0
2014	0
2015	0
2016	0

References:

1. American Academy of Pediatrics. Tetanus. In: Pickering, LK, Baker CJ, Kimberlin DW, Long SS, eds. 2012 Red Book: Report of the Committee on Infectious Diseases. Elk Grove Village, IL: American Academy of Pediatrics; 2012: 707-712.
2. Case Definitions for Infectious Conditions under Public Health Surveillance. *MMWR* 1997; 46(No. RR-10): 39-40.
3. Tetanus among injecting drug users – California, 1997. *MMWR* 1998; 47(08): 149-151.

TETANUS FACT SHEET
(LockJaw)

4. Centers for Disease Control and Prevention. Tetanus. Manual for the surveillance of vaccine-preventable diseases. Centers for Disease Control and Prevention, Atlanta, GA, 2011.
5. Tetanus Surveillance – United States, 2001-2008. MMWR, April 1, 2011, vol 60(12)365-9.

CHICKENPOX (VARICELLA) FACT SHEET

Agent
Varicella-Zoster Virus (VZV)

Brief Description
Primary varicella infection, or chickenpox, is a viral illness characterized by a generalized maculopapulovesicular rash typically consisting of lesions in varying stages of development and resolution (crusting). Symptoms include itchiness, low-grade fever, and general malaise. Disease severity and complications are increased among immunocompromised persons, infants, pregnant women, and adults. Breakthrough varicella is a case of chickenpox that occurs more than 42 days after an individual is vaccinated with varicella vaccine; this disease is usually mild and may present atypically. The virus that causes chickenpox can reactivate later in life to cause herpes zoster, or shingles. Though chickenpox used to be fairly common in the US, with about 4 million cases per year, including 100-150 deaths a year, incidence of chickenpox has decreased markedly since the introduction of the varicella vaccine in the mid-1990s.

Course of Illness
Chickenpox may begin with prodromal symptoms, including fever and malaise, 1-2 days before a rash develops. The rash typically consists of successive crops of lesions that appear over several days, with lesions at different stages of development. Healthy children commonly have 50-500 lesions in 2 - 4 successive crops. The rash usually resolves within 5 - 6 days, when all lesions have crusted over or disappeared. This period may be longer in immunocompromised people.

Complications
- Secondary bacterial skin infections
- Pneumonia
- Central nervous system manifestations:
    - Encephalitis, cerebellitis/ataxia, meningitis
- Reye Syndrome*
- Hemorrhagic complications

Vulnerable populations
- Pregnant women and their babies
    - Congenital varicella syndrome is more likely if maternal infection occurs during the 1st or early 2nd trimester of pregnancy
    - Infants are also at risk for severe infection and mortality if the mother develops varicella from 5 days before to 2 days after delivery
- Immunocompromised individuals
- Adolescents and adults
- Children younger than 12 months of age

Reservoir
Humans

Mode of Transmission
Chickenpox is highly contagious, particularly among close contacts like household members or playmates. Chickenpox transmission is person-to-person, via the airborne route, following direct exposure with an active rash. Infection can also occur following exposure to aerosolized virus from infectious lesions, and more rarely, exposure to respiratory tract secretions of a person with an active varicella infection. Chickenpox can also spread through contact with articles that

* Associated with aspirin use in children

have been soiled by fluid from lesions. Persons with shingles can spread chickenpox to people who are non-immune, through direct contact with an active shingles rash.

Incubation period

The amount of time that passes between VZV exposure and developing disease is 10 - 21 days (usually 14 - 16)[†].

Period of Communicability

A person with chickenpox can be contagious from up to 2 days before the rash appears until all the lesions have crusted over, or in the absence of crusting (common among breakthrough cases), no new lesions appear after 24 hours.

Exposure

In general, exposure to varicella is defined as contact with nasopharyngeal secretions or vesicular lesions, face-to-face interaction, or sharing indoor airspace with an infectious person.

Clinical Case Definition

Acute onset of diffuse, generalized maculopapulovesicular rash without other apparent cause. Breakthrough varicella cases are generally mild and may present atypically (maculopapular with few or no vesicles).

Case Classification[‡]

- Probable: Meets clinical case definition, is not laboratory confirmed, and is not epidemiologically linked to another probable or confirmed case[§]
- Confirmed: Is laboratory confirmed or a case that meets the clinical case definition and is epidemiologically linked to another confirmed or a probable case

Laboratory Criteria for Diagnosis

- There are multiple means of diagnosing a varicella infection with laboratory testing[**].
- Direct Detection: Test for presence of the VZV antigen
  - Polymerase chain reaction (PCR)[††]
  - Direct fluorescent antibody (DFA) detection
  - Viral isolation through culturing VZV from a clinical specimen
- Serologic Tests: Test for presence of VZV antibody
  - Immunoglobulin G (IgG) (considered evidence of current infection if there is a four-fold or greater rise in VZV IgG antibody level between paired acute and convalescent sera)
  - Immunoglobulin M (IgM) (considered evidence of current infection if clinical symptoms of varicella are also present)

Diagnostic Testing

Routine laboratory testing to diagnose varicella is not required. Laboratory confirmation is recommended for fatal cases and in the case of an outbreak (for at least 2 to 3 cases). For cases of varicella among those who are documented as having received 2 doses of the varicella vaccine, laboratory testing is encouraged in order to confirm varicella infection. The Georgia Department of Public Health conducts laboratory testing for varicella. For more information on submitting specimens, call your District or County Department of Public Health or refer to the Varicella Specimen Collection and

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[†] For those who received VariZIG, incubation period is up to 28 days

[‡] Cases are classified by state public health officials in accordance with CDC guidelines

[§] 2 probable cases that are epidemiologically linked are considered confirmed, even in the absence of laboratory confirmation

[**] VZV test results alone do not differentiate between Chickenpox and Shingles infections, clinical symptoms must also be used to diagnose disease

[††] Preferred laboratory method for diagnosing VZV infection

Submission Guidelines. Please notify the Epidemiology Section at 404-657-2588 before sending the specimen, as PCR testing is available by request only from the state office.

Evidence of immunity

Any of the following criteria constitutes presumptive evidence of immunity:

- Documentation of age-appropriate vaccination
- Laboratory evidence of immunity or laboratory confirmation of disease
- Born in the United States before 1980
    a. This does not suffice as evidence of immunity for healthcare providers, immunocompromised individuals, and pregnant women
- A healthcare provider diagnosis of varicella or verification of history of varicella disease
- History of herpes zoster based on healthcare provider diagnosis

Vaccination

The best way to prevent chickenpox is to receive 2 doses of the varicella vaccine. The Advisory Committee on Immunization Practices (ACIP), recommends that all children without contraindications be vaccinated between 12 and 15 months of age and receive a 2nd dose between 4 and 6 years of age. Healthy people over the age of 13 who have no history of chickenpox and have never been vaccinated against the disease should get 2 doses of the vaccine 4 to 8 weeks apart.

Post-exposure Prophylaxis

Varicella vaccine is effective in preventing infection or modifying the severity of illness if given within 5 days (ideally within 3) of varicella exposure. For those with contraindications to vaccination, VariZIG, an immune globulin, may help prevent disease. Administration of VariZIG is recommended as soon as possible following exposure to the VZV and within 10 days. The patient groups recommended by the ACIP to receive VariZIG include immunocompromised persons, pregnant women, and neonates whose mothers have varicella 5 days before to 2 days after delivery, and certain preterm infants.

Treatment

Chickenpox treatment is mainly supportive. Antiviral agents can reduce the duration and severity of illness if given within 24 hours of rash onset. These drugs should be considered for treatment of immunocompromised persons and other persons at high risk for severe varicella.

Case Investigation

All suspect varicella cases should be investigated and reported to public health, recommendations are as follows:

1. Notify your local health department of a suspect varicella case
2. Establish a diagnosis of varicella
3. Obtain an accurate and complete immunization history
4. Identify the source of infection
5. Assess potential transmission and identify contacts
6. Identify persons at high risk for developing severe disease (e.g., immunocompromised persons, pregnant women)
7. Complete the varicella case report form found at www.dph.ga.gov/varicella or in the State Electronic Notifiable Disease Surveillance System (SendSS)

Outbreak Recommendations

1. Notify your local health department of a suspected outbreak
    a. In a childcare, school, or residential setting, an outbreak is defined as ≥ 3 cases occurring in a 21 day period[‡‡]

[‡‡] Outbreaks in Georgia are defined and declared by the Georgia Department of Public Health

2. Collect specimens from 2-3 cases
3. Identify transmission setting
4. Obtain accurate and complete immunization histories for those exposed
5. Identify those most at-risk for developing severe disease (e.g. unvaccinated individuals, immunocompromised persons and pregnant women)
6. Vaccinate susceptible persons.
7. Consider VariZIG for susceptible persons for whom vaccination is contraindicated – refer to physician
8. Exclude susceptible persons from the setting[§§]

For further information on varicella case investigation and outbreak control please see the Varicella Outbreak and Control Manual at: www.dph.ga.gov/varicella

Reporting

Varicella is a notifiable disease in the state of Georgia; single cases of varicella are reportable within 7 days. For more information on reporting call your local health department or visit www.dph.ga.gov/varicella.

References

- American Academy of Pediatrics, Committee on Infectious Diseases, Kimberlin, D. W., Brady, M. T., Jackson, M. A., & Long, S. S. (2015). Varicella-Zoster Virus Infections. In Red book: 2015 report of the Committee on Infectious Diseases (30th ed., pp. 846–860).
- Centers for Disease Control and Prevention. (2015). Epidemiology and Prevention of Vaccine-Preventable Diseases. (J. Hamborsky, A. Kroger, & C. (Skip) Wolfe, Eds.) (13th ed.). Washington D.C.: Public Health Foundation.
- Centers for Disease Control and Prevention: Strategies for the Control and Investigation of Varicella Outbreaks. Lopez A, Marin M. Atlanta, GA: 2008.
- Lopez, A., Schmid, S., & Bialek, S. (2015). Chapter 17: Varicella. In Manual for the Surveillance of Vaccine-Preventable Diseases. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/vaccines/pubs/surv-manual/chpt17-varicella.html

Links

- CDC Pink Book: Varicella Chapter - http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/varicella.pdf
- CDC VPD Surveillance Manual, 5th Ed.: Varicella Chapter - http://www.cdc.gov/vaccines/pubs/surv-manual/chpt17-varicella.pdf
- GDPH Varicella webpage - http://dph.georgia.gov/varicella
- CDC: About Chickenpox - http://www.cdc.gov/chickenpox/about/index.html
- CDC: Shingles (Herpes Zoster)- http://www.cdc.gov/shingles/

Additional Information

Contact the Georgia Department of Public Health, Acute Disease Epidemiology Section at 404 657-2588.

[§§]Exclusions of susceptible persons should be considered on a case-by-case basis and at the discretion of public health.

Influenza Resources

RESOURCES FOR INFLUENZA PREVENTION AND CONTROL

PREVENTING INFLUENZA

Vaccination remains the primary method of preventing influenza infection or lessening the severity of influenza. Because circulating influenza strains change from year to year, a new vaccine is manufactured each year. For complete protection individuals must receive a new influenza vaccine annually. CDC recommends that individuals receive the influenza vaccine as soon as it is available, ideally by October, especially for persons at higher risk of developing complications from influenza, such as residents of long-term care facilities (LTCF) and children 5 years and younger. Persons who did not receive an influenza vaccine during the ideal time should still be immunized throughout the influenza season to achieve some protection. **Employees of LTCF are also strongly advised to be vaccinated to reduce the chance of their spreading influenza to residents.** LTCF visitors should be encouraged to receive influenza vaccine. In fact, given that influenza vaccine is more effective at preventing disease among young, healthy adults than among the elderly, vaccination of workers and visitors may be more effective in preventing disease among LTCF residents than vaccination of the residents themselves.

Listed below are the three manufacturers of influenza vaccine with contact information for ordering. The ideal time to order influenza vaccine for the upcoming flu season is in the spring, as most manufacturers' stocks are pre-booked by May.

- Sanofi Pasteur (www.sanofipasteur.com) 1-800-822-2463
- Novartis (www.chiron.com) 1-800-244-7668
- Medimmune (www.medimmune.com) 1-877-633-4411
- GlaxoSmithKline (www.gskvaccines.com) 1-866-475-8222

DIAGNOSING INFLUENZA

Numerous infectious agents cause flu-like symptoms, making influenza diagnosis difficult on clinical grounds. A verified diagnosis of influenza requires a positive real-time polymerase chain reaction (RT-PCR) test, which may take up to 4 hours. Several rapid tests for influenza have been developed with variable sensitivities and specificities. Some of these rapid tests can provide results as fast as 10 minutes and may be useful in a LTCF setting to attempt to quickly document the cause of an outbreak of influenza-like illness. While negative rapid test results **do not** rule out influenza virus as the causative agent, **a single positive result indicates that influenza is contributing to the outbreak** a single positive test result in a LTCF setting strongly indicates an outbreak is due to influenza. If rapid tests are being used, PCR tests **should still** be done for confirmation and to identify the strain and antigenic characteristics of the virus. Public health officials can provide molecular specimen submission kits to an LTCF during an outbreak and arrange for testing at the Georgia Public Health Laboratory. Call your local health department **immediately** if an influenza outbreak is suspected in a LTCF. Public health does not supply rapid tests for influenza.

Influenza Resources

Table 1 describes the various laboratory tests available for documenting influenza infection[1]. Long-term care facilities might consider stocking some of the rapid tests available for point-of-care use.

Table 1. Laboratory Diagnostic Procedures for Influenza

Procedure	Influenza Virus Types Detected	Acceptable Specimens[2]	Test Time	CLIA Waived[3]
Viral cell culture (conventional)	A and B	NP4 swab, throat swab, NP2 or bronchial wash, nasal or endotracheal aspirate, sputum	3-10 days[3]	NO
Rapid cell culture (shell vials; cell mixtures)	A and B	As above	1-3 days	NO
Immunofluorescence, Direct (DFA) or Indirect (IFA) Antibody Staining	A and B	NP4 swab or wash, bronchial wash, nasal or endotracheal aspirate	1-4 hours	NO
RT-PCR5 (singleplex and multiplex; real-time and other RNA-based) and other molecular assays	A and B	NP4 swab, throat swab, NP2 or bronchial wash, nasal or endotracheal aspirate, sputum	Varied (Generally 1-6 hours)	NO
Rapid Influenza Diagnostic Tests6 (antigen)	A and B	NP4 swab, (throat swab), nasal wash, nasal aspirate	<30 min.	YES/NO

1. Serologic (antibody detection) testing is not recommended for routine patient diagnosis.
2. Ref: Leland, et al. 2007, *Clin Micro Rev* 20: 49-78. Approved respiratory specimens vary among FDA cleared influenza assays.
3. Ref: http://www.cms.gov/Regulations-and-Guidance/Legislation/CLIA/index.html
4. NP = nasopharyngeal
5. Reverse transcriptase polymerase chain reaction, including FDA-approved test systems, reference laboratory testing using ASR or lab-developed reagents
6. Chromatographic- and/or fluorescence-based lateral flow and membrane-based immunoassays

Table 2: Characteristics of Rapid Influenza Diagnostic Test

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Procedure (Manufacturer/Distributor)	Influenza Virus Types Detected	Approved Specimens[2]	CLIA Waived[3]

Influenza Resources

3M™ Rapid Detection Flu A+B Test[4] (3M)	A and B	NP[5] swab/aspirate Nasal wash/aspirate	No
Alere™ Influenza A & B[4] (Alere)	A and B	Nasal swab	Yes
BD Veritor™ System for Rapid Detection of Flu A+B CLIA-waived[4,8] (Becton Dickinson)	A and B	NP[5] swab/nasal swab	Yes
BD Veritor™ System for Rapid Detection of Flu A+B Moderately Complex[4,8] (Becton Dickinson)	A and B	NP[5] wash/aspirate/swab	No
BinaxNOW® Influenza A&B[4] (Alere)	A and B	NP[5] swab, Nasal wash/aspirate/swab	Yes
BioSign® Flu A+B[4] (Princeton BioMedtech)	A and B	NP[5] swab/aspirate/wash, nasal swab	No
Directigen™ EZ Flu A+B[4] (Becton-Dickinson)	A and B	NP[5] wash/aspirate/swab Throat swab	No
OSOM® Influenza A&B[4] (Sekisui Diagnostics)	A and B	Nasal swab	No
QuickVue® Influenza Test[6] (Quidel)	A or B	Nasal wash/aspirate/swab	Yes
QuickVue® Influenza A+B Test[4]	A and B	NP[5] swab	Yes

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(Quidel)		Nasal wash/aspirate/swab	
SAS™ FluAlert A&B (SA Scientific)	A and B	Nasal wash/aspirate	No
SAS™ FluAlert A[4] (SA Scientific)	A only	Nasal wash/aspirate	Yes
SAS™ FluAlert B[6] (SA Scientific)	B only	Nasal wash/aspirate	Yes
Sofia® Influenza A+B [4,7,8] (Quidel)	A and B	NP[5] aspirate/swab/wash Nasal wash	Yes
TRU FLU®[4] (Meridian Bioscience)	A and B	NP[5] aspirate/swab Nasal wash	No
XPECT™ Flu A&B[4] (Remel/Thermofisher)	A and B	Nasal wash/swab Throat swab	No

1. List may not include all test kits approved by the U.S. Food and Drug Administration
2. Approved respiratory specimens according to manufacturer's package insert. Note that test performance may vary if other respiratory specimens are used.
3. Ref: http://www.cms.gov/Regulations-and-Guidance/Legislation/CLIA/index.html
4. Distinguishes between influenza A and B virus infections.
5. NP = nasopharyngeal.
6. Does not distinguish between influenza A and B virus infections when used alone.
7. Immunofluorescence assay.
8. Requires use of a separate analyzer reader device.

Disclaimer: Use of trade names or commercial sources is for identification only and does not imply endorsement by the Centers for Disease Control and Prevention or the Department of Health and Human Services.

Influenza Resources

TREATING INFLUENZA

Three antiviral drugs are currently approved for influenza treatment: oseltamivir (Tamiflu®), zanamivir (Relenza®), and Peramivir (Rapivab®). All three may be used for influenza A or B. Oseltamivir and zanamivir have also been approved for prophylaxis against influenza. Influenza A virus resistance to amantadine and rimantadine can emerge rapidly during treatment. On the basis of antiviral testing results conducted at CDC and in Canada indicating high levels of resistance, CDC and ACIP recommend that neither amantadine nor rimantadine be used for the treatment or chemoprophylaxis of influenza A in the United States until susceptibility to these antiviral medications has been re-established among circulating influenza A viruses.

Zanamivir and oseltamivir are chemically related antiviral drugs known as neuraminidase inhibitors that have activity against both influenza A and B viruses. Both zanamivir and oseltamivir were approved in 1999 for treatment of uncomplicated influenza virus infections.

Zanamivir, an inhaled drug, may aggravate existing chronic respiratory illnesses. Table 2 describes medication dosage and duration for all age groups with normal renal function[2]. Each medication should be administered within 48 hours of symptom onset.

INFLUENZA PROPHYLAXIS

Zanamivir and oseltamivir are chemically related antiviral drugs known as neuraminidase inhibitors that have activity against both influenza A and B viruses. Both zanamivir and oseltamivir were approved in 1999 for treatment of uncomplicated influenza virus infections. FDA has approved oseltamivir to treat influenza for persons 14 days and older and use as chemoprophylaxis in persons aged 1 year or older. However, CDC recommends using oseltamivir to treat influenza at any age and use for chemoprophylaxis of influenza in persons 3 months or older. Zanamivir is approved for chemoprophylaxis among those 5 years and older. Once a cluster of influenza-like illness has been identified in a long-term care facility, chemoprophylaxis of all residents should begin immediately, regardless of whether they received vaccine. Chemoprophylaxis of staff should also be considered.

Table 3: Antiviral Medications Recommended for Treatment and Chemoprophylaxis of Influenza

Antiviral Agent	Activity Against	Use	Recommended For	Not Recommended for Use in	Adverse Events
Oseltamivir	**Influenza**	**Treatment**	Any age[1]	N/A	**Adverse events:** nausea,

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(Tamiflu®)	**A and B**	**Chemo-prophylaxis**	3 months and older[1]	N/A	vomiting. Postmarketing reports of serious skin reactions and sporadic, transient neuropsychiatric events (self-injury or delirium; mainly reported among Japanese adolescents and adults).
Zanamivir (Relenza®)	**Influenza A and B**	**Treatment**	7 yrs and older	people with underlying respiratory disease (e.g., asthma, COPD)[2]	**Allergic reactions:** oropharyngeal or facial edema. **Adverse events:** diarrhea, nausea, sinusitis, nasal signs and symptoms, bronchitis, cough, headache, dizziness, and ear, nose and throat infections.
		Chemo-prophylaxis	5 yrs and older	people with underlying respiratory disease (e.g., asthma, COPD)[2]	
Peramivir (Rapivab®)	**Influenza A and B[3]**	**Treatment**	18 yrs and older	N/A	**Adverse events:** diarrhea. Postmarketing reports of serious skin reactions and sporadic, transient neuropsychiatric events (self-injury or delirium; mainly reported among Japanese adolescents and adults).
		Chemo-prophylaxis	N/A	N/A	

Abbreviations: N/A = not applicable, COPD = chronic obstructive pulmonary disease.

[1] Oral oseltamivir is approved by the FDA for treatment of acute uncomplicated influenza in persons 14 days and older, and for chemoprophylaxis in persons 1 year and older. Although not part of the FDA-approved indications, use of oral oseltamivir for treatment of influenza in infants less than 14 days old, and for chemoprophylaxis in infants 3 months to 1 year of age, is

recommended by the CDC and the American Academy of Pediatrics. If a child is younger than 3 months old, use of oseltamivir for chemoprophylaxis is not recommended unless the situation is judged critical due to limited data in this age group.

[2] Relenza is contraindicated in patients with history of allergy to milk protein.

[3] Peramivir efficacy is based on clinical trials in which the predominant influenza virus type was influenza A; a limited number of subjects infected with influenza B virus were enrolled.

Table 4: Recommended Dosage and Duration of Influenza Antiviral Medications for Treatment or Chemoprophylaxis

Antiviral Agent	Use	Children	Adults
Oseltamivir (Tamiflu®)	**Treatment (5 days)**	**If younger than 1 yr old[1]:** 3 mg/kg/dose twice daily[2,3] **If 1 yr or older, dose varies by child's weight:** 15 kg or less, the dose is 30 mg **twice** a day >15 to 23 kg, the dose is 45 mg **twice** a day >23 to 40 kg, the dose is 60 mg **twice** a day >40 kg, the dose is 75 mg **twice** a day	75 mg **twice** daily
	Chemo-prophylaxis (7 days)	If child is younger than 3 months old, use of oseltamivir for chemoprophylaxis is not recommended unless situation is judged critical due to limited data in this age group. **If child is 3 months or older and younger than 1 yr old[1]** 3 mg/kg/dose once daily[2] **If 1 yr or older, dose varies by child's weight:** 15 kg or less, the dose is 30 mg **once** a day >15 to 23 kg, the dose is 45 mg **once** a day >23 to 40 kg, the dose is 60 mg **once** a day >40 kg, the dose is 75 mg **once** a day	75 mg **once** daily
Zanamivir[4](Relenza®)	**Treatment**	10 mg (two 5-mg inhalations) **twice** daily	10 mg (two 5-mg

	(5 days)	(**FDA approved and recommended for use in children 7 yrs or older**)	inhalations) **twice** daily
	Chemo-prophylaxis (7 days)	10 mg (two 5-mg inhalations) **once** daily (**FDA approved for and recommended for use in children 5 yrs or older**)	10 mg (two 5-mg inhalations) **once** daily
Peramivir[4](Rapivab®)	**Treatment (1 day)**	N/A (**FDA approved and recommended for use in adults 18 yrs and older**)	One 600 mg dose, via intravenous infusion for 15-30 minutes
	Chemo-prophylaxis	N/A	N/A

Abbreviations: N/A = not applicable

[1] Oral oseltamivir is approved by the FDA for treatment of acute uncomplicated influenza with twice-daily dosing in persons 14 days and older, and for chemoprophylaxis with once-daily dosing in persons 1 year and older. Although not part of the FDA-approved indications, use of oral oseltamivir for treatment of influenza in infants less than 14 days old, and for chemoprophylaxis in infants 3 months to 1 year of age, is recommended by the CDC and the American Academy of Pediatrics (Committee on Infectious Diseases, 2014).

[2] This is the FDA-approved oral oseltamivir treatment dose for infants 14 days and older and less than 1 year old, and provides oseltamivir exposure in children similar to that achieved by the approved dose of 75 mg orally twice daily for adults, as shown in two studies of oseltamivir pharmacokinetics in children (Kimberlin, 2013 [CASG 114], EU study WP22849, FDA Clinical Pharmacology Review). The American Academy of Pediatrics has recommended an oseltamivir treatment dose of 3.5 mg/kg orally twice daily for infants aged 9-11 months for the 2013-14 season, on the basis of data which indicated that a higher dose of 3.5 mg/kg was needed to achieve the protocol-defined targeted exposure for this cohort as defined in the CASG 114 study (Kimberlin, 2013). It is unknown whether this higher dose will improve efficacy or prevent the development of antiviral resistance. However, there is no evidence that the 3.5 mg/kg dose is harmful or causes more adverse events to infants in this age group.

[3]

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Abbreviation: NA = not approved

* Zanamivir is manufactured by GlaxoSmithKline (Relenza --- inhaled powder). Zanamivir is approved for treatment of persons aged ≥7 years and approved for chemoprophylaxis of persons aged ≥5 years. Zanamivir is administered through oral inhalation by using a plastic device included in the medication package. Patients will benefit from instruction and demonstration of the correct use of the device. Zanamivir is not recommended for those persons with underlying airway disease. Oseltamivir is manufactured by Roche Pharmaceuticals (Tamiflu --- tablet). Oseltamivir is approved for treatment or chemoprophylaxis of persons aged ≥1 year. Oseltamivir is available for oral administration in 30 mg, 45 mg, and 75 mg capsules and liquid suspension. No antiviral medications are approved for treatment or chemoprophylaxis of influenza among children aged <1 year. This information is based on data published by the Food and Drug Administration (FDA).

† Recommended duration for antiviral treatment is 5 days. Longer treatment courses can be considered for patients who remain severely ill after 5 days of treatment.

§ Recommended duration is 10 days when administered after a household exposure and 7 days after the most recent known exposure in other situations. For control of outbreaks in long-term care facilities and hospitals, CDC recommends antiviral chemoprophylaxis for a minimum of 2 weeks and up to 1 week after the most recent known case was identified

¶ See Table 4 for information about use of oseltamivir for infants aged <1 year. A reduction in the dose of oseltamivir is recommended for persons with creatinine clearance <30 mL/min.

** The treatment dosing recommendation for oseltamivir for children aged ≥1 year who weigh ≤15 kg is 30 mg twice a day. For children who weigh >15 kg and up to 23 kg, the dose is 45 mg twice a day. For children who weigh >23 kg and up to 40 kg, the dose is 60 mg twice a day. For children who weigh >40 kg, the dose is 75 mg twice a day.

†† The chemoprophylaxis dosing recommendation for oseltamivir for children aged ≥1 year who weigh ≤15 kg is 30 mg once a day. For children who weigh >15 kg and up to 23 kg, the dose is 45 mg once a day. For children who weigh >23 kg and up to 40 kg, the dose is 60 mg once a day. For children who weigh >40 kg, the dose is 75 mg once a day.

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REIMBURSEMENT FOR INFLUENZA AND PNEUMOCOCCAL VACCINATION

Influenza and pneumococcal vaccines are a Medicare benefit, so long-term care facilities can bill Medicare for these immunizations. *Frequently, nursing homes in Georgia are not billing Medicare and are losing this revenue.*

- One of the most effective strategies for increasing influenza and pneumococcal immunizations involves the health care provider. Medicare beneficiaries are more likely to get immunized when their physician specifically recommends vaccination.
- Medicare Part B began paying for influenza vaccine on May 1, 1993.

- Medicare Part B began paying for pneumococcal polysaccharide vaccine (PPV) on July 1, 1981.
- Coverage of the vaccines and their administration is available under Medicare Part B regardless of the setting in which they are administered.

- If a beneficiary at high risk of pneumococcal disease (i.e., aged 65 or older) is unsure about his or her PPV vaccination status, Medicare will cover re-vaccination.

Roster bills can be submitted so that only one bill is needed per facility (although influenza and pneumococcal vaccines must be on separate roster claim forms).

Billing Code	Description
90658	Influenza split-virus vaccine (Only split virus vaccines are available in the U.S.)
90732	Pneumococcal polysaccharide vaccine
G0008	Administration of influenza vaccine
G0009	Administration of pneumococcal vaccine
V04.81	Diagnosis code for influenza vaccine
V03.82	Diagnosis code for pneumococcal polysaccharide vaccine

References:

1. Centers for Disease Control and Prevention-Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities. Available at http://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm
2. Kingston BJ and Wright CV. Influenza in the Nursing Home. Am Fam Physician 2002;65:75-78.
3. Centers for Disease Control and Prevention. Prevention and Control of Influenza. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2010;59 (No. RR-3):1-62.
4. Centers for Disease Control and Prevention: Influenza Antiviral Medications: Summary for Clinicians. Available at http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm#modalIdString_CDCTable_2

Other Resources:

Influenza Resources

- Georgia Department of Public Health Influenza Web Site – https://dph.georgia.gov/flu-activity-georgia
- Centers for Disease Control and Prevention, National Center for Infectious Diseases Influenza Web Site - http://www.cdc.gov/ncidod/diseases/flu/fluvirus.htm
- Centers for Disease Control and Prevention, National Immunization Program Influenza Web Site - http://www.cdc.gov/vaccines/vpd-vac/flu/default.htm
- Georgia Adult Immunization Coalition - http://www.immunizeadultga.org/
  Medicare Preventive Services, Adult Immunization Overview – http://www.cms.hhs.gov/AdultImmunizations/

Influenza Outbreak Control In A Long-Term Care Facility

Influenza vaccination remains the primary method of preventing illness and death associated with influenza. Among elderly persons residing in nursing homes, influenza vaccine can be 50-60% effective in preventing hospitalization or pneumonia and 80% effective in preventing death. While, the vaccine may be less effective in older people and may not prevent infection it may reduce the severity of illness. If an outbreak of influenza-like illness (defined as 2 or more residents with respiratory illness including: fever or feverishness with cough, chills, headache, myalgias, sore throat, or runny nose) occurs in a long-term care facility, please immediately contact the local county health department or the Georgia Department of Public Health Epidemiology Section at 404-657-2588 for assistance in outbreak investigation and control. Public health can help you confirm the diagnosis and prevent spread.

A. Confirmation of Influenza and Determination of the Outbreak Strain

- Early in the outbreak, obtain nasopharyngeal swab specimens from up to 10 patients with symptoms suggestive of influenza for real-time polymerase chain reaction (RT-PCR) testing. Specimen collection kits can be obtained through the health department, which can also arrange testing at the Georgia Public Health Laboratory (GPHL).
  - Approval from an epidemiologist at the local county health department or at Georgia Department of Public Health is required for influenza testing at GPHL.
- Because RT-PCR results may not be available for a few days, facilities may also consider using rapid flu tests. While a negative rapid test result does not rule out influenza, a single positive result indicates that influenza is contributing to the outbreak. Please see **RESOURCES FOR INFLUENZA PREVENTION AND CONTROL** for more information about rapid flu tests. Rapid flu tests are not available through public health.

B. Vaccination of Patients and Personnel

- Even during an outbreak, administer current influenza vaccine to unvaccinated patients and staff, especially if the outbreak occurs early in the influenza season.
- The local county health department may have vaccine available during flu season. See **RESOURCES FOR INFLUENZA PREVENTION AND CONTROL** for information on how to order influenza vaccine prior to flu season.
- For more detailed vaccination information, see Influenza Vaccine Guidelines in Chapter 2 of this manual.

C. Treatment and Prophylaxis

- Even in the absence of laboratory confirmation, the Georgia Department of Public Health advises long-term care facilities to begin treatment and prophylaxis of residents and staff with antiviral medications. *If influenza is*

Influenza Outbreak Control In A Long-Term Care Facility

*suspected, treatment and prophylaxis should **not** be delayed until test results are available.*

- Five antivirals are licensed for prevention or treatment of influenza, however only three antiviral drugs are recommended for influenza treatment: oseltamivir, zanamivir, and peramivir. Oseltamivir, zanamivir, and peramivir may be used for influenza A or B.
- Oseltamivir and zanamivi have also been approved for prophylaxis against influenza.
  - Zanamivir and oseltamivir are chemically related antiviral drugs known as neuraminidase inhibitors that have activity against both influenza A and B viruses. Both zanamivir and oseltamivir were approved in 1999 for treatment of uncomplicated influenza virus infections. FDA has approved oseltamivir to treat influenza for persons 14 days and older and use as chemoprophylaxis in persons aged 1 year or older. However, CDC recommends using oseltamivir to treat influenza at any age and use for chemoprophylaxis of influenza in persons 3 months or older. Zanamivir is approved for chemoprophylaxis among those 5 years and older.
- Amantadine and rimantadine are antiviral drugs that can be used to treat influenza A viruses but not influenza B viruses. However, influenza A virus resistance to amantadine and rimantadine can emerge rapidly during treatment. On the basis of antiviral testing results conducted at CDC and in Canada indicating high levels of resistance, CDC and ACIP recommend that neither amantadine nor rimantadine be used for the treatment or chemoprophylaxis of influenza A in the United States until susceptibility to these antiviral medications has been re-established among circulating influenza A viruses.
- Please see **RESOURCES FOR INFLUENZA PREVENTION AND CONTROL** for information regarding medication dosage and therapy duration.

D. Interruption of Person-to-Person Transmission

- Administer antivirals to individuals with suspected influenza within 48 hours of illness onset.
- Administer chemoprophylaxis to all non-ill residents, regardless of their influenza vaccination status, within 72 hours of identifying an influenza outbreak.
- Keep residents known or suspected to have influenza in a private room or in a room with other residents with documented influenza unless there are medical contraindications.
- If feasible, place persons with influenza-like illness together in an area with an independent air supply and exhaust system.
- Implement respiratory droplet precautions, including requiring all staff that have contact with ill residents to wear masks and gloves, and to wash hands frequently and thoroughly. Consider using hand sanitizers in areas where hand washing is difficult.
- Restrict visitors who have a febrile respiratory illness.

Influenza Outbreak Control In A Long-Term Care Facility

- Do not allow staff to work while ill.
- Consider temporarily closing the facility to new admissions while the outbreak continues.
- Administer the current influenza vaccine to previously unvaccinated resident and medical staff

Preventing Influenza Outbreaks in Long-Term Care Facilities

Morbidity and mortality from influenza can be greatly reduced if long-term care facilities follow these guidelines for influenza prevention:

- Develop an influenza control plan incorporating vaccination, surveillance, diagnosis, treatment, and prophylaxis activities. Ensure all staff are familiar with the plan's components.
- Plan an annual vaccination campaign targeting all residents, staff, volunteers, and visitors for flu vaccination. Ideally, vaccination should occur in October or early November, but the facility should also have methods in place to ensure that all staff and residents who enter the facility after the mass vaccination campaign are also vaccinated. Standing orders by the facility medical director may make this process more convenient.
- Review residents' immunization histories and administer pneumococcal vaccine to those who are eligible. This should be done on a regular basis, and especially during the annual flu vaccine campaign. If a pneumococcal vaccination history is unknown, it is safe and preferable to give another dose.
- During flu season, post signs asking visitors with flu-like symptoms, such as fever, cough, sore throat, or muscle aches, to refrain from visiting.
- Train staff at the beginning of each flu season on the proper respiratory secretion precautions, hand-washing procedures, and surveillance activities. Have a mechanism to ensure all new employees who are hired during flu season receive the training as well.
- Establish and post a definition of flu-like illness. The Centers for Disease Control and Prevention (CDC) defines influenza-like illness as fever $\geq$100˚F and cough and/or a sore throat without a known cause other than influenza. Be aware that influenza symptoms are sometimes different in elderly persons or persons with chronic medical conditions and to also consider influenza when patients have fever or feverishness with cough, chills, headache, myalgias, sore throat, or runny nose. Staff should be alert for residents who have fever with lethargy or delirium, or changes in their functional status.
- Monitor influenza activity in the community. The Georgia Department of Public Health posts influenza information at https://dph.georgia.gov/flu-activity-georgia. You may also receive periodic influenza activities during flu season by subscribing to the public health flu email list (sign up by sending an email to Audrey.Kunkes@dph.ga.gov with the word "subscribe" in the subject line). Knowledge of influenza activity in the community can assist in making a clinical diagnosis.
- Consider stocking rapid flu tests and antiviral medications for immediate detection and response to outbreaks. If you do not stock rapid tests, have a plan in place for

Influenza Outbreak Control In A Long-Term Care Facility

quickly obtaining laboratory confirmation of influenza. There should also be a method to quickly obtain physician orders for antiviral medication.

- Post the county, district, or state health department phone number for reporting a cluster of influenza-like illness. A cluster is defined as 2 or more cases of illness among residents and/or staff within a 72-hour period. *By law, any cluster of illness must be reported to Georgia public health authorities immediately*.

  (DHR Rule 290-5-3-.02(2))

References:

Centers for Disease Control and Prevention-Interim Guidance for Influenza Outbreak Management in Long-Term Care Facilities. Available at http://www.cdc.gov/flu/professionals/infectioncontrol/ltc-facility-guidance.htm

Influenza Antiviral Medications: Summary for Clinicians. Available at http://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm

Georgia Department of Public Health

NOTIFIABLE DISEASE / CONDITION REPORTING

All Georgia physicians, laboratories, and other health care providers are required by law to report patients with the following conditions. Both lab-confirmed and clinical diagnoses are reportable within the time interval specified below.

Reporting enables appropriate public health follow-up for your patients, helps identify outbreaks, and provides a better understanding of disease trends in Georgia. For the latest information from the DPH, Department of Public Health, visit their web site at: dph.georgia.gov/

REPORT IMMEDIATELY

To Report Immediately
Call: District Health Office or 1-866-PUB-HLTH (1-866-782-4584)

- any cluster of illnesses
- animal bites
- ▶ anthrax
- all acute arboviral infections:
  - -Eastern Equine Encephalitis (EEE)
  - -LaCrosse Encephalitis (LAC)
  - -St. Louis Encephalitis (SLE)
  - -West Nile Virus (WNV)
- ▶ botulism
- ▶ brucellosis
- cholera
- diphtheria
- *E. coli O157*
- *Haemophilus influenzae (invasive)**
- hantavirus pulmonary syndrome
- hemolytic uremic syndrome (HUS)
- hepatitis A (acute)
- measles (rubeola)
- meningitis (specify agent)
- meningococcal disease
- novel influenza A virus infections
- pertussis
- ▶ plague
- poliomyelitis
- ▶ Q fever
- rabies (human & animal)
- severe acute respiratory syndrome (SARS)
- shiga toxin positive tests
- *S. aureus with vancomycin MIC ≥ 4μg/ml*
- ▶ smallpox
- syphilis (congenital & adult)
- tuberculosis
- latent TB infection in children<5 years old
- ▶ tularemia
- ▶ viral hemorrhagic fevers

▶ Potential agent of bioterrorism.

* Invasive = isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid.

REPORT WITHIN 7 DAYS

To Report Within 7 Days
Report cases electronically through the State Electronic Notifiable Disease Surveillance System at http://sendss.state.ga.us (SEE REPORTING FOOTNOTES BELOW.)

- AIDS#
- aseptic meningitis
- blood lead level (all)
- campylobacteriosis
- chancroid
- *Chlamydia trachomatis* (genital infection)
- Creutzfeldt-Jakob Disease (CJD), suspected cases, under age 55
- cryptosporidiosis
- cyclosporiasis
- ehrlichiosis
- giardiasis
- gonorrhea
- HIV infection and Perinatal HIV exposure*
- hearing impairment† (permanent, under age 5)
- hepatitis B
  - -acute hepatitis B
  - -newly identified HBsAg+ carriers**
  - -HBsAg+ pregnant women
- hepatitis C virus infection (past or present)
- influenza-associated death (all ages)
- legionellosis
- leptospirosis
- listeriosis***
- leprosy or Hansen's disease (*Mycobacterium leprae*)
- Lyme disease
- lymphogranuloma venereum
- malaria
- maternal deaths## (during pregnancy or within 1 year of end of pregnancy)##
- mumps
- Neonatal Abstinence Syndrome
- psittacosis
- Rocky Mountain spotted fever
- rubella (including congenital)
- salmonellosis
- shigellosis
- streptococcal disease, Group A or B (invasive)*
- *Streptococcus pneumoniae* (invasive)*
  - -report with antibiotic-resistance information
- tetanus
- toxic shock syndrome
- toxoplasmosis
- typhoid
- Varicella (Chickenpox)
- *Vibrio* infections
- yersiniosis

* Invasive = isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid.
** HBsAg+ = hepatitis B surface antigen positive.
*** *L. monocytogenes* isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid, or other normally sterile site; or from placenta or products of conception in conjunction with fetal death or illness. Infant mortality is reportable to Vital Records.

REPORTING HIV/AIDS:

\# Report forms and reporting information for HIV/AIDS available by telephone (1-800-827-9769) OR at http://dph.georgia.gov/georgias-hivaids-epidemiology-surveillance-section. For mailing HIV/AIDS reports, please use double envelopes marked "confidential", addressed to Georgia Department of Public Health Epidemiology Section, P.O. Box 2107, Atlanta, GA 30301

\## Report forms and reporting information for maternal deaths are available at http://dph.georgia.gov/documents/forms-surveys-and-documents

† Report forms and reporting information for **hearing impairment** available at http://dph.georgia.gov/documents/forms-surveys-and-documents

REPORT WITHIN 1 MONTH

birth defects (under age 6)

Report forms and reporting information for **birth defects** available at http://dph.georgia.gov/documents/forms-surveys-and-documents

Healthcare-associated Infections (HAIs)
For facilities required to report HAI data to CMS via NHSN. Report in accordance with the NHSN protocol. Reporting requirements and information available at http:/dph.georgia.gov/notifiable-hai-reporting.

REPORT WITHIN 6 MONTHS

benign brain and central nervous system tumors
cancer

Report forms and reporting information for **tumors and cancer** found at http://dph.georgia.gov/georgia-comprehensive-cancer-registry.

Check List for Assessing a Patient with Suspected Diphtheria

	Symptom or event	Yes /No
Suspect case	Pharyngitis, naso-pharyngitis, tonsillitis, laryngitis, tracheitis (or any combination of these), absent or low-grade fever	
	Grayish adherent pseudo-membrane present	
	Membrane bleeds, if manipulated or dislodged	
Probable case	Suspect case above + 1 or more of the following	
	- Stridor	
	- Bull-neck (cervical edema)	
	- Toxic circulatory collapse	
	- Acute renal insufficiency	
	- Sub-mucosal or sub-cutaneous petechiae	
	- Myocarditis	
	- Death	
	Recently returned (<2 weeks) from travel to area with endemic diphtheria?	
	Recent contact (<2 weeks) with confirmed diphtheria case or carrier?	
	Recent contact (<2 weeks) with visitor from area with endemic diphtheria?	
	Recent contact with dairy or farm animals? Domestic pets?	
	Immunization status: Up-to-date - any DTaP/DT/Tdap/Td shot within past 10 years?	
Laboratory Confirmed case	Positive culture of *C. diphtheriae (or C. ulcerans)* AND	
	- Positive Elek Test OR	
	- PCR for *tox* gene (Positive for subunit A and B) OR	

What other conditions may be considered in the differential diagnosis of respiratory diphtheria?

Respiratory diphtheria is an uncommon disease in the US. The symptoms of respiratory diphtheria are due to diphtheria toxin. Corynebacterium species which produce diphtheria toxin are *C. diphtheriae* (biotypes mitis, gravis, intermedius, or belfanti), *C. ulcerans, C. pseudotuberculosis*. Symptoms of respiratory diphtheria may also be associated with non-toxigenic strains of *C. diphtheriae*.

- Other biological disease agents which may also cause a membranous pharyngitis include:

  1. Group A β-hemolytic *Streptococcus*
  2. *Staphylococcus aureus*
  3. *Arcanobacter hemolyticum*
  4. *Candida albicans*
  5. *Borellia vincenti (*Vincent's angina)
  6. *H. influenzae (acute epiglottitis)*
  7. Viruses – EBV (Infectious mononucleosis), adenovirus, *Herpes simplex*
  8. Other agents - *Toxoplasma*

- Use of some anti-neoplastic agents may also result in formation of a pharyngeal membrane e.g methotrexate.

- Long term use of corticosteroids (e.g. prednesolone) can cause oral candidiasis.

CDC Diphtheria Worksheet

PATIENT INFORMATION

Date of Request (Month / Day / Year)

Name (Last, First)

Birth Date (Month / Day / Year)

Age (Unk = 999)

Age Type
0 = 0-120 years
1 = 0-11 months
2 = 0-52 weeks
3 = 0-28 days
9 = Age unknown

Sex
M = Male
F = Female
U = Unknown

Pregnant?
Y = Yes
N = No
U = Unknown

Race
N = Native Amer./Alaskan Native
A = Asian/Pacific Islander
B = African American
W = White
O = Other
U = Unknown

Ethnicity
H = Hispanic
N = Not Hispanic
U = Unknown

Address (Street and No.)

County

State

Zip

Phone

Date Symptom Onset (Month / Day / Year)

Date First Diagnosis (Month / Day / Year)

Date Hospitalized (Month / Day / Year)

History of Immunization Against Diphtheria

Childhood Primary Series?
Y = Yes
N = No
U = Unknown

If < 18 Years Old, Number of Doses

Boosters as Adult?
Y = Yes
N = No
U = Unknown

Date of Last Dose (Month / Day / Year) OR U = Unk

Description of Clinical Picture

Outcome
N = Recovered, No Residua
R = Recovered, Residua
D = Died
U = Unknown

CLINICAL INFORMATION

Enter Y = Yes, N = No, or U = Unknown in the Boxes Below Unless Otherwise Indicated

Symptoms

- Fever?
- Sore Throat?
- Difficulty Swallowing?
- Change in Voice?
- Shortness of Breath?
- Weakness?
- Fatigue?
- Other?

Signs

- Fever?
- If Yes, Temp ___.___ °C
- Membrane?
- If Yes, Site(s)
  - Tonsils
  - Soft Palate
  - Hard Palate
  - Larynx
  - Nares
  - Nasopharynx
  - Conjunctiva
  - Skin
- Soft Tissue Swelling? (Around Membrane)
- Neck Edema?
- If Yes
  B = Bilateral
  L = Left Side Only
  R = Right Side Only
- If Yes, Extent
  S = Submandibular Only
  M = Midway to Clavicle
  C = To Clavicle
  B = Below Clavicle
- Stridor?
- Wheezing?
- Palatal Weakness?
- Tachycardia?
- EKG Abnormalities?

Complications

- Complications?
- Airway Obstruction?
- Date of Onset (Month / Day / Year)
- Intubation Required?
- Myocarditis?
- Date of Onset (Month / Day / Year)
- (Poly)neuritis?
- Date of Onset (Month / Day / Year)
- Other?
- Describe:

LABORATORY

Specimen for Diphtheria Culture Obtained?
Y = Yes
N = No
U = Unknown

If Yes, Obtained on (Month / Day / Year) OR U = Unknown

Culture Result
P = Positive
N = Negative
U = Unknown

Specify Lab Performing Culture:

If Culture Positive, Biotype
M = Mitis
G = Gravis
I = Intermedious
B = Belfanti

If Culture Positive, Results of Toxigenicity Testing
X = Not Done
P = Positive
N = Negative
U = Unknown

Specimen Sent to CDC Diphtheria Lab for Confirmation/Molecular Typing?
Y = Yes
N = No
W = Will be Sent

Type of Specimen (Check All That Apply)
- Clinical Swab
- Piece of Membrane
- *C. diphtheria* Isolate

Serum Specimen for Diphtheria Antitoxin Antibodies Obtained?
Y = Yes
N = No
W = Will be Obtained Prior to DAT

PCR Result
P = Positive
N = Negative
U = Unknown
X = Not Done

ANTIBIOTICS

Treated with Antibiotics?
Y = Yes
N = No

As an Outpatient

If Yes, Date Initiated (Month / Day / Year)

Antibiotic (See Codes Below)

Duration of Therapy (Days)

Antibiotic Therapy in Hospital?
Y = Yes
N = No

As an Inpatient

If Yes, Date Initiated (Month / Day / Year)

Antibiotic (See Codes Below)

Duration of Therapy (Days)

Were Antibiotics Given in the 24 Hours Before Culture?
Y = Yes
N = No
U = Unknown

1 = Erythromycin (Incl. Pediazole, Ilosone)
2= Penicillin (Bicillin, Pfizerpen-AS, Wycillin)
3 = Amoxicillin/Ampicillin/Augmentin/Ceclor/Cefixime
4 = Clarithromycin/azithromycin
5 = Cotrimoxazole (Bactrim/Septra)
6 = Tetracycline/Doxycycline
7 = Other
9 = Unknown

Note: This Form Has 2 Sides

EXPOSURE

Country of Residence
U = US
O = Other

If Other, Country Name:

Date of US Arrival
Month Day Year OR U = Unknown

History of International Travel?
(2 Weeks Prior to Onset)
Y = Yes
N = No
U = Unknown

Country(s) Visited	From Month	From Day	From Year	To Month	To Day	To Year

History of Interstate Travel?
(2 Weeks Prior to Onset)
Y = Yes
N = No
U = Unknown

State(s) Visited	From Month	From Day	From Year	To Month	To Day	To Year

Known Exposure to Diphtheria Case or Carrier?
Y = Yes
N = No
U = Unknown

Known Exposure to International Travelers?
Y = Yes
N = No
U = Unknown

Known Exposure to Immigrants?
Y = Yes
N = No
U = Unknown

REPORTING INFORMATION

Has This Suspected Case Been Reported to The State or Local Health Department?
Y = Yes
N = No
U = Unknown

Date Reported to State or Local Health Department
Month Day Year

Person Informed: Phone - - Fax - -

Reporting Physician: Phone - - Fax - -

REQUESTING PHYSICIAN

Name

Institution

Street

City | State | Zip

Phone - - Fax - -

Name of Investigator Under the IND (If Different From Requesting Physician) Phone - - Fax - -

SEND DRUG TO

Name

Attn.

Institution

Street

City | State | Zip

Phone - - Fax - -

DOSE

Amount of DAT Administered: , IU DAT

DISPOSITION

Final Diagnosis:

How Was the Final Diagnosis Confirmed?

Final Case Disposition
C = Confirmed
P = Probable
N = Not a Case

Information for Close Contacts*
Diphtheria

*Close Contact = Household members and others with a history of direct contact with a case-patient, and medical staff exposed to oral or respiratory secretions of a case-patient.

CONTACT INFORMATION

Name	Age	Relation to Case

Vaccinated?	If Vaccinated, Number of Lifetime Doses	If Vaccinated, Last Dose	Nasopharyngeal Culture Obtained?	Oropharyngeal (Throat) Culture Obtained?	Date of Culture	Results	Antibiotic Prophylaxis
☐ Y=Yes N=No U=Unknown	☐ U=Unknown L=<3 Doses G=≥3 Doses	☐ L=≤5 Years Ago G=>5 Years Ago	☐ Y=Yes N=No U=Unknown	☐ Y=Yes N=No U=Unknown	Month Day Year	☐ P=Positive N=Negative U=Unknown	☐ See Codes Below

Name	Age	Relation to Case

Vaccinated?	If Vaccinated, Number of Lifetime Doses	If Vaccinated, Last Dose	Nasopharyngeal Culture Obtained?	Oropharyngeal (Throat) Culture Obtained?	Date of Culture	Results	Antibiotic Prophylaxis
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Name	Age	Relation to Case

Vaccinated?	If Vaccinated, Number of Lifetime Doses	If Vaccinated, Last Dose	Nasopharyngeal Culture Obtained?	Oropharyngeal (Throat) Culture Obtained?	Date of Culture	Results	Antibiotic Prophylaxis
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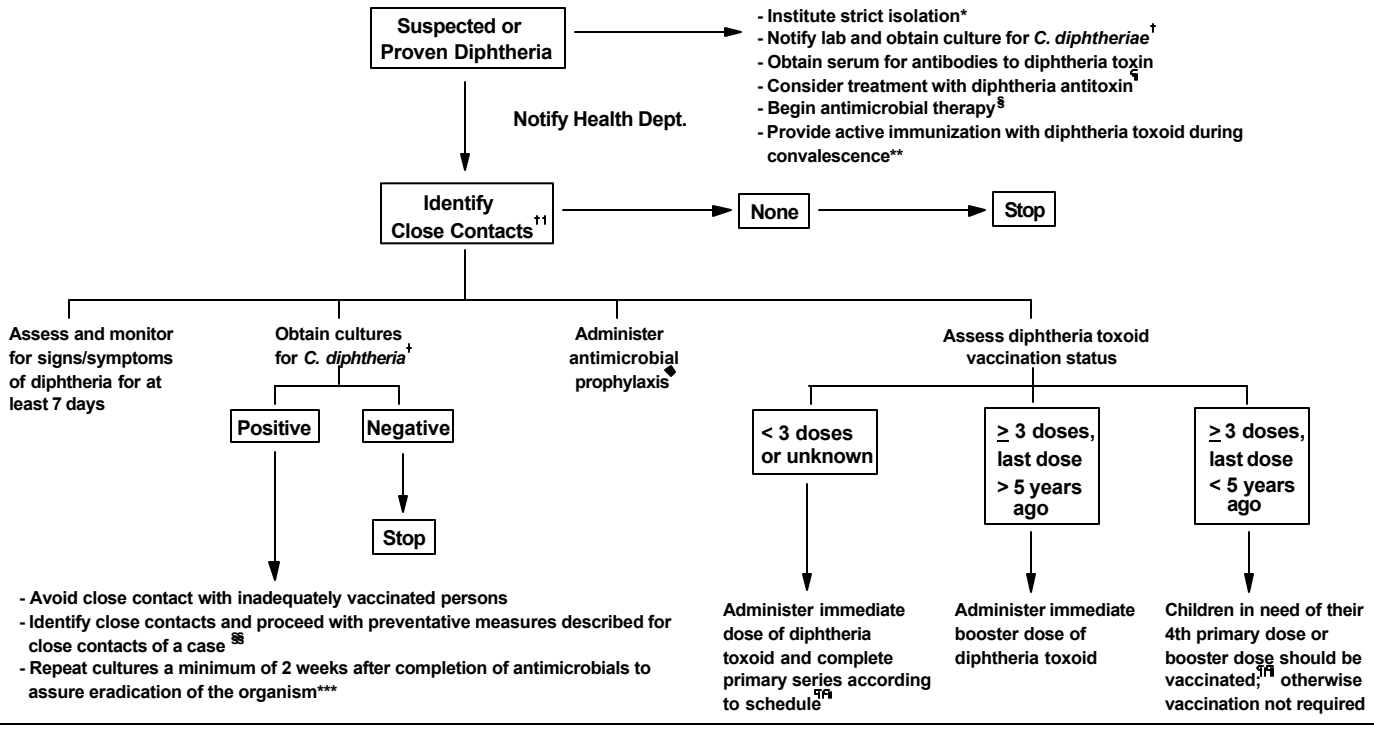
Name	Age	Relation to Case

Vaccinated?	If Vaccinated, Number of Lifetime Doses	If Vaccinated, Last Dose	Nasopharyngeal Culture Obtained?	Oropharyngeal (Throat) Culture Obtained?	Date of Culture	Results	Antibiotic Prophylaxis
☐ Y=Yes N=No U=Unknown	☐ U=Unknown L=<3 Doses G=≥3 Doses	☐ L=≤5 Years Ago G=>5 Years Ago	☐ Y=Yes N=No U=Unknown	☐ Y=Yes N=No U=Unknown	Month Day Year	☐ P=Positive N=Negative U=Unknown	☐ See Codes Below

1 = Erythromycin (incl. Pediazole, ilosone) (bactrim/septra)
2= Penicillin (Bicillin, Pfizerpen-AS, Wycillin) Tetracycline/Doxycycline
3 = Amoxicillin/Ampicillin/Augmentin/Ceclor/Cefixime
4 = Clarithromycin/azithromycin
5 = Cotrimoxazole
6 = Antibiotic Codes
7 = Other
9 = Unknown

Note: This Form has 2 Sides

CASE MANAGEMENT



*Maintain isolation until elimination of the organism is demonstrated by negative cultures of two samples obtained at least 24 hours apart after completion of antimicrobial therapy.

† Both nasal and pharyngeal swabs should be obtained for culture.

¶ If equine diphtheria antitoxin is needed, contact your State Health Department. Before administration, patients should be tested for sensitivity to horse serum and, if necessary, desensitized. The recommended dosage and route of administration depend on the extent and duration of disease. Detailed recommendations can be obtained from the package insert and other publications.

§ Antimicrobial therapy is not a substitute for antitoxin treatment. Intramuscular procaine penicillin G (25,000-50,000 units/[kg/d] for children and 1.2 million units/d for adults, in two divided doses) or parenteral erythromycin (40-50 mg/[kg/d], with a maximum of 2 g/d) has been recommended until the patient can swallow comfortably, at which point oral erythromycin in four divided doses or oral penicillin V (125-250 mg four times daily) may be substituted for a recommended total treatment period of 14 days.

** Vaccination is required because clinical diphtheria does not necessarily confer immunity.

†† Close contacts include household members and other persons with a history of direct contact with a case-patient (e.g. caretakers, relatives, or friends who regularly visit the home) as well as medical staff exposed to oral or respiratory secretions of a case-patient.

◆ A single dose of intramuscular benzathine penicillin G (600,000 units for persons < 6 years of age and 1.2 million units for persons ≥ 6 years of age) or a 7- to 10-day course of oral erythromycin (40mg/[kg/d] for children and 1 g/d for adults) has been recommended.

§§ Preventative measures may be extended to close contacts of carriers but should be considered a lower priority than control measures for contacts of each case.

*** Persons who continue to harbor the organism after treatment with either penicillin or erythromycin should receive an additional 10-day course of oral erythromycin and should submit samples for follow-up cultures.

¶¶ Refer to published recommendations for the schedule for routine administration of DTP.

Farizo KM, Strebel PM, Chen RT, et al. Fatal respiratory disease due to *Corynebacterium diphtheriae*: Case report and review of guidelines for management, investigation, and control. Clin Infect Dis 1993;16:59-68. Centers for Disease Control and Prevention. Manual for the Surveillance of Vaccine-Preventable Diseases 1996;2-9.

Georgia Department of Public Health
Measles Case Report Form

SendSS ID: _____
Form Complete □ Yes □ No

PATIENT DEMOGRAPHICS

Patient name: Last, First M.I.	Date of birth (mm/dd/yy): ____/____/____	Age *(enter age and check one)*: ___ □ Days □ Weeks □ Months □ Years	Gender: □ Male □ Female

Address: Number, Street	City:	State:	ZIP code:	County:

Telephone number: Home ( ) – Work ( ) –	Country of birth:

Ethnicity (check one):	Race (check all that apply):		
□ Hispanic/Latino	□ Black/African-American	□ Asian /Pacific Islander	□ Unknown
□ Non-Hispanic/Latino	□ Native American/Alaskan Native	□ Multiracial	
□ Unknown	□ White	□ Other (please specify) _____	

TRACKING DATA

Medical record no. or client no.:	State Case ID ***(For state use only):***

Date reported to health department (mm/dd/yy): ____/____/____	Date investigation started: ____/____/____	Person reporting:	Reporter telephone: ( ) –

Case investigator completing form:	Organization:	Investigator phone: ( ) –	Event Date: ____/____/____	Event Type: □ Rash Onset Date □Diagnosis Date □Lab Test Date □Unknown □Report Date (County) □Report Date (State)

SIGNS AND SYMPTOMS

Rash? □Yes □No □Unknown	Rash onset date ___/___/____	Rash duration _____days	Generalized rash? □ Yes □ No □ Unknown	Origin on body	Direction of spread

Was temperature taken? □ Yes □ No □ Unknown	Fever? □ Yes □ No □ Unknown	Fever onset date ___/___/_____	Highest recorded temperature ____ . ___°F	If temperature not taken, skin was □ Hot □ Warm □Normal □Unknown

Cough?	□Yes □No □Unknown	Onset date ___/____/_____	Other symptoms? □ Yes □ No □ Unknown	Describe additional symptoms
Coryza?	□Yes □No □Unknown	Onset date ___/____/_____		
Conjunctivitis	□Yes □No □Unknown	Onset date ___/____/_____		
Koplik's spots	□Yes □No □Unknown	Onset date ___/____/_____		

Does case meet clinical criteria for further investigation? □ Yes □ No □ Unknown	**CASE MEETS CDC/CSTE CLINICAL CRITERA? (*FOR STATE USE ONLY*)** □ Yes □ No □ Unknown

COMPLICATIONS AND OTHER SYMPTOMS

Hospitalized? □ Yes □ No □ Unknown	Admission date ____/____/____	Discharge date ____/____/____	Number of days hospitalized ____	Died? □ Yes □ No □ Unknown	Date of death ____/____/____ **If died, complete and attach measles death worksheet**

Facility Name:		
Pneumonia? □ Yes □ No □ Unknown	Encephalitis? □ Yes □ No □ Unknown	Other complications? □ Yes □ No □Unknown

Describe additional complications:

LABORATORY TESTS

Was laboratory testing for measles done? □ Yes □ No □ Unknown	Case lab confirmed ***(For state use only)*** □ Yes □ No □ Unknown	Virus isolated? □ Yes □ No □Unknown

	Result	Date specimen taken	Lab name	Specimen Type
Culture	_____	____/____/____	_____	_____
PCR	_____	____/____/____	_____	_____
IgG (acute)	_____	____/____/____	_____	_____
IgG (convalescent)	_____	____/____/____	_____	_____
IgM	_____	____/____/____	_____	_____

Specimen sent to CDC for genotyping? □Yes □No □Unknown

Date sent to CDC ___/___/_____

Virus genotype _____

Result Codes: P:Positive X:Not done N:Negative I:Indeterminate E:Pending U:Unknown

Specimen Type Codes: U:Urine S: Blood/Serum N: Nasopharyngeal swab T: Throat swab O: Other U: Unknown

Comments:

VACCINATION HISTORY

Vaccinated? (Received any doses of measles-containing vaccines)
□ Yes □ No □ Unknown

No. doses of measles-containing vaccine received prior to illness onset? _____

Dose	Vaccination date	Vaccine type	Vaccine manufacturer	Lot number
Dose 1	____/____/____			
Dose 2	____/____/____			

Prior MD diagnosis of measles? □ Yes □ No □ Unknown

Reason patient not **age-appropriately** vaccinated

□ Religious exemption
□ Parental/Patient refusal
□ Philosophical exemption
□ Lab confirmation of previous disease
□ Medical contraindication
□ MD diagnosis of previous disease
□ Unknown
□ Forgot
□ Inconvenience
□ Too expensive
□ Other
□ Too young
□ Unaware

EPIDEMIOLOGIC INFORMATION

Date first reported to public health:___/___/____

Epi-linked? □ Yes □ No □ Unknown

Name of Epi-linked case: _____

SendSS ID of Epi-linked case: _____

Outbreak related? □ Yes □ No □ Unknown

Outbreak name or location:

Employed at or attends school? □ Yes □ No □ Unknown

Employed at or attends child care? □ Yes □ No □ Unknown

Is patient incarcerated? □ Yes □ No □ Unknown

Is patient instutionalized? □ Yes □ No □ Unknown

Is patient pregnant? □ Yes □ No □ Unknown

Is patient immunocompromised? □ Yes □ No □ Unknown

Is patient a healthcare worker?
□ Yes, w/ direct patient contact
□ Yes, w/o direct patient contact
□ No
□ Unknown

EXPOSURE HISTORY

Recent travel or arrival from other country or state within 18 days of rash onset? □Yes □No □Unknown

Type of travel: □International □Domestic

Visited tourist attraction? □Yes □No □Unknown

Countries or states visited:

Dates in countries or states visited
___/___/____ to ___/____/____

Tourist attraction visited: ___/___/____ to ___/____/____

Date returned to Georgia
____/____/_____

Close contact with person(s) with rash 8-17 days before rash onset? □Yes □No □Unknown

	Name	Rash onset date	Relationship	Age(Years)	Same Household
1		___/___/___			
2		___/___/___			
3		___/___/___			
4		___/___/___			

Transmission setting (Where did this case acquire pertussis?)

□ Daycare (1)
□ School (2)
□ Doctor's Office (3)
□ Hospital Ward (4)
□ Hospital ER (5)
□ Outpatient clinic (6)
□ Home (7)
□ Work (8)
□ Unknown (9)
□ College (10)
□ Military (11)
□ Correctional facility (12)
□ Place of worship (13)
□ International travel (14)
□ Other (15)

Setting of further documented spread from case (outside of household) **(use number codes from transmission setting question above)**
_____ *(no documented spread = 16)*

Import status: □ Indigenous □Out-of-state import □International Import

If case is indigenous, is case □Import-linked (linked to imported case) □ Endemic

□ Imported virus (viral genetic evidence indicates an imported genotype) □ Unknown Source

If case is imported, describe source

Number of susceptible contacts _____

Comments:

Algorithm for Determining Measles Prophylaxis for Exposed Persons

Use the table as a guide to determine appropriate post-exposure prophylaxis for exposed individuals based on their current age and/or health status.

Current age and/or health status	Vaccination History	
	Yes*	No
Pregnant		
W/ documented evidence of measles immunity	No action is needed	No action is needed
W/o documented evidence of measles immunity	—	Administer intravenous IG (IGIV) within 6 days of exposure§
Immunocompromised	Administer intravenous IG (IGIV) within 6 days of exposure§	Administer intravenous IG (IGIV) within 6 days of exposure§
< 12 months of age†	—	Administer intramuscular IG (IGIM) within 6 days of exposure†‡
≥ 12 months of age*	No action needed*	MMR vaccine should be given within 72 hours of exposure; or IGIM should be given within 6 days of exposure‡
Born before 1957ll	Assume immunity. No action needed.	Assume immunity. No action needed.
Healthcare worker *(regardless of age and year of birth)*		
W/ documented evidence of measles immunity	No action needed	No action needed
W/o documented evidence of measles immunity	—	MMR vaccine should be given within 72 hours of exposure; or IG‡§ should be given within 6 days of exposure

*The algorithm assumes **2 doses of MMR vaccine**. Exposed persons with history of only 1 dose of MMR vaccine should receive a second dose of MMR within 72 hours of exposure if 28 days have passed since their first MMR.

† For infants aged 6 -11 months, MMR vaccine can be given in place of IGIM, if administered within 72 hours of exposure. This dose does not count toward the two-dose series.

‡Recommended dosage for intramuscular Immunoglobulin (IGIM) is 0.5 mL/kg of body weight up to a maximum of 15 mL .

§ Recommended dosage for intravenous Immunoglobulin (IGIV) is 400 mg/kg. This decision should be made in consultation with the patient's physician.

ll Healthcare workers are excluded. See "Healthcare worker" field for recommendations.

Georgia Department of Public Health

Acute Disease Epidemiology Section
2 Peachtree Street, NW
Atlanta, GA 30303
404-657-2588
http://dph.georgia.gov/vaccine-preventable-diseases

Updated January/2015

Measles: Specimen Collection and Shipping Instructions

A case of measles is a **public health emergency**. Contact public health **immediately** when the diagnosis of measles is suspected.. A clinical diagnosis of measles is unreliable; suspect cases of measles must be laboratory confirmed. Confirmation of acute infection can be determined by the presence of serum immunoglobulin M (IgM), a four-fold rise in serum immunoglobulin G (IgG) titer between acute and convalescent phase specimens, a positive PCR, and/or the isolation of measles virus from a throat or urine specimen.

The Georgia Division of Public Health strongly recommends the **collection of serum for measles IgM/IgG AND collection of a throat swab and urine specimen to confirm a measles case**. To coordinate specimen collection and laboratory submission, call your District or County Health Department. **Please do not send specimens directly to the Georgia Public Health Laboratory (GPHL) or the Centers for Disease Control and Prevention (CDC).**

Specimen Collection Instructions

Serologic Testing: Collect as soon as possible when measles infection is suspected, preferably at the onset of rash.

- Collect 7-10 ml of blood in a red top or serum separator tube (SST)
  Acute serum (IgM and first IgG)
  Convalescent serum (second IgG)
- SST tubes must be centrifuged and the serum transferred into a transport tube for shipment.
- Keep specimens cold (4° C or 39° F) and ship overnight service. **Do not freeze serum samples.**

Viral Testing: Collect a urine and throat swab at the same time as serology. Virus is most frequently recovered within the first 3 days following rash onset, but up to 7 days after rash onset is acceptable. If a few days have passed since resolution of the rash collect only a urine specimen.

Throat Swabs

- Use a **viral transport kit** if possible (such as that used to isolate influenza or herpes simplex virus)
- Collect a throat swab by rubbing the posterior oropharynx with a dry sterile cotton swab
- Place swab in a tube containing 2-3 mls of viral transport medium or other sterile isotonic solution (phosphate buffered saline or cell culture medium).
- Keep samples cold (4° C or 39° F)
- Ship the viral specimens using ice packs or dry ice*. Avoid freeze-thaw cycles.

Urine Specimens

- Collect 10-15 ml of urine in a screw top sterile container
- Keep samples cold (4° C or 39° F)
- Ship the viral specimens using ice packs or dry ice*. Avoid freeze-thaw cycles.

*If shipment contains both serum and viral specimens, ship together by overnight service on cold packs (do not freeze serum)

Laboratory Submission Instructions

1. Notify your District Public Health Office or the Vaccine Preventable Disease Epidemiology Unit **immediately**.

2. Label the specimen containers (transport media, urine, and/or blood) with the patient's name, date of birth, and date of specimen collection (**UNAPPROVED OR UNLABELED SPECIMENS WILL NOT BE TESTED)**

3. Complete the Georgia Public Health Laboratory Submission Form found at: http://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20FINAL%20Lab%20Submission%20Form_Non-Fillable%204-1-2014.pdf with the following information:
   a. Submitter code (if known), address, phone and fax number, and contact name

b. Patient name, address, phone number, date of birth, sex, race, and ethnicity (if available)
c. Date of specimen collection, source, type of specimen, clinical history and information
d. If requesting IgM and/or IgG, under "Immunology" check **ALL** of the following boxes: 1510 Rubella IgG; 1515 Rubella IgM; 1520 Rubeola IgG; and 1525 Rubeola IgM
e. If requesting a culture, under "Virology" check the box labeled 62040 Measles Culture/IFA
f. If requesting a PCR, under "Molecular Biology" check the box labeled 416000 Measles (RT-PCR)

NOTE: A separate submission form needs to be completed for **EACH** specimen submitted (i.e. if two specimens are collected – one for culture and one for PCR , two GPHL submission forms need to be completed).

4. Ship specimens overnight by courier or Federal Express on ice packs. If the shipment is delayed, refrigerate specimens at 2-8 ^{o}C (or 36-46 ^{o}F) and transport the next day on ice packs by first class mail, common carrier, or courier.

5. Ship specimens to the following address:

Georgia Public Health Laboratory
1749 Clairmont Road
Decatur, GA 30033-4050
ATTN: Bacteriology Laboratory

Contact Information

- For specimen outfit requests call the Georgia Public Health Laboratory at 404-327-7921
- For questions related to specimen collection and transport: contact local or district public health or the State VPD Epidemiology Unit, 404-657-2588

Interpretation of Measles Laboratory Test Results

- Serology
  - IgM: Measles infection is confirmed using measles IgM antibody testing of serum samples collected as soon as possible after symptom onset. A positive IgM test result indicates current/very recent infection or reinfection. As with any lab test, there can be false positive test results.

  - IgG: IgG alone is not diagnostic unless you obtain both an acute (can be done as soon after onset as the patient is seen, but ideally four to five days after onset of symptoms) and convalescent (from two to four weeks after onset) blood specimen for serologic tests to determine if a four-fold rise in IgG antibody titer has occurred (e.g., from 1:40 to 1:320). In vaccinated persons it may not be possible to detect a four-fold rise in measles IgG antibody titer in paired serum samples (acute and convalescent). In such persons, the existing IgG will begin to rise soon after exposure and infection. At the time of onset of symptoms and collection of the acute serum, the IgG may already be quite elevated, and obviate the 4fold rise observed in the convalescent serum specimen.

- PCR
  - Sequence analysis of an RT-PCR product derived from a virus isolate or from clinical material confirms a presumptive positive PCR result and provides epidemiologically important information

- Viral Culture
  - Isolation of measles virus from any clinical specimen constitutes laboratory confirmation of measles

Minimize Measles Transmission in Healthcare Settings

To minimize the risk of measles transmission in healthcare settings, healthcare personnel should:

1. **Query patients with a febrile rash illness*** about a history of international travel, contact with foreign visitors, transit through an international airport, or possible exposure to a measles patient in the 3 weeks prior to symptom onset. Suspect measles in patients with such a history.
2. **Mask suspect measles patients immediately**. If a surgical mask cannot be tolerated, other practical means of source containment should be implemented (e.g., place a blanket loosely over the heads of infants and young children suspected to have measles when they are in the waiting room or other common areas).
3. **Do not allow suspect measles patients to remain in the waiting area or other common areas**; isolate them immediately in an airborne infection isolation room if one is available. If such a room is not available, place patient in a private room with the door closed. For additional infection control information, please see the CDC "Guidelines for Isolation Precautions" at: www.cdc.gov/hicpac/2007IP/2007isolationPrecautions.html
4. If possible, **allow only healthcare personnel with documentation of 2 doses of MMR vaccine** or laboratory evidence of immunity (measles IgG positive) to enter the patient's room.
5. **Healthcare personnel who do not have documentation of 2 doses** of live measles vaccine or lab-evidence of immunity must wear a N95 respirator (N95 respirator must be fit-checked each time it is donned).
6. If possible, **do not allow susceptible visitors** in the patient's room.
7. **Do not use the examination room for at least two hours** after the possibly infectious patient leaves.
8. If possible, **schedule suspect measles patients at the end of the day**.
9. **Notify the Georgia Department of Public Health** immediately of any suspect measles patients; arrange for measles testing at the Georgia Public Health Laboratory (GPHL) by calling 404-657-2588 or 1-866-PUB-HLTH.
10. **Notify any location where the patient is being referred** for additional clinical evaluation or laboratory testing about the patient's suspect measles status and do not refer suspect measles patients to other locations unless appropriate infection control measures can be implemented at those locations. Patient must wear a mask, if feasible, or loosely cover the heads of infants or young children with a blanket during transport to another clinical area.
11. **Instruct suspect measles patients** and exposed persons to inform all healthcare providers of the possibility of measles prior to entering a healthcare facility so that appropriate infection control precautions can be implemented.
12. **Make note of the staff and other patients** who were in the area during the time the suspect measles patient was in the facility and for two hours after they left. If measles is confirmed in the suspect case, exposed people will need to be assessed for measles immunity.
13. **For more information** on measles and measles testing, please see: http://dph.georgia.gov/sites/dph.georgia.gov/files/ADES_Measles_Specimen_Collection_Guidelines.pdf

*Measles typically begins with a mild to moderate fever accompanied by cough, coryza, and conjunctivitis. Two to three days later, Koplick spots (tiny red spots with bluish-white centers inside the mouth on the lining of the cheek), which are a characteristic sign of measles, may appear. At this time the fever spikes, often as high as 104-105oF. At the same time, a red blotchy maculopapular rash appears that may become confluent, usually appearing first on the face-along the hairline and behind the ears. This slightly itchy rash rapidly spreads downward to the chest and back and, finally, to the thighs and feet. In approximately one week, the rash fades in the same sequence that it appeared.

Adapted from the Minnesota Department of Public Health

Georgia Department of Public Health

Acute Disease Epidemiology
2 Peachtree St., NW
Atlanta, GA 30303
404-658-2588 or 1-866-PUB-HLTH
http://dph.georgia.gov/vaccine-preventable-diseases

Updated 1/2015

Mumps Surveillance Worksheet

Name (Last, First)					Hospital Record Number
Address (Street and Number)	City	County	State	Zip Code	Phone
Reporting Physician/Nurse/Hospital/Clinic/Lab	Address				Phone

DETACH HERE and transmit only the lower portion if sent to CDC

Mumps Surveillance Worksheet

County	State	Zip Code

Birth Date ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Age ☐☐☐ 999 = Unknown

Age Type ☐ 0 = 0-120 years; 1 = 0-11 months; 2 = 0-52 weeks; 3 = 0-28 days; 9 = Age unknown

Ethnicity ☐ H = Hispanic; N = Not Hispanic; U = Unknown

Race ☐ N = Native American / Alaskan Native; A = Asian / Pacific Islander; B = African American; W = White; O = Other; U = Unknown

Sex ☐ M = Male; F = Female; U = Unknown

Event Date ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Event Type ☐ 1 = Onset Date; 2 = Diagnosis Date; 3 = Lab Test Date; 4 = Reported to County; 5 = Reported to State or *MMWR* Report Date; 9 = Unknown

Reported ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Import Status ☐ 1 = U.S.-acquired; 2 = International Import ☐ 1 = Import-linked; 2 = Imported Virus; 3 = Endemic; 4 = Unknown Source

Report Status ☐ 1 = Confirmed; 2 = Probable; 3 = Suspect; 4 = Unknown

CLINICAL DATA

Parotitis (opposite 2nd molars)? ☐ Y = Yes; N = No; U = Unknown ☐ Unilateral ☐ Bilateral

Jaw Pain? ☐ Y = Yes; N = No; U = Unknown

Salivary Gland Swelling (including parotitis)

Onset ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Duration ☐☐☐ 1-998 = Number of Days; 999 = Unknown

Submandibular? ☐ Y = Yes; N = No; U = Unknown

Sublingual? ☐ Y = Yes; N = No; U = Unknown

Notes

COMPLICATIONS

Meningitis? ☐ Y = Yes; N = No; U = Unknown

Deafness? ☐ Y = Yes; N = No; U = Unknown

Orchitis? ☐ Y = Yes; N = No; U = Unknown

Encephalitis? ☐ Y = Yes; N = No; U = Unknown

Death? ☐ Y = Yes; N = No; U = Unknown

Other Complications? ☐ Y = Yes; N = No; U = Unknown

If Yes, please specify

Hospitalized? ☐ Y = Yes; N = No; U = Unknown

Days Hospitalized ☐☐☐ 999 = Unknown

LABORATORY

Was Laboratory Testing Done for Mumps? ☐ Y = Yes; N = No; U = Unknown

Date Serologic (IgG) Specimens Taken

IgG (acute) ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Test Used _____

Units Reported _____

IgG (convalescent) ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Test Used _____

Units Reported _____

Result ☐

Single IgG Specimen Only ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Test Used _____

Units Reported _____

Result ☐

Date Serologic (IgM) Specimens Taken

IgM (1) ☐☐ Month ☐☐ Day ☐☐☐☐ Year ☐

IgM (2) ☐☐ Month ☐☐ Day ☐☐☐☐ Year ☐

Other Lab Results

PCR ☐☐ Month ☐☐ Day ☐☐☐☐ Year ☐

Culture ☐☐ Month ☐☐ Day ☐☐☐☐ Year ☐

Result

Result Codes
P = Significant rise in IgG
I = Indeterminate
N = No significant rise in IgG
E = Pending
X = Not Done
U = Unknown

Result Codes
P = Positive
I = Indeterminate
N = Negative
E = Pending
X = Not Done
U = Unknown

EPIDEMIOLOGIC

Date First Reported to a Health Department ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Date Case Investigation Started ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Outbreak Related? ☐ Y = Yes; N = No; U = Unknown

If Yes, Outbreak Name

Transmission Setting (Where did this person acquire mumps?) ☐

1 = Day Care
2 = School
3 = Doctor's Office
4 = Hospital Ward
5 = Hospital ER
6 = Hospital Outpatient Clinic
7 = Home
8 = Work
9 = Unknown
10 = College
11 = Military
12 = Correctional Facility
13 = Church
14 = International Travel
15 = Other

If Other, Specify Transmission Setting _____

Were Age and Setting Verified? (Is age appropriate for setting?) ☐ Y = Yes; N = No; U = Unknown

Source of Exposure for Current Case (Enter State ID if source was an in-state case; enter Country if source was out of U.S.; enter State if source was out-of-state)

Epi-linked to Another Confirmed or Probable Case? ☐ Y = Yes; N = No; U = Unknown

CS106190

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VACCINE HISTORY

Vaccinated? (Received mumps-containing vaccine?)

Y = Yes
N = No
U = Unknown

Notes (History of natural mumps disease?)

Vaccination Date	Vaccine Type	Manufacturer	Lot Number

Vaccine Type Codes
A = MMR
B = Mumps
O = Other
U = Unknown

Vaccine Manufacturer Codes
M = Merck
O = Other
U = Unknown

Number of Doses Received After 1st Birthday

9 = Unknown

If Not Vaccinated, What Was the Reason?

1 = Religious Exemption
2 = Medical Contraindication
3 = Philosophical Objection
4 = Lab. Evidence of Previous Disease
5 = MD Diagnosis of Previous Disease
6 = Under Age for Vaccination
7 = Parental Refusal
8 = Other
9 = Unknown

Notes/Other information

MUMPS LABORATORY TESTING GUIDANCE

Testing Method	Buccal Swab	Serum	Urine*
RT-PCR§	X		X
IgM or IgG Serology		X	
Viral Isolation (Culture)	X		X

*Collect only if the patient has orchitis (inflammation of the testicles) or oophoritis (inflammation of the ovaries)
§RT-PCR is the preferred method for confirming an acute mumps case; a buccal swab is the preferred sample.
Only patients with symptoms consistent with mumps will be considered for RT-PCR or IgM testing at the Georgia Public Health Laboratory (GPHL).

Health care providers must contact their local or district public health department to obtain mumps testing approval.

Collect specimens as soon as mumps is suspected

Buccal or Throat (Oropharyngeal) Swab

- Massage the parotid gland (the space near the upper rear molars between the cheek and teeth) for 30 seconds prior to swabbing.
- Vigorously swab the parotid area with a sterile synthetic swab (e.g. Dacron). Synthetic swabs are preferred over cotton swabs.
- Place swab in a tube containing 2-3 ml of viral transport medium or other sterile isotonic solution (phosphate buffered saline or cell culture medium).
- The swab can be broken off and left in the tube.
- Detailed buccal swabbing instructions are available at https://www.cdc.gov/mumps/lab/detection-mumps.html

Serum IgM or IgG testing

- Adults: Collect 7-10 ml of blood in a red top or serum separator tube (SST).
- Children: Collect at least 3 ml of blood in a red top or serum separator tube (SST)
- SST tubes must be centrifuged and the serum transferred into a transport tube for shipment.

Urine

- **Collect urine ONLY if the patient has orchitis (testicular swelling) or oophoritis (ovary swelling).**
- Collect 10-15 ml of urine in a screw top sterile container

Specimen Storage and Shipping

- Samples should be maintained at 4°C (39°F) and shipped on cold packs within 72 hours.

Specimen submission to the Georgia Public Health Laboratory requires prior consultation with your local public health department.

To ship approved specimens:

- Label all specimens (transport media, urine, and/or blood) with the patient's name, date of birth, and date of specimen collection **(UNAPPROVED OR UNLABELED SPECIMENS WILL NOT BE TESTED)**
- Complete the Georgia Public Health Laboratory Submission Form found at: https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form.pdf
- If requesting IgM and/or IgG, under "Immunology" check **BOTH** of the following boxes:
  - Mumps IgG W15550 Decatur OR W15550 Waycross
  - **AND** 1570 Refer to CDC. Write Mumps IgM in the space next to Refer to CDC.
- If requesting a PCR, under "Molecular Biology" check the box labeled 413000 Mumps (RT-PCR)
- If requesting viral isolation (culture), under "Virology" check the box labeled 60000 Mumps Culture/IFA
- **A separate submission form needs to be completed for EACH specimen submitted**

Ship approved specimens to:

Georgia Public Health Laboratory
1749 Clairmont Road
Decatur, GA 30033-4050
ATTN: Molecular Biology

In addition to GPHL, specimens can be submitted to commercial laboratories for testing. At this time, Quest Diagnostics is the only commercial lab that performs mumps PCR.

For questions about specimen collection, submission, or shipping contact local or district public health or call 1-866-PUB-HLTH

Georgia Department of Public Health
Enhanced Pertussis Surveillance Form

SendSS ID: _____ □ Final

Form Complete □ Yes □ No □Corrected

PATIENT DEMOGRAPHICS

Patient name: Last, First M.I.	Date of birth (mm/dd/yy): ____/____/____	Age *(enter age and check one)*: _____ □ Days □ Weeks □ Months □ Years	Gender: □ Male □ Female

Address: Number, Street	City:	State:	ZIP code:	County:

Telephone number: Home ( ) – Work ( ) – Country of birth:

Ethnicity (check one):
□ Hispanic/Latino
□ Non-Hispanic/Latino
□ Unknown

Race (check all that apply):
□ Black/African-American □ Asian /Pacific Islander □ Unknown
□ Native American/Alaskan Native □ Multiracial
□ White □ Other (please specify)_____

TRACKING DATA

Medical record no. or client no.: State Case ID ***(For state use only):***

Date reported to health department: ____/____/____ Case investigator completing form:

Date investigation started: ____/____/____ Organization: Investigator phone: ( ) –

Event Date: ____/____/____ Person/Clinic Reporting: Reporter telephone: ( ) –

Event Type: □ Onset Date □Diagnosis Date □Lab Test Date □Report Date (County) □Report Date (State) □Unknown

SIGNS AND SYMPTOMS

Any cough?	Cough onset date	Cough 14 days after cough onset?	Paroxysmal cough?
□ Yes □ No □ Unknown	____/____/____	□ Yes □ No □ Unknown	□ Yes □ No □ Unknown

Whoop?	Posttusive vomiting?	Apnea?	Cyanosis?
□ Yes □ No □ Unknown	□ Yes □ No □ Unknown	□ Yes □ No □ Unknown	□ Yes □ No □ Unknown

Fever? □ Yes, Patient report □ Yes, Provider report □Yes, both reported □No □ Unknown **If, yes** highest temperature: ___ ___ ___ . ___°F (unknown=999.9)

Fever onset was _____ cough onset □ Before □ After □ Same day as □ Unknown

Number of physician visits prior to diagnosis _____ □ Unknown	Duration of cough at final interview (days) _____	Final interview date ____/____/____	Cough at final interview □ Yes □ No □ Unknown

Reason for insufficient **Infant** Cough: □ Died (<14 days after onset) □Cough inhibited (medical intervention) □Lost to follow-up □Resolved (<14 day duration) □Other □Unknown

DOES CASE MEET CLINICAL CRITERIA □Yes □No □Unknown ***(For state use only)***

COMPLICATIONS AND OTHER SYMPTOMS

Hospitalized?	Admission date	Discharge date	Number of days hospitalized ____
□ Yes □ No □ Unknown	____/____/____	____/____/____	

Facility:

Died? □Yes □ No □Unknown

Date of death ____/____/____

If died, complete and attach pertussis death worksheet

X-ray for pneumonia? □ Not done □ Pos □ Neg □ Unknown	Seizures? □ Yes □ No □ Unknown	Acute encephalopathy? □ Yes □ No □ Unknown

TREATMENT

Antibiotics given? □ Yes □ No □ Unknown

1st antibiotic start date ___/___/___

1st antibiotic received: □Unknown (9)
□ Erythromycin (1)
□ Clarithromycin/Azithro.(2)
□ Tetracycline/Doxy. (3)
□ Cotrimoxazole (4)
□ Amoxicillin/Penicillin/ Ampicillin/Augmentin/ Ceclor/Cefixime (5)
□ Other (6)

2nd antibiotic received: __ (# from 1st antibiotic received list)

2nd antibiotic start date ___/___/___

No. of days 1st antibiotic actually taken _____

No. of days 2nd antibiotic actually taken _____

LABORATORY TESTS

Was laboratory testing for pertussis done? □ Yes □ No □ Unknown

Case lab confirmed ***(For state use only)*** □ Yes □ No □ Unknown

Isolate/Specimen Available: □ Yes □ No

	Result	Date specimen taken	Lab name
Culture	_____	____/____/____	_____
PCR	_____	____/____/____	_____
IgA	_____	____/____/____	_____
IgG	_____	____/____/____	_____
IgM	_____	____/____/____	_____
DFA	_____	____/____/____	_____

Co-infection with other *Bordetella species*?
□ No known co-infection
□ *B. parapertussis*
□ *B. bronchiseptica*
□ *B. holmesii*

Ship Date to GPHL: ____/____/____

Expected date to CDC: ____/____/____

Ship Date to CDC: ____/____/____

Result Codes: P:Positive X:Not done N:Negative I:Indeterminate E:Pending U:Unknown S:*B.parapertussis* B:*B.bronchiseptica* H:*B.holmseii*

Comments:

VACCINATION HISTORY

Vaccinated? (Received any doses of pertussis-containing vaccines)
□ Yes □ No □ Unknown

No. doses of pertussis-containing vaccine received prior to illness onset? _____

Dose	Vaccination date	Vaccine type*	Vaccine manufacturer†	Lot number
Dose 1	___/___/___			
Dose 2	___/___/___			
Dose 3	___/___/___			
Dose 4	___/___/___			
Dose 5	___/___/___			
Dose 6	___/___/___			

***Vaccine type codes:**

W:DTP, A: DTap, H: DTaP-Hib, D: DT or Td, T: DTP-Hib, P: Pertussis Only, B: DTP-Hib-HepB, X: Tdap (Adacel, Boostrix), V: DTaP-IPV-HepB (Pediarix), N: DTaP-IPV-Hib (Pentacel), K: DTaP-IPV (Kinrex), O: Other, U: Unknown, C: Pertussis vaccine (unspecified)

†Vaccine manufacturer codes:

C: Sanofi Pasteur, L: Wyeth, S: Glaxo Smith Kline, M: Mass. Health Dept, I: Michigan Health Dept, N: North American Vaccine, O: Other, U: Unknown

Reason patient not **age-appropriately** vaccinated :

□ Religious exemption
□ Medical contraindication
□ Philosophical exemption
□ Previous culture/MD confirmed pertussis
□ Parental/Patient refusal
□ Too Young
□ Unknown
□ Forgot
□ Inconvenience
□ Too expensive
□ Other
□ Concurrent Illness
□ Unaware

EPIDEMIOLOGIC INFORMATION

Case Report Status: □ Confirmed □ Probable *(For state use only)*

Outbreak related? □ Yes □ No □ Unknown
Outbreak name or location:

Epi-linked? □ Yes □ No □ Unknown
Name of Epi-linked case: _____
SendSS ID of Epi-linked case: _____

Previous Pertussis Diagnosis? If yes, year:
□ Yes □ No □ Unknown ___ ___ ___ ___
Previous State Case ID: _____

Employed at or attends school? □ Yes □ No □ Unknown
Employed at or attend daycare? □ Yes □ No □ Unknown
Is patient incarcerated? □ Yes □ No □ Unknown
Is patient instutionalized? □ Yes □ No □ Unknown
Pregnancy status at cough onset:
□ Pregnant* □ Postpartum □ Neither □Unknown
***If pregnant:**
Expected due date ___/___/___ Weeks of pregnancy ____

Is patient a healthcare worker?
□ Yes, w/ direct patient contact
□ Yes, w/ **no** direct patient contact
□ No
□ Unknown

PATIENT SETTING (EXPOSURE AND CONTACT)

Transmission setting (Where did this case acquire pertussis?)

□ Daycare (1)
□ School (2)
□ Doctor's Office (3)
□ Hospital Ward (4)
□ Hospital ER (5)
□ Outpatient clinic (6)
□ Home (7)
□ Work (8)
□ Unknown (9)
□ College (10)
□ Military (11)
□ Correctional facility (12)
□ Place of worship (13)
□ International travel (14)
□ Other (15)

Setting of further documented spread from case (outside of household) **(use number codes from transmission setting question)**
(no documented spread = 16)

Number of residents in case's household: _____

Number of contacts recommended antibiotics: _____
Number of contacts completing antibiotics: _____

Answer ONLY IF patient <12 months old

Suspected source of infection (if case < 1 year, is another person with suspected pertussis known?) □ Yes □ No □ Unknown

Source's relationship to case

□ Mother □ Brother □ Grandparent □ Other □ Cousin
□ Father □ Neighbor □ Friend □ Aunt □ Sibling N/S
□ Sister □ Daycare □ Baby Sitter □ Uncle □ Unknown

Source's current age: _____

Infant gestational age at birth: _____
Mother's age at infant birth: _____
Weight of infant at birth:
lb oz

MATERNAL TDAP INFORMATION - ONLY FOR MOTHERS OF INFANTS < 12 MONTHS OLD

Has mom ever been vaccinated with Tdap?
□ Yes □ No □ Mom N/A □ Unknown

Dose	Tdap Vaccination date	Source*
Dose 1	____/____/____ □Unk	
Dose 2	____/____/____ □Unk	
Dose 3	____/____/____ □Unk	
Dose 4	____/____/____ □Unk	
Dose 5	____/____/____ □Unk	

*Souce codes: 1: Medical Provider
2: Immunization registry 3: Verbal Report (shot card)
4: Verbal report (non-verified)

Was Tdap vaccine given to mom *during* pregnacy with [case infant]?
□ Yes □ No
□ Mom N/A for interview
□ Infant adopted/ in foster care
□ Unknown

If mom **was vaccinated** with Tdap *during* pregnancy with [case infant], during which trimester was vaccine given?
□ 1st trimester (1-12 wks)
□ 2nd trimester (13-27 wks)
□ 3rd trimester (28-42 wks)
□ Not vaccinated during pregnancy with [case infant]
□ Unknown

If mom **was not vaccinated** *during* pregnancy with [case infant], why not?
□ Tdap not offered by physician
□ Vaccinated prior to pregnancy
□ Vaccinated after pregnancy
□ Declined Tdap
□ Other:_____
□ Unknown

Georgia Department of Public Health
Vaccine Preventable Disease Epidemiology Unit (VPDEU)

Pertussis: Specimen Collection and Shipping Instructions

Pertussis should be considered in the differential diagnosis of patients presenting with prolonged cough with cyanosis, vomiting or apnea, regardless of vaccination history. Nasopharyngeal secretions are the optimal specimens for isolating the pertussis bacterium and obtaining a lab confirmed diagnosis. Nasopharyngeal swabs for culture and polymerase chain reaction (PCR) should be collected as soon as possible after onset of symptoms and prior to antibiotic treatment. The time of collection will greatly impact the ability to detect *B. pertussis*. There is a greater likelihood of positive cultures and/or PCR in the first two weeks of symptomatic infection than during later weeks of illness. However, PCR may detect organisms for a prolonged period of time regardless of viability. Confirmatory laboratory testing should be performed on **all** suspect or probable cases.

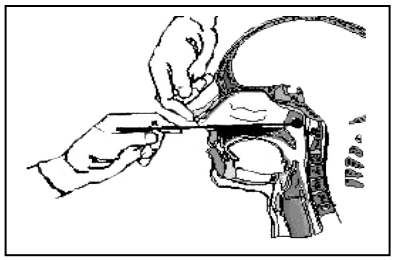
The Georgia Department of Public Health strongly recommends the collection of a nasopharyngeal swab to confirm a pertussis case**.** The preferred methods for laboratory diagnosis of pertussis are culture and polymerase chain reaction (PCR) and it is recommended that BOTH tests be performed.

***Pertussis culture and PCR testing at the Georgia Public Health Laboratory is available by special arrangement only. To receive pre-approval and make arrangements for either pertussis culture or PCR testing, the District Health office or Georgia Department of Public Health VPDEU must be contacted at 404-657-2588.**

A. Specimen Collection Instructions

Nasopharyngeal Swab Collection
A video detailing how to collect a nasopharyngeal swab can be found at: http://health.state.ga.us/epi/vpd/ in the Updates Section.

- Materials – Consult the District Epidemiologist or the Vaccine Preventable Disease Epidemiology Unit for the following:
  - Polyester (Dacron), rayon, or nylon-flocked swab (**Cotton-tipped or Calcium alginate swabs are not acceptable**)
  - Regan-Lowe transport media
    - Store at 2-8 degrees Celsius (or 36-46 degrees Fahrenheit) in a refrigerator
    - Remove from refrigerator and warm to room temperature
- Collection
  - Have patient sit with head against a wall or lie down, as patients have a tendency to pull away during this procedure
  - Insert swab into one nostril straight back (**not upwards**) and continue along the floor of the nasal passage for several centimeters until reaching the nasopharynx. The distance from the nose to the ear gives an estimate of the distance the swab should be inserted. Do not force swab, if obstruction is encountered before reaching the nasopharynx, remove swab and try the other side.



  - Rotate the swab gently for 5-10 seconds to loosen the epithelial cells.

Culture:
Remove swab and immediately inoculate Regan-Lowe transport media by inserting the swab at least ½ inch below the surface of the media. Bend or clip the wire swab handle to fit the transport medium tube and reattach the cap securely.

Vaccine Preventable Disease Epidemiology
2 Peachtree St, NW
Atlanta, GA 30303

http://health.state.ga.us/epi/vpd/
Phone: 404-657-2588
Fax: 404-657-2608

PCR:
Remove swab and immediately place in a dry sterile container. Bend or clip the wire swab handle to fit the container. **NOTE: A dry swab, not in Regan Lowe media, is acceptable for PCR testing.**

- Specimen should be transported at refrigerator temperature and received by the laboratory as soon as possible and within one day from time of collection.

Laboratory Submission Instructions

- Notify District Public Health Office or the Vaccine Preventable Disease Epidemiology Unit **immediately** for coordination
- Label specimen transport tube with the patient name and date of specimen collection
- **UNAPPROVED OR UNLABELED SPECIMENS WILL NOT BE TESTED**

Culture

- Complete a Bacteriology lab form at:
  http://health.state.ga.us/pdfs/lab/manual/Bacteriology%20Form%203410.pdf
  with the following information:
  - Submitter code (if known), address, phone and fax number, and contact name
  - Patient name, address, phone number, date of birth, sex, race, and ethnicity (if available)
  - Date of specimen collection, source, type of specimen, clinical history and information
  - Check the box for Pertussis (Whooping) Cough, then check culture

PCR

Complete a Molecular Biology lab form at:
http://health.state.ga.us/pdfs/lab/manual/2012/appendices/Molecular%20Form.pdf
with the following information:

- Submitter code (if known), address, phone and fax number, and contact name
- Patient name, address, phone number, date of birth, sex, race, and ethnicity (if available)
- Date of specimen collection, source, type of specimen, clinical history and information
- Check the box for Bordetella pertussis (PCR)

- **Ship specimens overnight** by courier or Federal Express on ice packs. If the shipment is delayed, refrigerate specimens at 2-8 degrees Celsius (or 36-46 degrees Fahrenheit) and transport the next day on ice packs by first class mail, common carrier, or courier.

- Send specimens to the following address:
  Georgia Public Health Laboratory
  1749 Clairmont Road
  Decatur, GA 30033-4050
  ATTN: Bacteriology Laboratory

Contact Information

- For specimen outfit requests: call the Georgia Public Health Laboratory at 404-327-7921
- Additional lab forms available at http://health.state.ga.us/programs/lab/manual.asp in Appendix B
- For questions related to specimen collection and transport: contact local public health or the State VPD Epidemiology Unit, 404-657-2588

Georgia Department of Public Health

Vaccine Preventable Disease Epidemiology
2 Peachtree St, NW
Atlanta, GA 30303

http://health.state.ga.us/epi/vpd/
Phone: 404-657-2588
Fax: 404-657-2608

Pertussis Laboratory Testing Procedures and Interpretation of Results

Culture

Cultures are held 7 days from the date of inoculation and read daily. Nasopharyngeal swabs received in transport medium tubes are inoculated immediately onto Regan-Lowe plates and incubated. After the final day of incubation, if no colonies typical of *B. pertussis* or *B parapertussis* are present, the culture is reported as negative for these organisms. A positive culture report is based upon typical colony morphology, biochemicals and direct fluorescent antibody testing (DFA) Positive cultures or cultures overgrown with mold or normal flora are reported immediately upon detection, and results are telephoned to the submitter.

Both culture and PCR are recommended for diagnosis of *B. pertussis* whenever possible. A positive culture is considered confirmatory and is the most reliable. " False negative" culture results may follow from any procedures that render the organisms nonviable, such as improper handling of plates and transport medium after collection or prolonged antibiotic treatment.

PCR

The GPHL currently offers a **multitarget** PCR assay validated by the CDC, for qualitative detection of *Bordetella pertussis*, *B. parapertussis*, and *B. holmesii* DNA extracted from clinical specimens or culture isolates by real-time PCR. Most commercial laboratories use a **single target** PCR for IS481, which is present in multiple copies in *B. pertussis* and in lesser quantities in *B. holmesii* and *B. bronchiseptica*. Because this DNA sequence is present in multiple copies, IS481 is especially susceptible to falsely-positive results. Use of the GPHL multiple target assay improves specificity of PCR assays for pertussis. When requesting commercial PCR testing, clinicians are encouraged to inquire about which PCR target or targets are used by their laboratories. Interpretation of commercial PCR results, should be done in conjunction with an evaluation of signs and symptoms and available epidemiological information, as their specificity can vary greatly.

Georgia Department of Public Health

Vaccine Preventable Disease Epidemiology
2 Peachtree St, NW
Atlanta, GA 30303

http://health.state.ga.us/epi/vpd/
Phone: 404-657-2588
Fax: 404-657-2608

Grandparents:

Protect Yourself and Your Grandbaby from Whooping Cough!

Why Whooping Cough is Serious:

Whooping cough (also known as pertussis) is a contagious disease that can be passed easily from person to person. It is very serious for babies and can cause them to cough so much that they cannot breathe. Hundreds of babies are hospitalized each year for whooping cough, and some die from it.

Whooping cough can cause adults or teens to have a persistent cough. The coughing can become severe enough to lead to vomiting or broken ribs. Adults and teens can be hospitalized for pneumonia and miss weeks of work or school. Even worse, they can spread whooping cough to babies.

Ways to Protect Yourself and Your Family:

Get Your Pertussis Booster (Tdap)

Everybody in the family should be vaccinated against whooping cough to protect themselves and the baby at home. Adults should ask their doctor about the Tdap vaccine that includes a tetanus and diphtheria booster and also protects against whooping cough.

Make Sure Your Grandchildren are Up-to-Date on Their Vaccinations

Children need five shots against whooping cough before starting kindergarten. Children 7 years of age and older can get the new Tdap booster.

Cover Your Cough and Wash Your Hands

Whooping cough is spread by coughing and sneezing. Remind everyone to cover their mouths when coughing and to wash their hands often.

Protect yourself. Protect your family.

Get Vaccinated!

DPH Georgia Department of Public Health

Have questions?

Talk with your doctor.

http://health.state.ga.us/pertussis

Abuelos:

¡Protéjanse y protejan a su nieto contra la tos ferina!

¿Por qué es grave la tos ferina?

La tos ferina es una enfermedad contagiosa que se puede pasar fácilmente de una persona a otra. Es muy grave para los bebés porque puede hacer que tosan tanto que no puedan respirar. Cada año cientos de bebés son hospitalizados por la tos ferina y algunos mueren a causa de ella.

La tos ferina puede causar que tanto adultos como adolescentes sufran una tos persistente, y la tos puede ser tan grave que haga que vomiten o que se les quiebren las costillas. Los adultos y los adolescentes pueden ser hospitalizados por neumonía y perder semanas de trabajo o de escuela, pero lo peor de todo es que pueden transmitir la tos ferina a los bebés en casa.

¿Cómo protegerse y proteger a su familia?

Pónganse la vacuna de refuerzo contra la tos ferina (Tdap)

Todos los miembros de la familia deberían ser vacunados contra la tos ferina para protegerse y proteger al bebé en casa. Además, los adultos deberían preguntar a su médico por la nueva vacuna Tdap, que incluye refuerzos contra el tétanos y la difteria, y también protege contra la tos ferina.

Asegúrense de que sus nietos estén al día con las vacunas

Es necesario administrarles a los niños cinco dosis de la vacuna contra la tos ferina antes de comenzar el kindergarten. Los niños de 7 años de edad y mayores se pueden poner la nueva vacuna de refuerzo Tdap.

Cúbranse la boca al toser y lávense las manos

La tos ferina se transmite al toser y al estornudar. Recuerde a todos que se cubran la boca al toser y que se laven las manos a menudo.

Protéjanse. Protejan a su familia.

¡Vacúnense!

DPH Georgia Department of Public Health

¿Tiene preguntas?

Hable con su médico.

http://health.state.ga.us/pertussis

Departamento de Salud Pública de Georgia

New Moms:

Pertussis is on the Rise

Babies Are Most At Risk

Whooping cough (also known as pertussis) causes coughing fits so bad that it is hard to breathe.

Each year in the U.S., hundreds of babies are hospitalized for whooping cough and some die.

Circle Your Baby with Protection

Whooping cough shots safely prevent the disease. But, your new baby is too young to get the shot.

To protect your baby, make sure that you and these people are up-to-date on their whooping cough shots:

- anyone who lives with your baby, or
- anyone who takes care of your baby

As an adult you can catch whooping cough because the vaccine you received as a child may have worn off. Make sure you and anyone who will have contact with your baby is vaccinated.

- keep your baby away from sick people

New Moms Need Tdap Protection

Babies most often catch whooping cough from a family member. By protecting yourself from the disease, you also protect your baby.

Ask your doctor for a Tdap shot. You can get it:

- before you are pregnant (ideally)
- after you are 20 weeks pregnant (late 2nd or 3rd trimester), or
- after giving birth

If you have not gotten your Tdap shot yet, get one before leaving the hospital with your new baby.

It is safe to get a Tdap shot while breastfeeding.

Treat Whooping Cough Early

Call your doctor or your baby's doctor if:

- you or your baby are sick. Early signs of whooping cough can look like a mild cold and get worse fast; or
- you or your baby are around someone with whooping cough or a bad cough

Protect yourself. Protect your family.

Get Vaccinated!

DPH Georgia Department of Public Health

Have questions?

Talk with your doctor.

http://health.state.ga.us/pertussis

Nuevas Mamás:

La tos ferina está aumentando

Los bebés corren más riesgo

La tos ferina provoca ataques de tos tan fuertes que causan dificultades para respirar.

Cada año cientos de bebés son hospitalizados en EE.UU. por la tos ferina, y algunos mueren a causa de ella.

Rodee a su bebé de protección

Las vacunas contra la tos ferina previenen la enfermedad de manera segura, pero su bebé es demasiado pequeño para recibir la vacuna.

Para proteger a su bebé asegúrese de estar al día con las vacunas contra la tos ferina, y de que las siguientes personas también lo estén:

- cualquier persona que viva con su bebé
- cualquier persona que cuide a su bebé

Aún siendo un adulto, usted puede contagiarse de tos ferina porque la protección de la vacuna que recibió de niña podría haber disminuido con el tiempo. Asegúrese de estar vacunada y de que cualquier persona que pueda estar en contacto con su bebé esté vacunada.

- mantenga a su bebé lejos de personas enfermas

Las nuevas mamás necesitan la vacuna Tdap

La mayoría de las veces, los bebés se contagian de tos ferina de algún familiar. Al protegerse de la enfermedad también está protegiendo a su bebé.

Pídale a su médico la vacuna Tdap, que puede conseguir:

- antes de quedarse embarazada (lo mejor)
- después de 20 semanas de embarazo (al final del 2º trimestre o del 3º trimestre), o
- después de dar a luz

Si todavía no se ha puesto la vacuna Tdap, obténgala antes de salir del hospital con su recién nacido.

Esté seguro recibir la vacuna Tdap mientras está amamantando.

Trate la tos ferina temprano

Llame a su doctor o al pediatra si:

- usted o su bebé están enfermos(as). Los primeros síntomas de tos ferina son leves como los de un resfriado pero empeoran rápido; o
- usted o su bebé están alrededor de alguien con tos ferina o con una tos fuerte

Protéjanse. Protejan a su familia.

¡Vacúnense!

DPH Georgia Department of Public Health

¿Tiene preguntas?

Hable con su médico.

http://health.state.ga.us/pertussis

Departamento de Salud Pública de Georgia

Parents:

Protect Yourself and Your Child from Whooping Cough!

Why Whooping Cough is Serious:

Whooping cough (also known as pertussis) is a contagious disease that can be passed easily from person to person. It is very serious for babies and can cause them to cough so much that they cannot breathe. Hundreds of babies are hospitalized each year for whooping cough, and some die from it.

Whooping cough can cause adults or teens to have a persistent cough. The cough can become severe enough to lead to vomiting or broken ribs. Adults and teens can be hospitalized for pneumonia and miss weeks of work or school. Even worse, they can spread whooping cough to babies.

Ways to Protect Yourself and Your Family:

Get Your Pertussis Booster (Tdap)

Everybody in the family should be vaccinated against whooping cough to protect themselves and the baby at home. Parents should ask their doctor for the Tdap vaccine that includes a tetanus and diphtheria booster and also protects against whooping cough.

Make Sure Your Children are Up-to-Date on Their Vaccinations

Children need five shots against whooping cough before starting kindergarten. Children 7 years of age and older can also get the new Tdap booster.

Cover Your Cough and Wash Your Hands

Whooping cough is spread by coughing and sneezing. Remind everyone to cover their mouths when coughing and to wash their hands often.

Protect yourself. Protect your family.

Get Vaccinated!

DPH Georgia Department of Public Health

Have questions?

Talk with your doctor.

http://health.state.ga.us/pertussis

Padres:

¡Protéjanse y protejan a sus niños contra la tos ferina!

¿Por qué es grave la tos ferina?

La tos ferina es una enfermedad contagiosa que se puede pasar fácilmente de una persona a otra. Es muy grave para los bebés porque puede hacer que tosan tanto que no puedan respirar. Cada año cientos de bebés son hospitalizados por la tos ferina y algunos mueren a causa de ella.

La tos ferina puede producir una tos tan grave en los adultos o en los adolescentes que haga que vomiten o que se les quiebren las costillas. Pueden ser hospitalizados por neumonía y perder semanas de trabajo o de escuela. Pero lo peor de todo es que pueden transmitir la tos ferina a los bebés en casa.

¿Cómo protegerse y proteger a su familia?

Pónganse la vacuna de refuerzo contra la tos ferina (Tdap)

Todos los miembros de la familia deberían ser vacunados contra la tos ferina para protegerse y proteger al bebé en casa. Además, los adultos deberían pedir a su médico la nueva vacuna Tdap, que incluye refuerzos contra el tétanos y la difteria, y también protege contra la tos ferina.

Asegúrense de que sus hijos estén al día con las vacunas

Es necesario administrarles a los niños cinco dosis de la vacuna contra la tos ferina antes de comenzar el kindergarten. Los niños de 7 años de edad y mayores se pueden poner la nueva vacuna de refuerzo Tdap.

Cúbranse la boca al toser y lávense las manos

La tos ferina se transmite al toser y al estornudar. Recuerde a todos que se cubran la boca al toser y que se laven las manos a menudo.

Protéjanse. Protejan a su familia.

¡Vacúnense!

DPH Georgia Department of Public Health

¿Tiene preguntas?

Hable con su médico.

http://health.state.ga.us/pertussis

Departamento de Salud Pública de Georgia

Pregnant Women:

Pertussis is on the Rise. Get Vaccinated with Every Pregnancy

Babies Are Most At Risk

Whooping cough (also known as pertussis) causes coughing fits so bad that it is hard to breathe.

Each year in the U.S., hundreds of babies are hospitalized for whooping cough and some die.

Babies, who are too young to get the shot, most often catch whooping cough from a family member.

Pregnant Women Need Tdap Protection

As an adult you can catch whooping cough because the vaccine you received as a child may have worn off. Whooping cough shots safely prevent the disease.

You should get a pertussis booster shot (Tdap) with every pregnancy regardless of receiving a previous vaccine Tdap.

By protecting yourself from the disease, you also protect your baby.

Ask your doctor for a Tdap shot. You can receive a Tdap vaccine between 27 and 36 weeks pregnant (late 2nd or 3rd trimester).

Circle Your Baby with Protection

To protect your baby, make sure that you and these people are up-to-date on their whooping cough shots:

- anyone who lives with your baby, or
- anyone who takes care of your baby
- keep your baby away from sick people

Treat Whooping Cough Early

Call your doctor or your baby's doctor if:

- you become sick. Early signs of whooping cough can look like a mild cold and get worse fast; or
- you are around someone with whooping cough or a bad cough

Protect yourself. Protect your family.

Get Vaccinated!

DPH Georgia Department of Public Health

Have questions? Talk with your Doctor.

www.dph.ga.gov/pertussis/

Whooping Cough (Pertussis):

What Is Whooping Cough (Pertussis)?

- an infection that spreads easily when someone with the disease coughs or sneezes
- it can cause death in babies

Whooping Cough Signs and Symptoms

Early Symptoms

Often, early symptoms are mild and like a common cold:

- runny nose
- low or no fever
- sneezing
- mild cough

Symptoms After 1-2 Weeks

Symptoms can get worse fast and can last for months. They include bad coughing attacks that may lead to:

- a "whoop" sound
- vomiting
- problems breathing
- difficulty sleeping
- extreme tiredness

Symptoms in Babies Are Different

Babies younger than 6 months old with pertussis often do not have a typical cough. In the early stages, babies may:

- gasp or gag
- feed poorly
- turn blue around the mouth
- stop breathing

Symptoms can get worse very fast. Often, babies need to go to the hospital for care.

Treat Whooping Cough Early

Call Your Doctor If You or a Family Member:

- have any symptoms of whooping cough

Your Doctor May Prescribe an Antibiotic Medicine

Early treatment with antibiotic medicine can:

- keep you from getting sicker
- prevent you from spreading the disease to others
- be given to babies and other household members to protect them from getting sick

If You Have Whooping Cough:

- stay home. Avoid contact with others until you have finished treatment
- have an adult who is not sick care for your baby
- contact your baby's doctor

Whooping Cough Shots Prevent the Disease

Everyone needs to be up-to-date on their whooping cough shots (DTaP for children age 6 and younger; or Tdap for children 7 years and up).

Protect yourself. Protect your family.

Get Vaccinated!

DPH Georgia Department of Public Health

Have questions?

Talk with your doctor.

http://health.state.ga.us/pertussis

La tos ferina:

¿Qué es la tos ferina?

- una infección que se transmite fácilmente cuando alguien con la enfermedad tose o estornuda
- puede ser mortal para los bebés

Signos y síntomas de la tos ferina

Primeros síntomas

Usualmente los primeros síntomas son leves y parecidos a un resfriado común:

- moqueo nasal
- fiebre baja o nada de fiebre
- estornudos
- tos leve

Síntomas después de 1-2 semanas

Los síntomas pueden empeorar rápidamente y durar varios meses. Pueden incluir ataques de tos fuertes que causan:

- un sonido agudo
- vómitos
- problemas al respirar
- problemas para dormir
- cansancio extremo

Los síntomas en los bebés son diferentes

Usualmente los bebés menores de 6 meses de edad que sufren de tos ferina no tienen una tos típica. En las primeras etapas, los bebés pueden:

- sufrir jadeos o arcadas
- perder el apetito
- sufrir coloración azulada alrededor de la boca
- parar de respirar

Los síntomas pueden empeorar rápidamente. A veces los bebés necesitan ir al hospital para recibir cuidado médico.

Trate la tos ferina temprano

Llame al médico si usted o un miembro de su familia:

- muestra síntomas de tos ferina

Es posible que su médico le recete antibióticos

El tratamiento temprano con antibióticos puede:

- prevenir que empeore la enfermedad
- prevenir que no contagie la enfermedad a otras personas
- ser administrado a bebés y a otros miembros del hogar para prevenir que se enfermen

Si sufre de tos ferina:

- quédese en casa y evite el contacto con otras personas hasta que termine el tratamiento
- pida a un adulto que no esté enfermo que cuide a su bebé
- llame al médico de su bebé

Las vacunas contra la tos ferina previenen la enfermedad

Todos necesitan estar al día con las vacunas contra la tos ferina (DTaP para niños de 6 años de edad o menos o Tdap para niños mayores de 7 años).

Protéjanse. Protejan a su familia.

¡Vacúnense!

DPH Georgia Department of Public Health

¿Tiene preguntas?

Hable con su médico.

http://health.state.ga.us/pertussis

Departamento de Salud Pública de Georgia

Suspected Polio Case Worksheet

REPORT CONTACT

Name (Last, First)

Initial Report Date ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Address | City | County | State | Zip Code | Phone

Reporting Laboratory | State

PATIENT IDENTIFIERS

Name (Last, First)

Birth Date ☐☐ Month ☐☐ Day ☐☐☐☐ Year

City | County | State | Occupation

Age at Onset ☐☐☐ 999 = Unknown

Age Type ☐ 0 = 0–120 Years, 1 = 0–11 Months, 2 = 0–52 Weeks, 3 = 0–28 Days, 9 = Age Unknown

Ethnicity ☐ H = Hispanic, N = Not Hispanic, U = Unknown

Race ☐ N = Native American / Alaskan Native, A = Asian / Pacific Islander, B = African American, W = White, O = Other, U = Unknown

Sex ☐ M = Male, F = Female, U = Unknown

Date of Onset of First Symptoms ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Date of Onset of Paralysis ☐☐ Month ☐☐ Day ☐☐☐☐ Year

CLINICAL COURSE

Clinical Course

CSF RESULTS

Date	WBCs	RBCs	% Lymph	% Polys	Protein	Glucose
☐☐ Month ☐☐ Day ☐☐☐☐ Year						

OUTCOME

Date of 60-day Follow Up ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Sites of Paralysis ☐ 1 = Spinal, 2 = Bulbar, 3 = Spino-bulbar

Specific Sites

60-day Residual ☐ 1 = None, 2 = Minor (any minor involvement), 3 = Significant (≤2 extremities, major involvement), 4 = Severe (≥3 extremities and respiratory involvement), 5 = Death, 9 = Unknown

Date of Death ☐☐ Month ☐☐ Day ☐☐☐☐ Year

IMMUNIZATION HISTORY

TOPV within 30 Days Prior to Onset of Symptoms? ☐ Y = Yes, N = No

Date ☐☐ Month ☐☐ Day ☐☐☐☐ Year

Lot Number _____

VACCINE	DATE 1	DATE 2	DATE 3
IPV-containing ☐☐ Total Doses Ever Received	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____
TOPV ☐☐ Total Doses Ever Received	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____
BOPV ☐☐ Total Doses Ever Received	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____	☐☐ Month ☐☐ Day ☐☐☐☐ Year Lot Number _____
MOPV ☐☐ Total Doses Ever Received	☐☐ Month ☐☐ Day ☐☐☐☐ Year Type ☐ 1 or 3 Lot Number _____	☐☐ Month ☐☐ Day ☐☐☐☐ Year Type ☐ 1 or 3 Lot Number _____	☐☐ Month ☐☐ Day ☐☐☐☐ Year Type ☐ 1 or 3 Lot Number _____

CS210384-A

INJECTIONS RECEIVED WITHIN 30 DAYS PRIOR TO ONSET OF ILLNESS

Date of First Injection	Substance of First Injection	Describe	Site of First Injection
Month Day Year			
Date of Second Injection	**Substance of Second Injection**	**Describe**	**Site of Second Injection**
Month Day Year			
Date of Third Injection	**Substance of Third Injection**	**Describe**	**Site of Third Injection**
Month Day Year			
Date of Fourth Injection	**Substance of Fourth Injection**	**Describe**	**Site of Fourth Injection**
Month Day Year			

Substance of Injection
1 = Vaccine
2 = Antibiotic
3 = Other

Site of Injection
1 = Left Deltoid
2 = Right Deltoid
3 = Left Thigh
4 = Right Thigh
5 = Left Gluteal
6 = Right Gluteal

EXPOSURE HISTORY

Did Case/Household Member Travel to Endemic/Epidemic Area(s)?
Y = Yes
N = No

Location(s) of Exposure _____

Date of Departure Month Day Year

Date of Return Month Day Year

Was Case/Household Member Exposed to Person(s) from or Returning to Endemic Areas?

Location(s) of Exposure _____

Date of Departure Month Day Year

Date of Return Month Day Year

Did Case/Household Member have Contact with Known Case?
Y = Yes
N = No

Contact Name
(Last)_____
(First)_____

Location of Exposure _____

Date of Contact Month Day Year

Did Case have Contact with OPV Recipient?
Y = Yes
N = No

If "Yes", Date of Contact with Household OPV Recipient — Month Day Year
Relation _____
Age (999 = Unknown)
Age Type

If "Yes", Date of Contact with Nonhousehold OPV Recipient — Month Day Year
Relation _____
Age (999 = Unknown)
Age Type

Age Type
0 = 0–120 Years
1 = 0–11 Months
2 = 0–52 Weeks
3 = 0–28 Days
9 = Age Unknown

Date Contact Received OPV Month Day Year

Dose Number_____ **Lot Number** _____

LABORATORY INFORMATION

STATE OR LOCAL LABORATORY

SERUM SPECIMENS SUBMITTED

Laboratory Name _____

SERUM 1
P1, P2, or P3 (1 = P1, 2 = P2, 3 = P3)
Test (1 = Neut., 2 = CF)
Result _____
Date Drawn/Obtained — Month Day Year

SERUM 2
P1, P2, or P3 (1 = P1, 2 = P2, 3 = P3)
Test (1 = Neut., 2 = CF)
Result _____
Date Drawn/Obtained — Month Day Year

SPECIMENS SUBMITTED FOR ISOLATION

SPECIMEN 1
Results _____ Laboratory Name _____ Specimen Type _____
Date Drawn/Obtained — Month Day Year

SPECIMEN 2
Results _____ Laboratory Name _____ Specimen Type _____
Date Drawn/Obtained — Month Day Year

LABORATORY INFORMATION (Continued)

CDC LABORATORY

SERUM SPECIMENS SENT TO CDC

SERUM 1

P1, P2, or P3	Test	Result	Date Drawn/Obtained
☐ 1 = P1 2 = P2 3 = P3	☐ 1 = Neut. 2 = CF	_____	☐☐ Month ☐☐ Day ☐☐☐☐ Year

SERUM 2

P1, P2, or P3	Test	Result	Date Drawn/Obtained
☐ 1 = P1 2 = P2 3 = P3	☐ 1 = Neut. 2 = CF	_____	☐☐ Month ☐☐ Day ☐☐☐☐ Year

SPECIMENS FOR POLIO VIRUS ISOLATION SENT TO CDC

SPECIMEN 1

Specimen Type	Results (Viral Type)	Strains (Characterization Results)	Date Received	Date Obtained
_____	_____	☐ 1 = Oligonucleotide 2 = Genomic Sequencing 3 = Polymerase Chain Reaction	☐☐ Month ☐☐ Day ☐☐☐☐ Year	☐☐ Month ☐☐ Day ☐☐☐☐ Year

SPECIMEN 2

Specimen Type	Results (Viral Type)	Strains (Characterization Results)	Date Received	Date Obtained
_____	_____	☐ 1 = Oligonucleotide 2 = Genomic Sequencing 3 = Polymerase Chain Reaction	☐☐ Month ☐☐ Day ☐☐☐☐ Year	☐☐ Month ☐☐ Day ☐☐☐☐ Year

EMG Conducted?	EMG Results	Date of EMG	Nerve Conduction?	Nerve Results	Date Nerve Conduction
☐ 1 = Yes 2 = No		☐☐ Month ☐☐ Day ☐☐☐☐ Year	☐ 1 = Yes 2 = No		☐☐ Month ☐☐ Day ☐☐☐☐ Year

Immune Deficiency Diagnosed Prior to OPV Exposure?	Immune Studies Performed	HIV Status
☐ 1 = Yes 2 = No 3 = Other Diagnosis _____		☐ 1 = Positive 2 = Negative 9 = Unknown

ADDITIONAL COMMENTS

Rubella Surveillance Worksheet

NAME (Last, First)				Hospital Record No.
Address (Street and No.)	City	County	Zip	Phone
Reporting Physician/Nurse/Hospital/Clinic/Lab	Address			Phone

---------- DETACH HERE and transmit only lower portion if sent to CDC ----------

Rubella Surveillance Worksheet

County | State | Zip | Country of Birth

Birth Date (Month Day Year)

Age (Unk = 999)

Age Type
0 = 0-120 years
1 = 0-11 months
2 = 0-52 weeks
3 = 0-28 days
9 = Age unknown

Ethnicity
H = Hispanic
N = Not Hispanic
U = Unknown

Race
N = Native Amer./Alaskan Native
A = Asian/Pacific Islander
B = African American
W = White
O = Other
U = Unknown

Sex
M = Male
F = Female
U = Unknown

Event Date (Month Day Year)

Event Type
1 = Onset Date
2 = Diagnosis Date
3 = Lab Test Date
4 = Reported to County
5 = Reported to State or MMWR Report Date
9 = Unknown

Outbreak Associated (Unk = 999)

Reported (Month Day Year)

Imported
1 = Indigenous
2 = International
3 = Out of State
9 = Unknown

Report Status
1 = Confirmed
2 = Probable
3 = Suspect
9 = Unknown

CLINICAL DATA

Any Rash? Y = Yes, N = No, U = Unknown

Rash Onset (Month Day Year)

Rash Duration (0 - 30 Days, 99 = Unknown)

Fever? Y = Yes, N = No, U = Unknown

If Recorded, Highest Measured Temp. (36.0 - 110.0 Degrees, 999.9 = Unknown)

Arthralgia/ Arthritis? Y = Yes, N = No, U = Unknown

Lymphadenopathy? Y = Yes, N = No, U = Unknown

Conjunctivitis? Y = Yes, N = No, U = Unknown

COMPLICATIONS

Encephalitis? Y = Yes, N = No, U = Unknown

Arthralgia/Arthritis? Y = Yes, N = No, U = Unknown

Thrombocytopenia? Y = Yes, N = No, U = Unknown

Death? Y = Yes, N = No, U = Unknown

Other Complications? Y = Yes, N = No, U = Unknown

If Yes, Please Specify:

Hospitalized? Y = Yes, N = No, U = Unknown

Days Hospitalized (0 - 998, 999 - Unknown)

LABORATORY

Was Laboratory Testing For Rubella Done? Y = Yes, N = No, U = Unknown

Date IgM Specimen Taken (Month Day Year)

Result
P = Positive
E = Pending
N = Negative
X = Not Done
I = Indeterminate
U = Unknown

Date IgG Acute Specimen Taken (Month Day Year)

Date IgG Convalescent Specimen Taken (Month Day Year)

Result
P = Significant Rise in IgG
N = No Significant Rise in IgG
I = Indeterminate
E = Pending
X = Not Done
U = Unknown

Other Lab Result
P = Positive
N = Negative
I = Indeterminate
X = Not Done
E = Pending
U = Unknown

Specify Other Lab Method:

VACCINE HISTORY

Vaccinated? (Received rubella-containing vaccine?) Y = Yes, N = No, U = Unknown

Vaccination Date (Month Day Year)	Vaccine	Vaccine Type	Manuf.	Lot Number

Vaccine Type Codes
A = MMR
B = Rubella
O = Other
U = Unknown

Vaccine Manufacturer Codes
M = Merck
O = Other
U = Unknown

Number of doses received ON or AFTER 1st birthday

If Not Vaccinated, What Was The Reason?
1 = Religious Exemption
2 = Medical Contraindication
3 = Philosophical Objection
4 = Lab. Evidence of Previous Disease
5 = MD Diagnosis of Previous Disease
6 = Under Age For Vaccination
7 = Parental Refusal
8 = Other
9 = Unknown

EPIDEMIOLOGIC

Date First Reported to a Health Department (Month Day Year)

Date Case Investigation Started (Month Day Year)

Outbreak Related? Y = Yes, N = No, U = Unknown

If Yes, Outbreak Name

Transmission Setting (Where did patient acquire rubella?)
1 = Day Care
2 = School
3 = Doctor's Office
4 = Hospital Ward
5 = Hospital ER
6 = Hospital Outpatient Clinic
7 = Home
8 = Work
9 = Unknown
10 = College
11 = Military
12 = Correctional Facility
13 = Church
14 = International Travel
15 = Other

If Other, Specify Transmission Setting:_____

Were Age and Setting Verified? (Is age appropriate for setting) Y = Yes, N = No, U = Unknown

Source of Exposure For Current Case (Enter State ID if source was an in-state case; enter Country if source was out of U.S.; enter State if source was out-of-state)

Epi-Linked to Another Confirmed or Probable Case? Y = Yes, N = No, U = Unknown

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Indicates epidemiologically important items not yet on NETSS screen

---------- DETACH HERE and transmit only lower portion if sent to CDC ----------

PREGNANT WOMEN

Was Patient Pregnant?

☐ Y = Yes
N = No
U = Unknown

Number of Weeks Gestation (or Trimester) at Onset of Illness ☐☐☐

1st = First Trimester
2nd = Second Trimester
3rd = Trimester

Or

1 = 1 Week
2 = 2 Weeks
3 = 3 Weeks
Etc. – continue up to 45 weeks

Prior Evidence of Serological Immunity?

☐ Y = Yes
N = No
U = Unknown

Year of Test ☐☐☐☐

OR

Age of Patient at Time of Test ☐☐

0 -50
99 - Unknown

Was Previous Rubella Serologically Confirmed?

☐ Y = Yes
N = No
U = Unknown

Year of Disease ☐☐☐☐

OR

Age of Patient at Time of Disease ☐☐

0 -50
99 - Unknown

The information below is epidemiologically important but not included on NETSS screens

Exposure Period — **Period of Communicability**

21 Days	14 Days	7 Days	Rash Onset	7 Days
Month ☐☐ Day ☐☐ Year ☐☐	Month ☐☐ Day ☐☐ Year ☐☐	Month ☐☐ Day ☐☐ Year ☐☐	Month ☐☐ Day ☐☐ Year ☐☐	Month ☐☐ Day ☐☐ Year ☐☐

Contacts of patient during infectious period (7 days before to 7 days after rash onset) who are in 1st 5 months of pregnancy

Name	Address/Phone	Documented Prior Rubella Immunization?	If Yes, Date	Documented Rubella Seropositivity Before Or Within 7 Days After First Exposed	If No or Unknown, Action Taken – Rubella Serology, etc.
		☐ Y = Yes N = No U = Unknown	Month ☐☐ Day ☐☐ Year ☐☐	☐ Y = Yes N = No U = Unknown	
		☐ Y = Yes N = No U = Unknown	Month ☐☐ Day ☐☐ Year ☐☐	☐ Y = Yes N = No U = Unknown	
		☐ Y = Yes N = No U = Unknown	Month ☐☐ Day ☐☐ Year ☐☐	☐ Y = Yes N = No U = Unknown	

Group contacts of patient during infectious period (7 days before to 7 days after rash onset), i.e., households, child care center, school, college, workplace, jail/prison, physician's office/clinic/hospital/emergency room, etc.

Name of Group/Site	Address/Phone	Notes

Clinical Case Definition:
An illness that has all of the following characteristics: acute onset of generalized maculopapular rash, temperature > 99° F (> 37° C), if measured, and arthralgia/arthritis, lymphadenopathy, or conjunctivitis.

Case Classification:
***Suspected*: any generalized rash illness of acute onset**
***Probable*: a case that meets the clinical case definition, has no or noncontributory serologic or virologic testing, and is not epidemiologically linked to a laboratory-confirmed case**
***Confirmed*: a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a laboratory-confirmed case**

Tetanus Surveillance Worksheet

NAME (Last, First)				Hospital Record No.
Address (Street and No.)	City	County	Zip	Phone
Reporting Physician/Nurse/Hospital/Clinic/Lab Phone	Address			Phone

DETACH HERE and transmit only lower portion if sent to CDC

CDC NETSS ID [ ]

County

State

Zip

Birth Date Month [ ] Day [ ] Year [ ]

Age [ ] Unknown= 999

Age Type [ ]
0 = 0-120 years
1 = 0-11 months
2 = 0-52 weeks
3 = 0-28 days
9 = Unknown

Race [ ]
N = Native Amer./Alaska Native
A = Asian/Pacific Islander
B = African American
W = White
O = Other
U = Unknown

Ethnicity [ ]
H = Hispanic
N = Not Hispanic
U = Unknown

Sex [ ]
M = Male
F = Female
U = Unknown

Event Date Month [ ] Day [ ] Year [ ]

Event Type [ ]
1 = Onset Date
2 = Diagnosis Date
3 = Lab Test Done
4 = Reported to County
5 = Reported to State or MMWR Report Date
6 = Unknown

Reported Month [ ] Day [ ] Year [ ]

Imported [ ]
1 = Indigenous
2 = International
3 = Out of State
9 = Unknown

Report Status [ ]
1 = Confirmed
2 = Probable
3 = Suspect
9 = Unknown

HISTORY

Date Year of Onset Month [ ] Day [ ] Year [ ]

Occupation

History of Military Service (Active or Reserve)? [ ]
Y = Yes
N = No
U = Unknown

Year of Entry into Military Service [ ]

Tetanus Toxoid Vaccination History Prior to Tetanus Disease
(Exclude Doses Received Since Acute Injury) [ ]
0 = Never
1 = 1 dose
2 = 2 doses
3 = 3 doses
4 = 4+ doses
9 = Unknown

Years Since Last Dose [ ]
0 - 98
99 = Unknown

CLINICAL DATA

Acute Wound Identified? [ ]
Y = Yes
N = No
U = Unknown

Date Wound Occurred Month [ ] Day [ ] Year [ ]

Principal Anatomic Site [ ]
1 = Head
2 = Trunk
3 = Upper Extremity
4 = Lower Extremity
9 = Unspecified

Work Related? [ ]
Y = Yes
N = No
U = Unknown

Environment [ ]
0 = Home
1 = Other Indoors
2 = Farm / Yard
3 = Automobile
4 = Other Outdoors
9 = Unknown

Circumstances

Principal Wound Type [ ]
1 = Puncture
2 = Stellate Laceration
3 = Linear Laceration
4 = Crush
5 = Abrasion
6 = Avulsion
7 = Burn
8 = Frostbite
9 = Compound Fracture
10 = Other (e.g. with cancer) Specify: _____
11 = Surgery
12 = Animal Bite
13 = Insect Bite/Sting
14 = Dental
15 = Tissue Necrosis
99 = Unknown

Wound Contaminated? [ ]
Y = Yes
N = No
U = Unknown

Depth of Wound [ ]
1 = 1 cm. or less
2 = more than 1 cm.
9 = Unknown

Signs of Infection? [ ]
Y = Yes
N = No
U = Unknown

Devitalized, Ischemic, or Denervated Tissue Present? [ ]
Y = Yes
N = No
U = Unknown

MEDICAL CARE PRIOR TO ONSET

Was Medical Care Obtained For This Acute Injury [ ]
Y = Yes
N = No
U = Unknown

Tetanus Toxoid (TT/Td/Tdap) Administered Before Tetanus Onset [ ]
Y = Yes
N = No
U = Unknown

If Yes, How Soon After Injury? [ ]
1 = < 6 Hours
2 = 7 - 23 Hours
3 = 1 - 4 Days
4 = 5 - 9 Days
5 = 10 - 14 Days
6 = 15+ Days
9 = Unknown

Wound Debrided Before Tetanus Onset [ ]
Y = Yes
N = No
U = Unknown

If Yes, Debrided How Soon After Injury [ ]
1 = < 6 Hours
2 = 7 - 23 Hours
3 = 1 - 4 Days
4 = 5 - 9 Days
5 = 10 - 14 Days
6 = 15+ Days
9 = Unknown

Tetanus Immune Globulin (TIG) Prophylaxis Received Before Tetanus Onset [ ]
Y = Yes
N = No
U = Unknown

If Yes, TIG Given How Soon After Injury? [ ]
1 = < 6 Hours
2 = 7 - 23 Hours
3 = 1 - 4 Days
4 = 5 - 9 Days
5 = 10 - 14 Days
6 = 15+ Days
9 = Unknown

Dosage (Units) [ ]
0 - 998
999 = Unknown

Associated Condition (If no Acute Injury) [ ]
1 = Abscess
2 = Ulcer
3 = Blister
4 = Gangrene
5 = Cellulitis
6 = Other Infection
7 = Cancer
8 = Gingivitis
88 = None
99 = Unknown

Describe Condition:

Diabetes? [ ]
Y = Yes
N = No
U = Unknown

If Yes, Insulin-Dependent? [ ]
Y = Yes
N = No
U = Unknown

Parenteral Drug Abuse? [ ]
Y = Yes
N = No
U = Unknown

Describe Condition:

CLINICAL COURSE

Type of Tetanus Disease [ ]
1 = Generalized
2 = Localized
3 = Cephalic
4 = Unknown

TIG Therapy Given After Tetanus Onset [ ]
Y = Yes
N = No
U = Unknown

If Yes, How Soon After Illness Onset? [ ]
1 = < 6 Hours
2 = 7 - 23 Hours
3 = 1 - 4 Days
4 = 5 - 9 Days
5 = 10 - 14 Days
6 = 15+ Days
9 = Unknown

Dosage (Units) [ ]
0 - 998
999 = Unknown

Days Hospitalized [ ]
0 - 998
999 = Unknown

Days In ICU [ ]
0 - 998
999 = Unknown

Days Received Mechanical Ventilation [ ]
0 - 998
999 = Unknown

Outcome One Month After Onset? [ ]
R = Recovered
C = Convalescing
D = Died

If Died, Date of Death Month [ ] Day [ ] Year [ ]

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Tetanus Surveillance Worksheet

NAME (Last, First)				Hospital Record No.
Address (Street and No.)	City	County	Zip	Phone
Reporting Physician/Nurse/Hospital/Clinic/Lab Phone	Address			Phone

DETACH HERE and transmit only lower portion if sent to CDC

NEONATAL (<28 DAYS OLD)

Mother's Age in Years
99 = Unknown

Mother's Birth Date
Month Day Year

Date Mother's Arrival in U.S.
Month Day Year

Mother's Tetanus Toxoid Vaccination History PRIOR to Child's Disease
(Known Doses Only)
0 = Never
1 = 1 dose
2 = 2 doses
3 = 3 doses
4 = 4+ doses
9 = Unknown

Years Since Mother's Last Dose
0 - 98
99 = Unknown

Child's Birthplace
1 = Hospital
2 = Home
3 = Other
9 = Unknown

Birth Attendant(s)
1 = Physician
2 = Nurse
3 = Licensed Midwife
4 = Unlicensed Midwife
5 = Other
9 = Unknown

Other Birth Attendant(s)
(If Not Previously Listed)

Other Comments?
Y = Yes
N = No
U = Unknown

Reporter's Name

Title

Institution Name

Phone Number

Date Reported
Month Day Year

Clinical Case Definition*:
Acute onset of hypertonia and/or painful muscular contractions (usually of the muscles of the jaw and neck) and generalized muscle spasms

Case Classification*:
Confirmed: A clinically compatible case, as reported by a health-care professional.

Notes/Other Information:

*CDC. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997;46(No. RR-10):39

GEORGIA PUBLIC HEALTH LABORATORY SUBMISSION FORM

(Do Not Use for Newborn Screening Tests)

Laboratory use only

Complete a separate form for each test requested

HEALTH CARE PROVIDER INFORMATION

Submitter Code		
Submitter Name		
Street Address		
City	**State**	**Zip**
Phone Number		
Fax Number		
Contact Name		

PATIENT INFORMATION

Patient ID Number	**PATIENT NAME (Last)**	**First**	**MI**	**Suffix**
County of Residence		**DOB** ___/___/_____		
Home Phone:	**Work Phone:**	**Cell Phone:**		
Address	**City,**	**State**	**Zip**	
Parent / Guardian (if applicable)	**Relationship**			

RACE
- ☐ American Indian/Alaska Native
- ☐ Asian
- ☐ Black/African-American
- ☐ Native Hawaiian/Pacific Islander
- ☐ White/ Caucasian
- ☐ Multi-Racial

ETHNICITY
- ☐ Hispanic or Latino
- ☐ Non-Hispanic or Latino

Sex
- ☐ Male
- ☐ Female

Pregnant? ☐Yes ☐No ☐N/A

Travel in the past month? ☐ Yes ☐ No **Travel Dates?** _____
Where? _____

☐ **SELF PAY** (SUBMITTER WILL BE INVOICED) ☐**APPROVAL CODE:** _____

INSURANCE INFORMATION – COPY OF PATIENT'S INSURANCE ELIGIBILITY DOCUMENT MUST BE SUBMITTED WITH THIS FORM

FOR FUTURE USE

ACCEPTED INSURANCE	ID Number	Plan Name	Group Number	Policy Holder's Name (Last, First, M)
☐ Amerigroup ☐ Peach State ☐ Wellcare ☐ Medicaid/ Peachcare				,
	Policy Holder's DOB	Policy Holder's Mailing Address		Patient's Relationship to Policy Holder
	___/___/_____			
	Insurance Phone #	Insurance Mailing Address		Coverage Effective Date
				___/___/_____

ICD 9 Diagnosis Codes
Required for insurance purposes only.

Sequence Code 1	Sequence Code 2	Sequence Code 3

SPECIMEN INFORMATION

All tests are performed at the Decatur Laboratory unless specified.

Specimen Type:
- ☐ Arthropod
  Type: _____
- ☐ Abscess
  Source: _____
- ☐ Biopsy
  Source: _____
- ☐ Bronchial Wash
- ☐ Bronchial Brush
- ☐ Bronchoalveolar Lavage
- ☐ Broth
- ☐ Buccal Swab
- ☐ Cerebral Spinal Fluid
- ☐ Dried Blood Spot
- ☐ Endocervical Swab
- ☐ Isolate (Bacterial)
  Source: _____
- ☐ Isolate (Mycobacterial)
  Source: _____
- ☐ Lesion/General Swab
- ☐ Lesion/Genital Swab
- ☐ Lymph Node Aspirate
- ☐ Nasal Wash
- ☐ Nasal Aspirate
- ☐ Nasopharyngeal Aspirate
- ☐ Nasal Swab
- ☐ Nasopharyngeal Swab
- ☐ Pinworm/Adhesive Slide
- ☐ Plasma
- ☐ Rectal Swab
- ☐ Scab
- ☐ Serum
- ☐ Sputum
- ☐ Stool/Feces (Fresh)
- ☐ Stool/Feces (Preserved)
- ☐ Tracheal Aspirate
- ☐ Throat/Pharynx
- ☐ Tissue
  Source: _____
- ☐ Urethral Swab
- ☐ Urine
- ☐ Vaginal Swab
- ☐ Vesicle Fluid/Swab
- ☐ Whole Blood (EDTA)
- ☐ Whole Blood(Heparin)
- ☐ Other: _____

Date of Collection
___/___/_____

Time of Collection
_____:_____ ☐AM ☐PM

Shipped:
- ☐ Frozen
- ☐ Refrigerated
- ☐ Room Temperature

Outbreak related ☐ Yes ☐ No
If yes, name of outbreak:
_____

Symptoms
_____
_____
_____

Date of onset
___/___/_____

Illness related to chemical exposure:
☐ Yes ☐ No
Event #_____

TEST REQUESTED

BLOOD LEAD
(Waycross Only)

COLLECTION METHOD
☐ Capillary ☐ Venous

☐ W4050 Blood Lead

CHEMICAL THREAT

Consultation with GPHL Emergency Response Coordinator required.

24/7 contact number: 866-782-4584

- ☐ CT041100 Rapid Toxic Screen (Performed at CDC)
- ☐ CT021500 Cadmium, mercury and lead (Blood)
- ☐ CT021700 Toxic Elements Screen (TES) (As, Ba, Be, Cd, Pb, Tl, U) (urine)
- ☐ CT021600 Mercury (urine)
- ☐ CT011100 Cyanide (blood)
- ☐ CT011200 Volatile Organic Compounds (VOC) (blood)
- ☐ CT011300 Tetramine (urine)
- ☐ CT031100 Organophosphate Nerve Agent metabolites (OPNA) (urine)
- ☐ Organophosphate Nerve Agent metabolites (OPNA) (serum)
- ☐ CT031300 Abrine and Ricinine (ABRC) (urine)
- ☐ Hold for testing

A correlating list of tests and prices is located at http://dph.georgia.gov/lab

PATIENT NAME
Last: First: MI.

For Laboratory Use Only

BACTERIOLOGY

☐ **Enteric Isolates**
- ☐ 1100 *Campylobacter*
- ☐ 1070 STEC
- ☐ 1110 *Salmonella*
- ☐ 1080 *Shigella*
- ☐ 1160 *Yersinia*

☐ **Clinical Specimen (Stool/Preserved Stool**
- ☐ 114004 *Campylobacter*
- ☐ 114006 STEC
- ☐ 114002 *Salmonella*
- ☐ 114003 *Shigella*
- ☐ 114008 *Yersinia*
- ☐ 114011 *Vibrio*

☐ 1120 **Stool Culture - Preserved** (Para-Pak C&S, Room Temp)
- ☐ Routine (*Salmonella*, *Shigella*, *Campylobacter*, *Aeromonas*, STEC, and *Yersinia*)
- ☐ *S. aureus* [1]

☐ 1140 **Stool Culture- Fresh** (Refrigerated)
- ☐ *B. cereus* [1]
- ☐ *C. perfringens* [1]

☐ 1130 **Special Bacteriology**
- ☐ *Neisseria meningitidis*
- ☐ *Haemophilus influenzae*
- ☐ *Listeria monocytogenes*
- ☐ *Vibrio spp.*
- ☐ Other- Suspected agent

_____

☐ 1040 **Pertussis Direct Fluorescent Antibody (DFA)**
☐ 1050 **Pertussis Culture**
☐ 1030 **Group A Streptococcus**
☐ 1010 **Gonorrhea Culture**
☐ **Nucleic Acid Amplification Test (Chlamydia/Gonorrhea)**
- ☐ **1060 Decatur** ☐ **W1000 Waycross**

☐ **Nucleic Acid Amplification Test (*Trichomonas vaginalis*)**
- ☐ **100100 Decatur** ☐ **W100100 Waycross**

☐ 1135 **Forward to CDC[1] (Please specify)** _____
- ☐ *C. botulinum* [1,2]

☐ 1180 **ENVIRONMENTAL / FOOD (Epidemiology Use Only)**
- ☐ *B. cereus*
- ☐ *Campylobacter*
- ☐ *C. perfringens*
- ☐ *Listeria*
- ☐ STEC / SLT
- ☐ *Salmonella*
- ☐ *Shigella*
- ☐ *S. aureus*

[1] **Special arrangement required CALL 404-327-7997**
[2] **Epidemiology approval required CALL 404-657-2588**

IMMUNOLOGY

Routine Syphilis
- ☐ Routine RPR *(Choose nearest location)*
  - ☐ 1610 Decatur ☐ W2000 Waycross
- ☐ 1640 TPPA

Special RPR testing request
- ☐ 16150 Quantitative (Titer) and Confirmatory even if screening test (RPR) is negative
- ☐ No Confirmatory Test needed even if screening test (RPR) is positive

Arbovirus/WNV panel
- ☐ 1595 Arbo IgG panel
- ☐ 1600 Arbo IgM panel
- ☐ 1580 WNV IgG
- ☐ 1585 WNV IgM
- ☐ 1590 WNV IgM (CSF)
- ☐ 16550 Zika IgM

Hepatitis Testing
- ☐ 1411 Hep B (Prenatal)
- ☐ 1410 Hep B (Routine Screen)
- ☐ 1400 Anti-HAV Total Antibody
- ☐ 1405 Anti-HAV-IgM
- ☐ 1470 Anti-HCV (Ab)
- ☐ 1480 Anti-HCV (Ab) with Reflex to HCV Viral Load
- ☐ 1490 HCV Viral Load

Miscellaneous Serology
- ☐ 15300 Toxoplasmosis IgG
- ☐ 15350 Toxoplasmosis IgM
- ☐ 15100 Rubella IgG ☐ W15100 Waycross
- ☐ 15150 Rubella IgM
- ☐ 15450 CMV Ig
- ☐ 15500 CMV IgM
- ☐ 15600 HSV1
- ☐ 15650 HSV2
- ☐ Rubeola IgG
  - ☐ 15200 Decatur ☐ W15200 Waycross
- ☐ 15250 Rubeola IgM
- ☐ Mumps IgG
  - ☐ 15550 Decatur ☐ W15550 Waycross
- ☐ Varicella Zoster
  - ☐ 15400 Decatur ☐ W15400 Waycross
- ☐ 14100 MMR Panel (Measles, Mumps, Rubella)
- ☐ 14101 Torch Panel (CMV, HSV1, HSV2, Rubella, and Toxoplasmosis)
- ☐ 33900 QuantiFERON-TB Gold (IGRA)
- ☐ 1570 Refer to CDC _____

MYCOBACTERIOLOGY

Known TB Patient? ☐ Yes, current ☐ Yes, former ☐ No

Clinical Specimens
- ☐ 30100 Microscopic exam for AFB only
- ☐ 30000 Smear, culture & susceptibility testing (Susceptibility Performed on MTB only)
- ☐ 30800 Nucleic Acid Amplification Testing (NAAT). This test is intended for use only with specimens from newly infected patients showing signs and symptoms of active pulmonary tuberculosis.

AFB Isolates
- ☐ 34000 Identification
- ☐ 33950 Susceptibility testing (MTB only)
- ☐ 30750 Genotyping only

PARASITOLOGY

(Choose nearest location)

☐ **Ova and Parasites Exam (Includes Formalin and PVA)**
Formalin ☐ 2100 Decatur ☐ W5000 Waycross
PVA ☐ 2300 Decatur ☐ W5020 Waycross

Pinworm Slide ☐ 2200 Decatur ☐ W5030 Waycross
- ☐ 2150 PCR _____
- ☐ 2610 Tissue/tissue smear for parasites
- ☐ 2700 Whole blood/blood smear for parasites - Malaria
- ☐ 2710 Whole blood/blood smear for parasites - Filaria
- ☐ 2800 Miscellaneous identification _____

For Epidemiology Use Only:
Cryptosporidium (O&P) ☐ 2400 Decatur ☐ W50100 Waycross
Cyclospora (O&P) ☐ 2500 Decatur ☐ W50800 Waycross

VIROLOGY

HIV
CTS#_____
- ☐ 13700 HIV Ag/Ab Combo
- ☐ 1340 HIV-1 Viral Load

For Epidemiology Use Only:
- ☐ 1360 HIV-1 Ab WB (dried blood spot only)

Viral Culture
- ☐ 62050 CMV Culture/IFA
- ☐ 60300 Measles Culture/IFA
- ☐ 60000 Mumps Culture/IFA
- ☐ 1385 Enterovirus Culture / IFA
- ☐ 1330 Herpes Culture / ELVIS
- ☐ 62000 VZV Culture / IFA
- ☐ 6100 Respiratory Culture / IFA
- ☐ 60040 Viral Culture / Identification (Please specify): _____

☐ **Gastrointestinal Outbreak Investigation**
- ☐ 60030 Rotavirus

Virology-Molecular
(Consultation with district epidemiologist required)
- ☐ 17100 Respiratory Viral Pathogen Panel
- ☐ 13750 Enterovirus RT-PCR

Miscellaneous Virology
- ☐ 60160 Virology CDC Sendout

(Please specify: _____

MOLECULAR BIOLOGY

Consultation with district epidemiologist required

☐ **BT Agent Rule Out (RT-PCR) Isolate:**
- ☐ BTC01005 *Bacillus anthracis*
- ☐ BTC02005 *Brucella spp.*
- ☐ BTC03005 *Burkholderia mallei/ pseudomallei*
- ☐ BTC04005 *Francisella tularensis*
- ☐ BTC06005 *Yersinia pestis*

☐ **BT Rule Out (RT-PCR) Clinical Specimen:**
- ☐ BTC01000 – Bacillus anthracis
- ☐ BTC02000 – Brucella spp.
- ☐ BTC03000 – Burkholderia spp.
- ☐ BTC04000 – Francisella tularensis
- ☐ BTC06000 – Yersinia pestis

- ☐ 414000 *Bordetella pertussis* (RT-PCR)
- ☐ 400050 Influenza Panel (rRT-PCR)
- ☐ 413000 Mumps (RT-PCR)
- ☐ 416000 Measles (RT-PCR)
- ☐ 411100 Norovirus (RT-PCR)
- ☐ BTC05000 Rash Illness Panel (RT-PCR)
- ☐ 421000 VZV (RT-PCR)
- ☐ 16600 Molecular Arbovirus (RT-PCR)
- ☐ 16800 Ebola (RT-PCR)
- ☐ 17300 MERS (RT-PCR)
- ☐ 49100 Miscellaneous Molecular _____
- ☐ 499100 Refer to CDC _____

A correlating list of tests and prices is located at http://dph.georgia.gov/lab

Georgia Department of Public Health
Varicella Case Report Form

SendSS ID: _____

Form Complete □ Yes □ No

PATIENT DEMOGRAPHICS

Patient name: Last, First M.I.	Date of birth:(mm/dd/yy) ____/____/____	Age *(enter age and check one)*: ____ □ Days □ Weeks □ Months □ Years		Gender: □ M □ F □ Other □ Unknown
Address: Number, Street	City:	State:	ZIP code:	County:
Telephone number: Home ( ) – Work ( ) –			Country of birth:	

Ethnicity (check one):
□ Hispanic/Latino
□ Non-Hispanic/Latino
□ Unknown

Race (check all that apply):
□ Black/African-American □ Asian /Pacific Islander □ Unknown
□ Native American/Alaskan Native □ Multiracial
□ White □ Other (please specify)_____

TRACKING DATA

Medical record no. or client no.:		State Case ID ***(For state use only):***	
Date reported to health department (mm/dd/yy): ____/____/____	Date investigation started: ____/____/____	Person/clinician reporting:	Reporter telephone: ( ) –
Case investigator completing form:	Organization:	Investigator phone: ( ) –	

Event Date: ____/____/____

Event Type: □ Rash Onset Date □ Diagnosis Date □ Lab Test Date □ Unknown □ Report Date (County) □ Report Date (State)

SIGNS AND SYMPTOMS

Did the patient visit a healthcare provider during this illness? □ Yes □ No □ Unknown

Diagnosis date: ____/____/____	Illness onset date: ____/____/____	Rash: □ Yes □ No □ Unknown	Rash onset date: ____/____/____	Estimated number of lesions:
Rash location: □ Generalized □ Focal □ Unknown	If focal, specify area(s) of body:	Where on body did rash 1st occur? (check all that apply) □ Face/Head □ Legs □ Trunk □ Arms □ Inside mouth □ Other (please specify)_____		□ < 50 □ 50-249 □ 250-500 □ > 500

Character of lesions :

Macules (flat) present	□ Yes	□ No	□ Unknown
Papules (raised) present	□ Yes	□ No	□ Unknown
Vesicles (fluid) present)	□ Yes	□ No	□ Unknown
Hemorrhagic	□ Yes	□ No	□ Unknown
Itchy	□ Yes	□ No	□ Unknown
Scabs/crusting	□ Yes	□ No	□ Unknown
Crops/waves	□ Yes	□ No	□ Unknown

Did the rash crust over? □ Yes □ No □ Unknown

If yes, how many days until all the lesions crusted over? _____days (Uk=999)

If no, how many days did the rash last? ____days (Uk=999)

Fever? □ Yes □ No □ Unknown

Date of fever onset: ____/____/____

Highest measured temperature: ____ °F (Unknown-999.9)

Total number of days with fever: _____ days (Unknown=999)

VACCINATION AND DISEASE HISTORY

Ever received one or more doses of varicella containing vaccine? □ Yes □ No □ Unknown

Number of doses **on** or **after** first birthday: _____ doses

Source of Vaccination History: □ GRITS □Physician Record □Parent Held Record □Patient Recall □Parent Recall □Other

Dose	Vaccination date	Vaccine type	Vaccine manufacturer	Lot number
Dose 1	____/____/____			
Dose 2	____/____/____			
Dose 3	____/____/____			
Dose 4	____/____/____			

Vaccine type codes: V: Varivax M: MMRV (ProQuad) U: Unknown O: Other

Manufacturer codes: M: Merck O: Other U: Unknown

Previous diagnosis of varicella? □ Yes □ No □ Unknown

If previously diagnosed, age at previous diagnosis: _____ (Unknown=999) □ Days □ Weeks □ Months □ Years

Previous diagnosis made by: □ Parent □ Physician/Healthcare Provider □ Other _____

Reason for not being **age-appropriately** vaccinated:

□ Born outside the U.S. **(1)**
□ Lab evidence of previous disease **(2)**
□ MD diagnosis of previous disease **(3)**
□ Medical contraindication **(4)**
□ Never offered vaccine **(5)**
□ Parent/patient forgot to vaccinate **(6)**
□ Parent/patient refusal **(7)**
□ Philosophical objection **(8)**
□ Religious exemption **(9)**
□ Under age for vaccination **(10)**
□ Other **(11)** (specify) _____
□ Unknown **(12)**

Revised February 2016

Please fax completed form to your District Health Department

COMPLICATIONS

Hospitalized: □ Yes □ No □ Unknown

Dates hospitalized: ___/___/___ to ___/___/___
Total # days hosp: _____

Facility name:

Primary Reason for Hospitalization:

Did the patient develop any complications that were diagnosed by a healthcare provider? □ Yes □ No □ Unknown

Skin/soft tissue infection	□ Y□ N □ Unk	Dehydration	□ Y□ N □ Unk	Meningitis	□ Y□ N □ Unk
Cerebellitis/ataxia	□ Y□ N □ Unk	Hemorrhagic condition	□ Y□ N □ Unk	Other (please specify):	
Encephalitis	□ Y□ N □ Unk	Pneumonia	□ Y□ N □ Unk		

Does case-patient have any co-morbid medical condition(s)? □ Yes □ No □ Unknown

If Yes, specify co-morbid condition(s):

Is case-patient immunocompromised? □ Y □ N □ Unk

If Yes, list immunocompromising medications, conditions:

Death: □ Yes □ No □ Unknown

If yes, date of death: ____/____/____

If case died, please complete and attach varicella death worksheet

TREATMENT

Did the patient receive any antiviral treatment? □ Yes □ No □ Unk

Date treatment started: ___/___/___

No. of days treatment taken _____ (Unk=999)

Antiviral treatment received: □ Acyclovir □ Valacyclovir □ Famciclovir □ Other (specify)_____

LABORATORY TESTS

Was laboratory testing done for varicella? □ Yes □ No □ Unknown

Case lab confirmed ***(For state use only)*** □ Yes □ No □ Unknown

Isolate/Specimen Available: □ Yes □ No

	Result	Date specimen taken	Lab name
Culture	_____	____/____/____	_____
PCR	_____	____/____/____	_____
IgM	_____	____/____/____	_____
IgG (acute)	_____	____/____/____	_____
IgG (convalescent)	_____	____/____/____	_____
DFA	_____	____/____/____	_____

Reason for **no** laboratory testing: **(check all that apply)**
□ Physician did not request testing
□ Rash was resolved at time of PH notification
□ Parental/Patient refusal
□ Other (specify) _____

**DPH requests lab testing on all vaccinated cases. However, lab confirmation is not a requirement to be considered a case.

Result Codes: P:Positive X:Not done N:Negative I:Indeterminate E:Pending U:Unknown S: Shingles

EPIDEMIOLOGIC INFORMATION

Epi-linked to another confirmed or probable case? □ Yes □ No □ Unknown

If yes, name of epi-linked case: _____

SendSS ID of epi-linked case: _____

Relationship to case:

□ Mother □ Brother □ Grandparent □ Cousin □ Sibling N/S
□ Father □ Neighbor □ Friend □ Aunt □ Unknown
□ Sister □ Daycare □ Baby Sitter □ Uncle
□ Other _____

Has this case been in contact with anyone with shingles in the past 21 days?
□Yes : Relationship to case: _____ □No □Unk

Outbreak related? □ Yes □ No □ Unknown

Outbreak name or location:

Transmission setting (Where did this case acquire varicella?)

□ Daycare (1) □ Doctor's Office (8) □ Other (15)
□ School (2) □ Unknown (9) □ Work (3)
□ College (10) □ Hospital Ward (4) □ Military (11)
□ Hospital ER (5) □ Correctional facility (12)
□ Outpatient clinic (6) □ Place of worship (13)
□ Home (7) □ International travel (14)

Is the patient:

Pregnant? □ Y□ N □ Unk
If Yes, weeks pregnant: _____

Healthcare worker? □ N □ Unk
□ Yes, w/o direct patient contact
□ Yes, with direct patient contact

Employed at or attend daycare? □ Y□ N □ Unk

Employed at or attend school? □ Y□ N □ Unk

Incarcerated? □ Y□ N □ Unk

Institutionalized? □ Y□ N □ Unk
(nursing home or chronic care facility)

Was a final follow up call completed at the end of the 21 day incubation period to ensure no contacts developed disease?
□ Yes
□ No (reason) _____

No. of resident's in case's household: _____

Setting of further documented spread from case (outside of household) (use no. codes from transmission Q above) _____

Comments:

Revised February 2016

Please fax completed form to your District Health Department

Varicella (Chickenpox): Reporting and Outbreak Recommendations for Childcare and School Facilities

Surveillance

Reporting

Individual cases of chickenpox are reportable in the state of Georgia and should be reported to 1-866-PUB-HLTH or the local health department.

Outbreak Control Recommendations

An outbreak of chickenpox in a childcare or school setting is defined as:

- ≥ 3 cases within a **3 week period** of time (21 days) in persons of any age

When an outbreak is recognized:

1. Contact your District Health Department immediately. For a list of local health departments go to: http://health.state.ga.us/epi/disease/districts.asp
2. Begin logging information on the varicella outbreak report form. Collect name, dob, date of rash onset, vaccination status, disease severity and classroom for every case.
3. Collaborate with Public Health to exclude all varicella cases (primary or breakthrough) until there are no new lesions appearing within 24 hours (usually 4–7 days after rash onset).
4. Identify susceptible students and staff who are at high risk for developing severe disease or at high risk for complications.

   ✓ Unvaccinated persons
   ✓ Persons with unknown vaccination status
   ✓ Immunocompromised persons
   ✓ Susceptible pregnant females

   - Inform them about their risks
   - Recommend vaccination (unless contraindicated)
   - Recommend that they contact their healthcare provider. The provider can determine whether the following are necessary:

     ✓ Immune status testing
     ✓ Postexposure prophylaxis for those who are at high risk for severe disease and complications without immunity

   - Collaborate with Public Health to exclude susceptible students and staff
5. Notify parents and school staff
   - Send a letter home to parents notifying them of the outbreak
   - Provide information about chickenpox including:

     ✓ The availability of the vaccine
     ✓ The potential for varicella to cause severe complications, especially in those who are high risk

   - Recommend a second dose of varicella vaccine for students and staff with no disease history or with a history of only one dose of varicella vaccine (provided the appropriate interval has passed since the first dose).
6. Report all students with primary or breakthrough varicella on the outbreak report form.
7. Obtain specimens for lab confirmation (Note: A specimen is not required from each ill student; a sample from 2 or 3 students is all that is necessary to confirm the outbreak).
8. Collaborate with Public Health to determine when excluded students and staff may return to school.
9. The outbreak is deemed ended when no new cases occur within 3 weeks (21 days) from the date the last case is considered to be infectious.

*** Note that the steps are not ordered by priority since several of these steps are conducted simultaneously ***

DPH Georgia Department of Public Health

Have questions? **Talk with your Doctor.**

http://dph.georgia.gov/varicella

Georgia Department of Public Health
Epidemiology Branch

Varicella Specimen Collection and Shipping Instructions

Laboratory confirmation of varicella zoster virus is not normally required, because varicella diagnosis is most commonly made by clinical assessment. However, the Georgia Department of Public Health recommends the **collection of lesions to confirm a varicella case**. To coordinate specimen collection and laboratory submission, call your District or County Health Department. **Please do not send specimens directly to the Georgia Public Health Laboratory (GPHL) or the Centers for Disease Control and Prevention (CDC).**

Specimen Collection Instructions:

Viral Testing: To make a laboratory diagnosis of VZV infection using polymerase chain reaction (PCR) method, the presence of the virus DNA should be demonstrated in tissues, vesicular fluid or crusts from lesions. We recommend the following methods for the collection of specimens for PCR testing. As noted below, scabs generally contain sufficient viral DNA for amplification and as such are also useful specimens.

Polyester Swab Method

- Use a sterile needle to unroof the top of the vesicle.
- Use a **synthetic,** sterile swab to vigorously swab the base of the lesion, applying enough pressure to collect epithelial cells without causing bleeding, and collect vesicular fluid (collection of infected epithelial cells in the base of the lesion is important because they usually contain a significant amount of virus).
- Place swab into an empty tube, breakage-resistant snap-cap or screw top tube.
- DO NOT PLACE TRANSPORT MEDIUM INTO THE TUBE; THE SPECIMEN MUST BE KEPT DRY.
- Specimen can remain at room temperature.

Glass Slide Method

- Rake the edge of the glass slide over the selected lesion, disrupting the lesion with sufficient vigor to ensure that skins cells are gathered onto the slide. Note: with young children, it may be less stressful if you ask them to help you with this.
- Use a **synthetic**, sterile swab to scrub the disrupted lesion and (using the same swab) collect the skin cells collected on the edge of the slide. Note: if more than one lesion is sampled, a separate swab should be used for each one.
- Place the swab into an empty tube, breakage-resistant snap-cap or screw top tube. Note: the swab for each sampled lesion must be placed in a separate swab tube, but multiple tubes can be shipped in the same envelope.
- DO NOT PLACE TRANSPORT MEDIUM INTO THE TUBE; THE SPECIMEN MUST BE KEPT DRY.
- Specimen can remain at room temperature.

Crusts (Scabs)

- Remove a scab from the patient.
- Place specimen into empty tube, breakage-resistant snap cap or screw top tube.
- Specimen can remain at room temperature.

Georgia Department of Public Health
Epidemiology Branch

Laboratory Submission Instructions

- Notify County or District Public Health Office **immediately** for coordination.
- Label specimen transport tube with the patient name and date of birth
- **UNLABELED SPECIMENS WILL NOT BE TESTED**
- Complete the GPHL Submission Form with the following information:

    - Submitter code (if known), address, phone number, and contact name
    - Patient name, address, date of birth, sex, race and ethnicity (if available)
    - Date of specimen collection, type of specimen, reason for testing, date of illness onset
    - Test requested—(Molecular Biology) – 421000 VZV (PCR)

- Ship specimens to the following address :

  Georgia Public Health Laboratory
  1749 Clairmont Road
  Decatur, GA 30033-4050
  ATTN: Molecular Biology Laboratories

Interpretation of Results

Sequence analysis of a PCR product derived from a virus isolate or from clinical material confirms the presumptive positive PCR results and provides epidemiologically important information

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Perinatal Hepatitis B Prevention Program Guidelines

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Protocol for Perinatal Hepatitis Contacts

State Hepatitis Program

Hepatitis B Vaccination in STD, HIV and Family Planning Clinics, Guidelines for Public Health

Perinatal Hepatitis B Prevention Program Guidelines

Georgia Perinatal Hepatitis B
Prevention Program
2 Peachtree Street, NW, 14-263
Atlanta, Georgia 30303
404-651-5196
Fax: 404-657-6871

Perinatal Hepatitis B Prevention Program Guidelines
Georgia Immunization Program

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Appendix

Perinatal Hepatitis B Prevention Program Guidelines
Georgia Immunization Program

A. **Background**

In the United States, over 24,000 pregnant women test positive for hepatitis B virus (HBV) each year. In Georgia, the Centers for Disease Control and Prevention (CDC) estimates between 500-1,000 births to hepatitis B surface antigen (HBsAg)-positive women should be reported annually. Aside from antiviral treatment, there is currently no cure for hepatitis B infection; however, there are methods to prevent perinatal transmission. Administering hepatitis B immune globulin (HBIG) and hepatitis B vaccine to an exposed infant within 24 hours of birth is 85-95 percent effective in preventing both acute HBV infection and chronic infection.

The purpose of the Georgia Perinatal Hepatitis B Prevention Program (PHBPP) is to ensure that infants born to hepatitis B surface antigen (HBsAg)-positive women are given the opportunity to live their lives free of hepatitis B disease. Infants born to HBsAg-positive women are exposed to the virus through contact with their mother's blood during delivery. Infants and children who become infected with the hepatitis B virus have a 90 percent risk of becoming chronic carriers. These children are more likely to die prematurely from end-stage liver disease (hepatocellular carcinoma or cirrhosis) as adults. Immunizing infants born to HBsAg-positive women with hepatitis B immune globulin (HBIG) and the hepatitis B vaccine series can help prevent this tragic outcome.

Identification of the hepatitis B virus (HBV) in pregnant women occurs through prenatal screening and reporting of HBsAg-positive results from the laboratory and/or physician to the state or local health department. To prevent perinatal transmission of hepatitis B, district perinatal hepatitis B case managers and staff identify HBsAg-positive pregnant women during gestation and track their infants through completion of the post-vaccination serologic testing. Infants born to HBsAg-positive women should be administered HBIG and hepatitis B vaccine within 12 hours of birth, followed by hepatitis B vaccine at 1-2 months and 6 months of age. Testing and immunizing sexual and household contacts of HBsAg-positive pregnant women also prevents transmission to susceptible individuals who are at high risk for the disease. Infected women should be informed by their medical care providers that antiviral treatment for chronic hepatitis B does exist and they should be encouraged to follow up with a medical specialist after delivery.

The Georgia Perinatal Hepatitis B Prevention Program is funded through the CDC's National Center for Immunization and Respiratory Disease, Immunization Services Division, with technical support from CDC's National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention. Since 1991, every state has received federal funding to support the Perinatal Hepatitis B Prevention Program. Separate funding from the state has been allocated to each district to assist with perinatal hepatitis B case management.

These guidelines are to be used as a reference for the case management of HBsAg-positive pregnant women, their infants, and sexual/household contacts. Emphasis is placed upon infant prophylaxis and post-vaccination serologic testing. The appendix contains several forms and tools that can be used during the case management process. Please adapt these materials to suit the needs of your health district's perinatal hepatitis B prevention program.

Perinatal Hepatitis B Prevention Program Guidelines
Georgia Immunization Program

B. **Program Goals**

The goals of the Georgia Perinatal Hepatitis B Prevention Program are to:

- Ensure that all pregnant women are screened for HBsAg as part of the initial prenatal screening panel
- Identify HBsAg-positive pregnant women and enroll them and their infants into the Georgia Perinatal Hepatitis B Prevention Program (PHBPP)
- Assure that local health departments perform case investigations on all HBsAg-positive pregnant women reported to their jurisdiction
- Identify and refer household/sexual contacts of HBsAg-positive pregnant women for HBV testing and vaccination (HBsAg and anti-HBs)
- Confirm that infants born to HBsAg-positive women receive HBIG and the first dose of hepatitis B vaccine within twelve (12) hours of birth
- Ensure that infants born to HBsAg-positive women receive the second dose of hepatitis B vaccine at 1-2 months of age, and the third dose of hepatitis B vaccine at six (6) months of age
- Ensure that infants born to HBsAg-positive women are tested at nine (9) months to twelve (12) months of age for hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody (anti-HBs) after completing the hepatitis B vaccination series

C. **Georgia Perinatal Hepatitis B Program Eligibility Requirements**

Eligibility requirements for enrollment into Georgia's Perinatal Hepatitis B Prevention Program include:

- Any pregnant women who tests HBsAg-positive (must reside in GA)
- Infants born to HBsAg-positive women (infant must be U.S. born & reside in GA)
- Sexual and household contacts of HBsAg-positive pregnant women

D. **Universal Prenatal Screening for Hepatitis B**

The Advisory Committee on Immunization Practices (ACIP), The American College of Obstetrics and Gynecologists (ACOG), and The American Academy of Pediatrics (AAP) recommend that ***all pregnant women be routinely tested for HBsAg at an early prenatal visit in each pregnancy.*** The Georgia Perinatal Hepatitis B Prevention Program encourages all prenatal health providers to follow this recommendation. An additional test for HBsAg can be ordered later in the pregnancy (approximately 34 weeks gestation) if the mother is at high risk for acquiring HBV infection (e.g., more than one sex partner during the past six (6) months, recent history of STD, intravenous drug use, household contact of a chronically HBV infected person). **Pregnant women susceptible to hepatitis B virus (i.e., have never been infected) can and should be vaccinated against the disease during pregnancy,** especially if they are at high risk for infection (see CDC "Guidelines for Vaccinating Pregnant Women" at https://www.cdc.gov/vaccines/pregnancy/hcp/guidelines.html). Chapter 2 in this manual also addresses the hepatitis B vaccine schedule and age appropriate dosage information. Appendix H-1, "Hepatitis B Facts: Testing and Vaccination," will provide a concise interpretation of the hepatitis B serology profile.

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E. **General Management of HBsAg-Positive Pregnant Women**
The following guidelines are recommended by the Georgia Perinatal Hepatitis B Prevention Program and follow the recommendations of the Centers for Disease Control and Prevention (CDC) and the ACIP for managing an HBsAg-positive pregnant woman.

1. The client's physician should draw a prenatal serologic panel at the time pregnancy is confirmed. While there is no law in Georgia mandating prenatal HBsAg testing, it is considered a standard of care for prenatal screening panels to include HBsAg serology. One of the following two scenarios may occur after the laboratory performs the test:

    a. If the HBsAg test is **NEGATIVE,** the laboratory will report the results to the physician. The physician files the results in the client's records and sends the information with the rest of her prenatal records to the hospital before delivery.

    b. If the HBsAg test is **POSITIVE**, the laboratory reports the results to the physician **AND** the Epidemiology Section at the Georgia Department of Health. The physician should inform the pregnant woman of her HBsAg-positive status, file the results in the client's record, and forward an original copy of the patient's HBsAg lab report with the rest of her prenatal records to the hospital prior to delivery.

NOTE: All HBsAg-positive test results for pregnant women must be reported to either the local health department or the Georgia Department of Public Health Epidemiology Section by the laboratory and health care provider within seven (7) days of receiving positive results. Reporting is required by authority of the Official Code of Georgia Section 31-12-2, Official Code of Georgia Section 31-22-7, Rules of the Department of Human Resources, chapter 290-5-3-02.

2. The Epidemiology Section sends HBsAg-positive laboratory reports on all females between 10 and 50 years of age to the Georgia Perinatal Hepatitis B Prevention Program for investigation.

3. The Georgia Perinatal Hepatitis B Prevention Program reviews the laboratory reports for females 10 to 50 years of age that are HBsAg-positive. The program contacts the ordering physician to determine the client's pregnancy status, estimated date of confinement (EDC) and delivery hospital for pregnant cases.

4. All pregnant HBsAg-positive women are entered into the web-based tracking system (Perinatal SendSS), where it is available to the district perinatal hepatitis B case manager for case management.

5. All **PREGNANT** clients are contacted by the health district for counseling about their infection and interviewed for sexual and household contacts. Clients are reminded to alert medical personnel of their HBsAg status at the time of delivery.

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NOTE: ***Communicating the woman's HBsAg status to the delivery hospital's department of labor and delivery should be the responsibility of her healthcare provider***. It is strongly recommended that the health district make efforts to remind the healthcare provider and the hospital of the woman's impending delivery at least four weeks before her EDC. An alert letter should be sent to the hospital's labor & delivery unit and/or provider. See Appendix B-2 for a sample fax to use when notifying the hospital for this purpose.

6. The hepatitis B counseling interview should be performed in the client's native language. Each district has a Limited English Proficient/Sensory Impaired (LEP/SI) Program Coordinator. This coordinator can assist the district with the utilization of the language line. It is critical that she is aware of self-care and disease transmission in order to protect her own health and that of others. See the Example Interviewing/Counseling Format for assistance (Appendix D-1 and Appendix D-2).
7. Any client who is chronically infected with hepatitis B should be encouraged to seek care with her physician so that her condition can be monitored routinely. Advise the client to discuss possible treatment options with her physician that may improve her health outcome and overall quality of life.

F. **General Management of Infants Born to HBsAg-Positive Women**

1. Infants born to women who are HBsAg positive must receive HBIG and the appropriate dose of hepatitis B vaccine (see Section 2, "Recommended Schedule and Guidelines, Hepatitis B") within twelve (12) hours of birth.

***NOTE*:** There is a **seven (7) day** window period to administer HBIG if an infant born to an HBsAg-positive woman did not receive HBIG within twelve (12) hours of delivery. Every effort should be made to locate the infant and administer HBIG within seven (7) days, if the infant was released from the hospital before receiving this important prophylactic component.

2. The health district should contact either the client or the delivery hospital close to the date of delivery to obtain:
   a. Infant's name, birth date, gender and birth weight, and
   b. Verification that the infant received HBIG and hepatitis B vaccine within twelve (12) hours of birth.
   c. Obtain the HBIG and hepatitis B vaccine administration dates and times

   After obtaining this information, the health district should update the Perinatal SendSS case management tracking record, where it will be available to the Georgia Perinatal Hepatitis B Prevention Program.

3. The health district will notify the pediatric care provider and/or mother that the infant should receive the second dose of vaccine, consult GRITS for verification that the vaccine was administered, and update Perinatal SendSS.

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REMINDER: Preterm infants with low birthweight (i.e. less than 2,000 grams or 4.4 pounds) have a decreased response to hepatitis B vaccine administered before 1 month of age. Infants born to HBsAg-positive women and who weigh less than 2,000 grams at birth should receive 4 doses of vaccine using the following schedules: Single-antigen vaccine (e.g., Engerix-B or Recombivax-HB): dose #1 at birth, dose #2 at one month of age, dose #3 at 2 months of age and dose #4 at 6 months of age or Combination vaccine (e.g., PEDIARIX): single-antigen vaccine dose #1 at birth, PEDIARIX vaccine dose #2 at 2 months of age, PEDIARIX dose #3 at 4 months of age and PEDIARIX dose #4 at 6 months of age).

4. The health district will notify the mother or legal guardian to take the infant for the third dose of vaccine, verify that vaccine was given, and update Perinatal SendSS for further tracking.

5. District perinatal hepatitis B case managers will document updated infant information in Perinatal SendSS for each subsequent dose of vaccine and monitor for when any dose of hepatitis B vaccine is overdue.

6. The hepatitis B post-vaccination serologic testing (PVST) should be obtained when the child is 9-12 months old. If the third dose of hepatitis B vaccine is given late, the child must have received the third dose a minimum of 30 days before obtaining the PVST. When the test results (HBsAg and anti-HBs) are known, the health district will update Perinatal SendSS and document the case as complete.

Note: The health district has the discretion to send the parent/guardian and infant to a local public health clinic for the PVST (HBsAg and anti-HBs), if testing is not otherwise affordable to the family. The local health department, health district or private physician can send the blood sample to the Georgia Public Health Laboratory where specimen processing will be performed at no charge to the infant's parent/guardian. District Immunization Program budgets must cover the costs of testing according to Public Health Master Agreement Annex 066 (Immunization).

7. If the test is **NEGATIVE for HBsAg** and **POSITIVE for anti-HBs**, the infant is considered **IMMUNE** to hepatitis B and the perinatal case is closed.

8. If the test is **NEGATIVE for BOTH HBsAg and anti-HBs,** the infant is considered **SUSCEPTIBLE** to hepatitis B infection, and should be **revaccinated with a single dose of HepB vaccine and retested 1-2 months later. Infants whose anti-HBs remains <10 mIU/mL following single dose revaccination should receive two additional doses of HepB vaccine, followed by testing 1-2 months later. Available data do not suggest a benefit from administering additional HepB vaccine doses to infants who have not attained anti-HBs ≥10 mIU/mL following receipt of two complete HepB vaccine series.** The parents/guardian should be counseled regarding the infant's negative results and susceptible status. The perinatal hepatitis B case is closed for the infant after the

second or third PVST is completed.

9. If the test is **POSITIVE for HBsAg** and **NEGATIVE for anti-HBs**, the infant is **INFECTED** and should be referred to the pediatrician for subsequent follow-up and specialist referrals. This infection is a notifiable disease that should be reported as a hepatitis B infection through SendSS and will be reported to the CDC by the Epidemiology Section. The perinatal hepatitis B case is then considered closed.

G. **Management of Infants Born to Women with Unknown HBsAg Status**

1. Infants born to women whose HBsAg status is unknown at the time of delivery should receive hepatitis B vaccine at the appropriate dosage per manufacturer (see Section 2, "Recommended Schedule and Guidelines, Hepatitis B") within twelve (12) hours of delivery. The woman should be tested in the hospital at the time of delivery and an expedited HBsAg test should be run to determine her status. If the mother's test is positive, the infant should receive HBIG as soon as possible, preferably before hospital discharge.

REMINDER: There is a **seven (7) day** window period to administer HBIG if an infant born to an HBsAg-positive woman did not receive HBIG within twelve (12) hours of delivery. Every effort should be made to locate the infant and administer HBIG within seven (7) days, if the infant was released from the hospital prior to administration.

2. The hospital laboratory and physician are required by law (see Note under Section E, 1-b) to report a positive HBsAg test within seven (7) days to the Georgia Department of Public Health, Epidemiology Section.

3. Upon receipt of a maternal HBsAg-positive serology report from the hospital, the Georgia Perinatal Hepatitis B Prevention Program (GA PHBPP Coordinator or health district) will obtain the infant's vaccination history and enter the infant into the Perinatal SendSS tracking system to be followed as indicated in Section F, "General Management of Infants Born to HBsAg-positive Women." If the mother is determined to be HBsAg-negative, the infant should receive the hepatitis B vaccine according to the schedule recommended by the ACIP for infants born to HBsAg-negative women, that is, first dose at birth, second dose at 1 to 2 months and third dose at 6 to18 months of age.

NOTE: When the mother is HBsAg-negative but is at high risk for hepatitis B infection, she should be vaccinated as soon as possible. Hepatitis B vaccine is not contraindicated during pregnancy.

4. Upon completion of the three-dose or four-dose vaccination series, infants born to HBsAg-positive mothers need to undergo post-vaccination serologic testing (PVST), in order to document immunity or infection status. If the infant does not have insurance to cover the PVST expense or the pediatric provider refuses to collect the PVST, the district case manager should assist with arrangements to refer the infant to a nearby public health clinic for the

blood test. (See Appendix K-2 for GPHL sample submission form.)

H. **Management of Sexual/Household Contacts of HBsAg-Positive Pregnant Women**

1. When health districts receive Perinatal Hepatitis B Prevention Program referrals of HBsAg-positive pregnant women, appropriate district personnel should make every effort to interview these women for household and sexual contacts. The contact interview should take place during the initial counseling session with the woman. It is imperative to identify younger contacts of the HBsAg-positive client due to the high risk for chronic infection in children aged five (5) years and younger. (See Section III, "Example Interviewing/Counseling Format", Appendix D-1, for further information.)

2. Household and sexual contacts of HBsAg-positive women are at increased risk of infection; therefore, it is important to test contacts for HBsAg and anti-HBs (See Appendix H-1, "Hepatitis B Facts: Testing and Vaccination"). Order these tests at the same visit when the contact receives the first dose of hepatitis B vaccine, but **draw the blood for serology before administering vaccine**. The test can be sent to the Georgia Public Health Laboratory using Form 3583: https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/GPHL%20Lab%20Submission%20Form_Fillable.docx

3. Sexual and household contacts should be vaccinated during their first visit to a medical provider with the age-appropriate dose of hepatitis B vaccine. Vaccine must be given according to the ACIP recommended schedule. See Section 2, "Recommended Schedule and Guidelines, Hepatitis B" of this manual for information on the hepatitis B vaccine dosage and scheduling for infants, children and adults.

4. HBIG can be given to sexual contacts of pregnant women diagnosed with acute hepatitis B infection (e.g., HBV infection of less than six (6) months duration with or without symptoms of hepatitis and/or positive anti-HBc IgM), when the last sexual exposure occurred within fourteen (14) days of administration. Administer HBIG and vaccine during the same visit, in two different body sites. HBIG can also be given to those household contacts that have not had sexual exposure, but have had known blood exposure to an acute case of hepatitis B within the past seven (7) days.

5. To calculate HBIG dosage for persons one (1) year of age through adulthood, use 0.06 mL per kilogram of body weight or 0.06 mL per 2.2 pounds of body weight. For example, for an adult weighing 140 pounds, the weight would be divided by 2.2 to obtain the equivalent in kilograms, then multiplied by 0.06 to obtain the HBIG dosage.

   Example: 140 lbs. ÷ 2.2 = 63.636 kg, rounded up to 64 kg
   64 kg x 0.06 mL = 3.84 mL of HBIG

6. If it is determined that the contact is **infected** (HBsAg-positive) or has **immunity** (HBsAg negative and anti-HBs positive) to infection, no further doses of vaccine are to be given. Report the infected case using SendSS. If the contact is susceptible to infection, that is, HBsAg-negative and anti-HBs-negative, then complete the vaccine series. (See Appendix H-4 for hepatitis B serology interpretations.)

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7. Each susceptible contact should be followed and reminded to complete the hepatitis B vaccine series at the appropriate intervals (See Section 2, "Recommended Schedule and Guidelines, Hepatitis B"). The district case manager is responsible for documenting tests and vaccinations in Perinatal SendSS for sexual and household contacts of a HBsAg-infected woman.

8. Contacts that are infected with hepatitis B should be counseled about the disease and its transmission and reported in SendSS. The "Example Interviewing/Counseling Format" is a useful guide for this situation. (See Appendix D-1)

I. Finding Clients That are Lost to Follow Up

- Ask if provider received request to transfer records to another provider (there may be contact information available for the new provider).
- Request CLEAR search (contact GA PHBPP Coordinator).
- Call telephone information 411 to see if you can locate the lost contact.
- Use Internet search engines (e.g., Google), white pages (whitepages.com), and United States Postal Service online (USPS.com) to search for contact information.
- Try old telephone numbers. Relatives/friends with information on the patient might still be reached at those numbers.
- Look in directories that list occupants of each household in the city. Most sexually transmitted disease (STD) programs have such directories.
- Transpose digits in telephone numbers and addresses.
- Try "Street" instead of "Avenue" and vise versa.
- Ask neighbors, landlords, and apartment rental offices.
- Ask mail carriers; they cannot give you addresses, by law, but might confirm whether or not the patient lives at the address.
- Ask the post office for the forwarding address. You may have to complete a justification form provided by the postal service and show your health department identification. The STD case manager may have local procedures.
- Search health department records.
- Ask other state and local agencies and programs (e.g., Medicaid, WIC programs, Department of Family and Child Services, parole and probation offices) for contact information.

J. Required Reports and Case Updates for Perinatal Hepatitis B Prevention in Georgia

Each month, the Georgia Perinatal Hepatitis B Prevention Program will review case information about any cases that are due for activity during that month, such as vaccination, blood tests, deliveries, etc. The district case manager is expected to update Perinatal SendSS at least weekly and alert the Georgia Perinatal Hepatitis B Prevention Program to any questionable or concerning information about a case.

Prompt documentation of case information in Perinatal SendSS allows for efficient maintenance of the tracking system and thus timely disease prevention. The updates will be used to complete state and federal annual reports including the Perinatal Hepatitis B Prevention Report requested annually by the CDC. If timely case

management is not being performed over a period of several months, a letter of concern may be sent to the District Clinical Coordinator and District Health Director requesting assistance with problem solving future Perinatal Hepatitis B case management within that district.

K. Glossary of Terms

EDC Estimated date of confinement or the approximate day that a woman's infant is expected to be born *(aka:* due date).

Viral Hepatitis Inflammation of the liver as a result of viral infection.

HBV Hepatitis B virus, the agent that causes hepatitis B virus infection**.**

HBsAg HBsAg is the most commonly used test for diagnosing acute HBV infections or detecting chronic infections (carriers). HBsAg can be detected as early as 1 or 2 weeks and as late as 11 or 12 weeks after exposure to HBV when sensitive assays are used. The presence of HBsAg indicates that a person is infectious, regardless of whether the infection is acute or chronic.

HBeAg Hepatitis B "e" antigen is associated with active HBV replication, high concentrations of HBV in serum, and high infectivity (increased risk of transmission); appears in early infection and persists for variable length of time (from weeks to years).

Anti-HBs Antibody to HBsAg is associated with long-term protection against reinfection and, in most persons, persists for many years after natural infection. Anti-HBs is also produced as an immune response to hepatitis B vaccine or is passively transferred when HBIG is administered. Anti-HBs is currently measured by radioimmunoassay (RIA) or enzyme-linked immunosorbent assay (ELISA).

Anti-HBc Anti-HBc (core antibody) develops in all HBV infections, appears shortly after HBsAg in acute disease, and indicates HBV infection at some undefined time in the past. Anti-HBc only occurs after HBV infection and does not develop in persons whose immunity to HBV is from vaccine. Anti-HBc generally persists for life and is not a serologic marker for acute infection.

IgM Anti-HBc IgM anti-HBc appears in persons with acute disease about the time of illness onset and indicates recent infection with HBV. IgM anti-HBc is generally detectable for 4 to 6 months after onset of illness and is the best serologic marker of acute HBV infection. A negative test for IgM-anti-HBc together with a positive test for HBsAg in a single blood sample identifies a chronic HBV infection.

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HBsAg Chronic Carriage	Through serologic testing, a person is confirmed as an HBsAg carrier (chronic infection) when: 1) HBsAg is detected on at least two tests, spaced a minimum of six (6) months apart; or 2) the results of a single serum specimen are HBsAg positive and IgM anti-HBc negative. Carriers may be asymptomatic and unaware that they are infected with HBV. Because they carry HBsAg in their blood, they are capable of infecting others.
HBIG	Hepatitis B immune globulin is a preparation obtained from the blood plasma from donor pools selected for a high antibody content of anti-HBs. In some situations, HBIG is administered post-exposure with hepatitis B vaccine to provide additional protection against HBV infection.

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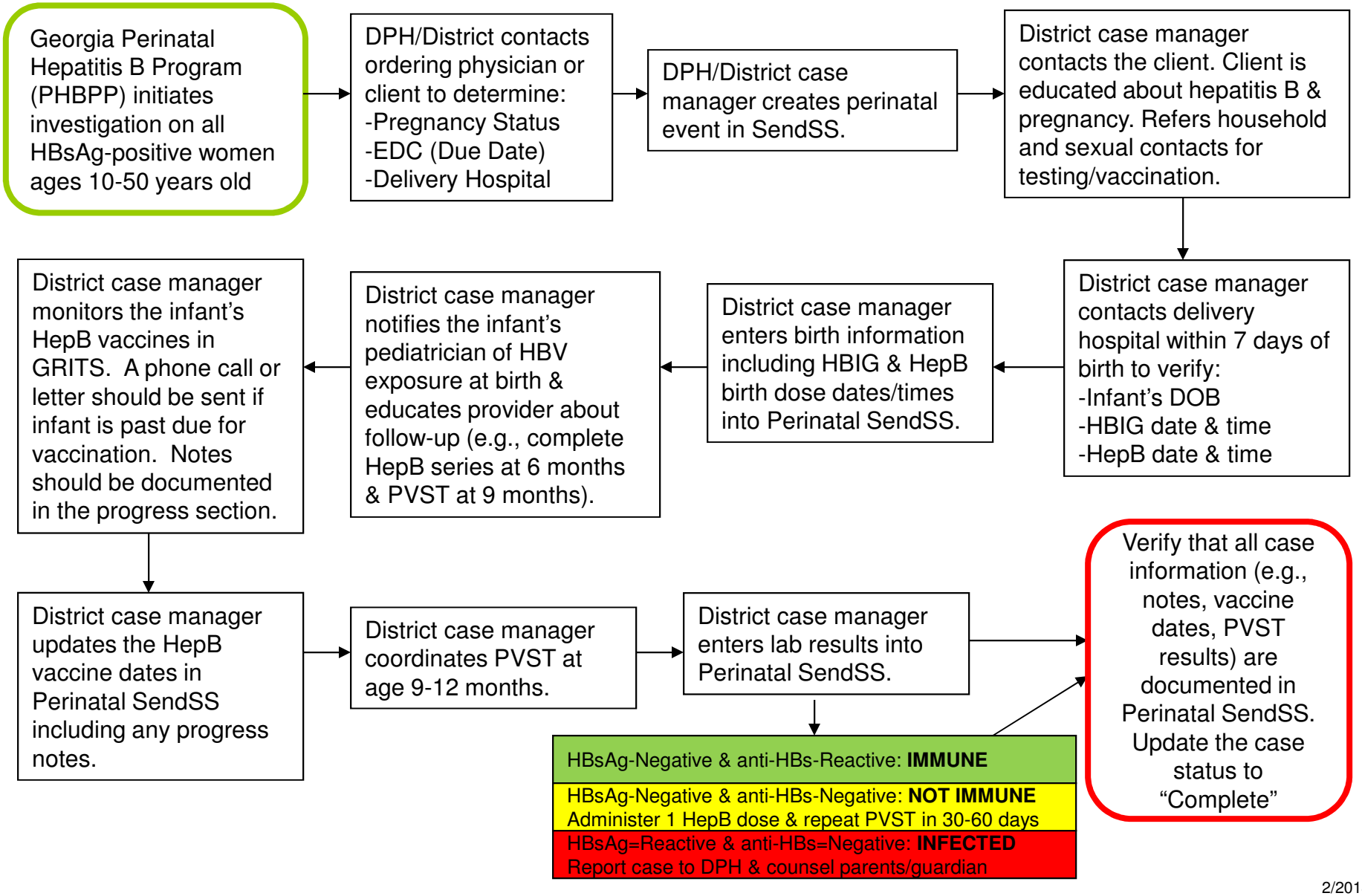
Appendix	
A	**Perinatal Hepatitis B Prevention Case Management Activities**
B	**Obstetrician & Delivery Hospital Notification Materials** **B-1**---Sample Letter for Medical Providers Caring for HBsAg-Positive Pregnant Patients **B-2**---Perinatal Hepatitis B Chart Alert Form **B-3**---Perinatal Hepatitis B Case Report Form
C	**Patient Notification Materials** **C-1**---Sample Letter for Pregnant HBsAg-Positive Women **C-2**---Sample Letter for Foster Parents of Infants Born to HBsAg (+) Women **C-3**---Hepatitis B & Moms-to-Be Pamphlet (2006)
D	**Patient Interview Guide** **D-1---**Example Hepatitis B Interviewing/Counseling Format **D-2---**Sample Perinatal Hepatitis B Interview Questions
E	**Pediatrician Notification Materials** **E-1---**Sample Letter for Pediatricians Caring for Infant Born to HBsAg-Positive Mother **E-2---**A Pediatric Guide for Caring for Infants born to HBV Infected Mothers (1/18)
F	**HIPAA Information for Perinatal Hepatitis B Prevention Program**
G	**Delivery Hospital Resources** **G-1---** Guidance for Developing Admission Orders in Labor & Delivery and Newborn Units to Prevent Hepatitis B Virus Transmission (6/17))
H	**Medical Provider Resources** **H-1---**Hepatitis B Facts: Testing and Vaccination (6/10) **H-2---**Patient Notification Letter Regarding Hepatitis B Test Results (4/02) **H-3---**What the Physician Can Do to Help the Child with Chronic Hepatitis B Virus Infection (7/08) **H-4---**Interpretation of Hepatitis B Serologic Test Results (2005)
I	**Patient Educational Materials** **I-1**---Questions Frequently Asked About Hepatitis B (8/07) **I-2**---If You Have Chronic Hepatitis B Virus (HBV) Infection… (6/10)
J	**Vaccine Information** **J-1**---Recommended Immunizations for Children from Birth Through 6 Years Old (2018) **J-2**---Hepatitis B Vaccine Information Sheet (7/16)
K	**Georgia Public Health Laboratory** **K-1**---Lab Service Manual Excerpt **K-2**---GPHL submission Form 3583 (7/16)

Georgia Department of Public Health

Georgia Perinatal Hepatitis B Prevention Program

Perinatal Hepatitis B Case Management Activities



INSERT YOUR HEALTH DEPARTMENT'S LETTERHEAD

Sample Letter for Medical Providers with HBsAg Positive Pregnant Patients

Today's Date

Name of Practice
Attention: Clinic Manager
Street Address
City, State Zip Code

Dear Medical Provider,

The County Name Health Department was notified that your patient, **Patient's Name (DOB: ## / ## /####)**, tested positive for hepatitis B surface antigen (HBsAg) during a recent prenatal exam. Hepatitis B is deemed a reportable condition by Georgia law and is required to be reported to the Georgia Department of Health within seven (7) days of laboratory confirmation.

The Georgia Perinatal Hepatitis B Prevention Program is responsible for providing case management services to hepatitis B-infected pregnant women and their newborn infant(s). Case management activities include testing/vaccinating sexual partners and household contacts, ensuring their newborn receives hepatitis B immune globulin (HBIG) and hepatitis B (HepB) vaccine within 12 hours of birth. We also facilitate hepatitis B vaccination and post-vaccination serologic testing to confirm the infant is protected against the hepatitis B virus.

We request that you notify your patient of her results, explain that hepatitis B virus can be transmitted to her infant at birth and refer her to a specialist for additional testing. Please notify the delivery hospital of your patient's HBsAg-positive test result by forwarding a copy of the original lab report to ensure the infant receives HBIG and HepB vaccine at birth.

Thank you in advance for your attention to this matter. Protecting your patient's infant from hepatitis B is our number one priority. Please contact me with any questions or concerns at (###) ### - ####.

Sincerely,

Case Manager's Name
Title

Hepatitis B Alert

Please flag this patient's medical record or electronic record.

This pregnant patient has been identified as having a positive Hepatitis B Surface Antigen (HBsAg) laboratory test.

Patient's Name:	Name
Patient's DOB:	## / ## / ####
Patient's EDC:	## / ## / ####
Patient's HBsAg Result:	## / ## / ### = Reactive

Prenatal Care Provider's Role:

- ☐ Notify the patient of her result, explain that hepatitis B virus can be transmitted to her infant(s) during delivery and explain the need for her infant(s) to receive immunoprophylaxis (HBIG and HepB) within 12 hours of birth
- ☐ Refer the patient to a medical specialist for evaluation of chronic hepatitis B
- ☐ Advise mother that all sexual and household contacts should be tested for hepatitis B infection and vaccinated if susceptible
- ☐ Provide the delivery hospital with a copy of the original laboratory report indicating the HBsAg status

Immunizing infants born to HBsAg-positive mothers with hepatitis B immune globulin (HBIG) and hepatitis B vaccine within 24 hours of birth is 85%-95% effective in preventing both acute hepatitis B infection and chronic infection.

Please contact Case Manager's Name, Specific County/District Perinatal Hepatitis B Program Coordinator, with any questions or concerns at (###) ### - ####.

County/District Logo & Contact Info

Perinatal Hepatitis B Case Report Form

Georgia Department of Public Health

Please complete form for infants exposed to hepatitis B at birth and fax copy to DPH.

MOTHER INFORMATION

Name:_____ DOB:_____

Street Address:_____

City:_____ State:_____ Zip:_____

HBsAg Collection Date:_____ Result: ☐ Reactive ☐ Negative ☐ Indeterminate

INFANT INFORMATION

Name:_____ DOB:_____

Time of Birth:_____ Birth Weight:_____ Gender: ☐ Male ☐ Female

POST-EXPOSURE PROPHYLAXIS INFORMATION

Hepatitis B Immune Globulin (HBIG): ☐ Administered ☐ Not Administered

HBIG Administration Date:_____ HBIG Administration Time:_____

HBIG Brand Name: ☐ HepaGam B ☐ HyperHEP B ☐ Nabi-HB ☐ Unknown

---

Hepatitis B Vaccine (HepB): ☐ Administered ☐ Not Administered

HepB Administration Date:_____ HepB Administration Time:_____

HepB Brand Name: ☐ Engerix-B ☐ Recombivax-HB ☐ Unknown

REPORTER INFORMATION

Facility Name:_____

Contact Person:_____ Phone:_____

FAX COMPLETED FORM TO ###-###-####

County Name Perinatal Hepatitis B Prevention Program
Your Street Address ◆ City, GA #####
Phone: ###-###-#### ◆ Website: dph.ga.gov/perinatal-hepatitis-b

INSERT YOUR HEALTH DEPARTMENT'S LETTERHEAD

Appendix C-1

Sample Letter for HBsAg-Positive Pregnant Women

Today's Date

Mother's Name
Address
City, State Zip Code

Dear Ms. Mother's Last Name,

During your pregnancy you tested positive for the hepatitis B virus. Hepatitis B can be a serious disease. Not only does this virus affect your liver, but also it can be passed to your baby at the time of birth. To be protected from this disease, your baby will need to get several shots. **The first two (2) shots are given within a few hours after birth.** They are hepatitis B immune globulin (HBIG) and dose 1 of hepatitis B vaccine.

Your baby will later need **dose 2 of hepatitis B vaccine at one or two months of age** and **dose 3 at six months of age.** After completing these shots, your baby's doctor will do some blood tests to see if your baby is protected. The blood test should be done when the baby is between 9 and 12 months of age. In some cases, the baby may need more shots to prevent infection.

It is possible that your sexual partner and other people living in your household could get infected. We recommend that they be tested and vaccinated for hepatitis B also, if they haven't been already. It is important that you discuss with your doctor whether you need further follow up for your infection. Your doctor may refer you to a gastroenterologist (GI doctor) who specializes in liver diseases.

We encourage you to show this letter to your doctor and later to your baby's doctor. If you have any questions, please call me at (###) ###-####. Protecting your child from hepatitis B is our number one priority!

Sincerely,

Case Manager Name
Title

INSERT YOUR HEALTH DEPARTMENT'S LETTERHEAD HERE

Sample Letter for Foster Parents of Infants born to HBsAg-positive Women

Date

Name
Address
City/State/Zip

Dear Legal Guardian's Name:

Thank you for making the decision to care for BABY FIRST/LAST NAME (DOB) in your home. As the foster parent(s), it is important that you know BABY FIRST NAME may have been exposed to the hepatitis B virus during childbirth. Hepatitis B is a serious disease that affects the liver. To be protected from the disease, the baby will need to get several shots. **The first two (2) shots should have been given within a few hours after birth**. They are hepatitis B immune globulin (HBIG) and dose 1 of hepatitis B vaccine.

The baby will later need **dose 2 of hepatitis B vaccine at one month of age** and **dose 3 at six months of age**. After completing these shots, the baby's doctor will do some blood tests to see if the baby is protected. The two tests that are needed are called HBsAg and anti-HBs. The blood test should be done when the baby is between 9 and 12 months of age. When the test results are back, please ask the doctor to call our office to report them to us. In some cases, the baby may need more shots to prevent hepatitis B infection.

We encourage you to show this letter to the baby's doctor. If you have any questions or concerns, please feel free to call me at XXX-XXX-XXXX.

Sincerely,

Your Name
Job Title

Protect yourself and your baby with the first "anti-cancer vaccine"

If you have not been infected, get vaccinated

Hepatitis B can still be transmitted through unprotected sex and contaminated blood (sharing toothbrushes, razors, or needles for tattoos/piercings).

The 3 shots given over 6 months are safe, even during pregnancy. The hepatitis B vaccine is so effective in preventing HBV and liver cancer that it is known as the first "anti-cancer vaccine."

Make sure your baby is vaccinated at birth

Since 1991, U.S. national guidelines have recommended that all newborns be vaccinated against HBV. The 3 shots can protect your baby for life against hepatitis B, reducing the risk of liver cancer and liver damage in the future.

Time	Infant should receive
At birth	birth dose of hepatitis B vaccine
1-2 months	2nd dose of hepatitis B vaccine
6 months	3rd dose of hepatitis B vaccine

The vaccine is safe, even for premature babies.

Unite against HBV.

The **Jade Ribbon** is folded like the Chinese character for people "人" to symbolize the united voices of those fighting hepatitis B and liver cancer worldwide.

Asian Liver Center
at Stanford University
300 Pasteur Drive, H3680
Stanford, CA 94305-5655
Tel: (650) 72-LIVER
1-888-311-3331
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http://liver.stanford.edu

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Hepatitis B & Moms-to-Be

HBV and Moms-to-Be

- Hepatitis B (HBV) is the most common serious viral infection of the liver, and can lead to premature death from liver cancer or liver failure.
- In the U.S., approximately 10-15 people die every day as a result of HBV infection.
- Hepatitis B can be transmitted from an infected mother to her child during the birthing process.
- Newborns who become infected with HBV have a 90% chance of developing chronic (lifelong) infection.

Fortunately, HBV can be prevented with a very safe and effective vaccine.

Ask your doctor for the results of your HBV test

Most people with chronic HBV infection have no symptoms. As an expecting mother, you should have already been tested for HBV with the following blood test:

- **Hepatitis B surface antigen (HBsAg):**
  Tells if you have chronic hepatitis B (also known as being a hepatitis B carrier).

Take extra precautions if you are a mom with HBV

During pregnancy:

Currently, antiviral HBV treatments are not recommended during pregnancy. If you are already on treatment, talk to your doctor.

At time of birth:

In addition to the first shot of the hepatitis B vaccine, make sure your newborn receives the hepatitis B immunoglobulin (HBIG) shot.

Time	Infant born to mother with HBV should receive
At birth	birth dose of hepatitis B vaccine **and hepatitis B immunoglobulin (HBIG)**
1-2 months	2nd dose of hepatitis B vaccine
6 months	3rd dose of hepatitis B vaccine
9-18 months	**HBsAg and anti-HBs* tests to confirm that your child is protected**

* The hepatitis B surface antibody (anti-HBs) blood test checks for protection against HBV.

Cesarean sections (C-sections) have not been found to prevent HBV transmission from mother to child. Hepatitis B vaccination along with the HBIG shot is the best way to protect your newborn against HBV infection.

In the first 6 months:

It is critical for your child to complete the hepatitis B vaccine series on time. This will be more than 95% effective in protecting your newborn against HBV infection.

Breastfeeding is safe for your baby. HBV is not transmitted through breast milk.

Moms with HBV

You're important too!

Remember to get screened for liver disease

You probably have no symptoms and feel healthy, but are still at increased risk for liver damage or liver cancer. However, regular screening and appropriate treatment can reduce this risk and help you lead a normal, healthy life. Ask your doctor for the following tests:

Every	Test	Screens for
6 months	ALT blood test	liver damage
	AFP blood test	liver cancer
1 year	ultrasound	liver cancer

Don't rush into treatment

Not every person with chronic HBV infection needs treatment. But if your ALT level is elevated, treatment with antiviral medication may be appropriate.

Be sure to review all medications with your doctor. Even some over-the-counter or herbal medications can injure your liver.

Get the hepatitis A vaccine

Avoid drinking alcohol

Protect your loved ones

Make sure your family and partner are tested for HBV, and vaccinated if they are not already protected.

Your local health department may contact you to ensure your baby is fully protected against HBV.

Interviewing/Counseling Format Hepatitis B

Interviewing/Counseling Format
Hepatitis B

I. Introduction, professional role, and purpose

Purpose: To let the patient know what is going to take place is to his/her benefit, that he /she is going to be dealing with a competent person, and that there should be no fears about discussing otherwise personal information.

A. Introduce yourself and anyone else present to the patient.
B. Tell the patient that you have been trained and have experience in helping people who have hepatitis B to understand and manage their disease.
C. Inform the patient that part of your job is to ensure that no one else find out about the patient's infection and that problems are minimized for everyone who may be involved.

II. Patient Assessment

Purpose: To establish rapport, get the patient accustomed to talking, reduce the possibility of patient concerns interfering with the rest of the process, gather information that can be used in later sections, and give the patient sufficient information to be able to understand and support disease intervention behaviors. Targeted medical information can preempt inappropriate strategies that the patient may be developing to take care of the problem. By getting the patient to talk during this section, issues may arise that can be used as motivations or as benchmarks against inconsistencies later on in the interview/counseling session.

A. Patient Concerns
   1. Ask the patient about problems or questions regarding the disease and how it has been handled thus far.
   2. Address concerns even if they are involved in other elements of the format.

B. Socio-sexual Information
   1. Question patient conversationally about where he/she lives, telephone number, alternate locating information, who living with, employment, travel, recreation social groups.
   2. Question the patient about current employment and/or past jobs where they may have had to handle blood or other body fluids.
   3. Explain reasons for questions if patient shows signs of concern.

C. Medical History and Disease Comprehension
   1. Ask what patient knows about the disease.
   2. Compliment correct responses, tactfully correct any misconceptions, and add any information that directly supports disease intervention behaviors.
   3. Ask about past hepatitis/liver problems.
   4. Impress upon the patient that the disease is serious, people usually don't know that they have it until it is too late, that routine tests may not discover the disease, and that it is often passed unintentionally.

Interviewing/Counseling Format Hepatitis B

III. Disease Intervention Behaviors

A. Assure examination of household, sexual, and needle-sharing contacts
   1. Explain that the medical facts just discussed clearly show that the patient's household contacts, sexual contacts, and needle-sharing contacts are in need of an exam as soon as possible.
   2. Ask for the names and birthdays of all the children in the home.
   3. Explain that other adults in the household need to be notified that they have been exposed to someone with a serious disease. This has to be done so that they can be tested for the infection and given vaccine as necessary.
   4. Ask for the names and birthdays of all the adults in the house besides the husband/boyfriend.
   5. Explain that the sex partners and needle-sharing partners (sex/NS partners) need to be notified privately that they have been exposed to someone with a serious disease. This has to be done in a way that doesn't embarrass them or the patient, but ensures that the examination takes place immediately by someone who knows enough about the circumstances to do the right things medically.
   6. Tell the patient that you can work together to come up with the plan for notifying the sex/NS partners, and that you have to know about each of the sex/NS partners since a certain date in order to do that.
   7. If the patient seems hesitant about talking about sex/NS partners, problem solve and explain the different plans and give different examples of how you would handle referrals.
   8. Ask for the names of each of the sex/NS partners since the significant date you have established for the interview period. Do not be concerned if the patient doesn't supply the whole name, but emphasize that you want to discuss every partner during that period, regardless of how much they know about them. Continue to probe for partners even after the patient has indicated there are no more. Use some other identifier for sex/NS partners if the patient can't remember a name or nickname.
   9. When further probing fails to produce other sex/NS partners, ask and record the last date of exposure beside each person's name.
   10. Confront problems indicated by exposure gaps and conflicts with previously gathered information.
   11. If you have not already done so, explain referral methods.
   12. Gather locating information including full name, nicknames, address, telephone numbers, living-with status, employment, age, race, sex, marital status, physical descriptions, directions to home, description of home, etc.
   13. Determine methods of sex/NS partner referral for each partner and agree to best approaches.
   14. Coach patient on any contact referrals (referrals they prefer to make, themselves) and give guidelines and deadlines.

Interviewing/Counseling Format Hepatitis B

B. Reduce Risk
Purpose: This section is important for all patients to hear, but is especially important for those who appear to have contracted the infection sexually. The information should be tailored to each patient.

1. The patient should be instructed that it is possible for her to spread the hepatitis B virus to others. She should be told of ways to prevent this spread:
   a. Household articles that could become contaminated with blood (such as toothbrushes, nail clippers and razors) should not be shared.
   b. Cuts or skin lesions should be covered to prevent the spread of infectious secretions or blood.
   c. When seeking medical or dental care, those responsible for care should be informed of HBsAg status.
   d. If sexual partner(s) are not immune to hepatitis B, the partner should be advised to take precautions, including “safer sex” and vaccination, if warranted.
   e. “Safer sex” should be practiced for the prevention of many sexually transmitted diseases, including hepatitis B, syphilis, gonorrhea, Chlamydia infection, and HIV/AIDS.
   f. Blood, plasma, body organs, other tissue or sperm should not be donated.
   g. Enroll or stay in a drug treatment program if using illicit drugs.

2. Medical follow-up is needed for evaluation of chronic hepatitis B. Patients with progressive liver disease may need to be referred to a liver specialist for consideration of interferon therapy.

3. Other recommendations include:
   a. Limiting the number of sex partners.
   b. Limiting anonymous sex.
   c. Routine checkups for STDs and liver function.

C. Respond to Disease Suspicion
Purpose: In spite of current status, the patient should understand how to respond to signs that the infection has worsened.

1. Discuss clinical symptoms of hepatitis B.
2. Tell patient to return to provider immediately if symptoms appear.

D. Complete Vaccine Series for All Exposed
Purpose: The understanding of the multi-dose regimen is particularly important and these messages should be delivered in concert with individualized pamphlets. The case manager should be reinforcing messages expressed by the provider and verifying that the patient understands and intends to comply with the plan.

1. Emphasize the need for all exposed to complete the series, especially the baby and children of the household. Remind the patient that she is directly responsible for her baby’s and other children’s health. She should remind the nurses and her baby’s doctor that she is a carrier of hepatitis B virus and her baby needs to complete the high-risk vaccine series.
2. Establish a specific schedule so that the patient is aware when the vaccine is due to be given to her baby.
3. Discuss contraindications and potential side effects.

Interviewing/Counseling Format Hepatitis B

4. Identify and discuss potential compliance problems.

IV. Conclusion

A. Ask what questions or problems remain.

B. Review and reinforce all components of compliance plan.

C. Reinforce commitments to communicate information.

D. Make arrangements for the next visit, if indicated.

Centers for Disease Control and Prevention. Managing a Hepatitis B Prevention Program: A Guide to Life as a Program Coordinator. [manual] April 2007.

Georgia Department of Public Health

Brenda Fitzgerald, MD, Commissioner | Nathan Deal, Gov

2 Peachtree Street NW, 15th Floor
Atlanta, Georgia 30303-3142
www.health.state.ga.us

Perinatal Hepatitis B Interview

Patient's Name:	
PHBPP Case Number:	
Interview Date:	

1. Verify the following demographic information:

a. Name (correct spelling)
b. DOB
c. Address
d. Country of birth
e. Native Language

2. Verify the following clinical information:

a. EDC (Due Date)
b. Single / Twins / Triplets / Other
c. Prenatal Care Provider
d. Delivery Hospital
e. HBV History (past medical history or new diagnosis)

3. Household/Sexual Contact Information:

a. Name(s) and DOB of household members (info is needed to verify vaccine history in GRITS)
   *Name of pediatric care provider for children less than 18 years of age
b. Name(s) and DOB of sexual contacts (info is needed to verify vaccine history in GRITS)
   *Vaccine and HBV testing history

4. Additional Information:

a. Name of the pediatric care provider planned to use (if known)
b. Educational needs (HBV information/pamphlets…)

Interview Format:

1. **Call client in their native language (e.g. interpreter, language line)**
2. **Verify the correct client is on the phone and ask if she has a few minutes to speak confidentially about a health issue**
3. **Introduce yourself, your agency and your role with the PHBPP**
4. **Explain confidentiality and that information will not be shared**
5. **Explain disease reporting in Georgia (i.e. how you received client's information)**
6. **Educate the client about hepatitis B infection (e.g. HBV transmission, long-term effects, prevention)**
7. **Educate client about perinatal hepatitis B and need for PEP**
    a. Transmitted from mother to child at birth
    b. Infant(s) will need hepatitis B immune globulin (HBIG) and hepatitis B vaccine within 12 hours of birth
    c. Remind client to notify delivery hospital staff that she is HBV-infected to ensure her infant(s) receive PEP
    d. Encourage client to follow-up with a medical specialist for chronic hepatitis B
8. **Verify demographic information**
9. **Verify clinical information**
10. **Conduct contact investigation**
    a. Ask the client the number of people living in her home
    b. Obtain the name(s) and DOB for household contacts
    c. Inquire about each contact's vaccination and serologic history
    d. Search the contact's name and DOB through GRITS to verify vaccination history
    e. Obtain the pediatric care provider for any children less than 18 years of age
11. **Obtain additional information**
12. **Request to send educational materials to the client**
13. **Provide client with your contact information**
14. **End call and add notes/contacts to Perinatal SendSS**

Georgia Department of Public Health

J. Patrick O'Neal, M.D., Commissioner | Nathan Deal, Governor

2 Peachtree Street NW, 15th Floor
Atlanta, Georgia 30303-3142
dph.ga.gov

June 5, 2018

Provider Name
Provider Address
City, GA #####

Dear Pediatric Care Provider,

Regarding Patient: Infant Name (DOB)

The Georgia Department of Public Health (DPH) is responsible for providing case management services to infants exposed to hepatitis B at birth. DPH's Perinatal Hepatitis B Prevention Program will be working with your practice and the infant's parent/legal guardian to ensure the infant completes recommended interventions to prevent disease transmission.

The recommended interventions endorsed by the Centers for Disease Control (CDC) and the American Academy of Pediatrics (AAP) includes ensuring the child completes the hepatitis B vaccine series at six months of age and completes post-vaccination serologic testing between 9-12 months of age. Post-vaccination testing must include both the hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody (anti-HBs) to provide a complete clinical picture.

	INTERVENTION	
AGE	**Single Antigen hepatitis B vaccine (Engerix-B or Recombivax HB)**	**Combination hepatitis B vaccine (Pediarix)**
Birth (Within 12 hours)	Hepatitis B vaccine dose #1 and Hepatitis B Immune Globulin (HBIG)	Hepatitis B vaccine dose #1* and Hepatitis B Immune Globulin (HBIG)
1-2 Months	Hepatitis B vaccine dose #2	Hepatitis B vaccine dose #2
4 Months	----------	Hepatitis B vaccine dose #3
6 Months	Hepatitis B vaccine dose #3	Hepatitis B vaccine dose #4
9-12 Months	Post-vaccination serologic testing	Post-vaccination serologic testing

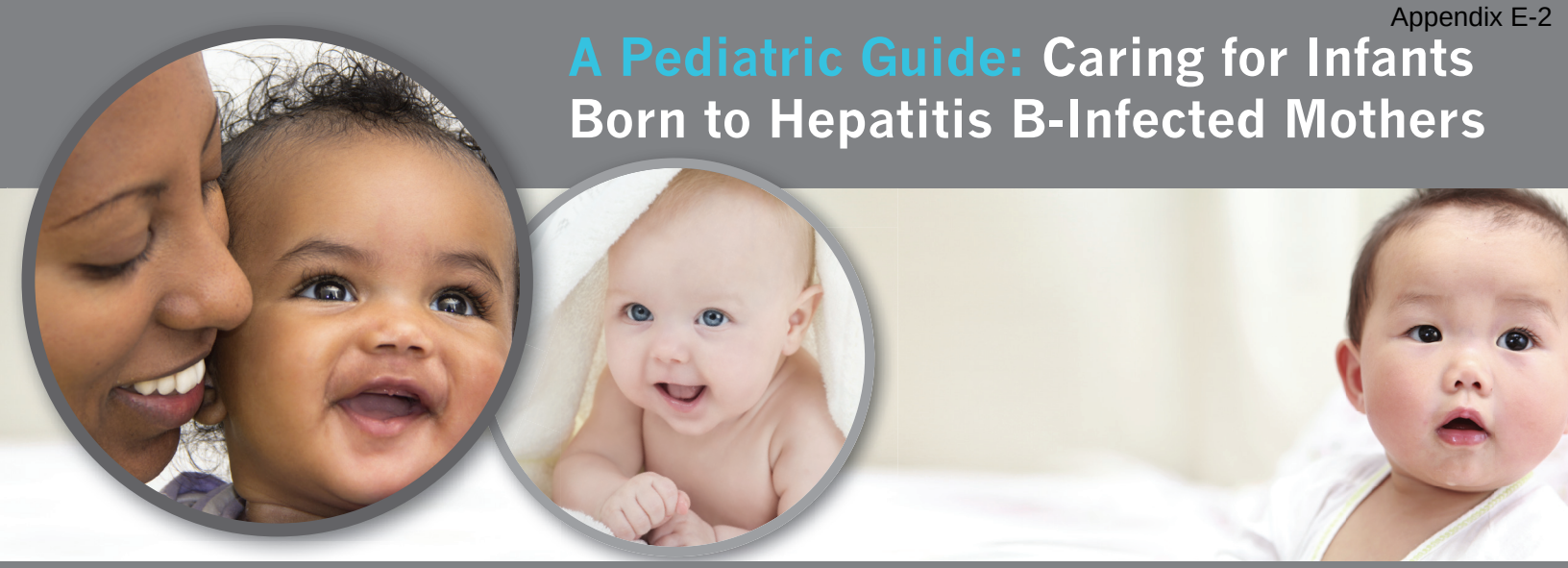
*Combination hepatitis B vaccine is not approved for use in infants less than 6 weeks of age. The birth dose is a single antigen vaccine.

Please help protect this high-risk infant by adhering to the above recommendations. Additional resources are available at dph.georgia.gov/perinatal-hepatitis-b or by contacting the Georgia Perinatal Hepatitis B Prevention Program at 404-651-5196.

Sincerely,

Name
Perinatal Hepatitis B Case Manager

A Pediatric Guide: Caring for Infants Born to Hepatitis B-Infected Mothers



Immunize and Test On Time

AGE	Single-antigen hepatitis B vaccine (Engerix-B® or Recombivax HB®)	Combination hepatitis B vaccine (Pediarix®)
Birth[1] (Within 12 hours)	Hepatitis B immune globulin (HBIG) AND Hepatitis B vaccine dose #1	Combination vaccine is not approved for the birth dose. See single-antigen guidance.
1–2 Months[2]	Hepatitis B vaccine dose #2	Hepatitis B vaccine dose #2
4 Months	No vaccine needed	Hepatitis B vaccine dose #3
6 Months	Hepatitis B vaccine dose #3	Hepatitis B vaccine dose #4
9–12 Months[3]	Postvaccination serologic testing Hepatitis B Surface Antigen (HBsAg) AND Hepatitis B Surface Antibody (anti-HBs)	Postvaccination serologic testing Hepatitis B Surface Antigen (HBsAg) AND Hepatitis B Surface Antibody (anti-HBs)

[1]HBIG should be administered within 12 hours of birth; however it can be administered up to 7 days after birth if the mother's HBsAg laboratory result is unavailable at delivery.

[2]Low birth weight infants (less than 2,000 grams or 4.4 lbs.) should receive 4 doses of hepatitis B vaccine. The schedule is: HBIG & hepatitis B vaccine within 12 hours of birth, hepatitis B vaccine at 1 month, 2 months and 6 months of age. The Pediarix® schedule is HBIG & single-antigen hepatitis B vaccine within 12 hours of birth, followed by Pediarix® doses at 2, 4 and 6 months of age.

[3]Blood for the PVST should not be collected before 9 months of age AND must be drawn a minimum of 30 days after final hepatitis B vaccine dose, if infant is completing the hepatitis B series after the recommended intervals.

Postvaccination Serologic Testing (PVST) Laboratory Interpretations

	Immune to HBV No additional HepB doses needed		Susceptible to HBV Additional HepB doses needed		Infected with HBV Report results to Public Health	
Test	**HBsAg**	**anti-HBs**	**HBsAg**	**anti-HBs**	**HBsAg**	**anti-HBs**
Result	Negative	Positive	Negative	Negative	Positive	Negative

Report all PVST results to the Georgia Perinatal Hepatitis B Prevention Program.

For more information or to locate your local health department's perinatal hepatitis B case manager, visit the Georgia Department of Public Health's Perinatal Hepatitis B Prevention Program website:
dph.georgia.gov/perinatal-hepatitis-b

Georgia Department of Public Health

Common Questions about Perinatal Hepatitis B

What is hepatitis B?

Hepatitis B is an infectious liver disease caused by the Hepatitis B Virus (HBV). HBV attacks the liver and can lead to cirrhosis, liver cancer and premature death.

How is hepatitis B transmitted?

HBV is transmitted through contact with infectious blood or body fluids. HBV can be transmitted from an infected mother to her newborn during delivery.

When is an infant at high-risk for hepatitis B?

Infants born to mothers who are hepatitis B surface antigen (HBsAg) positive are considered high-risk.

How can hepatitis B be prevented at birth?

Administering hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine (HepB) within 24 hours of birth is 85%-95% effective in preventing perinatal HBV infection.

Is there a specific immunization schedule that needs to be followed for HBV-exposed infants?

Yes. Hepatitis B immune globulin (HBIG) and HepB (birth dose) should be administered within 12 hours of birth. HepB dose two should be administered at 1-2 months of age and the third dose should be administered at 6 months of age. After the birth dose, infants receiving Pediarix® should receive doses at 2, 4 and 6 months of age.

What if my practice identifies a HBV-exposed newborn that did not receive HBIG before hospital discharge?

Administering HBIG within 12 hours of birth is recommended; however, it can be administered up to 7 days after birth. The infant should be referred urgently to the Mother/Baby department of the delivery hospital for immediate administration of HBIG. If more than 7 days have passed, it is too late to administer HBIG. However, ensure that the HepB birth dose was given, and strictly adhere to the recommended intervals for subsequent doses.

My patient was born to an HBV-infected mother and weighed less than 2,000 grams (4.4 lbs.) at birth. Why does this infant need 4 doses of HepB?

The immune response to HepB is less reliable in newborns weighing less than 2,000 grams. HBV-exposed infants must receive HBIG and HepB within 12 hours of birth. The HepB birth dose should not be counted as part of the series and the infant should receive three additional doses beginning at 1 month of age, followed by a third dose 1-2 months after the second and a fourth dose at 6 months of age. Infants receiving Pediarix® should receive HBIG and the single-antigen birth dose followed by Pediarix® doses at 2, 4 and 6 months of age.

What is postvaccination serologic testing (PVST) and why is it necessary?

Postvaccination serologic testing (PVST) is recommended for infants and children born to hepatitis B-infected mothers. Serologic testing confirms whether the child has developed immunity or has been infected with HBV. The PVST should include hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody (anti-HBs) only. Testing should occur between 9 and 12 months of age.

Why must providers wait until the infant is 9 months of age to collect the PVST?

Labs collected before 9 months of age can provide inaccurate anti-HBs results by detecting the antibody from HBIG administered at birth and not actual response to the hepatitis B vaccine. Also, for infants who receive HBIG at birth but still develop HBV infection, there can be a prolonged incubation period. Waiting until 9 months of age can maximize detection of late HBV infection.

Can collection of the PVST be delayed until the infant is older?

After primary immunization with HepB, anti-HBs concentrations decline rapidly within the first year. This decline may result in a negative/non-reactive anti-HBs result, making it difficult to determine if this child has waned immunity or vaccine failure and leading to unnecessary revaccination. For this reason, providers are encouraged to test at 9-12 months of age (or 1-2 months after the final dose of the HepB series, if doses were delayed).

What if my patient's HBsAg and anti-HBs results are negative after completing the HepB series?

The child should be re-vaccinated with a single dose of HepB vaccine and tested 1-2 months later. If the anti-HBs remains negative (<10 mIU/mL), the child should receive two additional doses of HepB vaccine, followed by testing 1-2 months after the last dose. If immunity is still not present after two complete HepB series, counsel the child's parents or guardian on risk reduction strategies for vaccine non-responders.

What if my patient is infected with HBV?

Hepatitis B is a reportable condition in Georgia. Report the HBsAg-positive result to the Georgia Department of Public Health within 7 days of diagnosis. Refer the child to a pediatric specialist for further evaluation. The child's family and caretakers should be educated about avoiding blood exposure.

My HBV-exposed patient has other siblings that I care for in my practice. Do they need follow-up?

Yes. Household contacts including other siblings should be tested and vaccinated against HBV, if found to be susceptible.

What if the infant was adopted or the mother's HBsAg-status is unknown?

Verify the child's immunization history beginning at birth. Administer any missing HepB doses, followed by PVST at 9-12 months of age.

All immunizations must be reported to the Georgia Department of Public Health via the Georgia Registry of Immunization Transactions and Services (GRITS) system within 30 days of vaccine administration.

For more information, visit the Georgia Department of Public Health's Perinatal Hepatitis B Prevention Program website at dph.georgia.gov/perinatal-hepatitis-b

DPH Georgia Department of Public Health

Centers for Disease Control and Prevention
National Immunization Program

HIPAA and Perinatal Hepatitis B Prevention

Responses to Frequently Asked Questions about Perinatal Hepatitis B Prevention

This guidance is intended to give health care providers and public health agencies specific information regarding the HIPAA Privacy Rule and how it impacts perinatal hepatitis B prevention. Several frequently asked questions posed to the CDC legal counsel for interpretation are presented below. Additional sources of information and reference materials available on the internet are also included.

Q. 1. Does HIPAA permit providers, hospitals, and laboratories to report HBsAg-positive women to state and local health departments (including local health agencies and local boards of health) without the authorization of the individual, regardless of whether the state has a reporting law?

A. 1. Yes. Under 45 CFR §164.512(b)(1)(i) of the HIPAA Privacy Rule, covered entities may disclose protected health information without authorization to public health authorities that are authorized by law to collect such information for public health purposes. In addition, under 45 CFR §164.512(a), covered entities may disclose protected health information to public health authorities if the disclosure is required by law. A specific mandate to report is not required for disclosure. In states that do not have a law that specifically mandates the reporting of maternal HBsAg status, notifiable disease reporting laws mandate reporting of hepatitis B.

Q. 2. Does HIPAA permit providers and hospitals to disclose patient information to state and local health departments ((including local health agencies and local boards of health) without the authorization of the individual, for perinatal case management (e.g. immunization, prophylaxis, and post vaccination serology)?

A. 2. Yes. Under 45 CFR §164.512(b)(1)(i) of the HIPAA Privacy Rule, covered entities may disclose protected health information without authorization to public health authorities that are authorized by law to collect such information for public health purposes including disease prevention or control.

Q. 3. Can patient records be reviewed by state and local health department staff and their contractual agents when conducting quality assurance activities (e.g. chart reviews to assess HBsAg screening rates and appropriate prophylaxis), case investigations and/or disease outbreak activities?

A. 3. Yes. As explained above, under 45 CFR §164.512(b)(1)(i) of the HIPAA Privacy Rule, covered entities may disclose protected health information without authorization to public health authorities that are authorized by law to collect such information for public health purposes.

Q. 4. Does the HIPAA Privacy Rule apply to Indian Health Services and tribal clinics?

A. 4. Yes. The HIPAA Privacy Rule governs the use and disclosure of protected health information by covered entities (health plans, clearinghouses, and providers who transmit specified transactions electronically). The definition of health plans (45 CFR §160.103) includes the Indian Health Service (IHS) and programs under the Indian Health Care Improvement Act, 25 U.S.C. 1601 et seq. (45 CFR 160.103(1)(xii)).

Resources

Office for Civil Rights (responsible for enforcing the Privacy Rule) website: (www.hhs.gov/ocr/hipaa)

CDC/DHHS guidance on the Privacy Rule and Public Health, available at http://www.cdc.gov/mmwr/pdf/other/m2e411.pdf.

Centers for Disease Control and Prevention
National Immunization Program

Health Insurance Portability and Accountability Act and Public Health

Fact Sheet

What is HIPAA?

The Health Insurance Portability and Accountability Act of 1996 (Public Law 104-191) established a national floor of consumer privacy protection and marketplace reform. Some key provisions include: insurance reforms, privacy and security, administrative simplification, and cost savings.

What is the HIPAA Privacy Rule?

HIPAA required Congress to enact privacy legislation by August 1999 or the Secretary of DHHS was to develop regulations protecting privacy. The HIPAA Privacy Rule (Standards for Privacy of Individually Identifiable Health Information) sets national minimal standards for protected health information.

Implications for Public Health

The Privacy Rule strikes a balance between protecting patient information and allowing traditional public health activities to continue. Disclosure of patient health information without the authorization of the individual is permitted for purposes including but not limited to 1) disclosures required by law (45 CFR § 164.512(a)) or 2) for "public health activities and purposes." This includes disclosure to "a public health authority that is authorized by law to collect or receive such information for the purpose of preventing or controlling disease, injury, or disability, including but not limited to, the reporting of disease, injury, vital events. . ., and the conduct of public health surveillance,. . . investigations, and. . . interventions." (45 CFR § 164.512(b)(i))

Definition of Public Health Authority

Defined as "an agency or authority of the United States, a State, a territory, a political subdivision of a State or territory, or an Indian tribe, or a person or entity acting under a grant of authority from or contract with such public agency, including the employees or agents of such public agency or its contractors or persons or entities to whom it has granted authority, that is responsible for public health matters as part of its official mandates." (45 CFR § 164.501)

J. Patrick O'Neal, M.D., Commissioner | Nathan Deal, Governor

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RE: **"Public Health" Exceptions to HIPAA**

Dear Colleague:

From time to time, we receive questions from physicians and other health care providers who are concerned that federal privacy regulations prevent them from reporting patient information to local health departments or to the Department of Public Health.

The "Health Insurance Portability and Accountability Act" (HIPAA), enacted by Congress in 1996, protects the confidentiality of the patient's personal health information. However, HIPAA and its accompanying regulations strike a balance between a health care provider's duty of confidentiality and the need to protect the public's health. Federal HIPAA regulations stipulate that patient health information may be provided to state public health authorities, with or without the patient's consent, in many different circumstances. Those circumstances include the following:

- A health care provider "may disclose protected health information for the public health activities and purposes described in this paragraph to a public health authority that is authorized by law to collect or receive such information for the purpose of preventing or controlling disease, injury or disability, including, but not limited to, the reporting of disease, injury, vital events such as birth or death, and the conduct of public health surveillance, public health investigations and public health intervention," 45 C.F.R. § 164.512(b)(1)(i); and

- A health care provider "may, consistent with applicable law and standards of ethical conduct, use or disclose protected health information, if the [provider] in good faith believes the use or disclosure is necessary to prevent or lessen a serious and imminent threat to the health or safety of a person or the public, and is to a person or persons reasonably able to prevent or lessen the threat, including the target of the threat," 45 C.F.R. § 164.512(j)(1)(i).

I hope this information will facilitate your support of our unwavering efforts to protect the public's health. If you have any questions, please feel free to contact our legal department.

Very truly yours,

J. Patrick O'Neal, M.D.
Commissioner

Guidance for Developing Admission Orders in Labor & Delivery and Newborn Units to Prevent Hepatitis B Virus Transmission

The guidelines in this document were developed to help hospitals establish policies and standing orders in their labor and delivery (L&D) and newborn units.

In February 2017, CDC released its updated recommendation to administer the hepatitis B birth dose within 24 hours of birth to all newborns in its "Recommended Immunization Schedule for Children and Adolescents." The American Academy of Pediatrics, American Academy of Family Physicians, and American College of Obstetricians and Gynecologists have all endorsed the hepatitis B birth dose recommendation. To obtain a copy of the 2017 schedule, go to www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf.

To protect infants from HBV infection, CDC recommends that all delivery hospitals institute standing orders or admission orders, and protocols to ensure healthcare professionals do the following:

1. Administer hepatitis B vaccine to **ALL newborns** within 24 hours of birth, or at hospital discharge, whichever comes first.
2. Identify all infants born to mothers who are hepatitis B surface antigen (HBsAg) positive or to mothers with unknown HBsAg status. Administer appropriate immunoprophylaxis to these infants.

Admission orders and procedures for women admitted to a birthing facility

For pregnant women who have a HBsAg lab report included in their prenatal records, do the following:

1. Examine a copy of the *original* laboratory report of the pregnant woman's HBsAg[1] test result to verify that the correct test (i.e., HBsAg) was performed and to verify that the testing date was during *this* pregnancy not a previous one. *Do not rely on a handwritten or transcribed HBsAg test result!*
2. Place a copy of the original HBsAg lab report into (1) the pregnant woman's L&D record and (2) the infant's hospital record (or have a link to the mother's HBsAg test result).
3. If the pregnant woman is HBsAg positive, alert the nursery staff that the newborn is high risk and will need postexposure prophylaxis – both hepatitis B immune globulin (HBIG) and hepatitis B vaccine – within 12 hours of birth.
4. Perform a repeat blood test for HBsAg[1] if the pregnant woman was HBsAg negative during a prenatal visit but was at risk for acquiring HBV infection during this pregnancy (e.g., more than one sex partner in the previous 6 months, evaluation or treatment for a sexually transmitted disease, recent or current injection-drug use, or HBsAg-positive sex partner), or had clinical hepatitis since her previous testing.
5. Instruct the laboratory to call L&D and the nursery with the HBsAg test result ASAP.

For pregnant women who do not have an HBsAg lab report on their prenatal record, do the following:

1. Perform HBsAg[1] testing ASAP on women who do not have a copy of an original HBsAg laboratory report from the current pregnancy included in their prenatal record.
2. Instruct the lab to call L&D and the nursery units with the newly obtained HBsAg test result ASAP.

Admission orders and procedures for newborns

Hospital procedures to follow for ALL newborns

1. Review a copy of the mother's *original* HBsAg[1] lab report to ensure that the correct serologic test was ordered and that it was ordered during this pregnancy.
2. Determine if the newborn needs immediate postexposure prophylaxis within 12 hours of birth. To do this you must know the mother's HBsAg status and the newborn's birth weight. If the newborn weighs less than 2 kg (4.4 lb), see the descriptions below and footnotes 2, 4, 5.
3. Prior to vaccination, give parent a Hepatitis B Vaccine Information Statement (available at www.immunize.org/vis).
4. If an infant is transferred to a higher level of care facility prior to vaccination, inform the receiving facility it is their responsibility to administer the hepatitis B vaccine.

For newborns of HBsAg-negative mothers

1. Administer single-antigen hepatitis B vaccine (0.5 mL, IM) within 24 hours of birth, or at hospital discharge, whichever comes first, to **all** newborns weighing 2 kg (4.4 lb) or more at birth.[2, 3]
2. Document the hepatitis B vaccine dose in the newborn's medical record, including the date, time, and site of administration, as well as the vaccine lot number.
3. Give the mother an immunization record card that includes the hepatitis B vaccination date. Explain the importance of completing the hepatitis B vaccine series to protect her baby. Remind her to bring the immunization record card with her each time her baby sees a provider.

CONTINUED ON THE NEXT PAGE ▶

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Technical content reviewed by the Centers for Disease Control and Prevention

Saint Paul, Minnesota ▪ 651-647-9009 ▪ www.immunize.org ▪ www.vaccineinformation.org

www.immunize.org/catg.d/p2130.pdf ▪ Item #P2130 (6/17)

For newborns of mothers with unknown HBsAg status, do the following:

1. Administer single-antigen hepatitis B vaccine (0.5 mL, IM) within 12 hours of birth.[3, 4] Do not wait for test results to return before giving this dose of vaccine.
2. Document the hepatitis B vaccine dose in the newborn's medical record, including date, time, and site of administration, as well as the vaccine lot number.
3. Give the mother an immunization record card that includes the hepatitis B vaccination date. Explain the importance of completing the hepatitis B vaccine series to protect her baby. Remind her to bring the immunization record card with her each time her baby sees a provider.
4. Confirm that the laboratory has received blood for the mother's HBsAg[1] test.
5. Verify when the mother's HBsAg result will be available and that it will be reported to L&D and the newborn unit ASAP.
6. If the nursery does not receive the report of the mother's HBsAg test at the expected time, call the laboratory for the result.
7. If the laboratory test indicates the mother's HBsAg[1] test result is positive, do the following:
   - **a** Administer HBIG (0.5 mL, IM) to the newborn ASAP. (Hepatitis B vaccine should have been given within 12 hours of birth.)
   - **b** Document the HBIG dose in the newborn's medical record. There is little benefit in administering HBIG to the newborn if more than 7 days have elapsed since birth.
   - **c** Alert the mother's and newborn's physician(s) of the test result.
   - **d** Follow the instructions below "For newborns of HBsAg-positive mothers," steps 3–7.
8. If the newborn must be discharged before the mother's HBsAg result is known:
   - **a** Document the parents' contact information (e.g., addresses, telephone numbers, emergency contacts) in case further treatment is needed for the infant.
   - **b** Obtain the name, address, and phone number of the mother's and the newborn's healthcare providers.
   - **c** Notify the mother's and newborn's healthcare providers that the mother's HBsAg test result is pending.

For newborns of HBsAg-positive mothers

1. Administer HBIG (0.5 mL, IM) and single-antigen hepatitis B vaccine[3, 5] (0.5 mL, IM) at separate injection sites within 12 hours of birth.
2. Document the hepatitis B vaccine and HBIG dose in the newborn's medical record, including the date, time, and site of administration, as well as the vaccine lot number.
3. Give the mother an immunization record card that includes the hepatitis B vaccination and HBIG dates. Explain the importance of completing the hepatitis B vaccine series to protect her baby. Remind her to bring the record card each time her baby sees a provider.
4. Notify the local or state health department of the infant's birth and the date and time of administration of HBIG and hepatitis B vaccine doses.
5. Obtain the name, address, and phone number of the newborn's primary care provider.
6. Notify the provider of the newborn's birth, the date and time of HBIG and hepatitis B vaccine doses administered, and the importance of additional on-time vaccination as well as postvaccination testing of the infant for both HBsAg and antibody to HBsAg (anti-HBs) after completion of the hepatitis B vaccine series to assess the hepatitis B status of the infant following vaccination.
7. Provide advice to the mother. Tell her the following:
   - **a** That she may breast-feed her infant upon delivery, even before hepatitis B vaccine and HBIG are given;
   - **b** That it is critically important for the protection of her baby's health that the baby receives the full hepatitis B vaccine series on the recommended schedule;
   - **c** That blood tests (HBsAg and antibody to hepatitis B surface antigen [anti-HBs]) need to be drawn from the baby 1–2 months after completion of the 3- or 4-dose hepatitis B vaccine series and also no earlier than 9–12 months of age to determine if the child developed a protective immune response to vaccination or needs additional management[6];
   - **d** About modes of HBV transmission and the need for testing and vaccination of susceptible household, sexual, and needle-sharing contacts;
   - **e** That she needs to have a medical evaluation for chronic hepatitis B, including an assessment of whether she is a candidate for antiviral treatment.

FOOTNOTES

1. Be sure the correct test for HBsAg (hepatitis B surface antigen) was/is ordered. The HBsAg test should not be confused with other hepatitis B serologic tests, including antibody to HBsAg (anti-HBs or HBsAb) and antibody to hepatitis B core antigen (anti-HBc or HBcAb).
2. Infants weighing less than 2 kg (4.4 lb) at birth and whose mothers are documented to be HBsAg negative should receive the first dose of vaccine 1 month after birth or at hospital discharge, whichever comes first. The mother's HBsAg test result must be part of the infant's medical record.
3. Federal law requires that you give parents a Hepatitis B Vaccine Information Statement (VIS) before vaccine administration. To obtain a VIS, download it from the IAC website at www.immunize.org/vis.
4. An infant weighing less than 2 kg (4.4 lb) whose mother's HBsAg status is unknown should receive HBIG and hepatitis B vaccine within 12 hours of birth. Do not count the hepatitis B vaccine dose as the first dose in the vaccine series. Reinitiate the full hepatitis B vaccine series at age 1–2 months.
5. An infant weighing less than 2 kg (4.4 lb) whose mother is HBsAg positive should receive the first dose of hepatitis B vaccine and HBIG within 12 hours of birth. Do not count the hepatitis B vaccine dose as the first dose in the vaccine series. Reinitiate the full hepatitis B vaccine series at age 1–2 months.
6. The optimal timing for serologic testing to detect a vaccine response generally is 1–2 months after the final dose of the HepB vaccine series. Results of tests for HBsAg can be transiently positive for 1–18 days after vaccination. Serologic testing should be performed no earlier than age 9 months to avoid detection of passive anti-HBs from hepatitis B immune globulin administered at birth and to maximize the likelihood of detecting late HBV infection (see "Update: Shortened interval for postvaccination serologic testing of infants born to hepatitis B-infected mothers," *MMWR*, 2015;64: 1118–20).

▶ ***For "Sample Text for Developing Admission Orders in Newborn Units for the Hepatitis B Birth Dose," visit www.immunize.org/catg.d/p2131.pdf.***

Hepatitis B Facts: Testing and Vaccination

Who should be vaccinated?

The following persons should receive routine hepatitis B vaccination, according to the Centers for Disease Control and Prevention (CDC):

Routine vaccination:
- All newborns at birth prior to hospital discharge
- All children and teens ages 0 through 18 years
- All persons who wish to be protected from hepatitis B virus (HBV) infection. CDC states it is not necessary for the patient to disclose a risk factor to receive hepatitis B vaccine.

Persons who are at risk for sexual exposure:
- Sexually active persons who are not in long-term, mutually monogamous relationships
- Sex partners of HBsAg-positive persons
- Persons seeking evaluation or treatment for an STD
- Men who have sex with men

Persons at risk for infection by percutaneous or mucosal exposure to blood:
- Injection-drug users, current or past
- Household contacts of HBsAg-positive persons
- Residents and staff of facilities for developmentally challenged persons
- Healthcare and public safety workers with reasonably anticipated risk for exposure to blood or blood-contaminated body fluids
- Persons with end-stage renal disease and those receiving dialysis

Others:
- Travelers to areas with moderate or high rates of HBV infection
- Persons with chronic (life-long) liver disease
- Persons with HIV infection

Refugees, immigrants, and adoptees from countries where HBV infection is endemic should have hepatitis B testing. Adults should discuss their need or desire for hepatitis B vaccination with their healthcare providers.

For certain people at risk, postvaccination testing is recommended. Consult ACIP recommendations for details (see references).

Hepatitis B lab nomenclature

HBsAg: *Hepatitis B surface antigen* is a marker of infectivity. Its presence indicates either acute or chronic HBV infection.

Anti-HBs: *Antibody to hepatitis B surface antigen* is a marker of immunity. Its presence indicates an immune response to HBV infection, an immune response to vaccination, or the presence of passively acquired antibody. (It is also known as ***HBsAb,*** but this abbreviation is best avoided since it is often confused with abbreviations such as HBsAg.)

Anti-HBc (total): *Antibody to hepatitis B core antigen* is a nonspecific marker of acute, chronic, or resolved HBV infection. It is *not* a marker of vaccine-induced immunity. It may be used in prevaccination testing to determine previous exposure to HBV infection. (It is also known as ***HBcAb,*** but this abbreviation is best avoided since it is often confused with other abbreviations.)

IgM anti-HBc: *IgM antibody subclass of anti-HBc.* Positivity indicates recent infection with HBV (within the past 6 mos). Its presence indicates acute infection.

HBeAg: *Hepatitis B "e" antigen* is a marker of a high degree of HBV infectivity, and it correlates with a high level of HBV replication. It is primarily used to help determine the clinical management of patients with chronic HBV infection.

Anti-HBe: *Antibody to hepatitis B "e" antigen* may be present in an infected or immune person. In persons with chronic HBV infection, its presence suggests a low viral titer and a low degree of infectivity.

HBV-DNA: *HBV Deoxyribonucleic acid* is a marker of viral replication. It correlates well with infectivity. It is used to assess and monitor the treatment of patients with chronic HBV infection.

About hepatitis B serologic testing

Serologic testing prior to vaccination may be undertaken based on your assessment of your patient's level of risk and your or your patient's need for definitive information (see information in the left column). If you decide to test, draw the blood first, and then give the first dose of vaccine at the same office visit. Vaccination can then be continued, if needed, based on the results of the tests. If you are not sure who needs hepatitis B testing, consult your state or local health department.

Tests	Results	Interpretation	Vaccinate?
HBsAg anti-HBc anti-HBs	negative negative negative	susceptible	vaccinate if indicated
HBsAg anti-HBc anti-HBs	negative negative positive with ≥10mIU/mL	immune due to vaccination	no vaccination necessary
HBsAg anti-HBc anti-HBs	negative positive positive	immune due to natural infection	no vaccination necessary
HBsAg anti-HBc IgM anti-HBc anti-HBs	positive positive positive negative	acutely infected	no vaccination necessary
HBsAg anti-HBc IgM anti-HBc anti-HBs	positive positive negative negative	chronically infected	no vaccination necessary (may need treatment)
HBsAg anti-HBc anti-HBs	negative positive negative	four interpretations possible*	use clinical judgment

*1. May be recovering from acute HBV infection
2. May be distantly immune, but the test may not be sensitive enough to detect a very low level of anti-HBs in serum
3. May be susceptible with a false positive anti-HBc
4. May be chronically infected and have an undetectable level of HBsAg present in the serum

Managing chronic HBV infection

When you identify a patient who is chronically infected with HBV, make sure you consult a specialist knowledgeable in the treatment of liver disease so your patient's care is optimized. Chronically infected persons need medical evaluation every 6–12 months to assess the status of their liver health and their need for antiviral therapy, as well as to screen for liver cancer. In addition, persons with chronic HBV infection should be educated about their disease and how to protect others.

Household members and sex partners should be tested for HBV infection (HBsAg and antiHBs) and given the first dose of hepatitis B vaccine at the same visit. (Vaccinating a person who has already been infected will do no harm). If testing indicates HBV susceptibility, complete the hepatitis B vaccination series. If testing indicates the presence of HBV infection, consultation and further care with a physician knowledgeable about chronic hepatitis B is needed.

References

1. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the U.S.: Recommendations of the ACIP, Part 1: Immunization of Infants, Children and Adolescents, *MMWR,* Dec. 23, 2005, Vol. 54(RR-16)
2. A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the U.S.: Recommendations of the ACIP, Part II: Immunization of Adults, *MMWR,* Dec. 8, 2006, Vol. 55(RR-16)

www.immunize.org/catg.d/p2110.pdf • Item #P2110 (6/10)

Patient notification letter regarding hepatitis B test results

Dear _____ , Date of birth:_____Today's date:_____

Your hepatitis B test results are recorded here and the explanation checked below.

Date of testing:_____ HBsAg: _____ anti-HBs: _____ anti-HBc: _____ IgM anti-HBc: _____

[ ] **Susceptible:** (HBsAg, anti-HBs, and anti-HBc are negative)
Your test results show that you have never been infected with the hepatitis B virus. This means that you could develop hepatitis B virus infection in the future. You should receive the three doses of hepatitis B vaccine to protect yourself from this disease. After the 1st dose, the 2nd dose is usually given one month later and the 3rd dose is usually given five months after that. Please call the clinic to make an appointment to start your hepatitis B vaccination series.

[ ] **Immune due to past infection:** (HBsAg is negative; anti-HBs and anti-HBc are positive)
Your results show that you had hepatitis B virus infection in the past but that the disease is gone and you will not get the disease again. You do not need the shots to protect you. You are already protected.

[ ] **Immune due to vaccination:** (HBsAg and anti-HBc are negative; anti-HBs is positive)
Your results indicate that you are protected from hepatitis B virus infection because you most likely received the hepatitis B vaccine. You are immune or safe from hepatitis B.

[ ] **Acutely infected with hepatitis B:** (HBsAg, anti-HBc, and IgM anti-HBc are positive; anti-HBs is negative)
Your results show that you have recently developed hepatitis B virus infection and that you are infectious. Please contact the clinic to discuss what further evaluation needs to be done.

[ ] **Resolving hepatitis B virus infection:** (HBsAg is negative; anti-HBc and IgM anti-HBc are positive; anti-HBs is negative)
Your results show that you were recently infected with hepatitis B virus, but that your infection is resolving. You are no longer infectious to others.

[ ] **Chronically infected with hepatitis B virus:** (HBsAg and anti-HBc are positive; IgM anti-HBc and anti-HBs are negative)
Your test results show that you are infected with the hepatitis B virus. It is important for you to come into the clinic *soon* for further evaluation and to receive additional information about hepatitis B. It is also important for you to learn how to take care of yourself and how to protect others from this infection. Hepatitis B can cause serious liver damage in some people, *even if they feel fine*. Call us now to make an appointment for further evaluation and education about hepatitis B.

[ ] **Indeterminate results:** (only anti-HBc is positive)
Your test results suggest that you may have been in contact with the hepatitis B virus at some time in the past. You may not be protected from this disease. Please make an appointment to come to discuss the meaning of your hepatitis B tests and what plan of action needs to be taken.

Please call the clinic if you have questions about this information or to schedule the appointment(s) indicated above.

Sincerely,

_____ _____
Clinician's signature Clinician's name (print or type)

Item #P4140 (4/02)

What the Physician Can Do to Help the Child with Chronic Hepatitis B Virus Infection

Sarah Jane Schwarzenberg, M.D.
Division of Pediatric Gastroenterology, Hepatology and Nutrition
University of Minnesota

Although children with chronic hepatitis B virus (HBV) infection may follow many different clinical courses, these recommendations will help all of them maintain good health.

1. **A yearly physical**
   Every child with hepatitis B needs a yearly check-up with his/her primary physician to make sure the child is healthy and growing normally.

2. **Laboratory studies to monitor liver health**
   At the first clinical visit, liver enzymes (ALT and AST), INR, a complete blood count, alpha-fetoprotein (AFP) and ultrasound are usually obtained. Thereafter, liver enzymes should be checked yearly in the healthy child with HBV.

3. **Screening for hepatocellular carcinoma**
   There are no definitive guidelines for screening children with HBV for hepatocellular carcinoma. AFP is a tumor marker and is increased in 85% of individuals with hepatocellular carcinoma, often before clinical evidence of cancer is present. It may be elevated at a time when the tumor can be resected completely. We recommend yearly AFP in the child with HBV, and twice yearly testing with hepatic ultrasound in the child with cirrhosis and HBV. It should be noted that even close monitoring of these tests does not guarantee early diagnosis of hepatocellular carcinoma.

4. **Hepatitis B testing every 3-5 years**
   Few children convert from HBsAg to anti-HBs (HBsAb), especially if they acquired the disease in the perinatal period. It is important to occasionally check to see if the patient is still infected.

5. **Referral to a pediatric gastroenterologist**
   Any child with an AST >2 times the upper limit of normal, evidence of hepatic dysfunction, failure to thrive, an elevated AFP, a need for family counseling, or abnormalities on hepatic ultrasound should be referred to a pediatric gastroenterologist for evaluation.

6. **Treatment**
   Although medications are available to treat hepatitis B, they are generally useful only in patients with on-going hepatic injury (active hepatitis). Consultation with a pediatric gastroenterologist will help identify those patients who would benefit from medical therapy.

7. **Vaccination of household members**
   All members of the child's household and caregivers who have close contact with the child should be vaccinated against hepatitis B, even if pregnant.

8. **Hepatitis B education**
   Each child with hepatitis B and his/her parents should receive age-appropriate hepatitis B education. This should include methods for prevention of transmission of the virus and assistance for the child in dealing with his/her positivity throughout the school years and as a teenager. Older children should receive counseling on the use of condoms to prevent viral transmission to their sexual partners.

9. **Maintaining personal health**
   Immunization against hepatitis A is recommended to prevent a second injury to the liver. Ethanol should be avoided. When prescribing other medications, care must be taken to avoid or monitor those with known hepatotoxicity.

For more information regarding the child with hepatitis B, please contact Dr. Sarah Jane Schwarzenberg in the division of Pediatric Gastroenterology, Hepatology and Nutrition, University of Minnesota, Department of Pediatrics, 420 Delaware Street SE, Minneapolis, Minnesota 55455; Telephone (612) 624-1133.

www.immunize.org/catg.d/p2170.pdf • Item #P2170 (7/08)

Interpretation of Hepatitis B Serologic Test Results

Hepatitis B serologic testing involves measurement of several hepatitis B virus (HBV)-specific antigens and antibodies. Different serologic "markers" or combinations of markers are used to identify different phases of HBV infection and to determine whether a patient has acute or chronic HBV infection, is immune to HBV as a result of prior infection or vaccination, or is susceptible to infection.

HBsAg **anti-HBc** **anti-HBs**	negative negative negative	Susceptible
HBsAg **anti-HBc** **anti-HBs**	negative positive positive	Immune due to natural infection
HBsAg **anti-HBc** **anti-HBs**	negative negative positive	Immune due to hepatitis B vaccination
HBsAg **anti-HBc** **IgM anti-HBc** **anti-HBs**	positive positive positive negative	Acutely infected
HBsAg **anti-HBc** **IgM anti-HBc** **anti-HBs**	positive positive negative negative	Chronically infected
HBsAg **anti-HBc** **anti-HBs**	negative positive negative	Interpretation unclear; four possibilities: 1. Resolved infection (most common) 2. False-positive anti-HBc, thus susceptible 3. "Low level" chronic infection 4. Resolving acute infection

Adapted from: A Comprehensive Immunization Strategy to Eliminate Transmission of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. Part I: Immunization of Infants, Children, and Adolescents. MMWR 2005;54(No. RR-16).

Division of Viral Hepatitis www.cdc.gov/hepatitis

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Centers for Disease Control and Prevention

- **Hepatitis B surface antigen (HBsAg):** A protein on the surface of hepatitis B virus; it can be detected in high levels in serum during acute or chronic hepatitis B virus infection. The presence of HBsAg indicates that the person is infectious. The body normally produces antibodies to HBsAg as part of the normal immune response to infection. HBsAg is the antigen used to make hepatitis B vaccine.
- **Hepatitis B surface antibody (anti-HBs):** The presence of anti-HBs is generally interpreted as indicating recovery and immunity from hepatitis B virus infection. Anti-HBs also develops in a person who has been successfully vaccinated against hepatitis B.
- **Total hepatitis B core antibody (anti-HBc):** Appears at the onset of symptoms in acute hepatitis B and persists for life. The presence of anti-HBc indicates previous or ongoing infection with hepatitis B virus in an undefined time frame.
- **IgM antibody to hepatitis B core antigen (IgM anti-HBc):** Positivity indicates recent infection with hepatitis B virus (≤6 mos). Its presence indicates acute infection.

Hepatitis B
COALITION
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QUESTIONS FREQUENTLY ASKED ABOUT HEPATITIS B

What is hepatitis B?

Hepatitis B is a serious public health problem that affects people of all ages in the U.S. and around the world. In 2006, an estimated 46,000 people contracted hepatitis B virus (HBV) infection in the U.S. Hepatitis B is caused by a highly infectious virus that attacks the liver and can lead to severe illness, liver damage, and in some cases, death.

The best way to be protected from hepatitis B is to be vaccinated with hepatitis B vaccine, a vaccine used in the U.S. for more than two decades and proved safe and effective.

Who is at risk for HBV infection?

About 5% of people in the U.S. will get infected with HBV sometime during their lives if they are not vaccinated. You might be infected with HBV and not even know it. If you engage in certain activities, your risk might be much higher. You might be at risk if you

- have a job that exposes you to human blood
- share a household with someone who has chronic (lifelong) HBV infection
- inject drugs
- have sex with a person infected with HBV
- are sexually active but not in a long-term, mutually monogamous relationship
- are a man who has sex with men
- received a blood transfusion before 1975, when excellent blood testing became available
- are a person who was born, or who has a parent born, in Asia, Africa, the Amazon River Basin in South America, the Pacific Islands, Eastern Europe, or the Middle East
- were adopted from Asia, Africa, the Amazon River Basin in South America, the Pacific Islands, Eastern Europe, or the Middle East
- have hemophilia
- are a patient or worker in an institution for developmentally challenged people
- are an inmate of a correctional facility
- travel internationally to areas with moderate or high rates of HBV infection

How is HBV spread?

HBV is found in the blood of people infected with the virus and certain of their body fluids, such as serum, semen, and vaginal secretions. HBV is not found in sweat, tears, urine, or respiratory secretions. Contact with microscopic amounts of infected blood can cause infection.

Hepatitis B virus can be spread by

- unprotected sex
- injection drug use
- an HBV-infected mother to her child during birth
- contact with blood or open sores of an HBV-infected person
- human bites from an HBV-infected person
- sharing a household with a person with chronic (lifelong) HBV infection
- sharing items such as razors, toothbrushes, or washcloths
- pre-chewing food for babies or sharing chewing gum
- using unsterilized needles in ear- or body-piercing, tattooing, or acupuncture
- using the same immunization needle on more than one person

Hepatitis B virus IS NOT spread by

- casual contact, like holding hands
- eating food prepared by an infected person
- kissing or hugging
- sharing silverware, plates, or cups
- visiting an infected person's home
- sneezing or coughing
- breastfeeding

What are the symptoms of hepatitis B?

Most babies and young children who get HBV infection don't look or feel sick at all. About half of adults who get infected don't have any symptoms or signs of the disease. If people do have signs or symptoms, they might experience any or all of the following:

- loss of appetite
- nausea, vomiting
- fever
- weakness, fatigue, inability to work for weeks or months
- abdominal pain
- yellowing of skin and eyes (jaundice)
- joint pain
- cola-colored urine
- clay-colored stools

I'm not in a risk group. How did I get HBV infection?

Many people don't know when or how they got the infection. When they get the results of a blood test indicating they've been infected with HBV, they are taken by surprise. Studies have demonstrated that about 15% of people who acquire hepatitis B are unable to identify a risk factor that explains why they have the disease.

(continued on next page)

Technical content reviewed by the Centers for Disease Control and Prevention, Aug. 2007.

Do people usually recover from HBV infection?

About 95% of adults recover after several months. They clear the infection from their bodies and become immune. This means they won't get infected with HBV again. They are no longer contagious and cannot pass HBV to others.

Unfortunately, about 5% of adults and up to 90% of children under age 5 years are unable to clear the infection from their bodies and develop chronic HBV infection.

How do I know if I have or have had HBV infection?

The only way to know if you are currently infected with HBV, have recovered, are chronically infected, or could become infected, is by having blood tests. The three standard blood tests are the following:

HBsAg (hepatitis B surface antigen): when this is "positive" or "reactive," it means the person is currently infected with HBV and is able to pass the infection on to others.

Anti-HBs [sometimes written as HBs-Ab] (antibody to hepatitis B surface antigen): when this is "positive" or "reactive," it means the person is immune to HBV infection, either from vaccination or from past infection. (This test is not done routinely by most blood banks on donated blood.)

Anti-HBc [sometimes written as HBc-Ab] (antibody to hepatitis B core antigen): when this is "positive" or "reactive," it might mean the person has had contact with HBV. This is a very complicated test to explain because the "anti-HBc" can possibly be a "false-positive" test result. Blood banks routinely run an "anti-HBc" on donated blood. The interpretation of this test result, if it is positive, depends on the results of the other two blood tests previously described.

A fourth blood test that is sometimes done is **IgM anti-HBc (IgM class antibody to hepatitis B core antigen).** When this is positive or "reactive," it means that the person has had HBV infection in the past six months, indicating acute (recently acquired) HBV infection.

Interpretation of the hepatitis B blood test results

Tests	Results	Interpretation	Vaccination Needed
HBsAg anti-HBc anti-HBs	negative negative negative	susceptible	Yes, for all people who want protection
HBsAg anti-HBc anti-HBs	negative negative positive with ≥10mIU/mL*	immune due to vaccination	no
HBsAg anti-HBc anti-HBs	negative positive positive	immune due to natural infection	no
HBsAg anti-HBc IgM anti-HBc anti-HBs	positive positive positive negative	newly infected	no
HBsAg anti-HBc IgM anti-HBc anti-HBs	positive positive negative negative	chronically infected	no (may need treatment)
HBsAg anti-HBc anti-HBs	negative positive negative	four interpretations possible†	possibly†

*Postvaccination blood testing, when it is recommended, should be done 1–2 months after the final vaccine dose.

†1. May be recovering from acute HBV infection.
2. May be distantly immune, and the test is not sensitive enough to detect a very low level of anti-HBs in serum.
3. May be susceptible with a "false positive" anti-HBc.
4. May be chronically infected and have an undetectable level of HBsAg present in the serum.

What does it mean if my blood bank said I tested positive for hepatitis B and can no longer donate blood?

If the blood bank told you your test was "positive," it is important to find out which test was positive. If the "HBsAg" was positive, this means that you are either chronically infected with HBV or were recently infected. If only the "anti-HBc" was positive, it is most likely that you either had a "false-positive" test or are immune to HBV infection (had HBV infection sometime in the past). It is important that you understand the full meaning of your test results. If you are not sure how to interpret these test results, call your blood bank for an explanation or have the blood bank send the test results to your healthcare provider. You may need to provide written permission for the blood bank to release these results to your healthcare provider. Your healthcare provider may want to repeat the blood tests or perform additional tests such as an "anti-HBs." Bring this information sheet along with you on your visit to your healthcare provider. The blood bank does not usually test for anti-HBs or IgM anti-HBc.

And remember, you cannot get HBV from donating blood because the equipment used during blood donation is sterile.

CHRONIC HEPATITIS B VIRUS INFECTION

What does it mean to be chronically infected with HBV?

People who do not recover from HBV infection are chronically infected, usually for life. There are over one million chronically infected people in the U.S. today. A chronically infected person is someone who has had HBV in her/his blood for more than 6 months. While approximately 5% of adults who acquire HBV infection become chronically infected, children younger than age 5 years have a greater risk (up to 90%). The younger the child is at the time of infection, the greater the risk that the child will develop chronic infection. Many babies born to chronically infected mothers will also become chronically infected with HBV unless the babies are given two shots in the hospital immediately after birth—the first dose of hepatitis B vaccine and a dose of hepatitis B immune globulin [HBIG])—and at least two doses of hepatitis B vaccine during the 6 months after

(continued on next page)

birth to protect them from the infection. The final dose should not be given before 24 weeks of age.

A chronically infected person might have no signs or symptoms of HBV infection but usually remains infected for years or for a lifetime and is capable of passing HBV on to others. Sometimes chronically infected people will spontaneously clear the infection from their bodies, but most will not. Although most chronically infected people have no serious problems with hepatitis B and lead normal, healthy lives, some develop liver problems later. Chronically infected people are at significantly higher risk than the general population for liver failure or liver cancer.

How can I take care of myself if I am chronically infected with HBV?

A person with HBV infection should see a physician knowledgeable about the management of liver disease every 6–12 months. The physician will do blood tests to check the health of the liver, as well as test for evidence of liver cancer. It is best for chronically infected people to avoid alcohol because alcohol can injure the liver. Additionally, your physician should know about all the medicines you are taking, even over-the-counter drugs, because some medicines can hurt the liver. If the result of any liver test is abnormal, it's important that you consult a liver specialist.

If your liver disease has progressed...

If your physician tells you your liver disease has progressed, read the following for some extra precautions you should take.

- Avoid alcohol and medicine that has not been prescribed by your doctor—even over-the-counter medicines.
- Get vaccinated against hepatitis A. Hepatitis A virus infection can further damage your liver.
- Get a yearly influenza (flu) vaccination. Patients with severe liver disease (cirrhosis) should also receive pneumococcal vaccine.
- Don't eat raw oysters. They may carry the bacteria *Vibrio vulnificus,* which can cause serious blood infections in people with liver disease. Approximately 50% of people with this blood infection die from it.

What can I do to protect others from HBV infection?

People with HBV infection might feel healthy but are still capable of passing the infection on to other people. To protect others from getting HBV infection, it is important to protect them from contact with your infected blood and other infectious body fluids, including semen and vaginal secretions. Sweat, tears, urine, and respiratory secretions do not contain HBV. Transmission of HBV by saliva has only been documented through biting.

Important DOs and DON'Ts for people with chronic HBV infection

DO:

- Cover all cuts and open sores with a bandage.
- Discard used items such as bandaids and menstrual pads carefully so no one is accidentally exposed to your blood.
- Wash your hands well after touching your blood or infectious body fluids.
- Clean up blood spills. Then reclean the area with a bleach solution (one part household chlorine bleach to 10 parts water).
- Tell your sex partner(s) you have hepatitis B so they can be tested and vaccinated (if not already infected). Sex partners should be tested for anti-HBs 1–2 months after the three doses are completed to be sure the vaccine worked.
- Use condoms (rubbers) during sex unless your sex partner has had hepatitis B or has been vaccinated and has had the anti-HBs blood test demonstrating immunity. (Condoms may also protect you from other sexually transmitted diseases.)
- Tell household members to see their healthcare providers for testing and vaccination for hepatitis B.
- Tell your healthcare providers that you are chronically infected with HBV.
- See your healthcare provider every 6–12 months to check the health of your liver with blood tests and liver scanning.
- If you are pregnant, tell your healthcare provider that you have HBV infection. It is critical that your baby is started on the hepatitis B shots (both vaccine and HBIG) within 12 hours of birth.

DON'T:

- Don't share chewing gum, toothbrushes, razors, washcloths, needles for ear or body piercing, or anything that might have come in contact with your blood or infectious body fluids
- Don't pre-chew food for babies.
- Don't share syringes and needles.
- Don't donate blood, plasma, body organs, tissue, or sperm.
- Don't take any medicines not prescribed by your doctor, even over-the-counter medicines.

What are the long-term effects of HBV infection?

Each year, approximately 3,000–5,000 people in the U.S. die of HBV-related chronic liver disease. HBV infection is the most common cause of liver cancer worldwide and ranks second only to tobacco as the world's leading cause of cancer.

Is there a cure for hepatitis B?

As of this writing, there are several drugs used for the treatment of people with chronic hepatitis B. These drugs usually don't get rid of the virus completely, but may reduce your risk for serious liver disease such as cirrhosis and liver cancer. Check with your doctor to find out if treatment with medication is the right choice for you. Researchers continue to find additional treatments and look for cures for hepatitis B.

(continued on next page)

Why is hepatitis B so serious in pregnant women?

Pregnant women who are infected with HBV can transmit the disease to their babies. If babies aren't protected with vaccinations, many of them develop lifelong HBV infections, and up to 25% of those who become infected will develop liver failure or liver cancer later in life. All pregnant women should be tested early in every pregnancy to determine if they are infected with HBV. If the blood test is positive, the baby should be vaccinated within 12 hours of birth with two shots, one of HBIG and the other the first dose of hepatitis B vaccine. The infant will need at least two more doses of hepatitis B vaccine by age 6 months. The final dose should not be given before age 24 weeks.

How can hepatitis B be prevented?

Hepatitis B vaccine can provide protection in 90%–95% of healthy young adults. The vaccine can safely be given to infants, children, and adults, including pregnant women. Usually, three doses of vaccine are given over a 6-month period. Hepatitis B vaccine is very safe, and side effects are rare. Since 1982, more than 100 million children, teens, and adults in the U.S. have been vaccinated. Hepatitis B vaccine is our first vaccine that prevents cancer—liver cancer.

At what age are hepatitis B vaccines given routinely?

The hepatitis B vaccine series can begin at any age. For newborns, it's recommended that the first dose be given in the hospital at birth. Hepatitis B vaccine is recommended routinely for all children age 0–18 years living in the U.S. Older children and teens should be vaccinated at the earliest opportunity. Any adult who is at risk for HBV infection or who simply wants to be protected from HBV infection should start the vaccine series right away.

Where can I get hepatitis B vaccine?

Check with your healthcare provider's office first. Children's health insurance usually covers the cost of this vaccine since it is routinely recommended for all children in the U.S. If your child is uninsured, ask your local health department for assistance. The federal Vaccines For Children (VFC) program helps families by providing free vaccines to healthcare providers who serve eligible children. VFC is administered at the national level by the Centers for Disease Control and Prevention (CDC), which contracts with vaccine manufacturers to buy vaccines at reduced rates. For adults, contact your healthcare provider to find out if the vaccine is available and how much it costs. If you are uninsured or don't have a healthcare provider, call your local health department for advice.

How many doses of vaccine are needed?

Three doses are needed usually for the best protection against HBV infection, but protection is sometimes provided from receiving as little as one dose. Hepatitis B vaccine is usually given on a schedule of 0, 1, and 6 months, but there is flexibility in the timing of these injections. As with all other vaccines, if you fall behind on the schedule, you just continue from where you left off. Hepatitis B vaccine will not help or cure a person who is already infected with HBV.

What should I do if I'm in a risk group and am not infected with HBV?

If you are in a risk group for hepatitis B, be sure to get vaccinated! All people in risk groups (risk groups are listed in the second question on this question-and-answer series) should protect themselves from HBV infection. You don't have to "admit" that you have a risk factor to be vaccinated. You simply need to ask to be vaccinated. Every day you delay getting vaccinated increases your chances of being in contact with this highly contagious liver disease. The problems caused by hepatitis B—liver cancer and liver failure—are too great to take a chance. See your healthcare provider or visit your health department.

How does hepatitis B differ from hepatitis A and C?

Hepatitis A, B, and C are all different viruses that attack and injure the liver, and all can cause similar symptoms. Usually, people get hepatitis A virus (HAV) infection from household or sexual contact with a person who has the infection. Hepatitis C is caused by the hepatitis C virus (HCV) and is spread through HCV-infected blood. Both HCV- and HBV- infections are spread by blood through some of the same activities (e.g., injection drug use). Both HBV- and HCV- infections can cause lifelong liver problems. HAV infection does not. Vaccines to prevent HAV infection are also available. Hepatitis A vaccine won't protect you from HBV or HCV infection, nor will hepatitis B vaccine protect you from HAV or HCV infection. There is no vaccine yet for hepatitis C. If you've been infected with HAV or HCV in the past, it is still possible to get infected with HBV.

Where can I receive more information about hepatitis B?

Contact your local and state health departments for more information. You can also contact the following organizations:

Immunization Action Coalition
Hepatitis B Coalition
(651) 647-9009
www.immunize.org
www.vaccineinformation.org
www.hepprograms.org

American Liver Foundation
(212) 668-1000
www.liverfoundation.org

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Asian Liver Center
(888) 311-3331
http://liver.stanford.edu

Centers for Disease Control and Prevention
(800) 232-4636 (800) CDC-INFO
www.cdc.gov/hepatitis
www.cdc.gov/vaccines

Hepatitis B Foundation
(215) 489-4900
www.hepb.org

Hepatitis Foundation International
(800) 891-0707
www.hepfi.org

Parents of Kids with Infectious Diseases (PKIDS)
(877) 557-5437
www.pkids.org

What is the Immunization Action Coalition (IAC)?

The Immunization Action Coalition is a nonprofit organization that works to prevent hepatitis B and all other vaccine-preventable diseases in people of all ages. IAC promotes hepatitis B vaccination, screening for all pregnant women, testing and vaccination for risk groups, and education and treatment for people with chronic HBV infection.

IAC relies on financial support from the CDC, corporations, foundations, health-care providers, and individuals to maintain its activities. Financial contributions are always needed, greatly appreciated, and tax-deductible. You can send your check to IAC at the address below or donate online at www.immunize.org/support.

Immunization Action Coalition
1573 Selby Ave., Suite 234
St. Paul, MN 55104
(651) 647-9009
admin@immunize.org
www.immunize.org
www.vaccineinformation.org
www.hepprograms.org

If you have chronic hepatitis B virus (HBV) infection . . .

If you have chronic hepatitis B virus infection (HBV), you are not alone. Today, approximately one million people in the United States are chronically infected with HBV. The majority of infected people feel healthy for their entire lives and do not demonstrate any evidence of ongoing liver damage. Other people progress to levels of more severe disease. Some people ultimately develop liver scarring (cirrhosis), liver failure, or liver cancer. It is important that you take care of yourself. And because it is possible to spread HBV to others, you have to know how to protect your family, friends, and others from this disease.

How you can take care of yourself

People who have chronic HBV infection need regular monitoring of their liver condition to determine whether their disease is progressing, whether treatment is needed, or whether a liver cancer is developing. Make sure you do the following:

- See your doctor for evaluation of your liver's condition once or twice a year. Certain blood tests need to be performed periodically to monitor your liver's health. Discuss with your doctor if you are a candidate for antiviral medication. These medicines are given to certain people with chronic liver disease.
- Discuss with your doctor about getting periodic ultrasounds, alpha-fetoprotein blood tests, or other studies to make sure there is no evidence of a developing liver cancer. Physicians may recommend different schedules for ultrasounds and blood tests depending on the patient's age, sex, ethnicity, age at which the infection was initially acquired, family history, HBeAg status, and liver enzymes. Usually, ultrasounds and blood tests are recommended every six to 12 months.
- Review with your physician *all* medications you take. Even some "over-the-counter" medications can injure your liver.
- If you are pregnant, tell your physician that you have chronic HBV infection. It is essential that your baby be given an injection of hepatitis B immune globulin (HBIG) and started on the hepatitis B vaccine series within 12 hours of birth.
- Avoid alcoholic beverages. Alcohol can damage your liver.

If your doctor tells you your liver disease has progressed...

If your liver disease progresses, here are some extra precautions you should take:

- Get your yearly influenza vaccine. Patients with severe liver disease should also receive pneumococcal polysaccharide vaccine.
- Get vaccinated against hepatitis A. Hepatitis A can further damage your liver.
- Don't eat raw oysters. Raw oysters may carry the bacteria *Vibrio vulnificus* which can cause a serious blood infection in individuals with liver disease. Approximately 40% of these cases are fatal.

How to protect others from HBV infection

People can get HBV infection from you by coming in contact with your blood, serum, semen, or vaginal fluids. HBV has also been transmitted by human bites. Although HBV has been detected in low concentrations in other body fluids, including tears, sweat, urine, feces, and breast milk, these fluids have not been associated with any documented transmission. Fortunately, HBV is *not* transmitted by sneezing or coughing, or from casual contact such as holding hands. Here are some important guidelines for you to follow so that others are protected:

- Tell your sex partner(s) that you are infected with HBV. Your sex partner(s) must see a physician for hepatitis B blood testing and should receive the first dose of hepatitis B vaccine at this same visit. If, according to the blood tests, your partner has never had hepatitis B, he or she should complete the vaccination series. One to two months after the series of three shots is completed, your partner needs to return to the doctor for blood testing to make sure the vaccine protected him or her. Use condoms until your partner is proven to be protected from HBV.
- Make sure *all* your household members see their physicians for hepatitis B testing and vaccination.
- Tell your healthcare providers that you are infected with HBV.
- Cover all cuts and open sores with a bandage.
- Throw away used personal items such as tissues or menstrual pads in a bag that does not leak so others will not be exposed to your blood.
- Wash your hands well after touching your blood or body fluids.
- Clean up your blood spills. Then reclean the area with bleach solution (one part regular household bleach to 10 parts water).
- Do not share toothbrushes, razors, needles for ear piercing, nail files, clippers, nail scissors, washcloths, or anything that may have come in contact with your blood or body fluids.
- Do not share food that has been in your mouth (e.g., chewing gum) and do not pre-chew food for babies.
- Do not share syringes, needles, or drugs.
- Do not donate blood, plasma, body organs, tissue, or sperm.
- Know that if someone is exposed to your blood—be it a family member, a friend, or even a stranger—*preventive treatment is available* for that person. If the exposed person receives HBIG and starts the hepatitis B vaccine series right away, that person has an excellent chance of being protected from HBV!
- Learn more about hepatitis B so you can make the best decisions for yourself and provide the best protection for your family and friends.

More resources...

If you have further questions, contact one of these trusted resources:

Immunization Action Coalition
(651) 647-9009
www.immunize.org

American Liver Foundation
(212) 668-1000
www.liverfoundation.org

Asian Liver Center, Stanford University
(888) 311-3331
http://liver.stanford.edu/

Centers for Disease Control and Prevention
(800) 232-4636
www.cdc.gov/hepatitis

Hepatitis B Foundation
(215) 489-4900
www.hepb.org

Hepatitis Foundation International
(800) 891-0707
www.hepfi.org

National Digestive Diseases Information Clearinghouse
(301) 496-3583
www2.niddk.nih.gov

Parents of Kids with Infectious Diseases (PKIDS)
(877) 557-5437
www.pkids.org

www.immunize.org/catg.d/p4120.pdf • Item #P4120 (6/10)

2018 Recommended Immunizations for Children from Birth Through 6 Years Old

Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	19–23 months	2–3 years	4–6 years
HepB	HepB			HepB	HepB	HepB	HepB	HepB	HepB	
		RV	RV	RV						
		DTaP	DTaP	DTaP		DTaP	DTaP	DTaP		DTaP
		Hib	Hib	Hib	Hib	Hib				
		PCV13	PCV13	PCV13	PCV13	PCV13				
		IPV	IPV	IPV	IPV	IPV	IPV	IPV		IPV
				Influenza (Yearly)*	Influenza (Yearly)*	Influenza (Yearly)*	Influenza (Yearly)*	Influenza (Yearly)*	Influenza (Yearly)*	Influenza (Yearly)*
					MMR	MMR				MMR
					Varicella	Varicella				Varicella
					HepA§	HepA§	HepA§			

Is your family growing? To protect your new baby and yourself against whooping cough, get a Tdap vaccine. The recommended time is the 27th through 36th week of pregnancy. Talk to your doctor for more details.

Shaded boxes indicate the vaccine can be given during shown age range.

NOTE:
If your child misses a shot, you don't need to start over, just go back to your child's doctor for the next shot. Talk with your child's doctor if you have questions about vaccines.

FOOTNOTES:

* Two doses given at least four weeks apart are recommended for children aged 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.

§ Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 to 18 months later. HepA vaccination may be given to any child 12 months and older to protect against HepA. Children and adolescents who did not receive the HepA vaccine and are at high-risk, should be vaccinated against HepA.

If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he may need.

SEE BACK PAGE FOR MORE INFORMATION ON VACCINE-PREVENTABLE DISEASES AND THE VACCINES THAT PREVENT THEM.

For more information, call toll free
1-800-CDC-INFO (1-800-232-4636)
or visit
www.cdc.gov/vaccines/parents

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

AMERICAN ACADEMY OF FAMILY PHYSICIANS
STRONG MEDICINE FOR AMERICA

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

Vaccine-Preventable Diseases and the Vaccines that Prevent Them

Disease	Vaccine	Disease spread by	Disease symptoms	Disease complications
Chickenpox	Varicella vaccine protects against chickenpox.	Air, direct contact	Rash, tiredness, headache, fever	Infected blisters, bleeding disorders, encephalitis (brain swelling), pneumonia (infection in the lungs)
Diphtheria	DTaP* vaccine protects against diphtheria.	Air, direct contact	Sore throat, mild fever, weakness, swollen glands in neck	Swelling of the heart muscle, heart failure, coma, paralysis, death
Hib	Hib vaccine protects against *Haemophilus influenzae* type b.	Air, direct contact	May be no symptoms unless bacteria enter the blood	Meningitis (infection of the covering around the brain and spinal cord), intellectual disability, epiglottitis (life-threatening infection that can block the windpipe and lead to serious breathing problems), pneumonia (infection in the lungs), death
Hepatitis A	HepA vaccine protects against hepatitis A.	Direct contact, contaminated food or water	May be no symptoms, fever, stomach pain, loss of appetite, fatigue, vomiting, jaundice (yellowing of skin and eyes), dark urine	Liver failure, arthralgia (joint pain), kidney, pancreatic, and blood disorders
Hepatitis B	HepB vaccine protects against hepatitis B.	Contact with blood or body fluids	May be no symptoms, fever, headache, weakness, vomiting, jaundice (yellowing of skin and eyes), joint pain	Chronic liver infection, liver failure, liver cancer
Influenza (Flu)	Flu vaccine protects against influenza.	Air, direct contact	Fever, muscle pain, sore throat, cough, extreme fatigue	Pneumonia (infection in the lungs)
Measles	MMR** vaccine protects against measles.	Air, direct contact	Rash, fever, cough, runny nose, pinkeye	Encephalitis (brain swelling), pneumonia (infection in the lungs), death
Mumps	MMR**vaccine protects against mumps.	Air, direct contact	Swollen salivary glands (under the jaw), fever, headache, tiredness, muscle pain	Meningitis (infection of the covering around the brain and spinal cord) , encephalitis (brain swelling), inflammation of testicles or ovaries, deafness
Pertussis	DTaP* vaccine protects against pertussis (whooping cough).	Air, direct contact	Severe cough, runny nose, apnea (a pause in breathing in infants)	Pneumonia (infection in the lungs), death
Polio	IPV vaccine protects against polio.	Air, direct contact, through the mouth	May be no symptoms, sore throat, fever, nausea, headache	Paralysis, death
Pneumococcal	PCV13 vaccine protects against pneumococcus.	Air, direct contact	May be no symptoms, pneumonia (infection in the lungs)	Bacteremia (blood infection), meningitis (infection of the covering around the brain and spinal cord), death
Rotavirus	RV vaccine protects against rotavirus.	Through the mouth	Diarrhea, fever, vomiting	Severe diarrhea, dehydration
Rubella	MMR** vaccine protects against rubella.	Air, direct contact	Children infected with rubella virus sometimes have a rash, fever, swollen lymph nodes	Very serious in pregnant women—can lead to miscarriage, stillbirth, premature delivery, birth defects
Tetanus	DTaP* vaccine protects against tetanus.	Exposure through cuts in skin	Stiffness in neck and abdominal muscles, difficulty swallowing, muscle spasms, fever	Broken bones, breathing difficulty, death

* DTaP combines protection against diphtheria, tetanus, and pertussis.
** MMR combines protection against measles, mumps, and rubella.

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VACCINE INFORMATION STATEMENT

Hepatitis B Vaccine

What You Need to Know

Many Vaccine Information Statements are available in Spanish and other languages. See www.immunize.org/vis

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

1 Why get vaccinated?

Hepatitis B is a serious disease that affects the liver. It is caused by the hepatitis B virus. Hepatitis B can cause mild illness lasting a few weeks, or it can lead to a serious, lifelong illness.

Hepatitis B virus infection can be either acute or chronic.

Acute hepatitis B virus infection is a short-term illness that occurs within the first 6 months after someone is exposed to the hepatitis B virus. This can lead to:

- fever, fatigue, loss of appetite, nausea, and/or vomiting
- jaundice (yellow skin or eyes, dark urine, clay-colored bowel movements)
- pain in muscles, joints, and stomach

Chronic hepatitis B virus infection is a long-term illness that occurs when the hepatitis B virus remains in a person's body. Most people who go on to develop chronic hepatitis B do not have symptoms, but it is still very serious and can lead to:

- liver damage (cirrhosis)
- liver cancer
- death

Chronically-infected people can spread hepatitis B virus to others, even if they do not feel or look sick themselves. Up to 1.4 million people in the United States may have chronic hepatitis B infection. About 90% of infants who get hepatitis B become chronically infected and about 1 out of 4 of them dies.

Hepatitis B is spread when blood, semen, or other body fluid infected with the Hepatitis B virus enters the body of a person who is not infected. People can become infected with the virus through:

- Birth (a baby whose mother is infected can be infected at or after birth)
- Sharing items such as razors or toothbrushes with an infected person
- Contact with the blood or open sores of an infected person
- Sex with an infected partner
- Sharing needles, syringes, or other drug-injection equipment
- Exposure to blood from needlesticks or other sharp instruments

Each year about 2,000 people in the United States die from hepatitis B-related liver disease.

Hepatitis B vaccine can prevent hepatitis B and its consequences, including liver cancer and cirrhosis.

2 Hepatitis B vaccine

Hepatitis B vaccine is made from parts of the hepatitis B virus. It cannot cause hepatitis B infection. The vaccine is usually given as 3 or 4 shots over a 6-month period.

Infants should get their first dose of hepatitis B vaccine at birth and will usually complete the series at 6 months of age.

All **children and adolescents** younger than 19 years of age who have not yet gotten the vaccine should also be vaccinated.

Hepatitis B vaccine is recommended for unvaccinated **adults** who are at risk for hepatitis B virus infection, including:

- People whose sex partners have hepatitis B
- Sexually active persons who are not in a long-term monogamous relationship
- Persons seeking evaluation or treatment for a sexually transmitted disease
- Men who have sexual contact with other men
- People who share needles, syringes, or other drug-injection equipment
- People who have household contact with someone infected with the hepatitis B virus
- Health care and public safety workers at risk for exposure to blood or body fluids
- Residents and staff of facilities for developmentally disabled persons
- Persons in correctional facilities
- Victims of sexual assault or abuse
- Travelers to regions with increased rates of hepatitis B
- People with chronic liver disease, kidney disease, HIV infection, or diabetes
- Anyone who wants to be protected from hepatitis B

There are no known risks to getting hepatitis B vaccine at the same time as other vaccines.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

3 Some people should not get this vaccine

Tell the person who is giving the vaccine:

- **If the person getting the vaccine has any severe, life-threatening allergies.**
  If you ever had a life-threatening allergic reaction after a dose of hepatitis B vaccine, or have a severe allergy to any part of this vaccine, you may be advised not to get vaccinated. Ask your health care provider if you want information about vaccine components.
- **If the person getting the vaccine is not feeling well.**
  If you have a mild illness, such as a cold, you can probably get the vaccine today. If you are moderately or severely ill, you should probably wait until you recover. Your doctor can advise you.

4 Risks of a vaccine reaction

With any medicine, including vaccines, there is a chance of side effects. These are usually mild and go away on their own, but serious reactions are also possible.

Most people who get hepatitis B vaccine do not have any problems with it.

Minor problems following hepatitis B vaccine include:
- soreness where the shot was given
- temperature of 99.9°F or higher

If these problems occur, they usually begin soon after the shot and last 1 or 2 days.

Your doctor can tell you more about these reactions.

Other problems that could happen after this vaccine:

- People sometimes faint after a medical procedure, including vaccination. Sitting or lying down for about 15 minutes can help prevent fainting and injuries caused by a fall. Tell your provider if you feel dizzy, or have vision changes or ringing in the ears.
- Some people get shoulder pain that can be more severe and longer-lasting than the more routine soreness that can follow injections. This happens very rarely.
- Any medication can cause a severe allergic reaction. Such reactions from a vaccine are very rare, estimated at about 1 in a million doses, and would happen within a few minutes to a few hours after the vaccination.

As with any medicine, there is a very remote chance of a vaccine causing a serious injury or death.

The safety of vaccines is always being monitored. For more information, visit: **www.cdc.gov/vaccinesafety/**

5 What if there is a serious problem?

What should I look for?

- Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or unusual behavior.

  Signs of a **severe allergic reaction** can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness. These would start a few minutes to a few hours after the vaccination.

What should I do?

- If you think it is a **severe allergic reaction** or other emergency that can't wait, call 9-1-1 or get to the nearest hospital. Otherwise, call your clinic.

  Afterward, the reaction should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor should file this report, or you can do it yourself through the VAERS web site at **www.vaers.hhs.gov**, or by calling **1-800-822-7967**.

VAERS does not give medical advice.

6 The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines.

Persons who believe they may have been injured by a vaccine can learn about the program and about filing a claim by calling **1-800-338-2382** or visiting the VICP website at **www.hrsa.gov/vaccinecompensation**. There is a time limit to file a claim for compensation.

7 How can I learn more?

- Ask your healthcare provider. He or she can give you the vaccine package insert or suggest other sources of information.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
  - Call **1-800-232-4636** (**1-800-CDC-INFO**) or
  - Visit CDC's website at **www.cdc.gov/vaccines**

IMMUNOLOGY

INFECTIOUS DISEASE SEROLOGY

404-327-7970

INTRODUCTION

The **Microbial Immunology Unit** performs infectious disease serology. Various serologic procedures are performed for a variety of bacterial, parasitic, and viral agents except for HIV. HIV (Human Immunodeficiency Virus) is performed in the Virology Unit. Hepatitis serology is only performed for county health departments and Georgia Department of Public Health agencies. Tests not performed in the Public Health Laboratory can be forwarded to CDC, if the submitter requests the testing.

SPECIMEN COLLECTION/LABELING/REQUISITION FORM

Collection Using Universal Precautions, and standard venipuncture technique, collect approximately six milliliters of whole blood (for serum) in a red top tube (no additive), labeled with patient's identifier (name, first and last, or number), data, and name of the submitter. Use a marker that will not fade, smear, or run during transportation. Use proper size needle (large enough to prevent hemolysis of the red blood cells) for the vein location and age of the patient. Allow blood specimen to clot, at least 30 minutes undisturbed, at room temperature, and transport, or place in the refrigerator for transporting. Collect blood specimens in, or transfer them to, non-breakable, leak resistant tubes. Specimens should be transported as soon as possible, do not hold over 7 days. Specimens over 14 days old are unacceptable. Many of the procedures we perform are not approved for use with plasma. Therefore, please submit only serum or whole blood without anticoagulants, not plasma.

Collect cerebrospinal fluids (CSF) according to proper hospital procedure. CSF contaminated with blood or grossly contaminated with bacteria is unacceptable.

Labeling All specimens must be labeled with patient identification (name or number), in acceptable testing condition, and accompanied by a completed requisition form. If the form is not specific for one test or a set of tests, the specific testing requested must be hand-written in the proper area, e.g., "viral serology" is not acceptable, the specific agent, e.g., "CMV", must be clearly requested. Failure to provide proper patient information may result in testing delays.

Requisition Form:
Use Form #3583 for all tests performed by the Microbial Immunology Unit. There is a single requisition form for all tests performed in the Georgia Public Health Laboratory. Hepatitis B

testing is performed for the (Department of Public Health facilities and county health departments only). Completely fill out the form and include the following information:

1. Unique patient identifier (name or number).
2. **TEST(S) REQUESTED (Please check <u>only</u> the corresponding box for test(s) requested).**
3. Date specimen collected.
4. Submitter's name, address and code number, where applicable.
5. For hepatitis the reason for testing, e.g., routine, or prenatal.
6. Any information the submitter needs for patient identification, e.g., chart number, address.
7. The date of onset of illness, if applicable.
8. Race, sex, and age, where applicable, e.g., hepatitis testing.

SHIPMENT OF SPECIMENS

Use outfit #0500, available from Laboratory Services and Supply, 404-327-7920, and follow the specific instructions below. For HCV Viral Load testing please use outfit 502.
Routine specimens may be mailed at room temperatures overnight or delivered cold to the laboratory by courier. HCV Viral Load should be sent frozen by overnight courier.

Shipping Instructions for USPS and Couriers:
Place the tubes of blood in protective, leak resistant, doubled-walled containers, e.g., aluminum and cardboard box, for transport. Wrap the requisition form around the inner (aluminum) can, secure with a rubber band and place in the outer container. If a screw-cap outer container is used, the screw-cap must be secured with tape or the Postal Service will return it for taping. Up to 50 milliliters of blood may be transported in one package (U.S. postal regulations). Therefore, an individual tube of blood may be placed in the metal can, with the requisition form secured to the outside by a rubber band, and several aluminum cans placed in one cardboard box for transporting.

Shipping Instructions for Courier Services Only:
Tubes of blood may be placed in leak proof biohazard bags. Wrap brown absorbent material around the tube, then secure with a rubber band. Place the requisition form in the sleeve located on the outside of the bag.

REPORTING AND INTERPRETATION OF RESULTS

Table 1 summarizes the interpretation of results for all serological tests performed in the Microbial Immunology Unit. The turnaround time after receipt of the specimen depends on the testing methodology and the frequency of testing. The frequency of testing depends on the demand for a specific test. Several tests are performed daily, while others are performed weekly. The turn-around time for specimens referred to CDC depends on CDC's schedule, which varies from laboratory to laboratory.

UNACCEPTABLE SPECIMENS

1. Spinal fluid obviously contaminated with bacteria or blood;
2. All specimens:
   Not approved for testing by the indicated method, e.g., plasma for RPR.
   Grossly hemolyzed, lipemic, turbid, or contaminated.
   Over 14 days old.
   Broken in transit.
   Insufficient quantity for testing.
   No identification on specimen.
   Name on the tube and form does not match.

The submitter will be notified of all rejected specimens. Most serologic services are available to both the public and private sectors. However, hepatitis B testing is limited to the public health care providers, and not available to the private providers.

Table1. Test Result Interpretation[1]						
Agent	**Test**	**Method**	**Negative**	**Positive[2]**	**Diagnostic**	**Presumptive[3]**
California Encephalitis	IgG[1] IgM[1]	IFA[1]	IgG <1:16 IgM <1:16	IgG ≥1:16 IgM ≥ 1:16	Four-fold rise in titer between paired sera[4]	≥ 1:16
Cytome-galovirus (CMV)	IgG IgM	EIA[1]	No IgG Detected No IgM Detected	IgG Detected IgM Detected	IgM detected and/or significant rise in titer between paired sera[4,5]	IgM Equivocal
Eastern Equine Encephalitis	IgG IgM	IFA	IgG <1:16 IgM <1:16	IgG ≥1:16 IgM ≥ 1:16	Four-fold rise in titer between paired sera[4]	≥ 1:16
Hepatitis A Total	IgG	EIA	Negative	Positive		
	IgM	EIA	Negative	Positive	Presumptive evidence of IgM antibodies to HAV	
Hepatitis C HCV Viral Load	 AG	EIA PCR	Negative Not detected	Positive Detected	Positive confirmed by HCV RNA	
Hepatitis B Virus (HBV)[6]	HBs[1]	EIA	Negative	Positive	Positive HBs	None
	Hbe[1]		Negative	Positive		
	Anti-HBs[1]		Negative	Positive		
	Anti-HBc[1]		Negative	Positive		
Herpes Simplex Virus (HSV)	Type 1 Type 2	EIA	No IgG Detected	IgG Detected	Significant difference between paired sera[4,5]	None

Test Result Interpretation[1]						
Agent	**Test**	**Method**	**Negative**	**Positive[2]**	**Diagnostic**	**Presumptive[3]**
Mumps	IgG	EIA	No IgG Detected	IgG Detected	Significant difference between paired sera[4,5]	None
Murine typhus	IgG	IFA	<1:16	≥ 1:16	Four-fold rise in titer between paired sera[4]	≥ 1:128
Rocky Mountain Spotted Fever (RMSF)	IgG	IFA	< 1:16	≥ 1:16	Four-fold rise in titer between paired sera[4]	≥ 1:128
Rubeola (Measles)	IgG	EIA	No IgG Detected	IgG Detected	IgM detected and/or significant increase between paired sera[4,5]	IgM Equivocal
	IgM		No IgM Detected	IgM Detected		
Rubella (German Measles)	IgG	EIA	No IgG Detected	IgG Detected	IgM detected and/or significant increase between paired sera[4,5]	Not Applicable
	IgM		No IgM Detected	IgM Detected		
St. Louis Encepha-litis	IgG IgM	IFA	IgG <1:16 IgM <1:16	IgG ≥1:16 IgM ≥ 1:16	Four-fold rise in titer between paired sera[4]	≥ 1:16
Syphilis	RPR[1]	Agg[1].	Non-Reactive	Reactive ≥ 1:1	RPR and EIA Reactive	Reactive RPR and Equivocal EIA
	Confir-matory EIA	EIA	Non-Reactive	Reactive		
	FTA	IFA	Non-Reactive	Reactive	RPR, EIA, FTA	Equivocal EIA
Syphilis	VDRL (CSF[1])	Agg[1]	Non-Reactive	Reactive	VDRL Reactive	Reactive VDRL
Toxoplas-mosis	IgG	EIA	No IgG Detected	IgG Detected	IgM detected and/or significant increase between paired sera[4,5]	IgM Equivocal
	IgM		No IgM Detected	IgM Detected		
Varicella Zoster		EIA	No IgG Detected	IgG Detected	Significant increase between paired sera[4,5]	None

Agent	Test	Method	Negative	Positive[2]	Diagnostic	Presumptive[3]
West Nile Virus	IgG IgM	EIA	No IgG Detected No IgM Detected	IgG Detected IgM Detected	IgM detected and/or significant increase between paired sera[4,5]	IgM Equivocal
Western Equine Encephalitis	IgG IgM	IFA	IgG <1:16 IgM <1:16	IgG ≥1:16 IgM ≥ 1:16	Four-fold rise in titer between paired sera[4]	≥ 1:16

Abbreviations (in alphabetical order)[1]

Agg.	Agglutination
Anti-HBs	Hepatitis B surface antibody
CSF	Cerebrospinal Fluid
Anti-HBc	Hepatitis B core antibody
EIA	Enzyme Immunoassay
IgM	Immunoglobulin M
IgG	Immunoglobulin G
TPPA	*Treponema palladium* antibody
RPR	Rapid Plasma Reagin
HBs	Hepatitis B surface antigen
VDRL	Venereal Disease Research Laboratory
HBe	Hepatitis B e antigen

[2]A positive result indicates natural or acquired immunity, especially for vaccine-preventable diseases.
[3]Presumptive results identify a significant result for a single (not paired) serum, and need confirmation by clinical symptoms, recollection of specimen for retesting, or if applicable, submission of a convalescent specimen.
[4]Paired sera (acute and convalescent) dates of collection and date of onset of illness are needed for proper interpretation of results.
[5]A significant difference is determined by instructions given in individual enzyme immunoassay procedures, and may differ manufacturers.
[6]Performed for county health departments and DPH facilities only.

FOR ADDITIONAL INFORMATION REGARDING TEST INTERPRETATION CALL THE MICROBIAL IMMUNOLOGY LABORATORY AT (404)327-7970

Georgia Department of Public Health

GEORGIA PUBLIC HEALTH LABORATORY SUBMISSION FORM

(Do Not Use for Newborn Screening Tests)

Laboratory use only

Complete a separate form for each test requested

HEALTH CARE PROVIDER INFORMATION

Submitter Code

Submitter Name

Street Address

City | **State** | **Zip**

Phone Number

Fax Number

Contact Name

PATIENT INFORMATION

Patient ID Number | **PATIENT NAME (Last)** | **First** | **MI** | **Suffix**

County of Residence | **DOB** ___/___/_____

Home Phone: | **Work Phone:** | **Cell Phone:**

Address | **City,** | **State** | **Zip**

Parent / Guardian (if applicable) | **Relationship**

RACE
- ☐ American Indian/Alaska Native
- ☐ Asian
- ☐ Black/African-American
- ☐ Native Hawaiian/Pacific Islander
- ☐ White/ Caucasian
- ☐ Multi-Racial

ETHNICITY
- ☐ Hispanic or Latino
- ☐ Non-Hispanic or Latino

Sex
- ☐ Male
- ☐ Female

Pregnant? ☐Yes ☐No ☐N/A

Travel in the past month? ☐ Yes ☐ No **Travel Dates?** _____
Where? _____

☐ **SELF PAY** (SUBMITTER WILL BE INVOICED) ☐**APPROVAL CODE:** _____

INSURANCE INFORMATION – COPY OF PATIENT'S INSURANCE ELIGIBILITY DOCUMENT MUST BE SUBMITTED WITH THIS FORM

ACCEPTED INSURANCE
- ☐ Amerigroup
- ☐ Peach State
- ☐ Wellcare
- ☐ Medicaid/ Peachcare

ID Number	Plan Name	Group Number	Policy Holder's Name (Last, First, M)
			,

Policy Holder's DOB	Policy Holder's Mailing Address	Patient's Relationship to Policy Holder
___/___/_____		

Insurance Phone #	Insurance Mailing Address	Coverage Effective Date
		___/___/_____

FOR FUTURE USE

ICD 9 Diagnosis Codes
Required for insurance purposes only.

Sequence Code 1 | Sequence Code 2 | Sequence Code 3

SPECIMEN INFORMATION

All tests are performed at the Decatur Laboratory unless specified.

Specimen Type:
- ☐ Arthropod
  Type: _____
- ☐ Abscess
  Source: _____
- ☐ Biopsy
  Source: _____
- ☐ Bronchial Wash
- ☐ Bronchial Brush
- ☐ Bronchoalveolar Lavage
- ☐ Broth
- ☐ Buccal Swab
- ☐ Cerebral Spinal Fluid
- ☐ Dried Blood Spot
- ☐ Endocervical Swab
- ☐ Isolate (Bacterial)
  Source: _____
- ☐ Isolate (Mycobacterial)
  Source: _____
- ☐ Lesion/General Swab
- ☐ Lesion/Genital Swab
- ☐ Lymph Node Aspirate
- ☐ Nasal Wash
- ☐ Nasal Aspirate
- ☐ Nasopharyngeal Aspirate
- ☐ Nasal Swab
- ☐ Nasopharyngeal Swab
- ☐ Pinworm/Adhesive Slide
- ☐ Plasma
- ☐ Rectal Swab
- ☐ Scab
- ☐ Serum
- ☐ Sputum
- ☐ Stool/Feces (Fresh)
- ☐ Stool/Feces (Preserved)
- ☐ Tracheal Aspirate
- ☐ Throat/Pharynx
- ☐ Tissue
  Source: _____
- ☐ Urethral Swab
- ☐ Urine
- ☐ Vaginal Swab
- ☐ Vesicle Fluid/Swab
- ☐ Whole Blood (EDTA)
- ☐ Whole Blood(Heparin)
- ☐ Other: _____

Date of Collection
___/___/_____

Time of Collection
_____:_____ ☐AM ☐PM

Shipped:
- ☐ Frozen
- ☐ Refrigerated
- ☐ Room Temperature

Outbreak related ☐ Yes ☐ No
If yes, name of outbreak:
_____

Symptoms
_____
_____
_____

Date of onset
___/___/_____

Illness related to chemical exposure:
☐ Yes ☐ No
Event #_____

TEST REQUESTED

BLOOD LEAD
(Waycross Only)

COLLECTION METHOD
☐ Capillary ☐ Venous

☐ W4050 Blood Lead

CHEMICAL THREAT

Consultation with GPHL Emergency Response Coordinator required.

24/7 contact number: 866-782-4584

- ☐ CT041100 Rapid Toxic Screen (Performed at CDC)
- ☐ CT021500 Cadmium, mercury and lead (Blood)
- ☐ CT021700 Toxic Elements Screen (TES) (As, Ba, Be, Cd, Pb, Tl, U) (urine)
- ☐ CT021600 Mercury (urine)
- ☐ CT011100 Cyanide (blood)
- ☐ CT011200 Volatile Organic Compounds (VOC) (blood)
- ☐ CT011300 Tetramine (urine)
- ☐ CT031100 Organophosphate Nerve Agent metabolites (OPNA) (urine)
- ☐ Organophosphate Nerve Agent metabolites (OPNA) (serum)
- ☐ CT031300 Abrine and Ricinine (ABRC) (urine)
- ☐ Hold for testing

A correlating list of tests and prices is located at http://dph.georgia.gov/lab

PATIENT NAME
Last: First: MI.

For Laboratory Use Only

BACTERIOLOGY

☐ **Enteric Isolates**
- ☐ 1100 *Campylobacter*
- ☐ 1070 STEC
- ☐ 1110 *Salmonella*
- ☐ 1080 *Shigella*
- ☐ 1160 *Yersinia*

☐ **Clinical Specimen (Stool/Preserved Stool**
- ☐ 114004 *Campylobacter*
- ☐ 114006 STEC
- ☐ 114002 *Salmonella*
- ☐ 114003 *Shigella*
- ☐ 114008 *Yersinia*
- ☐ 114011 *Vibrio*

☐ 1120 **Stool Culture - Preserved** (Para-Pak C&S, Room Temp)
- ☐ Routine (*Salmonella*, *Shigella*, *Campylobacter*, *Aeromonas*, STEC, and *Yersinia*)
- ☐ *S. aureus* [1]

☐ 1140 **Stool Culture- Fresh** (Refrigerated)
- ☐ *B. cereus* [1]
- ☐ *C. perfringens* [1]

☐ 1130 **Special Bacteriology**
- ☐ *Neisseria meningitidis*
- ☐ *Haemophilus influenzae*
- ☐ *Listeria monocytogenes*
- ☐ *Vibrio spp.*
- ☐ Other- Suspected agent

_____

☐ 1040 **Pertussis Direct Fluorescent Antibody (DFA)**
☐ 1050 **Pertussis Culture**
☐ 1030 **Group A Streptococcus**
☐ 1010 **Gonorrhea Culture**
☐ **Nucleic Acid Amplification Test (Chlamydia/Gonorrhea)**
- ☐ **1060 Decatur** ☐ **W1000 Waycross**

☐ **Nucleic Acid Amplification Test (*Trichomonas vaginalis*)**
- ☐ **100100 Decatur** ☐ **W100100 Waycross**

☐ 1135 **Forward to CDC[1] (Please specify)** _____
- ☐ *C. botulinum* [1,2]

☐ 1180 **ENVIRONMENTAL / FOOD (Epidemiology Use Only)**
- ☐ *B. cereus*
- ☐ *Campylobacter*
- ☐ *C. perfringens*
- ☐ *Listeria*
- ☐ STEC / SLT
- ☐ *Salmonella*
- ☐ *Shigella*
- ☐ *S. aureus*

[1] **Special arrangement required CALL 404-327-7997**
[2] **Epidemiology approval required CALL 404-657-2588**

IMMUNOLOGY

Routine Syphilis
- ☐ Routine RPR *(Choose nearest location)*
  - ☐ 1610 Decatur ☐ W2000 Waycross
- ☐ 1640 TPPA

Special RPR testing request
- ☐ 16150 Quantitative (Titer) and Confirmatory even if screening test (RPR) is negative
- ☐ No Confirmatory Test needed even if screening test (RPR) is positive

Arbovirus/WNV panel
- ☐ 1595 Arbo IgG panel
- ☐ 1600 Arbo IgM panel
- ☐ 1580 WNV IgG
- ☐ 1585 WNV IgM
- ☐ 1590 WNV IgM (CSF)
- ☐ 16550 Zika IgM

Hepatitis Testing
- ☐ 1411 Hep B (Prenatal)
- ☐ 1410 Hep B (Routine Screen)
- ☐ 1400 Anti-HAV Total Antibody
- ☐ 1405 Anti-HAV-IgM
- ☐ 1470 Anti-HCV (Ab)
- ☐ 1480 Anti-HCV (Ab) with Reflex to HCV Viral Load
- ☐ 1490 HCV Viral Load

Miscellaneous Serology
- ☐ 15300 Toxoplasmosis IgG
- ☐ 15350 Toxoplasmosis IgM
- ☐ 15100 Rubella IgG ☐ W15100 Waycross
- ☐ 15150 Rubella IgM
- ☐ 15450 CMV Ig
- ☐ 15500 CMV IgM
- ☐ 15600 HSV1
- ☐ 15650 HSV2
- ☐ Rubeola IgG
  - ☐ 15200 Decatur ☐ W15200 Waycross
- ☐ 15250 Rubeola IgM
- ☐ Mumps IgG
  - ☐ 15550 Decatur ☐ W15550 Waycross
- ☐ Varicella Zoster
  - ☐ 15400 Decatur ☐ W15400 Waycross
- ☐ 14100 MMR Panel (Measles, Mumps, Rubella)
- ☐ 14101 Torch Panel (CMV, HSV1, HSV2, Rubella, and Toxoplasmosis)
- ☐ 33900 QuantiFERON-TB Gold (IGRA)
- ☐ 1570 Refer to CDC _____

MYCOBACTERIOLOGY

Known TB Patient? ☐ Yes, current ☐ Yes, former ☐ No

Clinical Specimens
- ☐ 30100 Microscopic exam for AFB only
- ☐ 30000 Smear, culture & susceptibility testing (Susceptibility Performed on MTB only)
- ☐ 30800 Nucleic Acid Amplification Testing (NAAT). This test is intended for use only with specimens from newly infected patients showing signs and symptoms of active pulmonary tuberculosis.

AFB Isolates
- ☐ 34000 Identification
- ☐ 33950 Susceptibility testing (MTB only)
- ☐ 30750 Genotyping only

PARASITOLOGY

(Choose nearest location)

☐ **Ova and Parasites Exam (Includes Formalin and PVA)**
Formalin ☐ 2100 Decatur ☐ W5000 Waycross
PVA ☐ 2300 Decatur ☐ W5020 Waycross

Pinworm Slide ☐ 2200 Decatur ☐ W5030 Waycross
- ☐ 2150 PCR _____
- ☐ 2610 Tissue/tissue smear for parasites
- ☐ 2700 Whole blood/blood smear for parasites - Malaria
- ☐ 2710 Whole blood/blood smear for parasites - Filaria
- ☐ 2800 Miscellaneous identification _____

For Epidemiology Use Only:
Cryptosporidium (O&P) ☐ 2400 Decatur ☐ W50100 Waycross
Cyclospora (O&P) ☐ 2500 Decatur ☐ W50800 Waycross

VIROLOGY

HIV
CTS#_____
- ☐ 13700 HIV Ag/Ab Combo
- ☐ 1340 HIV-1 Viral Load

For Epidemiology Use Only:
- ☐ 1360 HIV-1 Ab WB (dried blood spot only)

Viral Culture
- ☐ 62050 CMV Culture/IFA
- ☐ 60300 Measles Culture/IFA
- ☐ 60000 Mumps Culture/IFA
- ☐ 1385 Enterovirus Culture / IFA
- ☐ 1330 Herpes Culture / ELVIS
- ☐ 62000 VZV Culture / IFA
- ☐ 6100 Respiratory Culture / IFA
- ☐ 60040 Viral Culture / Identification (Please specify): _____

☐ **Gastrointestinal Outbreak Investigation**
- ☐ 60030 Rotavirus

Virology-Molecular
(Consultation with district epidemiologist required)
- ☐ 17100 Respiratory Viral Pathogen Panel
- ☐ 13750 Enterovirus RT-PCR

Miscellaneous Virology
- ☐ 60160 Virology CDC Sendout

(Please specify: _____

MOLECULAR BIOLOGY

Consultation with district epidemiologist required

☐ **BT Agent Rule Out (RT-PCR) Isolate:**
- ☐ BTC01005 *Bacillus anthracis*
- ☐ BTC02005 *Brucella spp.*
- ☐ BTC03005 *Burkholderia mallei/ pseudomallei*
- ☐ BTC04005 *Francisella tularensis*
- ☐ BTC06005 *Yersinia pestis*

☐ **BT Rule Out (RT-PCR) Clinical Specimen:**
- ☐ BTC01000 – Bacillus anthracis
- ☐ BTC02000 – Brucella spp.
- ☐ BTC03000 – Burkholderia spp.
- ☐ BTC04000 – Francisella tularensis
- ☐ BTC06000 – Yersinia pestis

- ☐ 414000 *Bordetella pertussis* (RT-PCR)
- ☐ 400050 Influenza Panel (rRT-PCR)
- ☐ 413000 Mumps (RT-PCR)
- ☐ 416000 Measles (RT-PCR)
- ☐ 411100 Norovirus (RT-PCR)
- ☐ BTC05000 Rash Illness Panel (RT-PCR)
- ☐ 421000 VZV (RT-PCR)
- ☐ 16600 Molecular Arbovirus (RT-PCR)
- ☐ 16800 Ebola (RT-PCR)
- ☐ 17300 MERS (RT-PCR)
- ☐ 49100 Miscellaneous Molecular _____
- ☐ 499100 Refer to CDC _____

A correlating list of tests and prices is located at http://dph.georgia.gov/lab

PROTOCOL FOR
PERINATAL HEPATITIS B CONTACTS

DEFINITION

Hepatitis B is a contagious liver disease that results from infection with the hepatitis B virus. When first infected, a person can develop an “acute” infection, which can range in severity from a very mild illness with few or no symptoms to a serious condition requiring hospitalization. Acute hepatitis B refers to the first 6 months after someone is infected with the hepatitis B virus. Some people are able to fight the infection and clear the virus. For others, the infection remains and leads to a “chronic,” or lifelong, illness. Chronic hepatitis B refers to the illness that occurs when the hepatitis B virus remains in a person’s body. Over time, the infection can cause serious health problems.

Hepatitis B is usually spread when blood, semen, or other body fluids from a person infected with the hepatitis B virus enter the body of someone who is not infected. This can happen through sexual contact with an infected person or sharing needles, syringes, or other injection drug equipment. Hepatitis B can also be passed from an infected mother to her baby at birth.

Hepatitis B is not spread through breastfeeding, sharing eating utensils, hugging, kissing, holding hands, coughing, or sneezing. Unlike some types of hepatitis, hepatitis B is not spread by contaminated food or water.

ETIOLOGY

Hepatitis B virus (HBV)

SUBJECTIVE

1. May have a history of exposure at birth to a HBV-infected mother

2. May have a history of close (household/sexual) contact with a HBV-infected person

3. May have experienced or is experiencing symptoms listed below. Not everyone has symptoms with acute Hepatitis B, especially young children. Symptoms usually appear within 2 to 3 months (Range: 45-180 days) of exposure. Symptoms can last from a few weeks to several months and include:

    a. Fever
    b. Fatigue
    c. Loss of appetite
    d. Nausea
    e. Vomiting
    f. Abdominal pain
    g. Grey-colored stools

h. Dark urine
i. Joint and/or muscle pain
j. Jaundice

OBJECTIVE History of exposure to an HBV-infected mother at birth or through close household contact.

ASSESSMENT Exposure to hepatitis B viral infection

PLAN **MANAGEMENT OF EXPOSED INFANTS**

For infants that were exposed to HBV at birth:

- Ensure that Hepatitis B immune globulin (HBIG) and hepatitis B vaccine were given to the child prior to hospital discharge if the child is less than 7 days old.
- Verify child's hepatitis B immunization record in GRITS. Administer any needed doses using the current year's Advisory Committee on Immunization Practices (ACIP) schedule.
- Conduct post-vaccination serologic testing (HBsAg & anti-HBs) at 9 months of age. The child must be at least 9 months and have not received a hepatitis B vaccine in the previous 30 days.

DIAGNOSTIC STUDIES

For infants and children born to a HBV-infected mother, order hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody (anti-HBs) serology. Infants must be at least 9 months of age and have not received hepatitis B immunization less than 30 days prior to lab testing.
NOTE: Draw blood before administering the dose of hepatitis B vaccine and hepatitis B immune globulin (HBIG) to avoid a temporary HBsAg-positive result (transient antigenemia).

Specimen Collection

Refer to the most current version of the Georgia Public Health Laboratory (GPHL) Manual at http://dph.georgia.gov/lab.
Hepatitis B testing is performed by the Microbial Immunology Unit. GPHL can be contacted at 404-327-7970.

- Obtain the specimen via venipuncture using the appropriate gauge needle (e.g. 23-25 gauge butterfly needle)
- **Hepatitis B testing requires approximately six milliliters (one** 13.24 **tube) of whole blood in a serum separator tube (SST). Red top tubes may be used but are not preferred and may not be available through GPHL.**
- **Centrifugation of specimen should be performed prior to**

shipment.

- Invert specimen in serum separator tube (SST) 5 times to ensure distribution of the clot activator within sample, and allow it to clot for 30 minutes in vertical position before centrifugation.
- Red-top tubes (non-SST) should be allowed to clot for 60 minutes in vertical position before centrifugation.

Laboratory Requisition Form

Refer to the most current version of the Georgia Public Health Laboratory (GPHL) Manual to obtain the current laboratory requisition form. This information is available online at http://dph.georgia.gov/lab (see Infectious Disease Serology section).
NOTE: Hepatitis testing is located under Immunology. Select Hep B (Routine Screen) under the hepatitis testing section. The panel consists of hepatitis B surface antigen (HBsAg), hepatitis B surface antibody (anti-HBs) and hepatitis B core antibody (anti-HBc).

Test Result Interpretation

Hepatitis B surface antigen (HBsAg) is a protein on the surface of the hepatitis B virus. It can be detected in the blood during acute or chronic hepatitis B virus infection. The body normally produces antibodies to HBsAg as part of the normal immune response to infection, unless chronic infection occurs.

- Positive/Reactive test result means:
  The person has an acute or chronic hepatitis B virus infection and can pass the virus to others.

- Negative/Non-Reactive test result means:
  The person does not have the hepatitis B virus in his or her blood.

Hepatitis B surface antibody (anti-HBs) is an antibody that is produced by the body in response to the hepatitis B surface antigen.

- Positive/Reactive test result means:
  The person is protected or immune from the hepatitis B virus for one of two reasons:
  he or she was successfully vaccinated against hepatitis B.
  OR
  he or she recovered from an acute infection (and cannot get

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hepatitis B again)

- Negative/Non-Reactive test result means:
  A person does not have immunity against hepatitis B virus.

Hepatitis B core antibody (anti-HBc) is an antibody that does not provide any protection or immunity against HBV.

- Positive/Reactive test result means:
  The person may have current or past infection with the hepatitis B virus. A positive result does NOT mean the person is protected from HBV.

- Negative/Non-Reactive test result means:
  The person does not have current or past infection with the hepatitis B virus.

NOTE: The anti-HBc result should be disregarded for children less than 24 months of age who were exposed to HBV at birth. The mother's maternal antibody can be detected in the child's blood up to 24 months after birth.

THERAPEUTIC

POST-EXPOSURE PROPHYLAXIS (PEP)

1. Infants born to hepatitis B surface antigen-positive women should receive hepatitis B immune globulin (HBIG) and hepatitis B vaccine within 12 hours of birth.

2. Infants that are discharged from the delivery hospital prior to hepatitis B immune globulin (HBIG) administration should be referred to the delivery hospital for immediate HBIG administration. HBIG can be administered up to 7 days after birth.

3. HBIG may be administered simultaneously with hepatitis B vaccine but in a different injection site. 13.26

4. HBIG is administered by intramuscular injection. For infants, HBIG should be administered intramuscularly in the anterolateral thigh using a 22--25-gauge needle that is 5/8"--1" in length. For older children and adolescents, an appropriate muscle mass (e.g. deltoid

muscle or anterolateral thigh) should be chosen in which to deliver the larger volumes of HBIG required for these age groups by using a needle length appropriate for the person's age and size.

5. Vaccination with certain live-virus vaccines (measles, mumps, rubella, and varicella) should be deferred for at least 3 months after administration of HBIG because HBIG can inhibit the response to these vaccines.

PHARMACOLOGIC

Drug Name: Hepatitis B Immune Globulin (HBIG)
Trade Name(s): HepaGam B®, HyperHEP B®, Nabi-HB®

Formulation	Dose	Route	Frequency	Duration
Infant (birth-12 months)	0.5 mL	Intramuscularly in vastus lateralis (anterolateral thigh)	One time	N/A
Children ≥ 12 months	0.06 mL/kg	Intramuscularly	One time	N/A

Drug Name: Hepatitis B Vaccine
Trade Name(s): Engerix-B®, Pediarix®, Recombivax HB®

Formulation	Dose	Route	Frequency	Duration
Pediatric/adolescent	0.5 mL	Intramuscularly	One time	N/A

IMMUNIZATION

1. Infants and children of hepatitis B-infected mothers should follow the *Advisory Committee on Immunization Practices (ACIP) Recommended Immunization Schedule for Persons 0 Through 6 Years* for the current year.
   NOTE: Infants born to HBsAg-positive women and who weigh less than 2,000 grams at birth should receive postexposure prophylaxis with HBIG and hepatitis B vaccine within 12 hours of birth and receive 4 doses of hepatitis B vaccine. The birth dose should not be counted in the 3-dose schedule. The next dose in the series should be administered when the infant is chronologic age 1 month. The third dose should be given 1 to 2 months after the second, and the fourth dose should be given at 6 months of age. Infants receiving Pediarix® should receive single-antigen vaccine dose #1 at birth and Pediarix® vaccine dose #2 at 2 months of age, Pediarix® dose #3 at 4 months of age and Pediarix® dose #4 at 6 months of age.

NOTE: Infants whose mothers are HBsAg-positive should receive the last (third or fourth) dose by 6 months of age

2. The anterolateral thigh muscle is the recommended site of administration for the hepatitis B vaccine for neonates (aged <1 month) and infants (aged 1-12 months). For toddlers (aged 1--2 years) and older children, either the anterolateral thigh or the deltoid muscle may be used if the muscle mass is adequate. The deltoid muscle is the preferred site of administration for adolescents.

3. Infants and children who do not develop adequate antibody (HBsAg-Negative/Non-Reactive and anti-HBs-Negative/Non-Reactive) to the first series of hepatitis B vaccine should receive additional hepatitis B vaccine. Administer a single dose of hepatitis B vaccine and test for HBsAg and anti-HBs 30-60 days later. If the anti-HBs remains negative (<10 mIU/mL), the child should receive two additional hepatitis B doses, followed by testing for HBsAg and anti-HBs 30-60 days after the final dose of the hepatitis B series. **NOTE:** Persons who fail to respond after two appropriately administered three-dose series should be counseled regarding precautions to prevent HBV infection. No additional vaccine needed.

PATIENT EDUCATION/COUNSELING

1. Ensure that the client's parent or legal guardian knows the ways HBV can be transmitted.

2. Teach the client's parent or legal guardian ways to reduce disease transmission.

3. Explain the importance of completing the hepatitis B series using the recommended time intervals.

4. Explain the importance of completing post-vaccination serologic testing. Post-vaccination testing is recommended at age 9 through 12 months (after hepatitis B series completion).

5. Explain the client's status of immunity based on the laboratory findings.

CONSULTATION/REFERRAL

1. Administer additional hepatitis B vaccine doses and post-vaccination serologic testing for hepatitis B vaccine non-responders. Testing should be conducted at least 30 days after last dose of vaccine to avoid a transient antigenemia result.

2. Refer clients that test positive for hepatitis B virus to a gastroenterologist or hepatologist (liver specialist) for further evaluation.

3. Notify your district's Perinatal Hepatitis B Program Case Manager of the laboratory results for any clients tested.

4. Contact the Georgia Perinatal Hepatitis B Prevention Program for consultation or additional information at 404-651-5196.

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State Hepatitis Program

Background:

The State Hepatitis Program provides hepatitis B vaccine when indicated to eligible children and adults through the Perinatal Hepatitis B Prevention Program, the Vaccines for Children (VFC) Program, and the STD/HIV Program and Family Planning Program. Hepatitis A vaccine is provided to eligible children through the Vaccines for Children Program, high-risk adults, and to both children and adults in outbreak situations.

Groups recommended for routine vaccination:

Hepatitis B

Hepatitis B vaccine is recommended for all persons aged zero through 18 years, and adults at highest risk for the hepatitis B virus. These high-risk groups are as follows:

- Injecting drug users (IDU)
- Sexually active men who have sex with men (MSM)
- Sexually active heterosexual men and women who are diagnosed as having recently acquired other sexually transmitted diseases, and for persons who have a history of sexual activity with more than one partner in the previous 6 months. *NOTE:* Persons seen for evaluation of sexually transmitted diseases should be considered candidates for vaccination.
- Household contacts and sexual partners of persons infected with HBV
- Household members of HBsAg-positive adoptees
- Clients and staff of institutions for the developmentally disabled
- Inmates of juvenile detention centers or long-term correctional facilities
- Persons with occupational risk of infection through exposure to blood
- Hemodialysis patients
- Persons with chronic liver disease, including hepatitis C virus (HCV) infection
- International travelers to areas with high or intermediate rates of HBV infection
- Persons with diabetes mellitus (Type 1 or Type 2)
- Persons with HIV infection

Hepatitis A

Hepatitis A vaccine is recommended for all children 12 through 23 months of age.* Also, older children and adolescents who are susceptible should be immunized, when seen by their providers. All persons aged 12 months and older who are at increased risk for infection or severe outcomes from the disease should receive hepatitis A vaccine. These groups include the following:

- Travelers* to countries where hepatitis A is endemic
- Men who have sex with men (MSM)
- Users of illegal injection and non-injection drugs
- Persons with clotting-factor disorders
- Persons with chronic liver disease
- Close contacts of newly arriving international adoptees from countries of high

State Hepatitis Program

or intermediate endemicity
- Persons with occupational risk (e.g., working with nonhuman primates)

**Special Category: Administer a single dose to infants 6-11 months of age traveling to countries outside the United States for which protection against hepatitis A is recommended. Infants should then receive the full 2-dose hepatitis A vaccine series at ≥12 months of age as recommended.*

Note: See Chapter 2 of this Manual for list of persons eligible for state-supplied vaccine in Public Health clinics.

Provision of vaccine for routine vaccination by the State Hepatitis Program:

The State Immunization Program provides hepatitis B vaccine to household and sexual contacts of acute and chronic hepatitis B cases (which includes perinatal cases), persons seeking evaluation for an STD at a public STD/HIV or Family Planning Clinic, and VFC and PeachCare eligible children ages birth through 18 years.

Serologic testing:

Prevaccination serology for hepatitis B:

- Prevaccination serology is not indicated before routine vaccination of infants, children and adults. Prevaccination serology should be performed on persons who are at highest risk for infection with the hepatitis B virus (HBV). Those clients at highest risk are defined as:
- Injection drug users (IDU)
- Sexually active men who have sex with men (MSM)
- Sexually active heterosexual men and women with more than one sex partner within a 6-month period
- Certain persons receiving cytotoxic or immunosuppressive therapy
- All persons born in Africa, Asia, the Pacific Islands, and other regions with HBsAg prevalence of 2% or higher
- Children of immigrants from endemic countries
- Household, sex, and needle-sharing contacts of hepatitis B surface antigen (HBsAg)-positive persons

Persons being evaluated in STD/ HIV and Family Planning clinics should first be assessed for risk factors and have serologic testing performed, if indicated. The first dose of hepatitis B vaccine should be administered at the same visit as serologic testing. **Draw the blood *before* administering vaccine.** After the results of the serologic tests are received and the client is found to be susceptible, the second and third doses should be administered according to the client's age as specified in the ACIP recommended schedule. Always check GRITS for patient's history of hepatitis B vaccination, especially for persons born on or after 1/1/1992.

State Hepatitis Program

Prevaccination Serology for Hepatitis A:
Prevaccination serology for hepatitis A is not indicated for routine vaccination of children and adults. Antibody production in response to HAV infection results in lifelong immunity to hepatitis A infection. Vaccination of persons who are already immune because of prior infection does not increase the risk for adverse events. In populations that have expected high rates of prior HAV infection, prevaccination testing may be considered to reduce costs by not vaccinating persons who have prior immunity. Testing of children is not indicated because of their expected low prevalence of infection. For adults, the decision to test should be based upon the following information:

a) the expected prevalence of immunity;
b) the cost of vaccination compared with the cost of serologic testing (including the cost of an additional visit); and
c) the likelihood that testing will not interfere with initiating vaccination.

Persons for whom prevaccination testing will likely be most cost-effective include:

- Adults who were either born in or lived for extensive periods in geographic areas that have a high endemicity of HAV infection;
- Older adolescents and adults in certain populations (i.e., American Indian/Alaska Native, and Hispanic);
- Adults in certain groups that have a high prevalence of infection (e.g., injecting drug users);
- Adults 40 years of age and older

Post-vaccination serology for Hepatitis B
Testing for immunity to hepatitis B following vaccination is not routinely recommended but should be considered for persons whose subsequent management depends on knowing their immune status. This would include:

- Infants born to HBsAg-positive women
- Infants whose mother's HBsAg status remains unknown indefinitely (e.g., confidential surrender of infant shortly after birth, such as adoption)
- Dialysis patients, persons with weakened immune systems, and health care workers who have direct contact with blood or body fluids

When indicated, post-vaccination testing for children and adults should be done 1 to 2 months after completion of the vaccine series to provide definitive information on response to the vaccine. Infants born to HBsAg-positive women should be tested for HBsAg and anti-HBs at 9 months of age or 30 to 60 days after the final dose of hepatitis B vaccine, if the infant/child is older than 9 months of age.

Post-vaccination serology for Hepatitis A
Post-vaccination serology is not indicated in persons receiving hepatitis A vaccine due to the high rate of response among children and adults. No test sensitive enough to detect low anti-HAV concentrations after vaccination is approved for routine diagnostic use in the United States.

State Hepatitis Program

NOTE: Please refer to Chapter 2, "Vaccines to Prevent Hepatitis B" for specific vaccine administration guidelines for hepatitis B vaccines.

Resources

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Hepatitis B Vaccination in STD, HIV and Family Planning Clinics Guidelines for Public Health

Background

The goal of hepatitis B immunization is to prevent transmission of hepatitis B virus (HBV) infection, which in turn prevents chronic liver disease, cirrhosis and liver cancer, as well as hepatitis D coinfection. While routine vaccination of infants in the United States will eventually produce a population highly immune to hepatitis B, further efforts must be extended to prevent transmission among groups at highest risk for infection (see list below). Healthy People 2020 goals state that "viral hepatitis can be prevented, yet health care systems often do not make the best use of their available resources to support prevention efforts." To reach the Healthy People 2020 target for adults (1.5 cases per 100,000), hepatitis B vaccination programs must continue to focus on susceptible persons at the highest risk of infection. In 2010, there were 1.6 cases per 100,000 population reported in Georgia, with individual county rates ranging from 0.7 to 16.1 cases per 100,000. By 2014, the overall incidence rate in Georgia had declined to 1.0 case per 100,000; however, risk factor data collected since then show the majority of newly acquired cases of hepatitis B are associated with high-risk sexual activity or injection-drug use, and the case rate remained at 1.0 per 100,000 in 2016. It is important to provide prevention and healthy lifestyles information. This includes advancing effective and evidence-based viral hepatitis prevention priorities and interventions. Vaccinating susceptible persons attending public Sexually Transmitted Disease (STD), HIV, and Family Planning clinics in Georgia will reduce the transmission of HBV to sexually active adolescents and adults. Measures should be taken at the district and county levels to avoid missed opportunities to vaccinate high-risk patients, especially those referred by Perinatal Hepatitis B Case Managers and other Public Health staff. Particular attention should be paid to vaccinating adults born before January 1992, who were not required to have hepatitis B vaccine for school attendance.

High-risk Groups for whom Hepatitis B Vaccination is Recommended

1. **Injection drug users (IDU).** Persons with history of current or recent injection drug use who are susceptible to HBV should be vaccinated. Because of the high rate of HBV infection in this population, prevaccination screening should be considered.
2. **Men who have sex with men (MSM).** Susceptible MSM should be vaccinated. Because of the high rate of HBV infection in this population, prevaccination screening should be considered. Men known to have HIV infection should be tested for anti-HBs response after completion of the vaccine series. Check GRITS for patients born on or after 1/1/1992.
3. **Sexually active heterosexual men and women.** Vaccination is recommended for men and women who are diagnosed as having recently acquired other sexually transmitted diseases, for prostitutes, and for persons who have a history of sexual activity with more than one partner in the previous 6 months. Most patients seen in clinics for sexually transmitted diseases should be considered candidates for vaccination. Check GRITS for patients born on or after 1/1/1992.
4. **Household contacts and sexual partners of HBsAg-positive persons.** All household and sexual contacts of persons identified as HBsAg positive should be vaccinated. Hepatitis B vaccine should be administered at the age-appropriate dose to those determined to be susceptible or judged likely to be susceptible to infection.
5. **Clients and staff of institutions for the developmentally disabled.** Susceptible

clients in institutions for the developmentally disabled, as well as staff who work closely with clients, should be vaccinated. Susceptible clients and staff who live or work in smaller residential settings with known HBV carriers should also receive hepatitis B vaccine. Clients discharged from residential institutions into community programs should be screened for HBsAg so that appropriate measures can be taken to prevent HBV transmission. These measures should include both environmental controls and appropriate use of vaccine.

6. **Staff of nonresidential day-care programs for the developmentally disabled** (e.g., schools, sheltered workshops) attended by known HBV chronic carriers have a risk of infection comparable with that of health-care workers and therefore should be vaccinated. The risk of infection for other clients appears to be lower than the risk for staff. Vaccination of clients in day care programs may be considered. Vaccination of classroom contacts is strongly encouraged if a classmate who is an HBV carrier behaves aggressively or has special medical problems (e.g., exudative dermatitis, open skin lesions) that increase the risk of exposure to his or her blood or serous secretions.
7. **Inmates of long-term correctional facilities**. Prison officials should consider undertaking screening and vaccination programs directed at inmates with histories of high-risk behaviors, such as IDU and multiple sex partners.
8. **Persons with occupational risk.** Any healthcare or public-safety worker may be at risk for HBV exposure, depending on the tasks performed. Workers who perform tasks involving contact with blood or blood-contaminated body fluid should be vaccinated. For persons in health-care fields, vaccination should be completed during training in schools of medicine, dentistry, nursing, laboratory technology, and other allied health professions, before trainees have their first contact with blood.
9. **Hemodialysis patients.** Hepatitis B vaccination is recommended for susceptible hemodialysis patients. Vaccinating patients early in the course of their renal disease is encouraged because patients with uremia who are vaccinated before they require dialysis are more likely to respond to the vaccine. Although their seroconversion rates and anti-HBs titers are lower than those of healthy persons, patients who respond to vaccination will be protected from infection, and the need for frequent serologic testing will be reduced.
10. **Persons with chronic liver disease.** Hepatitis B vaccination is recommended for susceptible persons with chronic liver disease, including, but not limited to, those with hepatitis C virus (HCV) infection, cirrhosis, fatty liver disease, alcoholic liver disease, autoimmune hepatitis, and liver enzyme (ALT and AST) level greater than twice the upper limit of normal.
11. **International travelers.** Vaccination should be considered for persons who plan to spend *more than 6 months in areas with high rates of HBV infection and who will have close contact with the local population.* Short-term travelers who are likely to have contact with blood (e.g., in a medical setting) or sexual contact with residents of areas with high or intermediate levels of endemic disease should be vaccinated. Vaccination should begin at least 6 months before travel to allow for completion of the full vaccine series, although a partial series will offer some protection. The alternate four-dose schedule should provide protection, if the first three doses can be delivered before departure.
12. **Persons with HIV.** Susceptible HIV-positive persons should be vaccinated against HBV

to avoid coinfection and increased risk of cirrhosis and end-stage liver disease.

13. **Adults with diabetes mellitus**. All previously unvaccinated adults aged 19 through 59 years with diabetes mellitus (type 1 and type 2) should be vaccinated as soon as possible after a diagnosis of diabetes is made. Unvaccinated adults aged ≥60 years with diabetes may be vaccinated at the discretion of the treating clinician, after assessing their risk and the likelihood of an adequate immune response to vaccination.
14. **Families of adoptees from countries where HBV infection is endemic.** Adopted or fostered orphans or unaccompanied minors from countries where HBV infection is endemic at high or intermediate levels should be screened for HBsAg. If the children are HBsAg positive, other family members should be vaccinated.

Eligibility for Hepatitis B Vaccination in STD/HIV and Family Planning Clinics in Georgia

The following persons **ARE ELIGIBLE** to receive state-supplied hepatitis B vaccine if screened in any Public Health clinic and are Medicare covered, Medicaid covered, underinsured, or uninsured:

1. Men having sex with men (MSM)
2. Injection drug users (IDU)
3. Individuals with multiple sex partners (more than 1 partner in the past six months)
4. Homeless Adults
5. Persons seeking STD/HIV screening services including HIV testing and counseling
6. Persons recently diagnosed with a sexually transmitted disease (STD)
7. Persons seeking Family Planning clinic services
8. Sexual partners and household contacts of persons with acute or chronic HBV infection
9. Hemodialysis and transplant patients
10. Persons who began the series using state-supplied vaccine and still need to complete the series, regardless of insurance status
11. Diabetics (Type 1 or Type 2)
12. Refugees ≥ 19 years of age
13. Any unvaccinated adult who wants to be protected against hepatitis B virus

Note: See Chapter 2 of this Manual for list of persons eligible for state-supplied vaccine in Public Health clinics.

Persons **NOT ELIGIBLE** to receive state-supplied hepatitis B vaccine for routine immunizations include:

1. Public safety workers
2. Health care workers
3. International travelers
4. Inmates
5. Staff of institutions for developmentally disabled
6. Insured clients with immunization coverage

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Postexposure Prophylaxis for Hepatitis B with Vaccine and HBIG

Recommendations on postexposure prophylaxis are based on available efficacy data and on the likelihood of future HBV exposure of the person requiring treatment. In all exposures, a regimen combining HBIG with hepatitis B vaccine will provide both short- and long-term protection and is the treatment of choice. Please refer to Chapter 2, "Eligibility Criteria for Vaccines Supplied by the Georgia Immunization Program for Adult Populations (age ≥19 years)" in this manual for the eligibility requirements for persons to receive state-supplied HBIG.

Immunization Consent Requirements

Vaccination against viral hepatitis for persons under the age of 18 years without parental/guardian consent can occur in conjunction with STD/HIV examinations due to already existing laws and legal precedent relating to STD/HIV examination and treatment of minors (O.C.G.A. 31-17-7). In these instances, a minor is considered to be receiving hepatitis B vaccine as prophylaxis for STD, and therefore is covered under the aforementioned section of the Official Code of Georgia. Conversely, persons less than 18 years of age cannot be vaccinated without parental/guardian consent in any other vaccination setting, including school vaccination programs, outbreak control settings where mass vaccinations are being given, and other clinic settings where STD/HIV evaluations and treatments *are* ***not*** conducted.

Serology Testing

Prevaccination serologic testing for susceptibility

Prevaccination serology is cost effective and should be considered in persons who are at high risk for hepatitis B infection. Due to higher seroprevalence, the following high-risk groups should receive prevaccination testing:

1. Men having sex with men (MSM)
2. Injecting drug users (IDU)
3. Sexual, household or needle-sharing contacts of persons infected with HBV
4. Persons born in Africa, Asia, the Pacific Islands, and other high-prevalence regions

Prevaccination testing should not interfere with administering vaccine during the visit for which immunization against hepatitis B is requested. To test high-risk patients for history of disease and the need for vaccine, order HBsAg and anti-HBs tests. **Draw the blood before administering vaccine.** The first dose of vaccine should be given at the same visit as the blood test. If the client is found susceptible to HBV (via negative serology), then doses 2 and 3 should be administered at the appropriate intervals. It is not cost-effective for groups with a low expected prevalence of HBV serologic markers to receive prevaccination testing. Therefore, prevaccination serology is ***not indicated*** before routine vaccination of infants, children, or adolescents.

The Georgia Public Health Laboratory hepatitis serology consists of HBsAg, total anti-HBc, HBeAg, and anti-HBs. Specific guidelines for ordering hepatitis B serologic testing can be found in the Georgia Public Health Laboratory Service Manual in the "Microbiology Services-Immunology-Infectious Disease Serology" section.
https://dph.georgia.gov/sites/dph.georgia.gov/files/related_files/site_page/LSM2013_June.docx%207.3.13.pdf
For additional information regarding the interpretation of hepatitis B serology, please see Appendix H4 of the Perinatal Hepatitis B Prevention Program Guidelines.

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Postvaccination Testing

Hepatitis B vaccine, when given at the correct anatomic site, produces protective antibody (anti-HBs) in greater than 90% of healthy persons. Testing for immunity after vaccination is not recommended routinely but is advised for persons whose subsequent management depends on knowing their immune status (such as dialysis patients, other immunocompromised patients, and health care workers with direct contact to blood and body fluids). Testing for immunity is also advised for persons for whom a suboptimal response may be anticipated, such as those who had received vaccine in the buttock, persons aged 50 years or older, and persons known to have HIV infection. Postvaccination testing should also be considered for persons at occupational risk who may have needle-stick exposures necessitating postexposure prophylaxis. When indicated, postvaccination testing should be done between 1and 3 months after completion of the vaccine series to provide definitive information on response to the vaccine.

> **Note:** The postvaccination serology recommendation for infants born to HBsAg-positive women is to test at 9 to 12 months of age; however, if the last dose is delayed and the child is 9 months of age or older, testing should be completed within 30 to 60 days after final dose of hepatitis B vaccine.

Persons who do not respond to the first series of hepatitis B vaccine should complete a second three-dose series. Revaccination of persons who do not respond to the primary series produces adequate antibody in 15%-25% after one additional dose and in 30%-50% after three additional doses, when the primary vaccination has been given in the deltoid. For persons who did not respond to a primary vaccine series given in the buttock, data suggest that revaccination in the arm induces adequate antibody in greater than 75%.

Sexual Partners of Persons with Acute HBV Infection

Sexual partners of HBsAg-positive persons are at increased risk of acquiring HBV infection, and post-exposure administration of HBIG has been shown to be 75% effective in preventing such infections. Data about the efficacy of HBIG beyond the 14-day cutoff are limited and the period after sexual exposure during which HBIG is effective is unknown; however, it is unlikely that this period would exceed 14 days. Testing of sexual partners for susceptibility is recommended at the same visit as the first dose of vaccine. **Be sure to draw blood for the serology before administering the vaccine.** If a sexual partner is found susceptible after serology, then administer doses 2 and 3 at the appropriate dosage and time intervals.

Household Contacts of Persons with Acute or Chronic HBV Infection

Since infants have close contact with primary caregivers and they have a higher risk of developing chronic HBV infection after acute HBV infection, prophylaxis of an unvaccinated infant less than 12 months of age with HBIG (0.5 mL) and hepatitis B vaccine is indicated, if the mother or primary caregiver has acute HBV infection. Prophylaxis with HBIG for other household contacts of persons with acute or chronic HBV infection is not indicated unless they have had identifiable blood exposure to the index patient, such as by sharing toothbrushes, razors or glucometers within the past 7 days. Hepatitis B vaccine is recommended for household contacts and the first dose should be administered at the same visit as the prevaccination serology. **Be sure to draw blood for the serology before administering the vaccine.** If the household contact is found susceptible after serology, then administer doses 2 and 3 at the appropriate dosage and time intervals. Such exposures should be treated similarly to sexual exposures. If the index patient develops chronic HBV infection, all household contacts

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should be given hepatitis B vaccine.

> **NOTE**: Administering even one dose of hepatitis B vaccine allows seroconversion for 40% to 50% of persons receiving vaccine. Always encourage clients to complete the series, but do not withhold vaccine if uncertain that the client will return for the subsequent doses.

General Hepatitis B Vaccination Requirements

Please see Chapter 2, "Vaccines to Prevent Hepatitis B", for specific vaccine administration guidelines.

Reporting Requirements

All Georgia physicians, laboratories, and other health care providers are required by the authority of the Official Code of Georgia (Sections 31-12-2 and 31-22-7, Rules of the Department of Public Health) to report persons with acute hepatitis B disease or persons who are HBsAg positive within 7 days to their County Health Department or District Health Office. Hepatitis B cases may also be reported to the Epidemiology Section. The preferred method of reporting is through the State Electronic Notifiable Disease Surveillance System (SendSS), available at https://sendss.state.ga.us/.

In addition, positive serologic tests and acute cases received by the County Health Department or Health District are to be reported via SendSS.

Hepatitis B Counseling Interview

Each person infected with HBV should be counseled regarding the infection and interviewed for household and sexual contacts. For more specific information, please refer to “Example Interviewing/Counseling Format (for) Hepatitis B,” found in the Appendix section of the Perinatal Hepatitis B Prevention Guidelines in this chapter.

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8. RECALL OF PATIENTS
Recall of Immunization Patients Policy Statement
Immunization Documentation, “Moved or Gone Elsewhere” (MOGE) Categories

RECALL OF IMMUNIZATION PATIENTS POLICY STATEMENT

One of the national objectives recommended in the Health and Human Services document, **Healthy People 2020**, calls for the completion of primary immunizations for 90% of newborn children by the time they reach two years of age. This goal is endorsed by the Georgia Immunization Program and is one of the reasons that efforts to recall children for needed immunizations is so important.

In late 1985 and early 1986, the Immunization Program reviewed the immunization status for 2,858 children whose records were found in health departments in five (5) districts. Only 32% of those children had completed primary immunizations before age two (2) years. That level increased to 55% statewide by the end of 1989 and to 93.82% by the end of 1999. Although the adequate rates for children receiving immunizations in public health clinics has steadily risen, the number of children receiving their immunizations in public health clinics has decreased. In 1998-99, approximately 50% of immunizations were given by private providers, and in 2007, they gave more than 80% of the childhood immunizations. Therefore, the adequate rates for two year old children attending public health clinics is not indicative of the status for the majority of Georgia's two year old children. In order to attain and maintain **100%** immunization levels for all two year olds in a community, each health unit should address five (5) issues:

1. Due to the increase in the administration of immunizations by private providers, it is important that public health ensure high levels of immunizations are maintained in each community regardless of who is providing immunization delivery services. Every effort should be made to educate and collaborate with other health providers in the community to assist them in their immunization service delivery.

2. Health districts are responsible for conducting an annual population based study to determine the immunization level of all two year old children born in Georgia. The State Immunization and Epidemiology Programs will provide annual training and instruction for conducting the population-based study.

3. All children brought to health department facilities for any reason should be screened for immunization history and served as necessary. Children attending specifically for immunizations should be screened for other health care needs and served as necessary.

4. Districts should utilize **Comprehensive Clinical Assessment Software Application (CoCASA)** which is provided free of charge by CDC/National Immunization Program to measure the progress of its patients toward completion of primary immunizations and to identify problems. The Georgia Immunization Program will conduct at least one annual CASA audit for each health district and will provide training in the use of this software application. As part of this application, categories for documenting that a child has moved or gone elsewhere for services (MOGE) were developed by the Immunization Coordinator's Advisory Committee. To provide consistency in measurement procedures, districts should utilize the categories for MOGE documentation. (See next page)

5. Each health department unit must devise and implement a system(s), which encourages compliance with the recommended schedules and allows for active recall of delinquent patients.

Acceptable "Moved or Gone Elsewhere" (MOGE) Categories

An annual assessment is conducted to determine the immunization coverage levels of children 19-35 months of age in public health departments. This assessment is also conducted in private provider sites bi-annually. The Comprehensive Clinical Assessment Software Application (CoCASA) is used to assist in conducting this assessment. Moved or Gone Elsewhere (MOGE) is a process that is used in CoCASA to filter out patients that are no longer associated with the facility being assessed. By removing these patients, immunization practices may be assessed more accurately.

Clients should not be placed into a MOGE category only to improve immunization coverage rates. It is important that every effort is made to accurately identify the status of inactive children. Moved or Gone Elsewhere (MOGE) status is assigned when one of the following has occurred:

- a Patient has moved out of the immediate area
- a Patient has gone to another practice
- a Patient has moved with no forwarding address
- a Patient has died
- a Patient has a medical exemption issued by a physician
- a Patient has a signed and notarized religious exemption

With the exception of patients that have died, or who have a medical or religious exemption, all patients assigned the status of MOGE must have documentation to show that at least **3** attempts were made to contact the patient. Once the status of the patient is identified, no further attempts are required. Acceptable documentation includes:

1. The family, a neighbor, the WIC Program, Post Office, DFACS, etc. has notified the clinic, either in writing or by phone, that the client has moved out of the area.

2. School, day care, Headstart, employer, etc., state that the family has moved out of the area.

3. Client reports that immunizations are being received from a private physician or other health care provider. Patient is identified in GRITS and is receiving immunizations from another provider.

4. The provider receives a request for client's records to be transferred out of state.

5. The provider receives a returned post card or letter, which has been stamped or documented as "Moved, left no forwarding address."

6. A home visit was made and there is confirmation that the client no longer resides at that location. Confirmation means that someone else is now residing at that address, or the manager of the development confirms they have moved. A person refusing to answer the door on a visit does not confirm the client no longer lives at that address.

7. Historical data is recorded for WIC certification and the patient is receiving immunizations from another provider.

Acceptable "Moved or Gone Elsewhere" (MOGE) Categories

8. Vital records birth certificate data was uploaded to the VEIS (Vital Events Information System) and the child has not received immunization services within 6 months of birth. Prior to MOGEing the child, please look the child up in GRITS. If the child's medical home is identified in GRITS, no further documentation is needed to MOGE. If the child's medical home can't be identified in GRITS, please make two additional attempts to contact.

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9. VACCINE FOR CHILDREN & ADULT VACCINE PROGRAM POLICIES AND PROCEDURES

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Adult Vaccine Program Provider Profile 2015 E-form

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Centralized Distribution Information and Instruction for VFC Providers

Distribution of Vaccines

Georgia Provider Agreement

Inclement Weather

Title X Log

Unaccompanied Minor Comp Tally

Unaccompanied Minor Report

VFC Provider Profile Underinsured

VFC Routine and Emergency Vaccine Handling Plans

Vaccine Accountability Policy

This document will serve as the Georgia Department of Public Health, Immunization Program Vaccine Accountability Policy. This policy is designed to ensure:

1. Vaccine purchased with Vaccines for Children (VFC), federal and state funds are administered only to VFC-eligible and state-eligible recipients;
2. Vaccine loss and waste are minimized and measured;
3. The Georgia Immunization and VFC Programs are protected against fraud and abuse;
4. State, VFC and other federally purchased vaccines are ordered appropriately based on a provider's VFC-eligible and state-eligible populations.

The increase in the number of ACIP recommended vaccines and a rise in their associated costs have prompted a renewed emphasis on program accountability at all levels. As part of the enrollment and annual recertification processes for VFC and state vaccine programs, providers agree to comply with VFC and Georgia Immunization Program (GIP) requirements for ordering, storage, handling and accountability of vaccine to avoid vaccine loss as outlined in the Georgia Vaccine Loss Policy (Appendix A). Providers also agree to operate in a manner intended to avoid vaccine fraud and abuse as outlined in the Georgia Vaccine Fraud and Abuse policy (Appendix B).

Georgia will help ensure vaccine accountability in provider offices by:

1. Using provider profiles to monitor provider orders;
2. Monitoring provider vaccine inventory levels to ensure adequate supplies of public and privately purchased vaccine for the population size served in provider offices;
3. Monitoring vaccine wastage and loss that occur in provider offices;
4. Monitoring provider activities to prevent and/or identify fraud and abuse against the VFC and state vaccine programs.
5. Providing clear guidance to providers regarding the return of expired and wasted public vaccine for excise tax credit.

Using Provider Profiles to Monitor Provider Orders
VFC Providers are required to submit supporting documents for the enrollment estimates produced during VFC enrollment, re-enrollment, or annual re-certification with the VFC Program. Documentation is required to verify that submitted estimates are based on previous years':

1. Doses administered, benchmarking, Medicaid and/or other billing data; or
2. IIS (GRITS) data.

The VFC Logistics Associate will review a random provider sample on a monthly basis for accountability review purposes. Doses administered data will be reviewed over a 6 month span and data will be compared to the providers submitted profile estimates. Aggregate vaccine data exceeding annual profile estimates identified during this will result in corrective action development and implementation as necessary, including vaccine replacement for unaccounted for doses.

1. GIP staff contact providers that exceed profile amounts to determine if distribution of additional vaccine is justified, or if adjustments to the profile are needed.
2. Future vaccine orders are adjusted appropriately to ensure providers receive sufficient supply to serve their VFC or State-eligible population without creating an increased risk for vaccine loss, fraud, and/or abuse.

Monitoring of Provider Inventory Levels (Public vs. Private Supply)
In order to receive vaccine from Georgia's VFC program, VFC-enrolled providers must comply with reporting requirements for vaccine usage including: doses administered by eligibility category, wastage, and inventory. Georgia uses the following methods as ways to monitor provider inventory levels for both public and private vaccine supply:

1. VFC Program Representatives have been trained to routinely review monthly comprehensive reports for excessive use, underreporting, over reporting and anything that may look out of the ordinary.
2. Vaccine over- and under-reporting will be reviewed with provider(s) and unexplained amounts above the 5% allowance will be reported to the Deputy Director, who will respond accordingly.

Monitoring Vaccine Wastage and Loss
The *Georgia Department of Public Health - Immunization Program Vaccine Loss Policy* (Appendix A) details the action taken by the Georgia VFC Program for identifying, monitoring and management of incidents that result in loss of public vaccine. The action taken by the Georgia VFC Program will depend on the category of the vaccine loss. For this policy, lost vaccines fall under three categories:
1. Negligence,
2. Non-preventable loss, and
3. Noncompliance.

VFC staff use the *CDC Non-compliance with VFC Provider Requirement Protocol (algorithm)* to address all vaccine loss policy violations. Continued violation of any section of this policy will result in termination from the VFC Program.

Prevention and Detection of Fraud and Abuse in Provider Offices
The *Georgia Department of Public Health - Immunization Program Fraud and Abuse Policy* (Appendix B) details the action taken by the Georgia VFC Program to provide programmatic direction for the prevention of fraud and abuse in the utilization of state-supplied and/or VFC-funded vaccine. The Fraud and Abuse Policy is reviewed annually and updated, as necessary. Training on fraud and abuse takes place as part of new employee orientation. Additionally, program staff (VFC staff and Immunization Program Consultants [IPCs]) receives annual educational updates, led by the Deputy Director.

Georgia uses the following methods as ways to detect and/or prevent fraud and abuse of public vaccine supply:

1. Upon enrollment and on a monthly basis thereafter, provider information is cross-checked against the List of Excluded Individuals/Entities on the Department of Health and Human Services (HHS) Office of Inspector General website. If located in the Exclusion database, providers are not allowed to participate in VFC.
2. VFC Program staff has been trained to routinely review monthly comprehensive reports for excessive use, underreporting, and anything that may look out of the ordinary.
3. Georgia Immunization Representatives are required to review with the provider a vaccine accountability statement representative of at least six (6) months, which can help identify areas of potential fraud and/or abuse.
4. Vaccine over- and under-reporting will be reviewed with provider, and unexplained amounts above the 5% allowance will be reported to the Deputy Director, who will respond accordingly.
5. Any individual, group, or practice who wants to report a suspected case of fraud and/or abuse, a dedicated Fraud and Abuse Hotline has been implemented and is monitored by the Deputy Director. The Fraud and Abuse hotline number is (404) 657-5950. Reports must include (as applicable):
    1. Provider name and address;
    2. Source of the allegation;
    3. Source's name, address, and telephone number (if available)
    4. A description of the reason for the report (suspected misconduct/violation)
    5. Specific VFC requirements violated;

6. Value of vaccine involved (if available);
7. If the report was initiated in response to a complaint, a copy and/or summary of the complaint and the complainant's name, address and telephone number;
8. Success of educational intervention; and
9. A summary of the result of any preliminary investigation conducted by GIO staff regarding allegations or suspicions of fraud or abuse.

Once a report is received, the Non-compliance with VFC Provider Requirements Protocol will be used to determine the appropriate follow up action.

At the GIP, the Deputy Director is the person with primary responsibility for responding to suspected fraud and/or abuse. The Deputy Director will have authority to make decisions, referrals, and notifications when appropriate. In the event that the Deputy Director is not available, the VFC Coordinator will assume responsibility. In the event that neither of these individuals is available, the Program Director will assume responsibility.

The Deputy Director (or designated respondent) will review all information submitted and initiate an internal investigation on all cases reported without sufficient evidence of fraud and abuse within five (5) business days of the report. All suspected cases of VFC fraud and abuse will be forwarded electronically to the Centers for Medicare & Medicaid Services (CMS), Medicaid Integrity Group (MIG) Field Office and CDC within ten (10) business days following disposition. MIG will conduct preliminary investigations and, as warranted, transmit the referral to the appropriate oversight entity and will monitor the handling of the referral by entity.

Process for Returning Expired and/or Wasted Public Vaccine

All vaccine received from the GIP must always be accounted for. This includes doses administered and inventory as well as wasted and expired vaccine. Providers are required to report doses wasted or expired on their Monthly Comprehensive Report which begins the processing of their return request and our excise tax credit process. Vaccine returns are approved by the Vaccine Logistics Associate. The Vaccine Logistics Associate submits requests via VTrckS to McKesson for UPS return labels. Once returns are finalized in VTrckS, McKesson will ship UPS return label(s) directly to the provider site.

Providers are asked to box returns properly to ensure safe transit of the vials. Providers submit return request monthly to ensure vaccines are returned within 6 months following the date of expiration per VFC program requirements. The Vaccine Logistics Associate processes and screens each return to ensure returned vaccines have been properly accounted for and determines if replacement of the loss vaccine(s) are required according to Georgia's Vaccine Loss Policy. The Vaccine Logistics Associate enters all returns and wastage into VTrckS and e-mails a copy of the VTrckS Return Invoice to the provider. Providers are to place a copy of the return invoice(s) in the box with the appropriate vaccine return(s).Providers are reminded to mark expired or wasted vaccine(s) **"DO NOT USE"** and store it securely and outside of the refrigerator to avoid accidental administration of non-viable vaccine.

Vaccine return boxes should include:

1. Full vials or manufactured pre-filled syringes (no needle attached) of unused vaccine
2. Appropriate padding to protect vials from breaking
3. VTrckS Return Invoice (copy e-mailed from the VFC office)

Vaccine return boxes should **not** include:

1. Needles or syringes with needles (vaccine that has been drawn into a syringe should be wasted on-site, not returned.)
2. Broken or partially used vials (including partially used multi-dose vials)
3. Paperwork or other reports intended for VFC
4. Any other objects

Georgia Department of Public Health

State of Georgia Immunization Program
ADULT VACCINE PROGRAM (AVP)

GEORGIA ADULT VACCINE PROGRAM PROVIDER AGREEMENT

Return via fax to 800-372-3627 or send via email to DPH-gavfc@dph.ga.gov

FACILITY INFORMATION			
Facility Name:			AVP Pin#:
Facility Address:			
City:	County:	State:	Zip:
Telephone: ( ) -		Fax: ( ) -	
Shipping Address (*if different than facility address):*			
City:	County:	State:	Zip:

MEDICAL DIRECTOR OR EQUIVALENT		
Instructions: *The official AVP registered health care provider signing the agreement must be a practitioner authorized to administer vaccines under state law who will also be held accountable for compliance by the entire organization and its AVP providers with the responsible conditions outlined in the provider enrollment agreement. The individual listed here must sign the provider agreement.*		
Last Name, First, MI:	Title:	Specialty:
License No.:	Medicaid or NPI No.:	Employer Identification No. *(optional):*
Provide Information for second individual as needed:		
Last Name, First, MI:	Title:	Specialty:
License No.:	Medicaid or NPI No.:	Employer Identification No.: *(optional):*

AVP VACCINE COORDINATOR	
Primary Vaccine Coordinator Name:	
Telephone: ( ) -	Email:
Completed annual training: ☐ Yes ☐ No	Type of training received (*refer to your enrollment checklist for a list of required training*):
Back-Up Vaccine Coordinator Name:	
Telephone: ( ) -	Email:
Completed annual training: ☐ Yes ☐ No	Type of training received (*refer to your enrollment checklist for a list of required training*):

PROVIDERS PRACTICING AT THIS FACILITY *(additional spaces for providers at end of form)*

Instructions: *List below all licensed health care providers (MD, DO, NP, PA, pharmacist) at your facility who have prescribing authority.*

Provider Name	Title	License No.	Medicaid or NPI No.	EIN *(Optional)*

PROVIDER AGREEMENT	
To receive publicly funded vaccines at no cost, I agree to the following conditions, on behalf of myself and all the practitioners, nurses, and others associated with the health care facility of which I am the medical director or equivalent:	
1.	I will annually submit a provider profile representing populations served by my practice/facility. I will submit more frequently if 1) the number of adults served changes or 2) the status of the facility changes during the calendar year.
2.	I will screen patients and document eligibility status at each immunization encounter for AVP eligibility and administer 317-purchased adult vaccine only to adults who are 19 years of age or older who meet one or more of the following categories: 1. Have no health insurance; 2. Are underinsured: An adult who has health insurance, but the coverage does not include vaccines; an adult whose insurance covers only selected vaccines (AVP-eligible for non-covered vaccines only). Adults aged 19 years and older that do not meet one or more of the eligible vaccine categories (AVP eligible), are **not** eligible to receive 317-purchased adult vaccine.
3.	For the vaccines identified and agreed upon in the provider profile, I will comply with immunization schedules, dosages, and contraindications that are established by the Advisory Committee on Immunization Practices (ACIP) and included in the AVP program unless: a) In the provider's medical judgment, and in accordance with accepted medical practice, the provider deems such compliance to be medically inappropriate for the patient; b) The particular requirements contradict state law, including laws pertaining to religious and other exemptions.
4.	I will maintain all records related to the AVP program for a minimum of three years and upon request make these records available for review. AVP records include, but are not limited to, AVP screening and eligibility documentation, billing records, medical records that verify receipt of vaccine, vaccine ordering records, and vaccine purchase and accountability records.
5.	I will immunize eligible adults with publicly supplied vaccine at no charge to the patient for the vaccine.
6.	I will not charge a vaccine administration fee to AVP vaccine eligible adults that exceed the administration fee cap of $21.93 per vaccine dose.
7.	I will not deny administration of a publicly purchased vaccine to an established patient because the patient is unable to pay the administration fee.
8.	I will distribute the current Vaccine Information Statements (VIS) each time a vaccine is administered and maintain the appropriate records including the reporting of clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS).
9.	I will comply with the requirements for vaccine management including: a) Ordering vaccine and maintaining appropriate vaccine inventories; b) Not storing vaccine in dormitory-style units at any time; c) Storing vaccine under proper storage conditions at all times. Refrigerator and freezer vaccine storage units and temperature monitoring equipment and practices must meet Georgia Department of Public Health, Division of Health Protection, Immunization Office storage and handling requirements; d) Returning all spoiled/expired public vaccines to CDC's centralized vaccine distributor within six months of spoilage/expiration
10.	I agree to operate within the AVP program in a manner intended to avoid fraud and abuse. Consistent with "fraud" and "abuse" as defined in the Medicaid regulations at 42 CFR § 455.2, and for the purposes of the AVP Program: **Fraud:** is an intentional deception or misrepresentation made by a person with the knowledge that the deception could result in some unauthorized benefit to himself or some other person. It includes any act that constitutes fraud under applicable federal or state law. **Abuse:** provider practices that are inconsistent with sound fiscal, business, or medical practices and result in an unnecessary cost to the program, (and/or including actions that result in an unnecessary cost to the immunization program, a health insurance company, or a patient); or in reimbursement for services that are not medically necessary or that fail to meet professionally recognized standards for health care. It also includes recipient practices that result in unnecessary cost to the program.
11.	I will participate in AVP program compliance site visits including unannounced visits, and other educational opportunities associated with AVP program requirements.
12.	I agree to replace vaccine purchased with federal funds (317) that are deemed non-viable due to provider negligence on a dose-for-dose basis.
13.	Pursuant to O.C.G.A.§31-12-3, the vaccination data for every dose of vaccine administered by the clinic will be entered into the Georgia Registry of Immunization Transactions and Services (GRITS) within thirty (30) business days of the service being rendered.
14.	I understand this facility or the Georgia Department of Public Health, Division of Health Protection, Immunization Office may terminate this agreement at any time. If I choose to terminate this agreement, I will properly return any unused federal vaccine as directed by the Georgia Department of Public Health, Division of Health Protection, Immunization Office.

By signing this form, I certify on behalf of myself and all immunization providers in this facility, I have read and agree to the Georgia Adult Vaccine Program enrollment requirements listed above and understand I am accountable (and each listed provider is individually accountable) for compliance with these requirements.	
Medical Director or Equivalent Name (print):	
Signature:	Date:
Name (print) *Second individual as needed*:	
Signature:	Date:

Georgia Department of Public Health

State of Georgia Immunization Program
ADULT VACCINE PROGRAM (AVP)

GEORGIA ADULT VACCINE PROVIDER PROFILE FORM

Return via fax to 800-372-3627 or send via email to DPH-gavfc@dph.ga.gov

AVP PIN#

FACILITY INFORMATION		
Provider's Name:		
Facility Name:		
Vaccine Delivery Address:		
City:	State:	Zip:
Telephone: ( )	Email:	

VACCINE DELIVERY INSTRUCTIONS

Between the hours of 8 am and 5 pm, write the days of the week and times you may receive vaccine deliveries.

	Open	Lunch Start	Lunch Ends	Close
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				

FACILITY TYPE (select facility type)

Private Facilities	**Public Facilities**
☐ Private Practice (solo/group/HMO)	☐ Public Health Department Clinic
☐ FQHC/RHC (Community/Migrant/Rural)	☐ FQHC/RHC (Community/Migrant/Rural)
☐ Community Health Center	☐ Community Health Center
☐ Pharmacy	☐ Other _____
☐ Other _____	

Provider Specialty:

☐ STD/HIV	☐ Migrant Health Facility
☐ Family Planning	☐ Refugee Health Facility
☐ Correctional Facility	
☐ Drug Treatment Facility	

VACCINES OFFERED

Select Vaccines Offered:

☐ Hepatitis A ☐ Hepatitis B ☐ Herpes Zoster ☐ HPV ☐ Influenza	☐ Meningococcal Conjugate ☐ MMR ☐ Pneumococcal Conjugate ☐ Pneumococcal Polysaccharide	☐ Td ☐ Tdap ☐ Varicella ☐ Other, specify: _____

PROVIDER POPULATION

Provider Population based on patients seen during the previous 12 months. *Report the number of adults who received vaccinations at your facility, by category. Only count each adult once based on the status at the last immunization visit, regardless of the number of visits made. The following table documents how many adults received immunization services, by category.*

AVP Vaccine Eligibility Categories	**# of adults vaccinated**
	19 years and Older Total
No Health Insurance	
Underinsured *	
Total AVP Eligible:	
Non-AVP Vaccine Eligibility Categories	**# of adults vaccinated**
	19 Years and Older Total
Insured (private pay/health insurance covers vaccines)	
Enrolled in Medicaid	
Enrolled in Medicare	
Total Non-AVP Eligible:	
Total Patients (must equal sum of Total AVP + Total Non-AVP)	

* Underinsured includes adults with health insurance that does not include vaccines or only covers specific vaccine types. Adults are only eligible for vaccines that are not covered by insurance.

TYPE OF DATA USED TO DETERMINE PROVIDER POPULATION (choose all that apply)

☐ Benchmarking ☐ Claims Data ☐ Immunization Information System (IIS/GRITS) ☐ Other (must describe)	☐ Doses Administered ☐ Provider Encounter Data ☐ Billing System

VACCINE STORAGE UNITS

INDICATE YOUR **REFRIGERATOR STORAGE** UNIT TYPES BELOW:

Type:

Number of Units: _____ Storage Capacity in Cubic Feet: _____

- ☐ Small/under counter
- ☐ Combination
- ☐ Stand alone refrigerator
- ☐ Commercial/ pharmacy grade

Type:

Number of Units: _____ Storage Capacity in Cubic Feet: _____

- ☐ Small/under counter
- ☐ Combination
- ☐ Stand alone refrigerator
- ☐ Commercial/ pharmacy grade

*Dormitory style units are not acceptable units.
Under-counter units must be pharmacy or laboratory grade.

PRIMARY THERMOMETER TYPE:

Date of Last Calibration: _____

- ☐ Digital with Glycol-encased Probe
- ☐ Round Dial
- ☐ Data-logger
- ☐ Other: _____
- ☐ Thermometer in a Bottle
- ☐ None

BACK-UP THEMOMETER TYPE:

Date of Last Calibration: _____

- ☐ Digital with Glycol-encased Probe
- ☐ Round Dial
- ☐ Data-logger
- ☐ Other: _____
- ☐ Thermometer in a Bottle
- ☐ None

INDICATE YOUR **FREEZER** STORAGE UNIT TYPES BELOW:

Type:

Number of Units: _____ Storage Capacity in Cubic Feet: _____

- ☐ Small/under counter
- ☐ Combination
- ☐ Stand alone freezer
- ☐ Commercial/ pharmacy grade

Type:

Number of Units: _____ Storage Capacity in Cubic Feet: _____

- ☐ Small/under counter
- ☐ Combination
- ☐ Stand alone freezer
- ☐ Commercial/ pharmacy grade

*Dormitory style units are not acceptable units.
Under-counter units must be pharmacy or laboratory grade.

PRIMARY THERMOMETER TYPE:

Date of Last Calibration: _____

- ☐ Digital with Glycol-encased Probe
- ☐ Round Dial
- ☐ Data-logger
- ☐ Other: _____
- ☐ Thermometer in a Bottle
- ☐ None

BACK-UP THEMOMETER TYPE:

Date of Last Calibration: _____

- ☐ Digital with Glycol-encased Probe
- ☐ Round Dial
- ☐ Data-logger
- ☐ Other: _____
- ☐ Thermometer in a Bottle
- ☐ None

State of Georgia Immunization Program
Georgia Department of Public Health

Vaccine Incident Report

Follow the procedures below when your publicly purchased vaccine has experienced out-of-range storage temperatures. Use a separate report for each affected storage appliance.

1. Do not use or discard the affected vaccine.
2. Isolate the affected vaccine, mark the boxes with an "X," and post a clear "Do Not Use" sign.
3. If the situation is temporary or quickly remedied (w/in 3 hours), keep the vaccine in its original storage unit with the door closed.
4. If necessary, move the vaccine to a working storage unit or your emergency storage location. Be sure to monitor temperatures at this location.
5. Contact the Vaccine Logistics Associate at 404-657-5013.
6. Record the following information about the incident and submit this form within 24 hours of the incident:

Facility Name: _____**VFC #**_____

Telephone #_____ **Date Reported**_____ **Reported by:** _____

Email Address: _____

Storage Unit Involved: _____
(Use a separate report for each affected storage appliance.)

- When was the incident discovered? Date_____ Time_____ am/pm (circle one)
- Room Temperature at time of discovery: _____C / F
- Temperature of storage unit at time of discovery: Refrigerator_____ C / F Freezer_____ C / F
  (Record temperature for refrigerator and freezer if a combined unit.)
- Last known temperature recording prior to incident: Date_____ Time_____ am/pm (circle one)
- Temperature at last known recording: Refrigerator_____ C or F Freezer_____ C or F
  (Record temperature for refrigerator and freezer if a combined unit.)
- Time interval vaccine was exposed to out-of-range temperatures: _____ day's _____hrs_____ minutes
  (Estimate the worst case scenario based on last recorded temperatures. If using a data logger, use the graphing function to determine the exact interval.)
- Has the affected vaccine experienced previous temperature excursions? ____Yes ____No

7. Inventory the affected vaccine in columns 1–5 of the Vaccine Inventory Table on page 2 of this form.
8. Contact the manufacturer of the affected vaccine to determine its viability. Use the contact information on page 2. The manufacturer will need the information recorded above to determine vaccine viability. Record the information from the manufacturer in columns 6–8 of the Vaccine Inventory Table

Vaccine Inventory Table (Copy this page if you need more rows in the table.)

Vaccine Name	NDC#	Lot #	Expiration Date	# of Doses	Disposition per Manufacturer (i.e., viable, wasted, exp date changed, etc.)	Call Ref# or Representative's Name	Date of Call

9. If the manufacturer determines the vaccine is viable*: a) Mark the date of this report next to the "X" on the package. This indicates that the vaccine has experienced a temperature excursion and references this report; b) If the expiration date of the vaccine has changed, clearly indicate the new expiration date on the package; and c) Return the vaccine to your inventory. Do not return vaccine to a malfunctioning storage unit until it can reliably maintain vaccine storage temperatures. **VFC will defer to manufacturer guidance regarding vaccine viability. Non-viable vaccine must be returned to McKesson Specialty Care Solutions. Do not dispose of non-viable vaccine except for opened multi-dose vials.*
10. If the manufacturer determines that the vaccine is wasted: a) This form will be used to process your vaccine return. A return confirmation letter will be sent to the primary and secondary email addresses on file for your site. b) Account for the vaccine on your Monthly Comprehensive Report.
11. To finish this report, provide the following information: Briefly describe the incident:

    _____

    _____

    _____

    What steps will be taken to prevent this from happening in the future?

    _____

    _____

    _____

12. Once completed, e-mail this report to the Vaccine Logistics Associate at dph-gavfc@dph.ga.gov or via fax to (404) 657-5736. This report serves as a record of the incident, the steps taken to determine vaccine viability, and the disposition of the affected vaccine. **Keep a copy for your records.**

GA Immunization Office use only
Reviewer's initials/date_____
Corrective Action required ___Yes ___No
Completed initials/date_____
Vaccine Manager sign-off_____

Vaccine Manufacturer Contact Information

GlaxoSmithKline	866-475-8222	Sanofi Pasteur	800-822-2463	Pfizer	800-438-1985
Merck	800-637-2590	Seqirus	855-358-8966 Option 1		

Georgia Immunization Program

Centralized Distribution Information and Instructions for Public Health Providers

Revised 09/03/2015

Troubleshooting Problems/Issues	Instructions
You have a change in your vaccine delivery address, days, and/or hours available for vaccine deliveries. Your office/clinic will be closed for an extended period of time.	Hours should be updated in GRITS prior to placing your vaccine order each month. If your office moves, notify VFC **prior** to placing you vaccine order. **Contact Information:** *Public Health Assigned VFC Customer Service Representative:* ***Cheryl Paschal or Ria Clarke*** (404) 657-5013 **DPH-gavfc@dph.ga.gov** *Be sure to include your VFC PIN# in the subject line*
You receive a partial vaccine shipment. (i.e.; missing doses, vaccine, or diluent – MMR/Varicella) You receive more vaccines than were ordered. You received vaccines that you did not order.	Contact Cheryl Paschal or Ria Clarke within 24 hours of receiving the shipment. (Contact information above)
Digital data logger temperature is out of range, or you suspect the vaccine shipment was compromised in any way.	Follow the instructions for the interpretation of the temperature monitors. The instructions will be attached to the temperature monitors located in each vaccine shipment box. If there are any questions about how to interpret the temperature monitor readings or you suspect the shipment is compromised in any way: 1. Label the vaccines "Do Not Use" and continue to store them at recommended temperatures until a final determination is made. 2. Immediately contact the VFC Vaccine Logistics Associate, Brandon Brown, for further instructions by calling 404-657-5013. Please call within 2 hours of vaccine receipt.
Your vaccine shipment is not available on the manage transfer screen.	Allow a few hours for the information to populate. If the doses are needed for administration right away then, 1. Manually add the doses to your inventory 2. When the doses finally appear on the manage transfers screen, accept the transfers, then error subtract the doses. 3. Remember to notify VFC of the use of the error subtract option when the doses appear as negatives on your monthly comprehensive report.
You have **nonviable** vaccines that need to be returned. *viable vaccines **cannot** be returned to McKesson.	1. Returns are processed from the Monthly Comprehensive Report. Once processed, providers will receive an email copy of the vaccine return invoice directly from Brandon Brown and a UPS return label from McKesson.

	2. Include a copy of the return invoice in the carton to be returned to McKesson and keep a copy for your records. 3. Fax a copy of the completed McKesson Return of Federal Vaccine Form to VFC at (404) 657-5736 or outside Metro Atlanta at (800) 372-3627. 4. Returns can be sent in the McKesson shipping container or a container of your own. If you use your own container, ensure that vials are secure (so that they don't break during transport). 5. You must include a copy of the completed McKesson Return of Federal Vaccine Form in the box with the non-viable vaccines that are to be returned to McKesson. • UPS will pick up all boxes to return to McKesson, even when packages are shipped to you via FedEx. • Once you have the label and affix it to the box, simply give to your UPS driver the next time s/he is in your office. • Scheduling a specific pickup is not necessary. Your UPS driver can pick up the return during their regular visit(s) to your practice. **If you call UPS directly to schedule a pick up, you may be charged.**

Other Important Information

- **McKesson is no longer accepting returns of vaccine shipping cartons.** Providers are encouraged to keep one or two cartons on hand in the event an emergency occurs or vaccine needs to be transferred. Please check to see if there is a local recycling program in your area.

- It is imperative that you continue to submit monthly comprehensive reports. Make sure to notify VFC of any changes to hours, address, contact, etc.

- You must immediately open all vaccine packages, check the temperature monitor devices, inspect the vaccines and store them at the appropriate temperatures once the package is delivered. Follow up with VFC within 24 hours to report any order discrepancies.

- Direct-ship vaccines, such as Varicella and Proquad, will continue to be shipped by the manufacturer, Merck, not McKesson.

- Influenza vaccine will arrive in separate shipments.

- During periods of vaccine shortage, vaccine may be shipped incrementally throughout the month and may arrive in separate shipments.

Vaccine Shipping Timeframes

Vaccine deliveries may take from one to two weeks to arrive at your location. At the time your order is placed, please ensure that your available delivery times are up to date and that you have at least 2-3 month's supply of vaccine on hand to decrease the likelihood of running out of vaccine in the event of a prolonged delivery time.

DISTRIBUTION OF VACCINES

1. The State Immunization Program will utilize comprehensive reports, submitted by individual clinics each month to evaluate current vaccine inventory and historical usage. Shipments of vaccines, sufficient to bring vaccine inventories to the level of a three-month supply, will be made if vaccine is available.

2. Comprehensive reports are to be submitted monthly via GRITS.

3. All vaccine shipments will be sent directly to Clinic/County offices.

4. Short dated vaccines MUST be reported a minimum of 90 days before the date of expiration to the State Immunization Program, via phone (404) 657-5013 or e-mail: DPH-gavfc@dph.ga.gov. **The GRITS pre-populated report form will not generate this information for you**.

5. State supplied vaccines lost due to expiration or spoilage must be returned to McKesson. Vaccines wasted and/or expired will appear in the wastage section of the monthly comprehensive report and returns will be processed once your report has been reviewed for approving your vaccine order. Wastage that occurs as part of an incident require a Vaccine Incident Report that can be obtained by contacting the Vaccine Logistics Associate at 404-657-5013.

6. When vaccine shortages occur nationally, it may be necessary to move vaccine within the district. It also may be necessary to move vaccine from one district to another. It is the responsibility of the Immunization Program to evaluate total state needs and authorize movement of vaccine when necessary.

   Requests for vaccine transfers must be reported to the state office via email at: DPH-gavfc@dph.ga.gov.

As of January 1, 2018, each facility that stores vaccine must use continuous recording digital data loggers (temperature monitoring devices) that are calibrated and certified in both the refrigerator section and in the freezer section of the unit used for vaccine storage. In addition to the primary thermometers, a secondary backup thermometer should be kept on hand as well. As of the January 1, 2018 deadline, all backup thermometers used to replace primary units during recalibration or malfunction must be continuous recording digital data loggers. VFC will no longer allow the use of standard calibrated thermometers for use in units storing state supplied vaccines as well as coolers being used to transport vaccines upon approval by the program.

Temperature readings must be checked and record storage unit minimum and maximum temperatures at the start of each workday (see sample temperature log). If temperatures fall outside the acceptable range, the cause **must** be determined and corrected immediately. Failure to have digital data loggers and to record temperatures will jeopardize your status to receive vaccine and may result in counties/districts having to purchase replacement vaccine. At the end of the month, temperature logs should be checked by a reviewer who will sign off on the logs. Logs should be kept on file for a minimum of 3 years.

Each facility that stores vaccine must have adequate storage to assure vaccine integrity. Dormitory type refrigerators are not acceptable. Routinely placing vaccine in portable coolers during the clinic day is also unacceptable. Refrigerators must have externally separate sealed doors for the refrigerator and freezer compartments. As of January 1, 2016, VFC requires that frozen vaccines be stored in a pharmaceutical grade, or stand-alone unit. More information on recommended frozen vaccine storage can be found in the CDC's Storage and Handling Toolkit by clicking on the following link https://www.cdc.gov/vaccines/hcp/admin/storage/toolkit/storage-handling-toolkit.pdf

An emergency plan must be developed by each facility for handling vaccine storage in the event of a

power outage. This plan must be reviewed and updated annually, at minimum, to determine if all parties listed in the plan are aware of their responsibilities (see “Routine and Emergency Vaccine Handling Plans” form).

State of Georgia Immunization Program

VACCINES FOR CHILDREN PROGRAM PROVIDER AGREEMENT

Please select the reason for your request below:

- ☐ New Enrollment
- ☐ Re-Enrollment
- ☐ Add a provider
- ☐ Re-certification

FACILITY INFORMATION

Facility Name:			VFC Pin#:
Facility Address:			
City:	County:	State:	Zip:
Telephone:		Fax:	
Shipping Address (*if different than facility address):*			
City:	County:	State:	Zip:

MEDICAL DIRECTOR OR EQUIVALENT

Instructions: *The official VFC registered health care provider signing the agreement must be a practitioner authorized to administer pediatric vaccines under state law who will also be held accountable for compliance by the entire organization and its VFC providers with the responsible conditions outlined in the provider enrollment agreement. The individual listed here must sign the provider agreement.*

Last Name, First, MI:	Title:	Specialty:
License No.:	Medicaid or NPI No.:	Employer Identification No. *(optional):*
Provide Information for second individual as needed:		
Last Name, First, MI:	Title:	Specialty:
License No.:	Medicaid or NPI No.:	Employer Identification No.: *(optional):*

VFC VACCINE COORDINATOR

Primary Vaccine Coordinator Name:	
Telephone:	Email:

Completed annual training: ○ Yes ○ No	Type of training received:
Back-Up Vaccine Coordinator Name:	
Telephone:	Email:
Completed annual training: ○ Yes ○ No	Type of training received:

PROVIDERS PRACTICING AT THIS FACILITY *(additional spaces for providers at end of form)*

Instructions: *List below all licensed health care providers (MD, DO, NP, PA, pharmacist) at your facility who have prescribing authority.*

Provider Name	Title	License No.	Medicaid or NPI No.	EIN *(Optional)*

PROVIDER AGREEMENT

To receive publicly funded vaccines at no cost, I agree to the following conditions, on behalf of myself and all the practitioners, nurses, and others associated with the health care facility of which I am the medical director or equivalent:

1.	I will annually submit a provider profile representing populations served by my practice/facility. I will submit more frequently if 1) the number of children served changes or 2) the status of the facility changes during the calendar year.
2.	I will screen patients and document eligibility status at each immunization encounter for VFC eligibility (i.e., federally or state vaccine-eligible) and administer VFC-purchased vaccine by such category only to children who are 18 years of age or younger who meet one or more of the following categories: A. Federally Vaccine-eligible Children (VFC eligible) 1. Are an American Indian or Alaska Native; 2. Are enrolled in Medicaid; 3. Have no health insurance; 4. Are underinsured: A child who has health insurance, but the coverage does not include vaccines; a child whose insurance covers only selected vaccines (VFC-eligible for non-covered vaccines only). Underinsured children are eligible to receive VFC vaccine only through a Federally Qualified Health Center (FQHC), or Rural Health Clinic (RHC) or under an approved deputization agreement. B. State Vaccine-eligible Children 1. In addition, to the extent that my state designates additional categories of children as "state vaccineeligible", I will screen for such eligibility as listed in the addendum to this agreement and will administer state-funded doses (including 317 funded doses) to such children. Children aged 0 through 18 years that do not meet one or more of the eligibility federal vaccine categories (VFC eligible), are **not** eligible to receive VFC-purchased vaccine.

3.	For the vaccines identified and agreed upon in the provider profile, I will comply with immunization schedules, dosages, and contraindications that are established by the Advisory Committee on Immunization Practices (ACIP) and included in the VFC program unless: a) In the provider's medical judgment, and in accordance with accepted medical practice, the provider deems such compliance to be medically inappropriate for the child; b) The particular requirements contradict state law, including laws pertaining to religious and other exemptions.
4.	I will maintain all records related to the VFC program for a minimum of three years and upon request make these records available for review. VFC records include, but are not limited to, VFC screening and eligibility documentation, billing records, medical records that verify receipt of vaccine, vaccine ordering records, and vaccine purchase and accountability records.
5.	I will immunize eligible children with publicly supplied vaccine at no charge to the patient for the vaccine.
6.	VFC Vaccine Eligible Children I will not charge a vaccine administration fee to non-Medicaid federal vaccine eligible children that exceeds the administration fee cap of $21.93 per vaccine dose. For Medicaid children, I will accept the reimbursement for immunization administration set by the state Medicaid agency or the contracted Medicaid health plans. Non-VFC Vaccine Eligible Children I will not charge a vaccine administration fee to non-Medicaid state vaccine eligible children that exceeds the administration fee cap of $21.93 per vaccine dose

7.	I will not deny administration of a publicly purchased vaccine to an established patient because the child's parent/guardian/individual of record is unable to pay the administration fee.
8.	I will distribute the current Vaccine Information Statements (VIS) each time a vaccine is administered and maintain records in accordance with the National Childhood Vaccine Injury Act (NCVIA), which includes reporting clinically significant adverse events to the Vaccine Adverse Event Reporting System (VAERS).
9.	I will comply with the requirements for vaccine management including: a) Ordering vaccine and maintaining appropriate vaccine inventories; b) Not storing vaccine in dormitory-style units at any time; c) Storing vaccine under proper storage conditions at all times. Refrigerator and freezer vaccine storage units and temperature monitoring equipment and practices must meet Georgia Department of Public Health, Division of Health Protection, Immunization Office storage and handling requirements; d) Returning all spoiled/expired public vaccines to CDC's centralized vaccine distributor within six months of spoilage/expiration
10.	I agree to operate within the VFC program in a manner intended to avoid fraud and abuse. Consistent with "fraud" and "abuse" as defined in the Medicaid regulations at 42 CFR § 455.2, and for the purposes of the VFC Program: **Fraud:** is an intentional deception or misrepresentation made by a person with the knowledge that the deception could result in some unauthorized benefit to himself or some other person. It includes any act that constitutes fraud under applicable federal or state law. **Abuse:** provider practices that are inconsistent with sound fiscal, business, or medical practices and result in an unnecessary cost to the Medicaid program, (and/or including actions that result in an unnecessary cost to the immunization program, a health insurance company, or a patient); or in reimbursement for services that are not medically necessary or that fail to meet professionally recognized standards for health care. It also includes recipient practices that result in unnecessary cost to the Medicaid program.

11.	I will participate in VFC program compliance site visits including unannounced visits, and other educational opportunities associated with VFC program requirements.
12.	For providers with a signed deputization Memorandum of Understanding between a FQHC or RHC and the Georgia Department of Public Health, Division of Health Protection, Immunization Office to serve underinsured VFC-eligible children, I agree to: a) Include "underinsured" as a VFC eligibility category during the screening for VFC eligibility at every visit; b) Vaccinate "walk-in" VFC-eligible underinsured children; and c) Report required usage data Note: *"Walk-in" in this context refers to any underinsured child who presents requesting a vaccine; not just established patients. "Walkin" does not mean that a provider must serve underinsured patients without an appointment. If a provider's office policy is for all patients to make an appointment to receive immunizations then the policy would apply to underinsured patients as well.*
13.	For pharmacies, urgent care, or school located vaccine clinics, I agree to: a) Vaccinate all "walk-in" VFC-eligible children and b) Will not refuse to vaccinate VFC-eligible children based on a parent's inability to pay the administration fee. Note: *"Walk-in" refers to any VFC eligible child who presents requesting a vaccine; not just established patients. "Walk-in" does not mean that a provider must serve VFC patients without an appointment. If a provider's office policy is for all patients to make an appointment to receive immunizations then the policy would apply to VFC patients as well.*
14.	I agree to replace vaccine purchased with state and federal funds (VFC, 317) that are deemed non-viable due to provider negligence on a dose-for-dose basis.
15.	Pursuant to O.C.G.A.§31-12-3, the vaccination data for every dose of vaccine administered by the clinic will be entered into the Georgia Registry of Immunization Transactions and Services (GRITS) within thirty (30) business days of the service being rendered.
16.	I understand this facility or the Georgia Department of Public Health, Division of Health Protection, Immunization Office may terminate this agreement at any time. If I choose to terminate this agreement, I will properly return any unused federal vaccine as directed by the Georgia Department of Public Health, Division of Health Protection, Immunization Office.

By signing this form, I certify on behalf of myself and all immunization providers in this facility, I have read and agree to the Vaccines for Children enrollment requirements listed above and understand I am accountable (and each listed provider is individually accountable) for compliance with these requirements.

Medical Director or Equivalent Name (print):	
Signature:	Date:
Name (print) *Second individual as needed*:	
Signature:	Date:

ADDITIONAL PROVIDERS

PROVIDERS PRACTICING AT THIS FACILITY *(attach additional pages as necessary)*				
Instructions: *List below all licensed health care providers (MD, DO, NP, PA, pharmacist) at your facility who have prescribing authority.*				
Provider Name	**Title**	**License No.**	**Medicaid or NPI No.**	**EIN *(Optional)***

Georgia Immunization Office
Handling of Vaccine During Inclement Weather Conditions

To protect vaccine and to minimize the potential monetary loss from inclement weather conditions such as tornadoes; hurricanes; and tropical, ice, snow, rain, lightening, or wind storms, etc., emergency procedures at the provider level should be implemented immediately. A part of this implementation should include communication to all providers who receive publicly purchased vaccines, or at least to those in the geographic areas of highest risk.

When the state/local officials or a provider has reasonable cause to believe that weather conditions have the potential to disrupt power and/or flood any office where vaccine is stored, emergency procedures should be implemented IN ADVANCE OF THE EVENT.

In advance of the emergency, all providers should ensure the following:

A. Identification of an alternative storage facility (hospital, packing plant, state depot, etc.), with back-up power (generator), where the vaccine can be properly stored and monitored for the duration of the storm (provider needs to ensure that the receiving site is able to store multiple sites, if they have signed agreements with multiple sites). A written agreement (updated annually) is strongly advised;

B. The availability of staff to pack and move the vaccine;

C. The use of appropriate packing containers, certified digital data logger, and conditioned frozen water bottles; and

D. The transport of the vaccine to the secure storage facility.

It is appropriate for providers to suspend vaccinations before weather conditions deteriorate. Sufficient time must be allowed for packing and transporting vaccine BEFORE the storm can adversely affect local conditions.

There are other precautions and appropriate measures one can take to protect vaccine inventories using the emergency procedures described below. The following includes some HELPFUL HINTS AND REFERENCE INFORMATION.

EMERGENCY PROCEDURES

A. List emergency phone numbers, companies, and points of contact for:
    1. Electrical power company:
    2. Refrigeration repair company:
    3. Temperature alarm monitoring company:
    4. Perimeter alarm repair company:
    5. Perimeter alarm monitoring company:
    6. Backup storage facility:

Georgia Immunization Program
Handling of Vaccine During Inclement Weather Conditions

7. Transportation to backup storage:
8. Emergency generator repair company:
9. National Weather Service:
   Satellite tracking of significant weather is also available at http://www.goes.noaa.gov/ .
10. Manufacturers:
    a. Merck Vaccines: 800-637-2590
    b. Sanofi Pasteur: 800-VACCINE (800-822-2463)
    c. GlaxoSmithKline: 866-475-8222
    d. Pfizer: 800-934-5556
    e. Med Immune: 877-633-4411
    f. Novartis: Purchased by GSK

B. Providers may contact the Georgia Immunization Program (GIP) for assistance in identifying hospitals, health departments or other facilities that could serve as emergency vaccine storage facilities and communicate this information. This might also be done at the district or county level and/or with assistance from the Office of Emergency Preparedness. The GIP will prioritize assistance and communication to target providers in areas at highest risk, e.g., low lying coastal or floodplain areas.

C. Entering vaccine storage spaces: Describe, when necessary, how to enter the building and vaccine storage spaces in an emergency if closed or after hours. Include a floor diagram and the locations of:
   1. Doors
   2. Flash lights
   3. Spare batteries
   4. Light switches
   5. Keys
   6. Locks
   7. Alarms
   8. Circuit breakers
   9. Packing materials

D. Identify whom to call for the following items:
   1. Equipment problems
   2. Backup storage
   3. Backup transportation
   4. Security

E. Identify what vaccines to pack first in an emergency and while the power is still working:
   1. Pack the refrigerated vaccines first with an adequate supply of cold packs and certified digital data loggers.
   2. Remove and pack the varicella vaccines, using cold packs and certified digital data logger, immediately prior to transport

F. Pack and transport all vaccine or if that is not possible, determine the types and amount to save; e.g., save only the most expensive vaccines to minimize dollar loss or save some portion of all vaccines to ensure a short-term, complete supply for resuming the vaccination schedule. Priority should be given to those vaccines which would be the most expensive to replace (pneumococcal conjugate, varicella, DTaP/HepB/IPV, Hep B/Hib, MMR).

G. Follow vaccine packing procedures for transport to backup storage facilities:
   1. Open refrigerated units only when necessary and only after you have made all preparations for packing and moving the vaccine to alternative storage sites.
   2. Use properly insulated containers.
   3. Do not place vaccines that cannot be frozen directly against cold packs. (Note: MMR can be stored frozen or refrigerated.)
   4. Follow vaccine handling guidelines. The following are important tips to remember:

      --Varicella vaccine is fragile and should be used within 72 hours of placing on wet ice or in a refrigerated environment.

      --MMR vaccine can be refrigerated or frozen, but should be kept out of direct light.

      --All other vaccines should be maintained at refrigerator temperature.

H. Move vaccine to backup storage according to pre-arranged plans. Pre-arranged plans should take into consideration the following:

   1. How to load the transportation vehicle
   2. Routes to take
   3. Time enroute
   4. Temperature monitoring with a continuous recording data logger (maintenance of temperature log with temperatures checked twice daily) while vaccine is in backup storage

I. On returning inventory to the clinic/practice/pharmacy, vaccines should be checked carefully and placed in the appropriate refrigerator or freezer compartments. **If the provider is not able to assure viability, GIP should be contacted before using any vaccines that may not be effective for protecting children and/or adults against disease.**

Directions: This form must be completed and submitted to the Georgia Immunization Program on a monthly basis. The log must document only the administration of any VFC vaccine to **unaccompanied minors** (through age 18 years of age) because they present **without insurance information**. Please remember that an unaccompanied minor younger than 18 may only independently sign for Hep A, Hep B, and HPV. 18-year olds may sign for all vaccines on their own.
fax number below:

By mail:
Georgia Immunization Program
2 Peachtree St, NW
Suite 13-233
Atlanta, GA 30303

By email:
cheryl.paschal@dph.ga.gov

By FAX:
(404) 657-5736

Title X Unaccompanied Minor without Insurance Information
VFC Vaccine Log
Month: Year: 2015 Site Name: GIP/VFC ID #:

Date Administered	Patient's Age	Mark VFC Vaccines Administered											
					age 18 only								
		HPV	Hep A	Hep B	Flu	Hep AB	MCV4	MMR	Pneumo	Td	Tdap	Varicella	
TOTALS	X	X	X	X	X	X	X	X	X	X	X	X	

(enter total number of patients seen in first box)

UNACOMPANIED MINOR COMPREHENSIVE TALLY SHEET

0

Month Ending	HPV	Hep A	Hep B	Flu	Hep AB	MCV4	MENB	MMR	PPV23	Td	Tdap	Varicella	# Patients	# Forms
Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Directions: This form must be completed and submitted to the Georgia Immunization Program by the **10th** business day of each month. The log must document only the administration of any VFC vaccine to **unaccompanied minors** (through age 18 years of age) because they present **without insurance information**. Please remember that an unaccompanied minor younger than 18 may only independently sign for Hep A, Hep B, and HPV. 18-year olds may sign for all vaccines on their own.

By mail:
Georgia Immunization Program
2 Peachtree St, NW
Suite 13-233
Atlanta, GA 30303
Attention: Cheryl Paschal

By email:
Cheryl.Paschal@dph.ga.gov

By FAX:
(404) 657-5736

Unaccompanied Minor Report
VFC Vaccine Log

Month: _____ Year: 2015 Site Name: _____GIP/VFC ID #: _____

Date Administered	Patient's Age	Mark VFC Vaccines Administered											
					age 18 only								
		HPV	Hep A	Hep B	Flu	Hep AB	MCV4	MMR	Pneumo	Td	Tdap	Varicella	
TOTALS													

(enter total number of patients seen in first box)

Georgia Department of Public Health

State of Georgia Immunization Program
VACCINES FOR CHILDREN (VFC) PROGRAM

Provider Profile Form

Return via fax to 800-372-3627 or send via email to DPH-gavfc@dph.ga.gov **VFC PIN#**

FACILITY INFORMATION		
Provider's Name:		
Facility Name:		
Vaccine Delivery Address:		
City:	State:	Zip:
Telephone: ( )	Email:	

VACCINE DELIVERY INSTRUCTIONS

Between the hours of 8 am and 5 pm, write the days of the week and times you may receive vaccine deliveries.

	Open	Lunch Start	Lunch Ends	Close
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				

FACILITY TYPE (select facility type)

Private Facilities	Public Facilities
☐ Private Hospital	☐ Public Health Department Clinic
☐ Private Practice (solo/group/HMO)	☐ Public Health Department Clinic as agent for FQHC/RHC-deputized
☐ Private Practice (solo/groups as agent for FQHC/RHC-deputized)	☐ Public Hospital
☐ Community Health Center	☐ FQHC/RHC (Community/Migrant/Rural)
☐ Pharmacy	☐ Community Health Center
☐ Birthing Hospital	☐ Tribal/Indian Health Services Clinic
☐ School-Based Clinic	☐ Woman, Infants and Children
☐ Teen Health Center	☐ Other _____
☐ Adolescent Only Provider	
☐ Other _____	

Provider Specialty

☐ Pediatric	☐ STD/HIV	☐ Migrant Health Facility
☐ Family Medicine	☐ Family Planning	☐ Refugee Health Facility
☐ Internal Medicine	☐ Juvenile Detention Center	☐ School-Based Clinic
☐ OB/GYN	☐ Correctional Facility	☐ Teen Health Center
☐ Other _____		☐ Adolescent Only

VACCINES OFFERED (select only one box)

☐ All ACIP Recommended Vaccines

☐ Offers Select Vaccines (**This option is only available for facilities designated as Specialty Providers by the VFC Program)**

A "Specialty Provider" is defined as a provider that only serves (1) a defined population due to the practice specialty (e.g., OB/GYN; STD clinic; family planning) or (2) a specific age group within the general population of children ages 0-18. Local health departments and pediatricians are not considered specialty providers. The VFC Program has the authority to designate VFC providers as specialty providers. At the discretion of the VFC Program, enrolled providers such as pharmacies and mass vaccinators may offer only influenza vaccine.

Select Vaccines Offered by Specialty Provider:

☐ DTaP	☐ Meningococcal Conjugate	☐ TD
☐ Hepatitis A	☐ MMR	☐ Tdap
☐ Hepatitis B	☐ Pneumococcal Conjugate	☐ Varicella
☐ HIB	☐ Pneumococcal Polysaccharide	☐ Other, specify:
☐ HPV	☐ Polio	_____
☐ Influenza	☐ Rotavirus	

PROVIDER POPULATION

Provider Population based on patients seen during the previous 12 months (estimates are required for new clinics). *Report the number of children who received vaccinations at your facility, by age group. Only count a child once based on the status at the last immunization visit, regardless of the number of visits made. The following table documents how many children received VFC vaccine, by category, and how many received non-VFC vaccine.*

VFC Vaccine Eligibility Categories	# of children who received VFC Vaccine by Age Category				
	<1 Year	1-2 Years	3-6 Years	7-18 Years	Total
Enrolled in Medicaid					
No Health Insurance					
American Indian/Alaska Native					
Underinsured in FQHC/RHC or Deputized Facility[1]					
Total VFC:					
Non-VFC Vaccine Eligibility Categories	**# of children who received non-VFC Vaccine by Age Category**				
	<1 Year	1-2 Years	3-6 Years	7-18 Years	Total
Insured (private pay/health insurance covers vaccines)					
Other Underinsured[2]					
Children's Health Insurance Program (CHIP)[3]					
Total Non-VFC:					
Total Patients (must equal sum of Total VFC + Total Non-VFC)					

[1]Underinsured includes children with health insurance that does not include vaccines or only covers specific vaccine types. Children are only eligible for vaccines that are not covered by insurance.

In addition, to receive VFC vaccine, underinsured children must be vaccinated through a Federally Qualified Health Center (FQHC) or Rural Health Clinic (RHC) or under an approved deputized provider. The deputized provider must have a written agreement with an FQHC/RHC and the state/local/territorial immunization program in order to vaccinate these underinsured children.

[2]Other underinsured are children that are underinsured but are not eligible to receive federal vaccine through the VFC program because the provider or facility is not a FQHC/RHC or a deputized provider. However, these children may be served if vaccines are provided by the state program to cover these non-VFC eligible children.

[3]CHIP – Children enrolled in the state Children's Health Insurance Program (CHIP). These children are considered insured and are not eligible for vaccines through the VFC program. Each state provides specific guidance on how CHIP vaccine is purchased and administered through participating providers.

TYPE OF DATA USED TO DETERMINE PROVIDER POPULATION (choose all that apply)

☐ Benchmarking	☐ Doses Administered
☐ Medicaid Claims	☐ Provider Encounter Data
☐ Immunization Information System (IIS/GRITS)	☐ Billing System
☐ Other (must describe)	

VACCINE STORAGE UNITS

INDICATE YOUR **REFRIGERATOR STORAGE** UNIT TYPES BELOW:

Type:

Number of Units: _____ Storage Capacity in Cubic Feet: _____

- ☐ Small/under counter
- ☐ Combination
- ☐ Stand alone refrigerator
- ☐ Commercial/ pharmacy grade

Type:

Number of Units: _____ Storage Capacity in Cubic Feet: _____

- ☐ Small/under counter
- ☐ Combination
- ☐ Stand alone refrigerator
- ☐ Commercial/ pharmacy grade

*Dormitory style units are not acceptable units.
Under-counter units must be pharmacy or laboratory grade.

PRIMARY THERMOMETER TYPE:

Date of Last Calibration: _____

- ☐ Digital with Glycol-encased Probe
- ☐ Round Dial
- ☐ Data-logger
- ☐ Other: _____
- ☐ Thermometer in a Bottle
- ☐ None

BACK-UP THEMOMETER TYPE:

Date of Last Calibration: _____

- ☐ Digital with Glycol-encased Probe
- ☐ Round Dial
- ☐ Data-logger
- ☐ Other: _____
- ☐ Thermometer in a Bottle
- ☐ None

INDICATE YOUR **FREEZER** STORAGE UNIT TYPES BELOW:

Type:

Number of Units: _____ Storage Capacity in Cubic Feet: _____

- ☐ Small/under counter
- ☐ Combination
- ☐ Stand-alone freezer
- ☐ Commercial/ pharmacy grade

Type:

Number of Units: _____ Storage Capacity in Cubic Feet: _____

- ☐ Small/under counter
- ☐ Combination
- ☐ Stand-alone freezer
- ☐ Commercial/ pharmacy grade

*Dormitory style units are not acceptable units.
Under-counter units must be pharmacy or laboratory grade.

PRIMARY THERMOMETER TYPE:

Date of Last Calibration: _____

- ☐ Digital with Glycol-encased Probe
- ☐ Round Dial
- ☐ Data-logger
- ☐ Other: _____
- ☐ Thermometer in a Bottle
- ☐ None

BACK-UP THEMOMETER TYPE:

Date of Last Calibration: _____

- ☐ Digital with Glycol-encased Probe
- ☐ Round Dial
- ☐ Data-logger
- ☐ Other: _____
- ☐ Thermometer in a Bottle
- ☐ None

State of Georgia Immunization Office
VACCINES FOR CHILDREN (VFC) PROGRAM

Routine and Emergency Vaccine Handling Plans

Practice Name:		VFC PIN/GIP ID #	
Effective Date		Annual Review Date	
Approved By		Date Approved	

These are guidelines to follow in developing routine and emergency vaccine handling plans. They should be posted near your storage unit or where they can be easily accessed in case of an emergency. All office staff, including the janitor and security guard, should know the standard procedure to follow and where/how the individual vaccines are to be stored.

- Designate two people responsible for routine vaccine storage and security (keep current as staff changes):

  Primary Person: _____ Title: _____

  Secondary Person: _____ Title: _____

- Vaccine Ordering will be done **monthly** on the _____ day of each month.

  Primary Person: _____ Title: _____

  Secondary Person: _____ Title: _____

- Maintain proper temperature for storage of vaccine of vaccine:

Unit	Fahrenheit (F)	Celsius (C)
Refrigerator	36° - 46°F	2° - 8°C
Freezer	5° or colder	-15°C or colder

- Check and record storage unit minimum and maximum temperatures at the start of each workday.
- Maintain ongoing file of temperature logs. Keep for at least three years. Immediately take action if temperatures are out of range. Document what was done to ensure vaccine viability as well as action taken to establish proper temperatures on the Provider Temperature form. Complete the "Vaccine Incident Report" and fax to the VFC office at: (800) 372-3627 or (404) 657-5736
- Immediately unpack received vaccines and store at proper temperature.
- Label VFC/State Supplied vaccines and store separately from private supply.
- Store and rotate vaccines according to expiration dates and use vaccines with the shortest expiration dates first.
- Conduct monthly inventory count.
- Vaccines expiring within 90 days must be reported to the VFC Program via e-mail at: dph-gavfc@dph.ga.gov to avoid possible replacement according to the VFC Loss Policy.
- Check the unit doors to ensure they are closed and, if possible, locked.
- Place "DO NOT UNPLUG" stickers/notices next to outlet and circuit breaker.
- Use safety outlet covers where possible.
- Advise maintenance and cleaning personnel not to unplug refrigerator/freezer units.
- If public (VFC/State Supplied) vaccine has been exposed to out of range temperatures, contact VFC immediately: (800) 372-3627 or (404) 657-5736.

Emergency Vaccine Handling/Storage Plan – Notify VFC Office and/or IPC of emergency situations ASAP

- Designate two people responsible for emergency vaccine storage and security (keep current as staff changes):
- How will designated personnel be contacted in vaccine storage emergency? (i.e. phone, alarm, email, etc)
- Staff listed below have 24-hour access to storage units storing vaccines:

#	Name	Title	Phone	E-Mail
1.				
2.				

- Designate alternative storage units and facilities (back-up refrigerator, fire dept., hospital, another provider location).
- Written directions for packing vaccines and diluents for transport are located:

#	Alternate Location	Contact Person	Phone	Address
1.				
2.				

- Procedures the designated personnel should follow to access alternative units and facilities.

  1. _____
  2. _____
  3. _____

- Designate a refrigerator/freezer repair company to contact for equipment problems.

  Company Name: _____

  Phone Number: _____

- List the information below for each vaccine storage unit in your facility.

#	Unit Type (Fridge/Freezer)	Location	Brand	Model #	Serial #
1.					
2.					
3.					
4.					

NOTE: Georgia Immunization Regional Consultant (IRC) staff will ask for a copy of the clinic's vaccine storage and handling plans during on-site visits.

**CDC and the vaccine manufacturer do not recommend transport of varicella-containing vaccines. If varicella-containing vaccines must be transported in an emergency, CDC recommends transport with a portable freezer. Portable freezers may be available for rent in some places. Contact VFC or your assigned IRC prior to transport of varicella-containing vaccines for specific instructions.*

Signature: _____ Print Name: _____ Date: _____

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10. DISTRICT/COUNTY INSERTS

Empty section for the District/County to use for items considered necessary to complement or supplement the material provided by the State Program

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11. TRANSMITTAL MEMOS
Section for filing memos which accompany revised pages, forms or documents

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12. TRAVEL INFORMATION*

Foreign Travel Information

Travel and Yellow Fever Vaccination Clinics in Georgia

Foreign Language Terms

*For travel information specific to travel vaccines or destinations, consult the ACIP Recommendations manual and/or the Center for Disease Control and Prevention's current edition of Health Information for International Travel.

FOREIGN TRAVEL INFORMATION

In general, U.S. citizens who are up-to-date with regard to the ACIP recommendations do not need any additional immunizations. When advising individuals regarding foreign travel, recommend they check their immunization record to see if they are due to receive any of the vaccines routinely recommended by the ACIP.

The CDC may recommend other vaccines and prophylaxis depending on traveler destination and kind of traveler (e.g. pregnant women, immunocompromised, etc.). Therefore, it is important that if you administer vaccines for travel purposes, you have a system for keeping current information regarding travel requirements for specific countries. These recommendations should be referred to for specific vaccine dosage and administration information and guidelines.

How to Obtain Travel Vaccines

The Georgia Department of Public Health does not purchase and distribute any vaccines or preventive medications that might be recommended for travel. Healthcare Providers must obtain these from the drug manufacturer.

For direct travel from the United States only a few countries require certificates. No vaccinations are required for return to the United States.

Travel Resource Information

Travelers and immunization travel clinics may refer to the following resources when seeking information about recommendations and requirements:

- Centers for Disease Control and Prevention
  Internet Address: http://wwwnc.cdc.gov/travel/

- CDC Health Information for International Travel (commonly called the Yellow Book) is published every two years as a reference for those who advise international travelers about health risks. The Yellow Book is written primarily for health professionals, but is a useful resource for anyone interested in healthy international travel. It can also be accessed online at http://wwwnc.cdc.gov/travel/page/yellowbook-home

- Epidemiology and Prevention Branch
  Department of Public Health
  Georgia Department of Public Health
  (404) 657-2588

- Immunization Program
  Department of Public Health
  Georgia Department of Public Health
  (404) 657-3158

- The embassies and consulates of the countries to be visited may be of some assistance, as well, especially if certain vaccines are required prior to entry.

FOREIGN TRAVEL INFORMATION

Certification Requirements for Yellow Fever Vaccination:

- The International Health Regulations adopted by the World Health Organization only addresses requirements for Yellow Fever Vaccine.
- When Yellow Fever Vaccine is required for travel, an immunization certificate that has been stamped with an official stamp should be issued after the traveler receives his vaccination.
- Certification for Yellow Fever requires one dose of vaccine and is valid for 10 years beginning 10 days after primary vaccination.

Georgia Requirements to Administer Yellow Fever Vaccine:

- The Immunization Program of the Georgia Department of Public Health designates sites which may administer Yellow Fever Vaccines.
- To apply to become a designated Yellow Fever Vaccination site and receive instructions on how to obtain the official stamp for Yellow Fever Vaccination send a request to:

  Georgia Department of Public Health
  2 Peachtree Street, NW, Suite 13.285
  Atlanta GA 30303-3142
  Attention: Yellow Fever Vaccination Program

  You may also fax a letter of request to: (404) 657-1463. For additional information about the application and stamp contact the Immunization Office at (404) 657-3166.

- Designated Yellow Fever Vaccination Centers for Georgia are listed in this section and on the Immunization Program website at http://dph.georgia.gov/travel-immunizations

Certification for International Travel

- International Certificate of Vaccination or Prophylaxis (ICVP) Record Example. http://wwwnc.cdc.gov/travel/yellowbook/2016/infectious-diseases-related-to-travel/yellow-fever#2849
- Purchase ICVPs, CDC 731 (formerly PHS 731), from the US Government Printing Office http://bookstore.gpo.gov/, 866-512-1800. The stock number is 017-001-00567-3 for 25 copies and 017-001-00566-5 for 100 copies.

Foreign Language Terms

Aids to translating foreign immunization records.

Table 1: **Disease, Vaccine, and Related Terms.** This table lists terms for vaccine-preventable diseases and vaccines, and other terms that might be found on an immunization record, by language.

Table 2: **Trade Names.** This table lists the names of specific vaccines that are used, or have been used, internationally, along with the manufacturer and country or region where the vaccine is produced or used, when known.

These tables have been adapted from (among other sources)
lists developed by
the Minnesota Department of Health Immunization Program
(now maintained by the Immunization Action Coalition)
and
Washington State Department of Health.

See also:
http://www.immunize.org/izpractices/p5121.pdf

These lists are not comprehensive. We have checked sources,
but we cannot claim complete accuracy.

Foreign Vaccines

Table 1: Disease, Vaccine, and Related Terms

Albanian	
Difteria	Diphtheria
Fruthi	Measles
Pertusisi	Pertussis
Tetanozi	Tetanus
Arabic	
Alhasiba	Rubella
As'al	Pertussis
Athab	Mumps
Difteria	Diphtheria
El Safra	Hepatitis
Has 'ba	Measles
Shel'el	Polio
Bosnian	
Beseže	BCG
Detepe	DPT
Difterija	Diphtheria
Dječja paraliza	Polio
Gripa	Influenza
Ljudski papilloma virus	Human Papillomavirus
Male boginje	Rubella
Ospice	Chickenpox
Rubeola	Measles
Tuberkuloza	Tuberculosis
Upala pluća	Pneumonia
Veliki boginje	Smallpox
Veliki kašalj	Pertussis
Zauške	Mumps
Žutica	Hepatitis
Chinese	
疫 苗	Vaccine
痲 疹	Measles
腮 腺 炎	Mumps
白	Diphtheria
流 感 or 流 行 性 感 冒	Influenza
乙	B
Croatian	
Beseže	BCG
Detepe	DTP
Difterija	Diphtheria
Dječje paralize	Polio
Gripe	Influenza
Haemophilus influenzae tipa b	*Haemophilus influenzae* type b
Hri pavac	Pertussis
Kašalj hripavac	Pertussis
Meningokoknog konjugirati	Meningococcal Conjugate
Ospice	Measles
Pneumokoka konjugirano	Pneumococcal Conjugate
Rotavirusa	Rotavirus
Rubeola	Rubella
Šindra	Shingles (Herpes Zoster)
Tetanusa	Tetnaus
Tuberculosa	Tuberculosis
Upala pluća	Pneumonia
Veliki boginje	Smallpox
Vodene kozice	Varicella
Zapaljenje	Hepatitis
Zaušnjaci	Mumps
Žutica	Hepatitis
Czech	
Davivy Kasel	Pertussis
Difterie	Diphtheria
Hepatitida	Hepatitis
Parotitida	Mumps
Pertuse	Pertussis
Poliomyelitis	Polio
Plané Nestovice	Chickenpox
Spalnicky	Measles
Subinuira	Influenza
Zardenky	Rubella
Zaškrt	Diphtheria
Zlutá Zimnice	Yellow Fever
Danish	
Bornelammelse	Polio
Difteritis	Diphtheria
Faaresyge (Fåresyge)	Mumps
Kighoste	Pertussis
Leverbetaendelse	Hepatitis
Meslinger	Measles
MFR	MMR
Rode Hunde	Rubella
Stivkrampe	Tetanus
Dutch	
BMR	MMR
Bof	Mumps
Difterie	Diphtheria
DKTP	DTP
Gelekoorts	Yellow Fever
Gordelroos	Varicella

Griep	Influenza
Humaan papillovirus	Human papillomavirus
Kinderverlamming	Polio
Kinkhoest	Pertussis
Longontsteking	Pneumonia
Mazelen	Measles
Meningokokken conjugaat	Meningococcal Conjugate
Pneumokokken conjugaat	Pneumococcal conjugaat
Pokken	Smallpox
Rode hond	Rubella
Stijfkramp	Tetanus
Tering	Tuberculosis
Waterpekkea	Chickenpox
Ethiopian (Oromiffaa)	
Cufaa	Tetanus
Difteeriyaa	Diphtheria
Gifira	Measles
Gifira farangli	Rubella
Laamsheesaa	Polio
Qakkee	Pertussis
Shimbiraa	Hepatitis
Finnish	
Hinkuyska	Pertussis
Jaykkakouristus	Tetanus
Kurkkumata	Diphtheria
Lapsihalvaus	Polio
Sikotauti	Mumps
Tuhkarokko	Measles
Vihurirokko	Rubella
French	
Coqueluche	Pertussis
Diphtérie	Diphtheria
DTC, DT Coq	DTP
DTCP	DTP +Polio
Fievre jaune	Yellow Fever
Grippe	Influenza
l'Haemophilus b	Hib
Oreillons	Mumps
Poliomyélite	Polio
ROR	MMR
Rougeole	Measles
Rubéole	Rubella
Tétanos	Tetanus
Tuberculose	Tuberculosis
Variole	Smallpox
German	
Diphtherie	Diphtheria
FSME	Tick-borne encephalitis
Gelbfieber	Yellow Fever

Grippe	Influenza
Keuchhusten	Pertussis
Kinderlähmung	Polio
Masern	Measles
Pocken	Smallpox
Röteln	Rubella
Starrkramph	Tetanus
Tuberkulose	Tuberculosis
Wundstarrkrampf	Tetanus
Zei Genpeter	Mumps
Greek	
Διν θγρίτιδα, Τέτανος και Κοκκύτης	DTP
Ο Αιμόνιλος της γρίπππης τύπου B	Hib
Μηνιγγοκοκκική Ασθένγα ομάδας C	Meningococcal C
Ιλαρά - Μαγουλάδγς – Ερυθρά	MMR
Πολιομυγλίτιδα	Polio
Τέτανος και Διν θγρίτιδα	Td
Haitian Creole	
Difteri	Diphtheria
Epatit	Hepatitis
Flou	Influenza
Koklich	Pertussis
Lawoujβl, Laroujβl	Measles
Malmouton	Mumps
Polyo	Polio
Ribeyβl	Rubella
Saranpyon	Varicella
Tetanβs	Tetanus
Hmong	
Hawb pob	Pertussis
Kabmob siab hom B	Hepatitis B
Kub cer	Diphtheria
Qhua Maj	Rubella
Qhua Pias	Measles
Qog	Mumps
Tuag tes tuag taw	Polio
Ua npuag	Tetanus
Indonesian	
Batuk rejan	Pertussis
Beguk	Mumps
Biring Peluh	Rubella
Campak	Measles
Difteri	Diphtheria
Penyakit lumpuh	Polio
Radang hati	Hepatitis
Italian	
Antipolio inattivato	IPV
Difterite	Diphtheria
Emofilo b	Hib
Epatite	Hepatitis
Febbre Giallo	Yellow Fever

B

Morbillo	Measles
MPR (morbillo, parotite, rosolia)	MMR
Parotite	Mumps
Pertosse	Pertussis
Poliomielite	Polio
Polmonite	Pneumonia
Rosolia	Rubella
Tetano	Tetanus
Tosse Asinina	Pertussis
Tubercolosi	Tuberculosis
Vaioloso	Smallpox
Japanese	
A 型肝炎	Hepatitis A
B 型肝炎	Hepatitis B
Fushin (風疹	Rubella
Hashika (麻疹 or はしか	Measles
Hashofu (破傷風)	Tetanus
Hyakaseki (百日咳)	Pertussis
Jifuteria (ジフテリア)	Diphtheria
Otafukukuaze (流行性耳下腺炎 or おたふくかぜ)	Mumps
Sh naimahi (ポリオ)	Polio
三種混合	DTaP
水痘 or みずぼうそう	Varicella
肺炎球菌	Pneumococcal
インフルエンザ菌	Hib
日本脳炎	Japanese Encephalitis
インフルエンザ	Influenza
ツベルクリン	PPD
追加接種	Booster
Malay	
Batok rejan	Pertussis
Penyaakit bengok	Mumps
Sakit champak	Measles
Sakit rengkong	Diphtheria
Norwegian	
Difteri	Diphtheria
Kikhoste	Pertussis
Kopper	Smallpox
Kusma	Mumps
Leverbetennelse	Hepatitis
Meslinger	Measles
Poliomyelitt	Polio
Rρde hunder	Rubella
Stivkrampe	Tetanus
Vannkopper	Varicella
Polish	
Błonicy, Błonica, Błonnica	Diphtheria
Dyfteria	Diphtheria
Gruzlica	Tuberculosis

Grypa	Influenza
Haemophilus influenza typu b	*Haemophilus influenzae* Type b
Koklusz	Pertussis
Krztuscowi, Krztuścowi, Krztusiec	Pertussis
Meningokokom sprzężenia	Meningococcal Conjugate
Odra	Measles
Ospa	Smallpox
Ospa Wietrzna	Chickenpox
Paraliz dzieciecy	Polio
Pojar German	Rubella
Pojarul, Pojarului	Measles
Półpasiec	Shingles (Herpes Zoster)
Przeciwko błonicy	Diphtheria
Przypominajace	Booster
Rotavirusy	Rotavirus
Rozyczka	Rubella
Skoniugowanej szczepionki pnuemokokowej	Pneumococcal Conjugate
Swinka	Mumps
Tezec, Tężcowi	Tetanus
Wirus brodawczaka ludzkiego	Human Papillomavirus
Wirusowemu zapaleniu wątroby typu A	Hepatitis A
Wirusowemu zapaleniu wątroby typu B	Hepatitis B
Zapalenie pluc	Pneumonia
Zapalenie watroby	Hepatitis
Zólta Goraczka	Yellow Fever
Portuguese	
Cachumba (papeira)	Mumps
Coqueluche	Pertussis
Difteria	Diphtheria
Febre Amarela	Yellow Fever
Gripe	Influenza
Hepatite	Hepatitis
Paralisia infantil	Polio
Parotidite epidémica	Mumps
Poliomielite	Polio
Rúbéola	Rubella
Sarampo	Measles
Tetânica, Tétano	Tetanus
Triplice	DTP
VAHB	Hepatitis B Vaccine
VAP	Polio Vaccine
Varicela	Chickenpox
VAS	Measles Vaccine
VASPR	MMR
VAT	Tetanus Vaccine

Romanian	
AR	Measles
Conjugate meningococice	Meningococcal Conjugate
Difteria (Difteriei)	Diphtheria
Di Te	DT
Di-Te-Per	DTP
Febra Galbena	Yellow Fever
Gripa	Influenza
Haemophilus influenza tip b boala	*Haemophilus influenzae* type b
Hepatita	Hepatitis
Holera	Cholera
Oreion, Oreionul, Oreionului	Mumps
Papilomavirus uman	Human papillomavirus
Pneumococic conjugat	Pneumococcal Conjugate
Pneumoniei	Pneumonia
Pojar German	Rubella
Pojarul	Measles
Poliomielita, Poliomielitic	Polio
Rubeolei, Rubeola	Rubella
Rujeola, Rujeolei	Measles
Şi varicelă	Varicella
Tetanos,Tetanosul, Tetanosului	Tetanus
Tuberculozei	Tuberculosis
Tuse convulsiva, Tusei convulsive	Pertussis
Varicelă, Varicelei	Varicella
Variola, Variolei	Smallpox
Russian	
Бцρ	BCG
АКДС	DTP
Дифтерит, Дифтерия	Diphtheria
Гемоифлюс инфлюзнцы типа Б, ГемофілЬной инфекции типа Б	Hib
Гепатит	Hepatitis
Вирус папилломы человека	Human Papillomavirus
Грипп	Influenza
Корь	Measles
Свинка, Паротит	Mumps
Коклюша	Pertussis
Лневмокковоя конъюгированной	Pneumococcal conjugate
Воспале лёгких Пневмония	Pneumonia
Полиомиелит	Polio
Ротавірусной	Rotavirus
Краснуха	Rubella
Опоясьывающий лишай	Shingles (Herpes Zoster)
Оспа	Smallpox
Столбняк, Столбняка	Tetanus
Туберкулез, Туберкулес	Tuberculosis
Ветрянка, Ветрянкая Оспа (Вітрянка)	Varicella
Манту	Mantoux (TB Test)
Вакцина	Vaccine
Вакцинация	Series
Ревакцинация	Booster
Подлись	Signature
Серия, доза	Series, Dose
Samoan	
Mami	Mumps
Misela	Measles
Rupela	Rubella
Serbian	
Beseže	BCG
Detepe	DTP
Difterija, ДиФтрије	Diphtheria
Хаемопхилус ИнФлуензае Тип Б болести	Haemophilus influenza type b
Хепатитиса А	Hepatitis A
Хепатитиса В	Hepatitis B
Људски Папилома Вирус	Human Papillomavirus
Мале богиње	Measles
Менингококне Коњуговано	Meningococcal Conjugate
Dječja paraliza	Polio
Gripa, Грип	Influenza
Hri pavac	Pertussis
Male boginje	Rubella
Pljuskavice, Kozice	Varicella
Upala pluća	Pneumonia
Veliki boginje	Smallpox
Veliki kašalj, Великог	Pertussis
Zapaljenje	Hepatitis
Zaušnjaci, Заушке	Mumps
Žutica	Hepatitis
Slovak	
Chrípka	Influenza
Čierny kašeľ	Pertussis
Detská obrna	Poliomyelitis
Difteria	Diphtheria
DiTePe	DTP
Haemophilus influenza typ b ochorenia	*Haemophilus Influenzae* type b
Hepatitida	Hepatitis
Kiahne	Smallpox
Konjugovaná pneumokoková	Pneumococcal Conjugate
Krzamak	Measles

B

L'udský papillomavirus	Human papillomavirus
Meningokokove j konjugovanou	Meningococcal Conjugate
Morbilli, Osýpky	Measles
Ovčim kiahňam, Ovčie kiahne	Varicella
Parotitis	Mumps
Pásového oparu, Pásový opar	Shingles
Polyomyelitida	Polio
Priusnica	Mumps
Rubeola, Ruzienka	Rubella
Tuberkulóza	Tuberculosis
Zápal□plüc	Pneumonia
Záškrt	Diphtheria
Spanish	
Antineumocócica conjugada	Pneumococcal conjugate
Cólera	Cholera
Coqueluche	Pertussis
Difteria	Diphtheria
Doble Antigen	Td (Mexico)
Doble Viral	Measles-Rubella (Mexico)
Duple	DT (Cuba)
Gripe	Influenza
Hemófilo tipo b, Haemophilus influenzae tipo b	Haemophilus influenza type b
Hemófilo tipo b	Hib
Herpes	Shingles (Herpes Zoster)
Meningococo Conjugada	Meningococcal conjugate
Numonía	Pneumonia
Paperas, Parotiditis	Mumps
Poliomielitis	Polio
Pulmonía	Pneumonia
Rubéola	Rubella
Sarampión, Sarampión Comun	Measles
Sarampión Aleman	Rubella
SRP	MMR
Tetánica, Tétano, Tétanos	Tetanus
Tos Ferina	Pertussis
Tuberculínica	Tuberculosis
Varicela	Varicella
Viruela	Smallpox
Virus del Papilloma Humano	Human Papillomavirus
Zona de Matojos	Shingles (Herpes Zoster)
Somali	
Bus-buska	Varicella
Cagaarshowga	Hepatitis
Cuno xanuun	Diphtheria
Dabayl	Polio
Duf	Polio
Furuq	Smallpox
Gowracato	Diphtheria
Gurra dhaabsis	Mumps
Hablobaas	Varicella
Haemophilus nooca b	Hib
Infilowense	Influenza
Jadeeco	Measles
Jadeeco been, Jadeeco jarmalka	Rubella
Joonis	Hepatitis
Kix	Pertussis
Qaamow-Qashiir	Mumps
Qaaxo-Tiibi	Tuberculosis
Qanja Barar	Mumps
Sambabaha	Pneumonia
Tallaakla Qaaxada	BCG
Taytano	Tetanus
Wareento	Pneumonia
Xiiqdheer	Pertussis
Swedish	
Bältros, Herpes Zoste	Shingles (Herpes Zoster)
Difteri	Diphtheria
Duplex	DT
Gula Febern	Yellow Fever
Haemophilus influenzae typ b	Haemophilus influenza type b
Hepatit A	Hepatitis A
Hepatit B	Hepatitis B
Influensa	Influenza
Kikhosta	Pertussis
Kolera	Cholera
Konjugerat Pneumokock	Pneumococcal conjugate
Mänskliga papillovirus	Human papillomavirus
Mässling, Masslingormerly	Measles
Meningokockinfektion Konjugatet	Meningococcal conjugate
MPR	MMR
Påssjuka, Pässjura	Mumps
Polio	Polio
Rőda Hund, Röda Hund	Rubella
Smittkopper, Smittkoppor	Smallpox
Stelkramp	Tetanus
Trippel	DTP
Tuberkulos	Tuberculosis
Vattkopper	Varicella
Tagalog	
Beke	Mumps
Dipterya	Diphtheria

B

Pertusis	Pertussis
Polyo	Polio
Tetano	Tetanus
Tigdas	Measles
Turkish	
Bo maca	Pertussis
Çocuk Felci	Polio
DBT	DPT
Difteri	Diphtheria
Erken Yaz-Beyin Iltihabı'na	Tick-borne encephalitis
Grip	Influenza
KKK	MMR
Kabakulak	Mumps
Kızamık	Measles
Kımamıkçık	Rubella
Meningekoklar	Meningococcal
Kuduz	Rabies
Pnömokoklar	Pneumococcal
Su Çiçe i	Varicella
Tetanos	Tetanus
Ukranian	
Дифтерії	Diphtheria
Гемофілъної інфекції Типу В Захворювань	Haemophilus influenzae type b
Гепатиту S	Hepatitis A
Гепатиту В	Hepatitis B
Вірус Паппіломи Людини	Human Papillomavirus
Грипу	Influenza
Менінгококова Сполучених	Meningococcal Conjugate
Кір	Mumps
Кawлюку	Pertussis
Пневмококковой Конъюгированной	Pneumococcal Conjugate
Поліо, Поліомієліту	Polio
Ротавірусної	Rotavirus
Оперізуючий Герпес (Оиерізуючий лЛишай)	Shingles (Herpes Zoster)
Стов□няк, Правця	Tetanus
Вітряної Віспи (Вітрянка)	Varicella
Vietnamese	
Bach Hâu	Diphtheria
Bai liet	Polio
Ban Đo	Rubella
Dai	Rabies
Ho GB	Pertussis
Quai Bi	Mumps
SBi Uon Ván	Tetanus
So'i	Measles
Sot TΛ LiΛt	Polio
Thuong hBn	Typhoid

Uon ván	Tetanus
ViΛm gan siΛu vi B (VGSV B)	Hepatitis B
VNNB	Japanese encephalitis

May 2012

B

Foreign Language Terms

Table 2: Product Names

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
6 in 1	Diphtheria, tetanus, pertussis, polio, Hib, hepatitis B	GSK, Ireland
ADC-M (АДС-М)	Td	Russia
A.D.T.	Diphtheria, tetanus (adsorbed)	Commonwealth, Australia
A.K.D.S.	Diphtheria, tetanus, pertussis	UK
ACVax	Meningococcal (polysaccharide A & C)	GSK, UK
ACWYVax	Meningococcal (polysaccharide A, C, Y, W135)	GSK, UK
Acelluvax	Pertussis (acellular)	Chiron, Italy
ACTAcel	Diphtheria, tetanus, pertussis, Hib	Sanofi Pasteur, Argentina
Adifteper	Diphtheria, tetanus, pertussis	Ism, Italy
Adinvira A+B	Influenza (whole virus)	Imuna
Adiugrip	Influenza	Sanofi Pasteur
Admun	Influenza (whole virus)	Duncan
Admune GP	Influenza (whole virus)	Duncan
Agrippal	Influenza	Novartis
AH	Hepatitis B	(Romania)
Aimmugen	Hepatitis A (inactivated)	Chemo-Sero-Therapeutic Resh Inst. Japan
Aldiana	Diphtheria (adsorbed)	Sevac, Czech Republic
Alditeana	Diphtheria, tetanus (adsorbed)	Sevac, Czech Republic
Alditerpera	Diphtheria, tetanus (adsorbed), pertussis	Sevac, Czech Republic
Almevax	Rubella	Evans
Alorbat	Influenza (whole virus)	Asta Pharma
Alteana Sevac	Tetanus	Institute of Sera and Vaccines
AM-BC	Meningococcal B & C	Cuba
Amaril	Yellow Fever	Sanofi Pasteur, France
AmBirix	Hepatitis A, Hepatitis B	GSK, Europe
AMC	Hib (polysaccharide)	Cuba
Anadifterall	Diphtheria (adsorbed)	Chiron, Italy
Anatetall	Tetanus (adsorbed)	Chiron, Italy
Anatoxal Di Te	Diphtheria, tetanus	Berna Biotech, Europe
Anatoxal Di Te per	Diphtheria, tetanus, pertussis	Berna Biotech, Europe
AP	Polio	(Romania)
AS	Measles	Cuba
Arilvax	Yellow fever	MEDI, UK
ATPA	Tetanus toxoid	(Romania)
AVAC-1, AVA	Anthrax	(for U.S. military use)
AVAXIM	Hepatitis A	Aventis Pasteur, France

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
B-Hepavac II	Hepatitis B	Merck, Singapore
Begrivac	Influenza (split virus)	Novartis
Betagen	Hepatitis B	Sanofi Pasteur
Biaflu Zonale	Influenza (whole virus)	Farmabiagini, Italy
Biken-HB	Hepatitis B	Biken, Japan
Bilive	Hepatitis A/Hepatitis B (recombinant)	Sinovac, China
Bimmugen	Hepatitis B (recombinant, adsorbed, yeast derived)	Chemo-Sero-Therapeutic Resh Inst., Japan
Biviraten Berna	Measles, mumps (live)	Berna Biotech, Switzerland
Buccopol Berna	Polio (oral)	Berna Biotech, Europe
BVAC	Botulinum antitoxin	(for U.S. military use)
B-Vaxin	Hepatitis B	Laboratorios Pablo Cassara, Argentina
C.D.T.	Diphtheria, tetanus (pediatric, adsorbed)	Commonwealth, Australia
CEF	Measles (Schwarz strain)	Chiron, Italy
Cacar	Smallpox	Indonesia
Campak Kerig	Measles	Pasteur Institute, Indonesia
Celluvax	Pertussis (acellular)	Chiron, Italy
Chiromas	Influenza (same as Fluad)	Novartis, Spain
Cinquerix	Diphtheria, tetanus, pertussis, Hib, polio	GSK, Europe
Cocquelucheau	Pertussis (adsorbed)	Sanoti Pasteur, France
Cuadruple	Diphtheria, tetanus, pertussis, Hib	Mexico
D-Immun	Diphtheria	Osterreichisches Institut, Austria
D.S.D.P.T.	Diphtheria, tetanus, pertussis (adsorbed)	Dong Shin Pharm, Korea
D.T. Bis Rudivax	Diphtheria, tetanus, rubella	Sanofi Pasteur, France
Di Anatoxal	Diphtheria	Berna Biotech, Europe
Di Te Per Pol Impfstoff	Diphtheria, tetanus, pertussis, polio	Berna Biotech, Switzerland
Di-Te-Pol SSI	Diphtheria, tetanus, polio	Statens Seruminstitut, Denmark
Dif-Tet-All	Diphtheria, tetanus	Chiron, Italy
Diftavax	Diphtheria, tetanus	Sanofi Pasteur
Ditanrix	Diphtheria, tetanus	GSK, Europe
DiTe Anatoxal	Diphtheria, tetanus (adsorbed)	Berna Biotech, Switzerland
Ditoxim	Diphtheria, tetanus (adsorbed)	Dong Shin Pharm, Korea
Double Anigen B.I.	Diphtheria, tetanus	Bengal Immunity Co., India
DT Adulte	Diphtheria, tetanus (adult)	Sanofi Pasteur, France
DT Bis	Diphtheria, tetanus (booster)	Sanofi Pasteur, France
DT Coq	Diphtheria, tetanus, pertussis	Sanofi Pasteur, France
DT Polio	Diphtheria, tetanus, polio	Sanofi Pasteur, France
DT TAB	Diphtheria, tetanus *Salmonella typhi*, *Paratyphi* A & B	Sanofi Pasteur, France
DT Vax	Diphtheria, tetanus (pediatric)	Sanofi Pasteur, France
DT Wellcovax	Diphtheria, tetanus (pediatric)	Chiron, UK
Dual Antigen Sii	Diphtheria, tetanus (adsorbed)	Serum Institute of India (Sii)
Dultavax	Diphtheria, tetanus, polio (booster)	Aventis Pasteur, France
Dupla	Diphtheria, tetanus	Instituto Butantan, Brazil
Duplex	Diphtheria, tetanus	Sweden

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
Easyfive	DTwP-Hib-HepB	India
Ecolarix	Measles, rubella (Schwarz & RA 27/3)	GSK, Europe
Elvarix	Influenza (split virus)	VEB, Sachsesches Serumwerk Dresden
EMAV	Meningococcal serogroup A	China
Encepur	Tick-borne encephalitis	Chiron, Europe
Enivac-HB	Hepatitis B (recombinant DNA)	Centro de Ingenieria Genetica Y Biotecnologia, Cuba
Enterovaccino	Typhoid (IM)	Isi
Enzira	Influenza	CSL
Eolarix	Measles, rubella (Schwartz & RA 27/3)	GSK, Europe
Epaxal Berna	Hepatitis A – virosomal vaccine	Berna Biotech, Switzerland
Ervax	Rubella (live)	GSK, Mexico
Ervevax RA 27/3	Rubella (live)	GSK, Belgium
Esavalenti	(Hexavalent) Diphtheria, tetanus, pertussis, polio, Hib, hepatitis B	Italy
Euvax-B	Hepatitis B (recombinant DNA)	LG Chemical, South Korea
Fendrix	Hepatitis B (dialysis formulation)	GSK, Europe
Fluad	Influenza (adults ≥65)	Novartis, Europe, Asia, NZ
Flubron	Influenza (whole virus)	Pfizer
Flugen	Influenza	UK
Fluvax	Influenza	CSL, Australia
Fluvirine	Influenza	CellTech Pharma SA
FOH-M	Polio (inactivated)	Russia
FrocuoOke	Polio (inactivated)	Russia
FSME-IMMUNE	Tick-borne encephalitis	Baxter, Austria
FSPD	Measles	Russia
Funed-CEME	Diphtheria, tetanus, pertussis	Belo Horizonte, Brazil
Gen H-B-Vax	Hepatitis B	Merck-Behringwerke
GenHevac B Pasteur	Hepatitis B	Sanofi Pasteur
Gene Vac-B	Hepatitis B	Serum Institute of India (Sii)
Gripax	Influenza (whole virus)	Hebrew University
Gripe	Influenza (whole virus)	Spain
Gripguard	Influenza (same as Fluad)	Novartis, France
Gripovax	Influenza (whole virus)	GSK
Gunevax	Rubella	Chiron, Italy
H-Adiftal	Diphtheria	Ism, Italy
H-Adiftetal	Diphtheria, tetanus	Ism, Italy
H-Atetal	Tetanus	Ism, Italy
HarPaBreHnr B CtauOHAP	Rubella	Russia
HAVPur	Hepatitis A	Chiron, Germany
HB Vax Pro	Hepatitis B	SP
HBY	Hepatitis B (recombinant)	KGC, Japan

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
HDCV	Human Diploid Cell Rabies Vaccine	
Heberbiovac HB	Hepatitis B	Heberbiotec, Cuba
Hepabest	Hepatitis A	Sanofi Pasteur, Mexico
Hepacare	Hepatitis B (recombinant)	Chiron, Europe
Hepaccine-B	Hepatitis B (plasma derived)	Chiel Jedang, South Korea
Hepagene	Hepatitis B	Chiron, Europe
Hepativax	Hepatitis B	Sanofi Pasteur, Mexico
Hepatyrix	Hepatitis A, typhoid	GSK
Hepavax-B	Hepatitis B (plasma derived)	Korea Green Cross, South Korea
Hepavax-Gene	Hepatitis B (recombinant DNA)	Korea Green Cross, South Korea
Hepcare	Hepatitis B	Chiron, Europe
Heprecomb	Hepatitis B (yeast derived)	Berna Biotech, Switzerland
Hevac B	Hepatitis B (plasma derived)	Sanofi Pasteur, France
Hexamune	Diphtheria, Tetanus, (acellular) Pertussis, Hib, hepatitis B, polio	Aventis, Latin America
Hexavac (Hexavax)	Diphtheria, tetanus, pertussis, polio, hepatitis B, Hib	Sanofi Pasteur, Europe or Mexico
Hiberix	Hib conjugate	GSK
HIBest	Hib	Sanofi Pasteur
Hinkuys karokoe	Pertussis (adsorbed)	Natl. Public Health Institute, Finland
HIS	Influenza	Serbian Institute, Yugoslavia
IBV	Polio (inactivated)	Statens Seruminstitut, Denmark
Immravax	Measles, mumps, rubella	Sanofi Pasteur, Europe
Immugrip	Influenza	Pierre Fabre Médicament
Immunil	Pneumococcal (polysaccharide)	Sidus
Imovax Parotiditis	Mumps	Sanofi Pasteur, Europe
Imovax Polio	Polio	Sanofi Pasteur, Europe
Imovax Sarampion	Measles	Sanofi Pasteur, Europe
Imovas D.T.	Diphtheria, tetanus (adult)	Sanofi Pasteur, Europe
Imovas Gripe	Influenza	Sanofi Pasteur, Europe
Imovax D.P.T.	Diphtheria, tetanus, pertussis	Sanofi Pasteur Mexico
Imovax R.O.R.	Measles, rubella, mumps (live)	Sanofi Pasteur, Europe
Imovax Rubeola	Measles	Sanofi Pasteur, Europe
Imovax Mumps	Mumps	Sanofi Pasteur, Europe
Imovax Oreillons	Mumps	Sanofi Pasteur, Europe
Imovax Rage	Rabies	Sanofi Pasteur, Europe
Imovax Tetano	Tetanus	Sanofi Pasteur, Europe
Infanrix Hexa	Diphtheria, tetanus, pertussis, polio, Hib, hepatitis B	GSK, France
Infanrix Penta	Diphtheria, tetanus, pertussis, hepatitis B, polio	GSK, Europe
Infanrix Quinta	Diphtheria, tetanus, pertussis, polio, Hib	GSK, Europe
Infanrix Tetra	Diphtheria, tetanus, pertussis, polio	GSK, Europe
Inflexal	Influenza	Swiss Serum and Vaccine Institute

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
Influmix	Influenza (whole virus)	Schiapparelli
Influpozzi Zonale	Influenza (whole virus)	Ivp
Influsplit SSW	Influenza (split virus)	VEB Sachsecsches Serumwerk Dresden
Influvac	Influenza	Solvay-Pharma
Influvirus	Influenza	Ism, Italy
Invirin	Influenza (whole virus)	GSK
Ipad TP	Tetanus, polio	Sanofi Pasteur, France
IPV-Virelon	Polio (inactivated)	Chiron, Europe
Isiflu Zonale	Influenza (whole virus)	Isi, Italy
Istivac	Influenza	Sanofi Pasteur, Europe
Kaksoisrokote Dubbelvaccin	Diphtheria, tetanus (pediatric)	Natl. Public Health Institute, Finland
Kikhoste-Vaksine	Pertussis	Statens Institutt for Folkehelse, Norway
Koplivac	Measles (Edmonston strain)	Philips-Duphar, Australia
Kotipa	Cholera, typhoid, paratyphoid	Perum Bio Farma, Indonesia
Krztuscowi	Pertussis	Poland
Ksztu	Pertussis	Poland
Lancy Vaxina	Smallpox	Swiss Serum and Vaccine Institute, Switzerland
Lavantuu Tirokote	Typhoid	Central Pub Health La, Finland
Liomorbillo	Measles	
Liovaxs	Smallpox	Chiron, Italy
Lirugen	Measles	Sanofi Pasteur
LM – 3 RIT	Measles, mumps, rubella (live)	Dong Shin Pharm, Korea
LM – 2 RIT	Measles, mumps (live)	Dong Shin Pharm, Korea
Lteanas Imuna	Tetanus (adsorbed)	Imuna sp., Slovakia
Lyssavac N	Rabies	Berna Biotech, Europe
M-M-Rvax	Measles, mumps, rubella	Chiron, Europe
M-M-Vax	Measles, mumps	Merck, Europe
M-Vac	Measles (live)	Serum Institute of India (Sii)
Massern-Impfstoff SSW	Measles (live)	Chiron, Germany
Massling	Measles	Sweden
MDPH-PA	Anthrax	
Measavac	Measles (Edmonston strain)	Pfizer, UK
MenAfriVac	Meningococcal A Conjugate	Africa
Mencevax A	Meningococcal Group A (polysaccharide)	SmithKline/RIT, Belgium
Mencevax ACWY	Meningococcal quadravalent	GSK
Mengivax A/C	Meningococcal Groups A & C (conjugate)	Sanofi Pasteur, Europe
Meningitec	Meningococcal Group C (conjugate)	Wyeth, UK, Australia
Meningtec	Meningococcal Group C (conjugate)	Wyeth, Canada
Meninvact	Meningococcal Group C (conjugate)	Sanofi Pasteur
Menjugate	Meningococcal Group C (conjugate)	Novartis
Menpovax 4	Meningococcal Groups A, C, Y & W135 (polysaccharide)	Chiron, Europe
Menpovax A+C	Meningococcal Groups A & C	Chiron, Italy

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
MeNZB	Meningococcal Group B	Novartus, New Zealand
Mesavac	Measles (Edmonston strain)	Pfizer, UK
Mevilin-L	Measles (Schwarz strain)	Chiron, UK
MFV	Influenza (whole virus)	Servier, UK
MFV-Ject	Influenza (whole virus)	Sanofi Pasteur, Europe
Miniflu	Influenza	Schiapparelli, Italy
Mo-Ru Viraten	Measles, rubella	Berna Biotech, Canada
Moniarix	Pneumococcal 17-valent (polysaccharide)	GSK, Europe
Monovax / Monovac	BCG	Sanofi Pasteur, France
Mopavac	Measles, mumps (live)	Sevac, Czech Republic
Morbilvax	Measles (live)	Chiron, Italy
Morubel	Measles, rubella (live)	Chiron, Italy
Moruman Berna	Measles immunoglobulin	Berna, Switzerland
Morupar	Measles, mumps, rubella (live)	Chiron, Italy
Movivac	Measles (live)	Sevac, Czech Republic
Mumaten	Mumps (live)	Berna Biotech, Switzerland
Munevan	Influenza (whole virus)	Medeva
Mutagrip	Influenza	Sanofi Pasteur, Germany
Nasoflu	Influenza	GSK, Europe
Neis Vac-C	Meningococcal Group C (conjugate)	Baxter, Europe & Canada
Neumo Imovax	Pneumococcal 23-valent (polysaccharide)	Sanofi Pasteur, Mexico
Neotyf	Typhoid (live, oral)	Chiron, Italy
Nilgrip	Influenza	CSL
Nivgrip	Influenza (whole virus)	Nicolau Institute of Virology, Romania
NorHOMHerHTA	Polio (inactivated)	Russia
Nothav	Hepatitis A	Chiron, Italy
Okavax	Varicella (live)	Biken / Sanofi Pasteur, Japan & Europe
Optaflu	Influenza (cell culture-based)	Novartis, Europe, Iceland, Norway
Oral Virelon	Polio (oral)	Chiron, Germany
Pariorix	Mumps (live)	GSK, Mexico & Europe
Pavivac	Mumps (live)	Sevac, Czech Republic
Pediacel	Diphtheria, tetanus, acellular pertussis, Hib, polio	Europe
Penta	Diphtheria, tetanus, acellular pertussis, Hib, polio	Sanofi Pasteur, Europe
PENT-HIBest	Diphtheria, tetanus, pertussis, polio, Hib	Sanofi Pasteur
Pentacel	Diphtheria, tetanus, pertussis, polio, Hib	Sanofi Pasteur, Canada
Pentacoq	Diphtheria, tetanus, pertussis, polio, Hib	Sanofi Pasteur
PentAct-HIB	Diphtheria, tetanus, pertussis, polio, Hib	Sanofi Pasteur, Europe
Pentavac	Diphtheria, tetanus, pertussis, polio, Hib	Sanofi Pasteur
Pentavalente	Diphtheria, tetanus, pertussis, hepatitis B, Hib	Mexico (Prior to July 2007)
Pentavalente Acelular	Diphtheria, tetanus, pertussis, polio, Hib	Mexico (August 2007 to present)

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
Pentavalenti	Diphtheria, tetanus, pertussis, polio, Hib ***OR*** Diphtheria, tetanus, pertussis, polio, hepatitis B	Italy
Pentaxim	Diphtheria, tetanus, pertussis, polio, Hib	Aventis Pasteur, France
Pluserix	Measles, rubella	GSK, Mexico & Europe
Pneumopur	Pneumococcal 23-valent (polysaccharide)	Chiron, Europe
POLIAcel	Diphtheria, tetanus, pertussis, polio, Hib	Sanofi Pasteur, Argentina
Poliomyelite	Polio (inactivated)	France
Polioral	Polio (live, oral, trivalent)	Novartis
Polio Sabin	Polio (oral)	GSK, Europe
Poloral	Polio (oral)	Swiss Serum and Vaccine Institute
Prevenar	Pneumococcal 7-valent (conjugate)	Wyeth, France
Previgrip	Influenza	Chiron, France
Primavax	Diphtheria, tetanus, hepatitis B	Sanofi Pasteur, Europe
Priorix	Measles, mumps, rubella (live)	GSK, Europe & Australia
Priorix-Tetra	Measles, mumps, rubella, varicella (live)	GSK, Europe
Probivac-B	Hepatitis B	Probiomed, Mexico
Procomvax	Hib, hepatitis B	Sanofi Pasteur, Europe
PRS	MMR	Cuba
PRV	Pentavalent Rotavirus Vaccine	Palau
Pulmovax	Pneumococcal 23-valent (polysaccharide)	Merck
Q-Vac	Diphtheria, tetanus, pertussis, hepatitis B	Serum Institute of India (Sii)
Quadracel	Diphtheria, tetanus, acellular pertussis, polio	Sanofi Pasteur, Mexico
QUADRAcel/Hibest	Diphtheria, tetanus, acellular pertussis, polio, Hib	Sanofi Pasteur, Argentina
Quadravax	Diphtheria, tetanus, pertussis, polio	GSK
Quadruple	Diphtheria, tetanus, pertussis, Hib	Mexico
Quatro-Virelon	Diphtheria, tetanus, pertussis, polio	Chiron, Europe
Quinivax-IN	Diphtheria, tetanus, pertussis, polio, Hib	Valda Laboratori, Europe
Quintuple	Diphtheria, tetanus, pertussis, polio, Hib	GSK, Mexico
Quinvaxem	Diphtheria, tetanus, pertussis, Hib, Hepatitis B	Novartis/Crucell
R-HB Vaccine	Hepatitis B (recombinant)	Mitsubishi Chem Corp, Japan
R-Vac	Rubella (live)	Serum Institute of India (Sii)
Rabdomune	Rabies	Impdfstofwerke, Germany
Rabipur	Rabies	Chiron, Germany
Rabivac	Rabies	Chiron, Germany
Rasilvax	Rabies	Chiron, Italy
RDCV	“Rabies Diploid Cell Vaccine”	
Refortrix	Diphtheria, tetanus (adult)	GSK
Repevax	Diphtheria, tetanus, pertussis, polio	Sanofi Pasteur
Revaxis	Tetanus, diphtheria, polio (adult)	Sanofi Pasteur (Europe)
Rimevax	Measles (live, Schwarz strain)	GSK, Mexico & Europe
Rimparix	Measles, mumps (live)	GSK, Europe
RIT-LM-2	Measles, mumps (live)	Dong Shin Pharm, Korea
RIT-LM-3	Measles, mumps, rubella (live)	Dong Shin Pharm, Korea

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
Rorvax	Measles, mumps, rubella (live)	Sanofi Pasteur, Europe & Brazil
Rosovax	Rubella	Ism, Italy
Rouvax	Measles (live)	Sanofi Pasteur, Europe
Rubavax	Rubella (live)	Sanofi Pasteur, UK
Rubeaten	Rubella (live)	Berna Biotech, Europe
Rubellovac	Rubella (live)	Chiron, Germany
Rubilin	Rubella (live)	Chiron, UK
Rudi-Rouvax	Measles, rubella (live)	Sanofi Pasteur, France
Rudivax	Rubella (live)	Sanofi Pasteur, France
Sahia	Polio (live oral)	Multiple manufacturers
Sampar	Plague	Sanofi Pasteur, Indonesia
Sandovac	Influenza	Sandoz, Austria
Serap	Diphtheria, tetanus, pertussis	Perum Bio Farma, Indonesia
Shanvac-B	Hepatitis B	Shantha, India
SMBV	Rabies	Sanofi Pasteur, Europe
Sii Rabivax	Rabies	Serum Institute of India (Sii)
Sii Triple Antigen	Diphtheria, tetanus, pertussis	Serum Institute of India (Sii)
Stamaril	Yellow fever (live)	Sanofi Pasteur, Europe
Streptopur	Pneumococcal 23-valent (polysaccharide)	Chiron, Europe
Subinvira	Influenza (split virus)	Imuna, Czech Republic
Synflorix	Pneumococcal (10-valent, conjugate)	GSK, Europe, Australia
T. Polio	Tetanus, polio	SP (Canada)
T.A.B.	Typhoid, paratyphoid (A & B)	- Institute Pasteur, Tunisia - Egypt - Pharmaceutical Industries Corp., Burma
T-Immun	Tetanus (adsorbed)	Baxter, Germany
T-Vaccinol	Tetanus	Roehm Pharma, Germany
T-Wellcovax	Tetanus	Wellcopharm, Germany
Tanrix	Tetanus	GSK, Europe
Td-Pur	Tetanus, diphtheria (adult)	Chiron, Europe
Td-Virelon	Tetanus, diphtheria, polio	Chiron, Europe
Te Anatoxal	Tetanus	Berna Biotech, Switzerland
Telvaclptap	Tetanus	Yugoslavia
Tet-Aktiv	Tetanus	Tropon-Cutter, Germany
Tet-Tox	Tetanus	CSL Limited, Australia
Tetagrip	Tetanus, influenza	SP, France
Tetamun SSW	Tetanus (fluid, nonadsorbed)	Veb Sachsisches Serumwerk, Germany
Tetamyn	Tetanus	Bioclon, Mexico
Tetano-difter	Tetanus, diphtheria	Celltech Pharma
Tetanol	Tetanus (adsorbed)	Chiron, Sanofi Pasteur, Europe & Mexico
Tetanovac	Tetanus	Sanofi Pasteur, Mexico
Tetasorbat SSW	Tetanus (adsorbed)	Veb Sachsisches Serumwerk, Germany
Tetatox	Tetanus (adsorbed)	Berna Biotech, Italy
Tetavax	Tetanus (adsorbed)	Sanofi Pasteur, Europe
Tetracoq 05	Diphtheria, tetanus, pertussis, polio	Sanofi Pasteur, France

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
TetrAct-HIB	Diphtheria, tetanus, pertussis, Hib	Sanofi Pasteur, Europe
Tetravac Acellulaire	Diphtheria, tetanus, acellular pertussis, polio	Sanofi Pasteur, Europe
Tetravalenti	Diphtheria, tetanus, pertussis, hepatitis B	Italy
Tetraxim	Tetanus, diphtheria, pertussis, polio	Sanofi Pasteur, Europe
Theracys	BCG	Aventis Pasteur, Canada
Ticovac	Tick-borne encephalitis	Baxter SA
Tifovax	Typhoid (Vi polysaccharide)	Sanofi Pasteur, Mexico
Titifica	Typhoid and paratyphoid	Italy
TOPV	Polio (oral, trivalent)	Multiple manufacturers
Trenin DPT Behring	Diphtheria, tetanus, pertussis	Chiron Behring GmbH, Germany
Tresivac	Measles, mumps, rubella (live)	Serum Institute of India (Sii)
Triacel	Diphtheria, tetanus, acellular pertussis	Sanofi Pasteur, Europe & Mexico
Triacelluvax	Diphtheria, tetanus, acellular pertussis	Chiron, Europe
Trimovax	Measles, mumps, rubella (live)	Sanofi Pasteur,
Tripacel	Diphtheria, tetanus, acellular pertussis	Sanofi Pasteur, Europe
Triple antigen	Diphtheria, tetanus, pertussis	- Chowgule & Co., India - CSL Limited, Australia
Triple Sabin	Polio (live, oral)	Mexico
Triple	Diphtheria, tetanus, pertussis	Cuba, Mexico
Triple viral	Measles, mumps, rubella	- Mexico - Immunology Institute, Croatia
Triple Virica	Measles, mumps, rubella	Dominican Republic
Triplice (VT)	Diphtheria, tetanus, pertussis	Instituto Butantan, Brazil
Triplice Viral (VTV)	Measles, mumps, rubella	Instituto Butantan, Brazil
Triplovax	Measles, mumps, rubella	Sanofi Pasteur, Europe & Brazil
Tritanrix	Diphtheria, tetanus, whole-cell pertussis	GSK
Tritanrix-HB	Diphtheria, tetanus, whole-cell pertussis, hepatitis B	GSK, Mexico
Tritanrix-HB-Hib	Diphtheria, tetanus, whole-cell pertussis, hepatitis B, Hib	GSK
Trivacuna Leti	Diphtheria, tetanus (adsorbed), pertussis	Laboratory Leti, Spain
Trivax	Diphtheria, tetanus (plain), pertussis	Chiron, UK
Trivax-AD	Diphtheria, tetanus (adsorbed), pertussis	Chiron, UK
Trivax-Hib	Diphtheria, tetanus, pertussis, Hib	GSK, Europe
Trivb	Diphtheria, tetanus, pertussis	Brazil
Triviraten	Measles, mumps, rubella (live)	Berna Biotech, Switzerland
Trivivac	Measles, mumps, rubella (live)	Sevac, Czech Republic
Trivivax	Measles, mumps, rubella	Sanofi Pasteur, Mexico
Tussitrupin Forte	Pertussis	Staatliches Institut, Germany
Tuvax	BCG	Japan BCG Laboratory, Japan
Tyne	BCG	Sweden
Typherix	Typhoid (Vi polysaccharide)	GSK, Europe & Australia
Typhopara-typhoidique	Typhoid and paratyphoid	France

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
Typhoral-L	Typhoid (Ty21a oral)	Berna Biotech, Germany
Typh-Vax	Typhoid	CSL Limited, Australia
VAA	Yellow fever (vaccine anti-amaril)	Democratic Republic of Congo
Va-Diftet	Diphtheria, tetanus	Finlay Vacunas y Sueros, Cuba
Va-Mengoc-BC	Meningococcal Groups B & C	Finlay Vacunas y Sueros, Cuba
Vac-DPT	Diphtheria, tetanus, pertussis	Bioclon, Mexico
Vaccin Difteric Adsorbit	Diphtheria (adsorbed)	Cantacuzino Institute, Romania
Vaccin Rabique Pasteur	Rabies	Pasteur Vaccins
Vaccin Combinat Diftero-Tetanic	Diphtheria, tetanus (adsorbed)	Cantacuzino Institute, Romania
Vaccin tuberculeux attenue lyophilize	BCG	Sanofi Pasteur, France
Vaccinum Morbillorum Vivum	Measles (live)	Moscow Research Institute, Russia
Vacina Dupla	Diphtheria, tetanus	Instituto Butantan, Brazil
Vacina Triplice	Diphtheria, tetanus, pertussis	Instituto Butantan, Brazil
Vacina Triplice Viral	Measles, mumps, rubella	Brazil
Vacuna Doble	Tetanus, diphtheria	Instituto Biologico Argentino
Vacunol	Tetanus	Temis-Lostato, Brazil
Vaksin Sampar	Plague	Perum Bio Farma, Indonesia
Vaksin Cacar	Smallpox	Indonesia
Vaksin Serap	Diphtheria, tetanus, pertussis	Perum Bio Farma, Indonesia
Vaksin Campak Kerig	Measles (live)	Perum Bio Farma, Indonesia
Vaksin Kotipa	Cholera, typhoid, paratyphoid A, B & C	Perum Bio Farma, Indonesia
Vamoavax	Measles, mumps (live)	Institute of Immunology, Croatia
Varicella-RIT	Varicella	GSK, Europe
Varicellon	Zaricella zoster immunoglobulin	Behringwerke Aktiengesellischaft, Germany
Varie	Smallpox (lyophilized)	Institute of sera and Vaccine, Czech Republic
Varilrix	Varicella (live, Oka strain)	GSK, Australia, New Zealand
Varirix	Varicella (live, Oka strain)	GSK, Europe & Mexico
VAT	Tetanus (vaccin anatoxine tetanique)	Francophone Africa
Vax-Tet	Tetanus	Finlay Vacunas & Sueros, Cuba
Vaxem-Hib	Hib (polysaccharide)	Chiron, Europe
Vaxicoq	Pertussis (adsorbed)	Sanofi Pasteur, France
Vaxigrip	Influenza	Sanofi Pasteur, Europe & Australia
Vaxihaler-Flu	Influenza (inhaler)	Riker, UK
Vaxipar	Mumps (live)	Chiron, Italy
VCDT	Diphtheria, tetanus (pediatric)	Cantacuzino Institute, Romania
VDA Vaccin Difteric Adsorbit	Diphtheria	Cantacuzino Institute, Romania
Verorab	Rabies (purified vero cell)	Sanofi Pasteur, France

Trade Name/ Abbreviation	Component(s)	Manufacturer, Country
ViATIM	Hepatitis A, typhoid	Sanofi Pasteur, UK
Vibriomune	Cholera	Duncan Flockhart, UK
Viralinte	Hepatitis B	Ivax Pharmaceuticals, Mexico
Virelon C	Polio (inactivated)	Chiron, Germany
Virelon T 20	Polio (live, oral trivalent)	Chiron, Germany
Virivac	Measles, mumps, rubella (live)	Merck, Finland
Virovac Massling, Perotid, Rubella	Measles, mumps, rubella	Sweden
Vopix	Polio (oral)	PT Biofarma, Indonesia
VPH	Human Papillomavirus	Spanish
V T (Vacine Triplice)	Diphtheria, tetanus, pertussis	Instituto Butantan, Brazil
V T V (Vacina Triplice Viral)	Measles, mumps, rubella	Brazil
V V R	Measles (live)	Cantucuzino Institute, Romania
Welltrivax Trivalente	Diphtheria, tetanus, pertussis	Spain
X-Flu	Influenza	CSL
Zaantide	Diphtheria antitoxin	Imunoloski Zavod, Croatia
Zaantite	Tetanus antitoxin	Imunoloski Zavod, Croatia
Zaditeadvax	Diphtheria, tetanus	Imunoloski Zavod, Croatia
Zaditevax	Diphtheria, tetanus	Imunoloski Zavod, Croatia
Zamevax A+C	Meningococcal Groups A & C (polysaccharide)	Imunoloski Zavod, Croatia
Zamovax	Measles (live)	Imunoloski Zavod, Croatia
Zamruvax	Measles, rubella (live)	Imunoloski Zavod, Croatia
Zapavax	Mumps	Imunoloski Zavod, Croatia
Zaruvax	Rubella (live)	Imunoloski Zavod, Croatia
Zatetravax	Diphtheria, tetanus, pertussis, parapertussis	Imunoloski Zavod, Croatia
Zatevax	Tetanus	Imunoloski Zavod, Croatia
Zatribavax	Diphtheria, tetanus, pertussis	Imunoloski Zavod, Croatia
Zatrivax	Measles, mumps, rubella (live)	Imunoloski Zavod, Croatia

March 2015

Designated Yellow Fever Vaccination Clinics in Georgia

Designated Yellow Fever Vaccination Clinics

International Hot Line for Yellow Fever 1-888-332-4559
CDC Travel Information

YF Yellow Fever Vaccine Only---these offices will not be able to offer any travel vaccines except yellow fever vaccine

O These offices can offer other travel vaccines in addition to the yellow fever vaccine

S Students only---these offices can only offer yellow fever vaccine to the students at this particular school or institution

E Employees only---these offices only offer yellow fever vaccine to their employees

City & County	Services	Address	Phone
City-Acworth CO-Cobb	O	John Daniel Kennedy Jr., M.D. Acworth Public Health Center 4489 Acworth Industrial Drive Acworth, Georgia 30101	770-514-2339
City-Albany CO-Dougherty	YF	Charles Dieas Ruis, M.D. Dougherty County Health Department 1710 South Slappey Boulevard Albany, Georgia 31706	229-430-6225
City-Albany CO-Dougherty	O	Kevin M. Smith, M.D., M.P.H. Phoebe Corporate Health 2410 Sylvester Road Albany, Georgia 31705	229-312-9220
City-Alpharetta CO-Fulton	O	Kathleen Toomey, M.D. North Fulton Regional Health Center 3155 Royal Drive, Suite 125 Alpharetta, Georgia 30022	404-612-1876
City-Americus CO-Sumter	O	Michael S. Busman, M.D. Sumter Family Medicine & Sports Medicine Center P.O. Box 6815 922 East Jefferson Street, Suite B Americus, Georgia 31709	229-924-2383

Designated Yellow Fever Vaccination Clinics in Georgia

City-Athens CO-Clarke	O	Claude A. Burnett III, M.D., M.P.H. Clarke County Health Department 345 North Harris Street Athens, Georgia 30601-2470	706-389-6921
City-Athens CO-Clarke	O	Garth Russo, M.D. University Health Center University of Georgia 55 Carlton Street Athens, Georgia 30602-1755	706-542-8704
City-Athens CO-Clarke	O	Christopher Ryan Thurmond, RPh. Village Drug Shop of Athens, Inc. 740 Prince Avenue Athens, Georgia 30606	706-548-4444
City-Atlanta CO-Fulton	O	Crawford F. Barnett, Jr., M.D. 3193 Howell Mill Road N.W. Suite 302 Atlanta, Georgia 30327-2100	404-262-1414
City-Atlanta CO-Fulton	O	Nicholas J. Beaulieu, M.D. Highland Travel Medicine of Atlanta 920 Ponce De Leon, Suite B Atlanta, Georgia 30306	404-815-1957
City-Atlanta CO-Fulton	O	Mitchell A. Blass, M.D. World Travel Care 5673 Peachtree Dunwoody Rd, Suite 600 Atlanta, Georgia 30342-1701	404-459-4393
City-Atlanta CO-Fulton	O	Ronald Devine, M.D. Peachtree Travel Clinic 275 Collier Road, Suite 450-A Atlanta, Georgia 30309	404-351-2572
City-Atlanta CO-Fulton	O	Janet Anne Dey, M.D. Piedmont Health Center 1830 Piedmont Avenue, Suite C, NE Atlanta, Georgia 30324	404-874-1111
City-Atlanta CO-DeKalb	O	Amina S. Hassanali, M.D. Amina Medical Consultants 2840 NE Expressway, Suite 116 Atlanta, Georgia 30345	404-929-1402
City-Atlanta CO-DeKalb	YF	Scott D. Henderson, M.D. Emory Healthcare 1364 Clifton Road, D-219 Atlanta, Georgia 30316	404-686-7947

Designated Yellow Fever Vaccination Clinics in Georgia

City-Atlanta CO-Fulton	O	Richard Hengel, M.D. Peachtree Travel Clinic 275 Collier Road, Suite 450-A Atlanta, Georgia 30309	404-351-2572
City-Atlanta CO-Fulton	O	Sophie A. Lukashok, M.D. Intown Infectious Diseases, LLC 619 Rankin Street, NE Atlanta, Georgia 30308	404-874-3102
City-Atlanta CO-Fulton	O	John M. Maloney III, M.D. Atlanta Infectious Disease Specialist 5669 Peachtree Dunwoody Road, Suite 315 Atlanta, Georgia 30342	404-851-0081
City-Atlanta CO-Fulton	O	Steven I. Marlow, M.D. Atlanta Travel Medicine & Clinical Care 5673 Peachtree Dunwoody Rd., Suite 330 Atlanta, Georgia 30342	404-459-0002
City-Atlanta CO-Fulton	S	Frank M. Pickens, M.D. Stamps Health Services (Georgia Tech) 740 Ferst Drive, NW Atlanta, Georgia 30332-0470	404-894-0248
City-Atlanta CO-Fulton	S	Lawrence D. Powell, M.D Spelman College Department of Student Health Services. 350 Spelman Lane. SW Atlanta, Georgia 30314	404-270-5250
City-Atlanta CO-Fulton	O	Alex E. Rikhter, M.D., P.C. Perimeter Clinic 3867 Roswell Road Atlanta, Georgia 30342	678-904-5611
City-Atlanta CO-Fulton	E	Hyun Cho-Steinberg, M.D. The Emory Clinic at Delta 1030 Delta Boulevard Atlanta, Georgia 30354	404-778-8281
City-Atlanta CO-Fulton	O	Charles H. Taylor, M.D. Perimeter North Family Medicine 960 Johnson Ferry Road, Suite 300 Atlanta, Georgia 3034	404-255-7325

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City-Atlanta CO-Fulton	O	Kathleen Toomey, M.D. Fulton County Health & Wellness Center The Center for Health & Rehabilitation 265 Boulevard Dr, N.E., Third Floor Atlanta, Georgia 30312	404-612-5835
City-Atlanta CO-Fulton	O	Maria L. Walker, M.D. Piedmont Minor Emergency Clinic/Piedmont Travel Clinic 2521 Piedmont Road, N.E., Suite 2101 Atlanta, Georgia 30324	404-231-7640
City-Atlanta CO-Fulton	O	Margaret Williamson, M.D. Georgia Infectious Diseases, PC 5673 Peachtree Dunwoody Rd., Suite 600 Atlanta, Georgia 30342	404-256-4111
City-Atlanta CO-Fulton	O	Henry Wu, MD Emory Healthcare-Emory Clinic Travel Well 550 Peachtree Street, Suite 7000 Medical Office Tower 7th Floor Atlanta, Georgia 30308	404-686-5885
City-Atlanta CO-Fulton	O	Jalal A. Zuberi, M.D. Morehouse Health Care 1800 Howell Mill Road, NW, Suite 550 Atlanta, Georgia 30318	404-756-5014
City-Atlanta CO-Fulton	O	Christine Zurawski, M.D., M.P.H. Peachtree Travel Clinic 275 Collier Road, Suite 450-A Atlanta, Georgia 30309	404-351-2572
City-Augusta CO-Richmond	O	Jack H. Austin, Jr., M.D. Medical Associates Plus 2050 Walton Way, Suite 101 Augusta, Georgia 30904	706-434-1590
City-Augusta CO-Richmond	O	Russ R. Ayers, M.D. Christ Community Health Services 127 Telfair Street Augusta, Georgia 30901	706-922-0600
City-Augusta CO-Richmond	O	Thaddeus Y. Carson, MD Augusta University Health 1120 15th Street BP 1220 Augusta, Georgia 30922	706-721-4078

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City-Augusta CO-Richmond	O	D. Stephen Goggans, M.D. Richmond County Health Dept. 950 Laney Walker Boulevard Augusta, Georgia 30901	706-721-5800
City-Augusta CO-Richmond	O	Vic Johnson, R.Ph., BCNP Living Well Pharmacy 3736 Mike Padgett Hwy. Augusta, Georgia 30906	706-262-4454
City-Augusta CO-Richmond	O	Chitra S. Mani Augusta University Health – Pediatric Infectious Diseases Clinic 1446 Harper Street, Suite BG 1127 Augusta, Georgia 30912	706-721-4725
City-Augusta CO-Richmond	O	Cedric McCord, M.D. Center for Occupational Medicine, LLC 2215 Tobacco Road, Suite F Augusta, Georgia 30906	706-396-1140
City-Augusta CO-Richmond	O	Pamela Tipler, DO Augusta University Health 1120 15th Street BP1220 Augusta, Georgia 30912	706-721-4078
City-Austell CO-Cobb	O	Marga Ngwang, M.D. Nissi Family Medicine 1810 Mulkey Road, Suite 105 Austell, Georgia 30106	678-540-7597
City-Brunswick CO-Glynn	O	Lawton Cater Davis, M.D. Glynn County Health Department 2747 4th Street Brunswick, Georgia 31520	912-264-3961
City-Buford CO-Gwinnett	O	Nicholas Steven Bower, DO ChoiceOne Urgent Care 2690 Hamilton Mill Road, Suite 100 Buford, Georgia 30519	470-326-7300
City-Buford CO-Gwinnett	O	Lloyd M. Hofer, M.D. Buford Health Center 2755 Sawnee Avenue Buford, Georgia 30518	770-614-2401
City-Butler CO-Taylor	O	Robert J. Bazemore, RPH Smith's Pharmacy and Home Medical Equipment 10 North Poplar Street Butler, Georgia 31006	478-862-5655

Designated Yellow Fever Vaccination Clinics in Georgia

City-Carrollton CO-Carroll	O	Olugbenga Obasanjo, M.D., PhD, MPH Carroll County Health Dept. 1004 Newnan Road Carrollton, Georgia 30116	770-836-6667
City-Cartersville CO-Bartow	O	Aman Mongia, M.D. Center for Infectious Diseases 100 Market Place Blvd. Suite 207 Cartersville, Georgia 30152	678-721-6971
City-Cave Spring CO-Floyd	O	Susan M. Butler-Sumner, M.D. Cave Spring Medical Center 28 Rome Road Cave Spring, Georgia 30124	706-777-8775
City-Chamblee CO-DeKalb	O	Sima Dehghnany, MD 5001 Peachtree Blvd., Suite 115 Chamblee, Georgia 30341	706-458-8929
City-Chamblee CO-DeKalb	O	Nipun Patel, M.D. Premier Family Clinic 3646-B Chamblee Tucker Road Chamblee, Georgia 30341	770-493-6767
City-Chamblee CO-DeKalb	O	Leslie Richmond, M.D., M.B.A., F.A.A.F.P. North DeKalb Health Center 3807 Clairmont Road, N.E. Chamblee, Georgia 30341-4911	770-454-1144 Ext. 4602
City-Chatsworth CO-Murray	O	Russell B. Minor, M.D. Corner Drugs, Inc. 430 North 3rd Avenue Chatsworth, Georgia 30705	706-695-0444
City-Clarkston CO-DeKalb	E	Joyce R. Lewis, M.D. Greater Atlanta Family Healthcare 3700 Market Street, Building C Clarkston, Georgia 30021	404-298-9333
City-College Park CO-Fulton	O	Kathleen Toomey, M.D. WJ Freeman College Park Regional Health Center 1920 John Wesley Avenue College Park, Georgia 30337-3606	404-612-4024
City-Columbus CO-Muscogee	O	Kevin Donald Lokkesmoe, M.D. Urgent Care and Occupational Medicine 4328 Armour Road Columbus, Georgia 31904	706-507-1213

Designated Yellow Fever Vaccination Clinics in Georgia

City-Columbus CO-Muscogee	O	Beverley A. Townsend, M.D. West Central Health District P.O. Box 2299 2100 Comer Avenue Columbus, Georgia 31902-2299	706-321-6300
City-Columbus CO-Muscogee	O	Kandra Watson, M.D. Columbus Regional Medical Group My Care Urgent Care Center 7301 Blackmon Road Columbus, Georgia 31909	706-321-3750
City-Conyers CO-Rockdale	O	Lloyd M. Hofer, M.D. Rockdale County Health Department 985 Taylor Street Conyers, Georgia 30012	770-785-4345
City-Covington CO-Newton	O	Lloyd M. Hofer, M.D. Newton County Health Department 8203 Hazelbrand Road Covington, Georgia 30014	770-786-9086
City-Cumming CO-Forsyth	O	Priya Vamsi Bayyapureddy, M.D. Windermere Medical Group 3850 Windermere Parkway, Suite 105 Cumming, Georgia 30041	678-455-2800
City-Decatur CO-DeKalb	E	Chad D. Costley, M.D. Ponce Primary Care 402 West Ponce De Leon Avenue Decatur, Georgia 30030	404-537-2521
City-Decatur CO-DeKalb	O	Robin H. Dretler, M.D., FIDSA Infectious Disease Specialists of Atl., P.C. 2665 North Decatur Road, Suite 330 Decatur, Georgia 30033	404-297-9755
City-Decatur CO-DeKalb	S	Srilatha Edupuganti, M.D The Hope Clinic, Emory Vaccine Center 500 Irvin Court, Suite 200 Decatur, Georgia 30030	404-712-1370
City-Decatur CO-DeKalb	O	Leslie Richmond, M.D., M.B.A., F.A.A.F.P T.O. Vinson Health Center 440 Winn Way Decatur, Georgia 30030	404-294-3762

Designated Yellow Fever Vaccination Clinics in Georgia

City- Douglasville CO-Douglas	O	Janet Pak Memark, M.D. Douglas Public Health 6770 Selman Drive Douglasville, Georgia 30134	770-949-1970
City-Duluth CO-Gwinnett	O	Jeffrey Cooper, MD Cooper Pediatrics, PC 3645 Howell Ferry Rd. Duluth, GA 30096	678-473-4739
City-Duluth CO-Gwinnett	O	Young W. Kang, M.D. River Parc Internal Medicine 4855 River Green Parkway #140 Duluth, Georgia 30096	678-417-0077
City-Dunwoody CO-DeKalb	O	Charles W. Wilson, Jr., RPH Dunwoody Pharmacy 4675 North Shallowford Rd., Suite 101 Dunwoody, Georgia 30338	770-455-1144
City-Ellijay CO-Gilmer	O	Mark Elam, M.D. Gilmer County Health Department International Travel Clinic 28 Southside Church Street Ellijay, Georgia 30540	706-635-4363
City-Evans CO-Columbia	O	Christopher J. Apostol D.O. Barry W. Jordan, MD Evans Medical Group 465 N. Belair Rd., Suite 1B Evans, Georgia 30809	706-868-3100
City-Evans CO-Columbia	O	Cedric McCord, M.D. Center for Occupational Medicine, LLC 635 Ronald Reagan Drive Evans, Georgia 30809	706-922-5056
City-Fayetteville CO-Fayette	O	Olugbenga Obasanjo, M.D., PhD, MPH Fayette County Health Dept. 140 West Stonewall Avenue, Suite 107 Fayetteville, Georgia 30214	770-305-5416
City-Gainesville CO-Hall	O	Pamela Logan, M.D. Hall Co. Health Dept. Travel Clinic 1290 Athens Street Gainesville, Georgia 30507	770-531-5600 Ext. 5657/5615

Designated Yellow Fever Vaccination Clinics in Georgia

City-Greensboro CO-Greene	O	Dave A. Ringer, M.D. TenderCare International Travel Clinic 1040 Park Drive Greensboro, Georgia 30642	706-534-6640
City-Hapeville CO-Fulton	O	Donovan W. Christie, M.D. Anwan Wellness Medical Center 725 North Central Avenue Hapeville, Georgia 30354	404-761-2766
City-Kennesaw CO-Cobb	S	Megan E. Bowles, M.D. Wellstar Kennesaw State Student Health Services 3215 Campus Loop Road Kennesaw, Georgia 30144-5588	470-578-6644
City-Kennesaw CO-Cobb	O	Janet Pak Memark, MD, MPH, FACP Acworth-Kennesaw Public Health Center 3810 Old 41 Highway Kennesaw, Georgia 30144	770-974-3330
City-LaGrange CO-Troup	O	Robert A. Martin, M.D. Emory at LaGrange Emory Clark-Holder Clinic 380 South Davis Road, Suite E & F LaGrange, Georgia 30240	706-882-8831
City-Lawrenceville CO-Gwinnett	O	Larry W. Anderson, DO Passport Health 5415 Sugarloaf Parkway #1107 Lawrenceville, Georgia 30043	770-649-1675
City-Lawrenceville CO-Gwinnett	E	Daniel Henson, M.D. Care Here Clinic MTW 1600 North Brown Road Lawrenceville, Georgia 30043	678-527-7900
City-Lawrenceville CO-Gwinnett	O	Lloyd M. Hofer, M.D. Lawrenceville Health Center 455 Grayson Hwy, Suite 300 Lawrenceville, Georgia 30046	770-339-4283
City-Lawrenceville CO-Gwinnett	O	Afroz Rahman, M.D. East Metro Primary Care 325 Lester Road, NW, Suite C Lawrenceville, Georgia 30044	770-935-1515
City-Lithonia	O	Leslie J. Richmond, M.D., M.B.A., F.A.A.F.P	770-484-2600

Designated Yellow Fever Vaccination Clinics in Georgia

CO-DeKalb		East DeKalb Health Center 2277 South Stone Mountain Lithonia Road Lithonia, Georgia 30058	
City-Loganville CO-Walton	O	Constance O. George-Adebayo, M.D. Christ the King Medical Center 3531-3533 Highway 81 South Loganville, Georgia 30052	770-554-8015
City-Macon CO-Bibb	O	Harold Katner, MD Mercer Medicine 250 Martin Luther King Jr. Blvd. Macon, Georgia 31201	478-301-4111
City-Macon CO-Bibb	O	Ritu A. Kumar, M.D. Infectious Disease Novicent Health 1014 Forsyth Street, Suite 300 Macon, Georgia 31201	478-633-1919
City-Macon CO-Bibb	O	J. Patrick O'Neal, M.D. Macon-Bibb County Health Dept. 171 Emery Highway Macon, Georgia 31217	478-745-0411
City-Macon CO-Bibb	O	Jeffrey L. Stephens, MD Mercer Medicine 250 Martin Luther King Jr. Blvd. Macon, Georgia 31201	478-301-4111
City-Marietta CO-Cobb	O	Danny R. Branstetter, II, M.D. Wellstar Infectious Disease 55 Whitcher Street, Suite 220 Marietta, Georgia 30060	770-429-0083
City-Marietta CO-Cobb	O	Janet Pak Memark, M.D. Marietta Public Health Center 1650 County Services Parkway Marietta, Georgia 30008	770-514-2409
City-Marietta CO-Cobb	O	Janet Pak Memark, M.D. East Cobb Public Health Center 4958 Lower Roswell Road, Suite 120 Marietta, Georgia 30068	678-784-2192

Designated Yellow Fever Vaccination Clinics in Georgia

City-Marietta CO-Cobb	O	John Thomas Sherrer, Jr., RPH Poole's Pharmacy 660 Whitlock Avenue, Suite G-1 Marietta, Georgia 30064	770-514-1414
City-McDonough CO-Henry	O	Olugbenga Obasanjo, M.D., PhD, MPH Henry County Health Department McDonough Center 135 Henry Parkway McDonough, Georgia 30253	770-288-6136
City-Newnan CO-Coweta	O	Olugbenga Obasanjo, M.D., PhD, MPH Coweta County Health Department 70 Hospital Road Newnan, Georgia 30263	770-254-7400
City-Norcross CO-Gwinnett	O	Jane T. St. Clair, M.D. WellBeings Occupational Healthcare 3300 Holcomb Bridge Road Suite 110 Norcross, Georgia 30092	770-449-5161
City-Norcross CO-Gwinnett	O	Lloyd M. Hofer, M.D. Norcross Health Center 5030 Georgia Belle Court, Suite 2071 Norcross, Georgia 30093	770-638-5700
City-Norcross CO-Gwinnett	O	Louise F. Sheffield, M.D. Occupational Healthworx, LLC 6825 Jimmy Carter Boulevard, Suite 1100 Norcross, Georgia 30071	404-855-3300
City-Riverdale CO-Clayton	O	Richard C. Prokesch, M.D. Infectious Diseases Associates, PC 6285 Garden Walk Blvd, Suite A Riverdale, Georgia 30274	770-991-1500
City-Rome CO-Floyd	O	John S. Hostetler, M.D. The Harbin Clinic Travel Medicine 1825 Martha Berry Blvd. Rome, Georgia 30165-1698	706-236-6460
City-Roswell CO-Fulton	O	M. Rabiul Alam, M.D. Infectious Disease Services of Georgia 11660 Alpharetta Highway, Suite 430 Roswell, Georgia 30076	770-255-1069

Designated Yellow Fever Vaccination Clinics in Georgia

City-Roswell CO-Fulton	O	Larry W. Anderson, DO Passport Health 990 Holcomb Bridge Rd. - Suite 4 Roswell, Georgia 30076	770-649-1675
City-Roswell CO-Fulton	E	Thomas L. Fariss, M.D. Kimberly-Clark Corp.(Employees Only) 1400 Holcomb Bridge Road Roswell, Georgia 30076	770-587-8286
City-Savannah CO-Chatham	O	Lawton Cater Davis, MD Chatham County Health Department 1395 Eisenhower Drive Savannah, Georgia 31406	912-356-2441
City-Suwanee CO-Forsyth	O	Alan David Einstein, DO Vaccines 2 Go 4060 Johns Creek Parkway Suite H Suwanee, Georgia 30024	770-896-8284
City-Thomaston CO-Upson	O	Olugbenga Obasanjo, M.D. Upson County Health Dept. 314 East Lee Street Thomaston, Georgia 30286-34256	706-647-7148
City-Tifton CO-Tift	O	Kristen Renee Ussery Smallwood Moon's Pharmacy 717 Second Street West Tifton, Georgia 31794	229-382-3711
City-Tucker CO-DeKalb	O	Donovan W. Christie, M.D. Anwan Wellness Medical Center 2227 Idlewood Road, Suite 1 Tucker, Georgia 30084	678-205-2039
City-Valdosta CO-Lowndes	O	William Roy Grow, M.D. Lowndes County Health Dept. 206 South Patterson St., 1st. Fl. Valdosta, Georgia 31601	229-333-5257
City-Warner Robins CO-Houston	O	J. Patrick O'Neal, M.D. (Interim) Houston County Health Dept. 98 Cohen Walker Drive Warner Robins, Georgia 31088-2729	478-218-2000
City-Watkinsville CO-Oconee	O	Cassandra A. Hayes, PharmD., RPH Jennings Mill Drug Company 1360 Caduceus Way Building 400, Suite105 Watkinsville, Georgia 30677	706-621-5996

Designated Yellow Fever Vaccination Clinics in Georgia

City-Waycross CO-Ware	O	Rosemarie Parks, M.D. Ware County Health Department 604 Riverside Avenue Waycross, Georgia 31501	912-283-1996
City-Woodstock CO-Cherokee	O	Jackie L. Williamson, M.D. Cherokee Family Medical Center 9766 Highway 92, Suite 200 Woodstock, Georgia 30188	770-926-9846
City-Zebulon CO-Pike	O	Olugbenga Obasanjo, M.D., PhD, MPH Pike County Health Department 541 Griffin Street (P.O. Box 342) Zebulon, Georgia 30295	770-567-8972

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13. QUALITY ASSURANCE
Quality Assurance/Quality Improvement for Immunization Practice for Public Health Nurses and Immunization staff

QA/QI Immunization

GEORGIA DEPARTMENT OF PUBLIC HEALTH
Guidelines for Student Nurses Administering Immunizations for Clinical Experience in Public Health Settings

The Department of Public Health supports the concept of providing student nurses meaningful and appropriate learning opportunities related to vaccine-preventable diseases and immunizations as part of their clinical experience.

Administering immunizations to people in the community is a fundamental role for public health. Assessing the immunization needs of communities and individuals is an integral part of public health services. Public health assesses immunization status as a routine part of serving each individual receiving clinical service. Public health also monitors the immunization status of communities and the state and collaborates with private and public partners and community agencies to improve immunization levels.

Because improving the immunization status of a community is such an important public health issue, the Department supports efforts to assure that student nurses receive planned opportunities to learn about this public health role, which may include clinical experience in the actual administration of immunizations, reviewing the data sources for monitoring immunization levels for communities and planning with community partners to improve immunization levels.

The student learning experience related to immunizations should be planned to include the following:

1. The written agreement between the nursing school and the public health agency should clearly specify the responsibilities of public health and those of the nursing school, including
    a) Orientation to immunizations and vaccine preventable diseases prior to student beginning clinical experience (suggested training may be found at http://dph.georgia.gov/health-care-professionals)
    b) Who is responsible for clinical supervision of the students;
    c) Who is responsible for overall provision of patient care; and
    d) Compliance with public health guidelines/policies/procedures and documentation requirements related to immunizations.

2. The written agreement should specify that each student is covered by liability insurance carried by the school.

EXPECTATIONS	Method of Learning	Date Completed
Initial Training **suggested** prior to first clinical assignment.		
A. Self Study		
How to protect your vaccine supply	**Video** View "Keys to storing and handling your vaccine supply" cdc.gov/vaccines/recs/storage/default.htm Complete Posttest: "How to protect your vaccine supply" (Attachment B) in Georgia Immunization Program Manual dph.georgia.gov/immunization-publications	
You Call The Shots / Understanding the Basics	**Self-Study** cdc.gov/vaccines/ed/youcalltheshots.html View "Understanding the Basics: General Recommendations on Immunization"	
Vaccine Administration	**Self-Study** Review Vaccine Administration/Recommendations and Guidelines cdc.gov/vaccines/recs/vac-admin/default.htm or Review Vaccine Administration Guidelines (**Chapter 6** in Pink Book) Complete Posttest: "Vaccine Administration techniques" (Attachment E) in Georgia Immunization Program Manual at dph.georgia.gov/immunization-publications **Or** **Review Vaccine Administration Techniques Review and complete posttest at dph.georgia.gov/health-care-professionals**	
Vaccine Information Statements	**Self-Study** It's Federal Law!-Instructions for the Use of Vaccine Information Statements Pink book (**Appendix C**)	
B. Be familiar with and can access:		
Georgia Immunization Program Manual	dph.georgia.gov/immunization-publications	
Advisory Committee on Immunization Practices (ACIP)	cdc.gov/vaccines/acip/index.html	

Georgia Notifiable Disease Fact Sheet	dph.georgia.gov/disease-reporting	
Vaccine Adverse Event Reporting System	cdc.gov/vaccinesafety/Activities/vaers.html	
Vaccine Package inserts	immunize.org/packageinserts	
Pink Book	cdc.gov/vaccines/pubs/pinkbook/index.html Hard Copy of Pink Book onsite	

Georgia Registry of Immunization Transactions and Services (GRITS)	**Be familiar with the purpose and requirements of the Georgia Registry of Immunization Transactions and Services**	
C. On Site:		
• Access Immunization Status	Know how to access and query for an existing immunization record to determine current immunization status and need for vaccination in Georgia Registry Immunization Transactions & Service (GRITS)	
• District Immunization forms	Informed of district Immunization documentation forms and charting process to include: informed consent & Vaccine Administration Record	
• Tour of Immunization Clinic, including information about where vaccines and emergency carts trays are located	Know where to obtain equipment in emergency situation and where vaccines are stored and handled.	

IMMUNIZATIONS

INTRODUCTION

The Georgia Immunization Program, within the Georgia Department of Public Health produces an Immunization Program Manual based on the Advisory Committee on Immunization Practices (ACIP) recommendations that outline the recommended Policies and Procedures for administering vaccines by Registered Nurses and for providing immunization services. An advisory committee consisting of District Immunization Coordinators and Pediatricians, a State Pharmacist and the Immunization Program management team, review and update the manual on an ongoing basis. All public health locations that provide vaccine services will utilize the current edition of the Georgia Department of Public Health Immunization Program (GIP) Manual as outlined in the Standard Nurse Protocol for Childhood and Adult Immunizations located at https://dph.georgia.gov/nurse-protocols. Each district is responsible for having written policies and procedures for the administration of travel vaccines that have been reviewed and signed annually by the health director or their designee if applicable.

PURPOSE

The purpose of this QA/QI tool is to document the training/education expectations and the parameters of clinical practice for immunization services. Use of this tool will help promote consistency in practice across programs on a statewide basis and provide an opportunity to identify excellence in practice, as well as opportunities for improvement. The components of this tool may be used to conduct QA reviews of training programs and administration of vaccines by registered nurses. These reviews may be done by Public Health staff from either the local or state level. The credentialing, training and education expectations as well as the parameters of clinical practice for Licensed Practical Nurses in immunization services are in Chapter 13 of the Georgia Immunization Program Manual. This tool may be used when evaluating immunization services provided by Licensed Practical Nurses.

IMMUNIZATIONS

Learning Expectations – Initial Training The nurse must complete the following prior to practicing under nurse protocol:	**Documentation**		**Comments/Notes**
	Yes Date & Initials	**No** Explain	
Self-Study			
Georgia Immunization Program Manual *+ www.dph.georgia.gov/immunization-publications			
Pink Book Epidemiology & Prevention of Vaccine Preventable Diseases-CDC *+ https://www.cdc.gov/vaccines/pubs/pinkbook/chapters.html			
General Best Practice Guidelines for Immunization*+ (available online) www.cdc.gov/vaccines/hcp/acip-recs/general-recs/index.html			
Health District Policies & Procedures for Administration of Travel Vaccines* (If district administers travel vaccines)			
Routine and Emergency Vaccine Handling Plans*- (Georgia Immunization Program Manual) Chapter 9- Vaccine Distribution and Storage			
Georgia Notifiable Disease Fact Sheets+ (Georgia Immunization Program Manual) Chapter 6- Surveillance and Reporting			
Manual for the Surveillance & Reporting of Vaccine Preventable Diseases Manual, CDC*+ http://www.cdc.gov/vaccines/pubs/surv-manual/index.html			

Emergency Guidelines, Policies, Procedures and Protocols (Standard Nurse Protocols for Registered Professional Nurses)			
Didactic/Classroom			
Epidemiology and Prevention of Vaccine-Preventable Diseases www.cdc.gov/vaccines/ed/webinar-epv/index.html View online CDC webinar series for the Pink Book. *			
Vaccine Storage and Handling View and print certificate of completion for the CDC's "Keys to Storing and Handling Your Vaccine Supply" and complete the "You Call the Shots: Vaccine Storage and Handling Module" www.cdc.gov/vaccines/hcp/admin/storage/index.html **OR** Attend a Vaccine Storage & Handling training presentation provided by the GA Immunization Program and complete and pass posttest "How to Protect Your Vaccine Supply" with a score of 80% (See attachments A and B) * +			
Complete training for Transporting Dangerous Drugs /Acknowledgment of Completion signed (if applicable) *** see Standard Nurse Protocol for Transporting Dangerous Drugs			
Vaccine Administration Techniques Attend a Vaccine Administration Techniques training session +* Contact GA Immunization Regional Consultant (IRC) to schedule presentation **OR** View the Immunization Techniques DVD+* purchased from www.immunize.org/shop/ or complete the CDC Vaccine			

Administration e-learn at www.cdc.gov/vaccines/hcp/admin/admin-protocols.html. Complete and pass the Vaccine Administration Techniques posttest with a score of 80% following either training (see attachments C, D, E, and F)			
GA Requirements for School and Child Care Attendance Attend a training session on GA Requirements for School and Child Care Attendance (Can be provided by a district "Certified Trainer" or an Immunization Regional Consultant)			

• Review and instruct on how to access Immunization forms, reports, & records (refer to Immunization Program Manual) a. Patient Immunization Record (written and computerized) b. Vaccine Information Statements * c. Forms for childcare and school attendance • Certificate of Immunization (Form 3231) ** • Religious Objections (Form 2208) ** Chapter 5- Requirements of School / Childcare Law d. VFC Provider Agreement- Determination of Coverage and Fees** Chapter 9- Vaccines for Children & Adults Vaccine Program Policies and Procedures e. Informed Consent** Chapter 3- Informed Request Policy f. Vaccine Adverse Event Reporting System (VAERS)** Chapter 4–Adverse Events Following Immunizations g. Tracking and Follow-up Moved or Gone Elsewhere (MOGE)** Chapter 8 – Recall of Patients h. Notifiable Disease Reports /Vaccine Preventable Disease (VPD) fact sheets ** Chapter 6 – Surveillance and Reporting i. Immigration Forms* (USCIS Form I-693 available online) http://www.uscis.gov/i-693 j. District Immunization documentation forms and charting process *			

k. Georgia Registry of Immunization Transactions & Services (GRITS) • Access and query for an existing immunization record to determine current immunization status and need for vaccination • Recall process and related forms and letters (GRITS Website) www.grits.state.ga.us/production/security_ui.showLogin l. Clinical Assessment Software Application (CASA) report* (Contact District Immunization Regional Consultant for training instructions) www.cdc.gov/vaccines/programs/cocasa/index.html m. Current Georgia Immunization Studies www.dph.georgia.gov/immunization-publications n. District Immunization Coordinator, District Immunization Regional Consultant (IRC), and the Georgia Immunization Program "On-Call" resource phone line			

Preceptorship/Clinical			
The extent and duration of the preceptorship/clinical may vary according to the needs of each individual nurse. However, there shall be documentation that the nurse can satisfactorily perform the required clinical skills on the attached check list (see Attachment G) and that the preceptor has observed the required encounters prior to the nurse being allowed to administer vaccines without direct supervision. The minimum number of observed encounters should be two per age group indicated (infants, children/adolescents and adults) +			

Learning Expectations – Annual Training The Nurse must complete the following annually or as otherwise indicated while practicing under nurse protocol:	**Documentation**		**Comments/Notes**
	Yes	**No**	
	Date & Initials	Explain	
Didactic/Classroom Training			
Complete an annual update for the following training: (training sessions can be live, webcast, or recorded for self-study from the Georgia Immunization Program or the CDC National Center for Immunization and Respiratory Diseases- Immunization Services) * • Vaccine Administration and Safety • Immunization Schedule Updates (Review of the Recommended Immunization Schedule) • Vaccine Storage and Handling (see initial training VFC requirements) • International/ Travel Vaccines (if applicable) • Transporting Dangerous Drugs Training (see initial training requirements if applicable)			
Clinical/ Peer Review			
A supervisor or peer shall document that the nurse can satisfactorily perform the required clinical skills on the attached check list (see attachment G) +			

+ Additional resources for the Immunization program are listed in Attachment 2.
* Most current version
** Chapter reference refers to the Georgia Immunization Program Manual
*** Standard Protocol for Transporting Dangerous Drugs

ATTACHMENT – A: VACCINE SUPPLY POST TEST

"How to Protect Your Vaccine Supply"

Please mark one correct answer for each question. Each question counts 10 points.
A passing score is 80%.

1. What type of refrigerator/freezer does CDC recommend for vaccine storage units?

   A. Purpose-built units designed to either refrigerate or freeze
   B. Dormitory type refrigerator with small hanging freezer inside
   C. Dormitory type refrigerator and separate dormitory type freezer

2. Which vaccine(s) are stored in the freezer?

   A. IPV & DTaP
   B. Td, Hib
   C. Varicella, HZV
   D. DT and Pneumococcal

3. The temperature in the refrigerator and freezer should be checked:

   A. Once a day
   B. Twice a day
   C. Once a week
   D. Once a month

4. To stabilize temperature in the refrigerator it is helpful to keep the following in there:

   A. All vaccine diluents
   B. Large plastic containers filled with water
   C. Lunch

5. Vaccine should never be stored in which part of the refrigerator?

   A. Floor
   B. Door
   C. Lower right-hand corner

6. Which of the following should **NOT** be stored in your vaccine storage unit?

   A. vaccines, diluents, and sodas
   B. vaccines, diluents, and water bottles
   C. HPV, MMR, Td

7. When storing varicella-containing vaccines in a freezer unit:

A. Keep between -58˚F and +5°F until reconstitution and administration
B. Always store in original packaging with lids closed until ready for administration
C. Discard reconstituted vaccine if not used within 30 minutes.
D. All of the above

8. The expiration date on the vial of vaccine you are holding is today's date. This vaccine is ok to use.

   A. True
   B. False

9. When rotating the vaccine stock:

   A. Use short dated vaccine first.
   B. Use the longest date vaccine first as this is the "freshest."
   C. Rotating stock is not that important as long as you don't use anything outdated.
   D. Always over-order to make sure nothing out dates.

10. You should have a sign on your refrigerator/freezer plug to prevent accidental unplugging.

    A. True
    B. False

ATTACHMENT – B: VACCINE SUPPLY POST TEST ANSWERS

"How to Protect Your Vaccine Supply"

1. What type of refrigerator/freezer does CDC recommend for vaccine storage units?

   A. Purpose-built units designed to either refrigerate or freeze
   B. Dormitory type refrigerator with small hanging freezer inside
   C. Dormitory type refrigerator and separate dormitory type freezer

2. Which vaccine(s) are stored in the freezer?

   A. IPV & DTaP
   B. Td, Hib
   C. Varicella, HZV
   D. DT and Pneumococcal

3. The temperature in the refrigerator and freezer should be checked:

   A. Once a day
   B. Twice a day
   C. Once a week
   D. Once a month

4. To stabilize temperature in the refrigerator it is helpful to keep the following in there:

   A. All vaccine diluents
   B. Large plastic containers filled with water
   C. Lunch

5. Vaccine should never be stored in which part of the refrigerator?

   A. Floor
   B. Door
   C. Lower right-hand corner

6. Which of the following should **NOT** be stored in your vaccine storage unit?

   A. vaccines, diluents, and sodas
   B. vaccines, diluents, and water bottles
   C. HPV, MMR, Td

7. When storing varicella-containing vaccines in a freezer unit:

   A. Keep between -58˚F and +5°F until reconstitution and administration
   B. Always store in original packaging with lids closed until ready for administration
   C. Discard reconstituted vaccine if not used within 30 minutes.
   D. All of the above

8. The expiration date on the vial of vaccine you are holding is today's date. This vaccine is ok to use.

   A. True
   B. False

9. When rotating the vaccine stock,

   A. Use short dated vaccine first.
   B. Use the longest date vaccine first as this is the "freshest."
   C. Rotating stock is not that important as long as you don't use anything outdated.
   D. Always over-order to make sure nothing out dates.

10. You should have a sign on your refrigerator/freezer plug to prevent accidental unplugging.

    A. True
    B. False

ATTACHMENT – C: ADMINISTRATION OF I.M. VACCINES

Administer these vaccines via I.M. (intramuscular) route: DTaP, DT, Td, Tdap, Hib, Hepatitis A, Hepatitis B, Influenza, Pneumococcal Conjugate (PCV), Meningococcal Conjugate (MCV4), and Human Papillomavirus Vaccine (HPV). Administer IPV & Pneumococcal Polysaccharide (PPV) either IM or subQ.

When you administer these vaccines, follow the age recommendations indicated in the current Advisory Committee on Immunization Practices (ACIP) schedules.

Patient's Age	Site (see illustrations below) **	Needle Size*
Infants (birth to 12 months of age)	Vastus lateralis muscle in anterolateral aspect of middle or upper thigh	5/8" (0-28 days of age) 1" needle (1-12 months of age) 22-25 gauge
Toddlers (12 to 36 months of age)	Vastus lateralis muscle preferred until deltoid muscle has developed adequate mass (approximately age 36 months)	5/8" for deltoid 1" needle for vastus lateralis 22-25 gauge
Toddlers (>36 months of age) **Children and Adults**	Densest portion of deltoid muscle – above armpit and below acromion **For the above vaccines, the gluteus maximus (buttocks) is not a recommended site for any age.	1" to 2" needle 22-25 gauge

Needle Insertion

Use a needle long enough to reach deep into the muscle.

Insert needle at an 80° to 90° angle to the skin with a quick thrust.

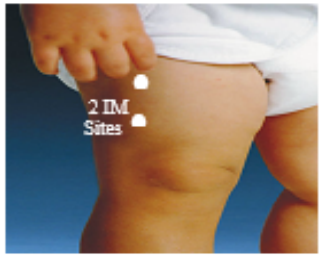
Retain pressure on skin around injection site with thumb and index finger while needle is inserted.

The 2006 Red Book (p.21) states the following regarding the need to aspirate. "Aspiration before injection of vaccines or toxoids (i.e., pulling back on the syringe plunger after needle insertion, before injection) is not required because there are no large blood vessels at the preferred injection sites."

Multiple injections given in the same extremity should be separated as far as possible (preferably 1" to 1½" with minimum of 1" apart).

Multiple vaccines should not be mixed in a single syringe unless specifically licensed and labeled for administering in one syringe.

IM Site For Infants and Toddlers (birth to 36 months of age)



Insert needle at 80°-90° angle into vastus lateralis muscle in anterolateral aspect of middle or upper thigh.

IM Site For Older Toddlers, Children and Adults.

Needle size and site: Decide on the needle size and site of injection based upon each patient's:

- age
- volume of material to be administered
- the size of the muscle
- and the depth below the muscle surface into which the material is to be injected.

Needle size and site: The needle length should depend on the patient's weight:

- 1 1/2" for Males ≥ 118 kg (260 lbs)
- 1" for Males 60-118 kg (130-260 lbs)
- 1 1/2" for women ≥ 90 kg (200 lbs)
- 1" for women 60-90 kg (132-198 lbs)

(The Red Book, 2006, American Academy of Pediatrics)

Insert needle at 80°-90° angle into densest portion of deltoid muscle above armpit and below acromion.

* References: 2006 Red Book, American Academy of Pediatrics, 27th edition; Morbidity and Mortality Weekly Report (MMWR), "General Recommendations on Immunization", December 1, 2006, Vol. 55/No. RR-15

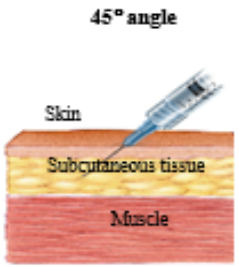
Adapted from the MN and CA Departments of Health Vaccine Administration charts, June 2001. (This information is intended for the education of licensed medical personnel.)

ATTACHMENT – D: ADMINISTRATION OF SUBCUTANEOUS VACCINES

Administer these vaccines via subQ (subcutaneous) route: MMR, Varicella, MMRV, Meningococcal Polysaccharide (MPSV4), and zoster vaccine. Administer IPV & Pneumococcal Polysaccharide (PPV) either subQ or IM.

When you administer these vaccines, follow the age recommendations indicated in the current Advisory Committee on Immunization Practices (ACIP) schedules.

Patient's Age	Site (see illustrations below)	Needle Size	Needle Insertion
Infants (birth to 12 months of age) **and** **Toddlers** (12 to 36 months of age)	Fatty area of the thigh or outer aspect of upper arm	5/8" to 3/4" needle 23-25 gauge	Insert needle at 45° angle to the skin. Pinch up on subQ tissue to prevent injection into muscle. The 2006 Red Book (p.21) states the following regarding the need to aspirate: "Aspiration before injection of vaccines or toxoids (i.e., pulling back on the syringe plunger after needle insertion, before injection) is not required because there are no large blood vessels at the preferred injection sites." Multiple injections given in the same extremity should be separated as far as possible (preferably 1" to 1½ " with minimum of 1" apart). Multiple vaccines should not be mixed in a single syringe unless specifically licensed and labeled for administering in one syringe.
Children and Adults	Outer aspect of upper arm	5/8" to 3/4" needle 23-25 gauge	



SubQ Site for Infants and Toddlers (birth to 36 months)

Insert needle at 45° angle into fatty area of anterolateral thigh or outer aspect of upper arm. Make sure you pinch up on subQ tissue to prevent injection into muscle.

SubQ Site for Children and Adults

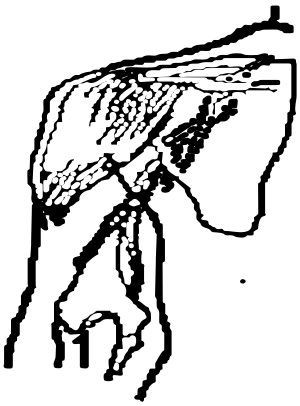
Insert needle at 45° angle into outer aspect of upper arm or fatty area of the thigh. Make sure you pinch up on subQ tissue to prevent injection into muscle.

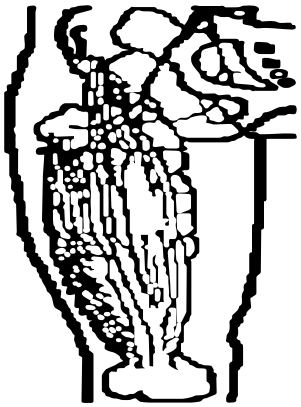
* References: 2006 Red Book, American Academy of Pediatrics, 27th edition; Morbidity and Mortality Weekly Report (MMWR), "General Recommendations on Immunization", December 1, 2006, Vol. 55/No. RR-15

Adapted from the MN and CA Departments of Health Vaccine Administration charts, June 2001. (This information is intended for the education of licensed medical personnel.)

ATTACHEMENT – E: POST TEST

Vaccine Administration Techniques





1. Indicate the site for (**a**) an intramuscular, and (**b**) a subcutaneous immunization on an adult.

2. Please mark the site for an infant or toddler's **DTaP** immunization.

3. Please indicate above with arrows the angle of the needle used for (**a**) an intramuscular and (**b**) a subcutaneous immunization

4. If the following three vaccines were to be administered simultaneously to an **adult**, which site(s) and method(s) of immunization would be **routinely** used for each:

Type of Vaccine	Route(s) of Injection/administration	Site(s)
Influenza	_____	_____
Pneumococcal	_____	_____
Td/Tdap	_____	_____

5. What factors should be considered when determining the needle size and site for an intramuscular injection?
   a. Patient's age
   b. Volume of material to be administered
   c. Size of the muscle
   d. Depth below muscle surface into which the material is to be injected
   e. All of the above

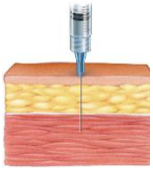
6. Circle the site which is **never** recommended for immunizations.
   a. Deltoid b. Vastus Lateralis
   c. Anterolateral Thigh d. Gluteus Maximus

7. Check the pediatric vaccines which may be given to a child on the same visit as a TB skin test:
   __Varicella __ DTaP __ Hib __MMR

8. Vaccines can be mixed in a single syringe when:
   a. Vaccines are licensed and labeled to be mixed
   b. There is need to decrease the number of injections to be given
   c. Giving all live or all inactivated vaccines.

9. Which of the following is not a route of vaccine administration?
   a. IM
   b. IT
   c. SC
   d. Nasal

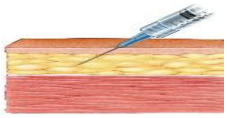
10. Which type of injection is this?
   a. SL
   b. SC
   c. IM
   d. IV



11. When administering intranasal influenza vaccine it is necessary to re-administer vaccine if client sneezes immediately following administration?
   a. True b. False

12. You must re-administer rotavirus if the infant spits or regurgitates following administration.
   a. True b. False

13. The needle angle is correct for an SC injection.
   a. True b. False



14. Never recap or clip needles prior to disposal.
   a. True b. False

15. If both hepatitis A and B vaccines are indicated, it is acceptable to mix the two vaccines together in one syringe.
   a. True b. False

16. When more than two IM vaccines are given to an infant at one visit, the gluteal (buttock) muscle should be used.
   a. True b. False

17. A new needle and syringe must be used for each vaccination.
   a. True b. False

18. MMR and varicella vaccines are both given subcutaneously.
   a. True b. False

19. The proper needle length for an SC injection in a child or adult is 5/8inch.
   a. True b. False

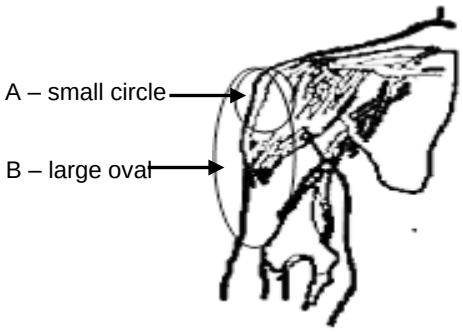
20. No vaccine should be injected unless epinephrine is immediately available.
   a. True b. False

Name:_____ Date:_____ Score:_____

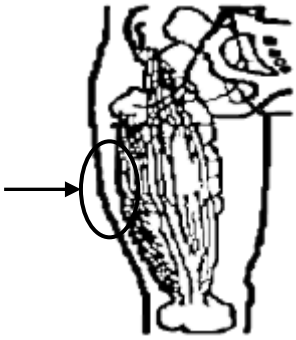
ATTACHMENT – F: POST TEST ANSWER KEY

Vaccine Administration Techniques

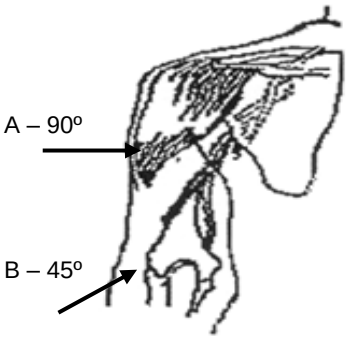
Score 5 points for correct answers. Passing score = 80%



1. Indicate the site for (**a**) an intramuscular, and (**b**) a subcutaneous immunization on an adult.



2. Please mark the site for an infant or toddler's **DTaP** immunization.



3. Please indicate above with arrows the angle of the needle used for (**a**) an intramuscular and (**b**) a subcutaneous immunization

4. If the following three vaccines were to be administered simultaneously to an **adult**, which site(s) and method(s) of immunization would be **routinely** used for each:

Type of Vaccine	Route(s) of Injection/administration	Site(s)
Influenza	**IM, Intranasal**	**IM** deltoid*, nostrils
Pneumococcal	Either **SC** or **IM**	**SC** upper arm; **IM** deltoid*
Td/Tdap	**IM**	Either deltoid*

***Note: Different arms preferred. Separate sites required.**

5. What factors should be considered when determining the needle size and site for an intramuscular injection?
   a. Patient's age
   b. Volume of material to be administered
   c. Size of the muscle
   d. Depth below muscle surface into which the material is to be injected
   e. All of the above

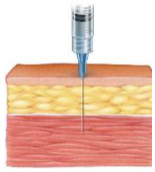
6. Circle the site which is **never** recommended for immunizations.
   a. Deltoid
   b. Vastus Lateralis
   c. Anterolateral Thigh
   d. Gluteus Maximus

7. Check the pediatric vaccines which may be given to a child on the same visit as a TB skin test:
   ☒Varicella ☒ DTaP ☒ Hib ☒MMR

8. Vaccines can be mixed in a single syringe when:
   a. Vaccines are licensed and labeled to be mixed
   b. There is need to decrease the number of injections to be given
   c. Giving all live or all inactivated vaccines.

9. Which of the following is not a route of vaccine administration?
   a. IM
   b. IT
   c. SC
   d. Nasal

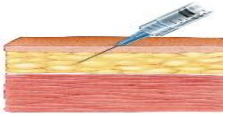
10. Which type of injection is this?
   a. SL
   b. SC
   c. IM
   d. IV



11. When administering intranasal influenza vaccine it is necessary to re-administer vaccine if client sneezes immediately following administration?
   a. True b. False

12. You must re-administer rotavirus if the infant spits or regurgitates following administration.
   a. True b. False

13. The needle angle is correct for an SC injection.
   a. True b. False



14. Never recap or clip needles prior to disposal.
   a. True b. False

15. If both hepatitis A and B vaccines are indicated, it is acceptable to mix the two vaccines together in one syringe.
   a. True b. False

16. When more than two IM vaccines are given to an infant at one visit, the gluteal (buttock) muscle should be used.
   a. True b. False

17. A new needle and syringe must be used for each vaccination.
   a. True b. False

18. MMR and varicella vaccines are both given subcutaneously.
   a. True b. False

19. The proper needle length for an SC injection in a child or adult is 5/8inch.
   a. True b. False

20. No vaccine should be injected unless epinephrine is immediately available.
   a. True b. False

ATTACHMENT – G: CLINICAL SKILLS CHECKLIST

Clinic site _____

Name and title of person being reviewed _____

Program/type of client visit_____Date_____Time_____

Reviewer

To assure the quality of client services, this form is used to record the findings from observation of a nurses' performance. For each line, use the rating code that most closely fits the consistency of the nurses' performance with programmatic standards and policies and procedures. A minimum of two observations per age group are required for completion of initial preceptorship. A minimum of one observation per age group is required annually. Document comments and plan of action in Summary section. Comments must be specific and objective.

The Clinical Skills Checklist is available on the next page.

IMMUNIZATION - CLINICAL SKILLS CHECKLIST

RATING CODE: 1- Unsatisfactory 2- Needs Improvement 3- Satisfactory 4- Not Applicable						
STANDARDS	**Infant**		**Child/Adolescent**		**Adult**	
Clinical Skills, Techniques, and Procedures	Infant-1	Infant-2	Child-1	Child-2	Adult-1	Adult-2
A. Patient/Parent Education						
Welcomes patient/family, establishes rapport, and answers questions						
Explains what vaccines will be given and which type(s) of injection will be done						
Accommodates language or literacy barriers and special needs or patient/parents to help make them feel comfortable and informed about the procedure						
Provides and/or verifies that patient/parents received the Vaccine Information Statements for indicated vaccines and had time to read them and ask questions						
Screens for contraindications and precautions (allergies, fever, immunocompetence, previous reactions, blood products, etc.)						
Reviews comfort measures and after care instructions with patients/parents, inviting questions						

Demonstrates appropriate knowledge of where to find information pertaining to true contraindications and precautions when assessing and administering vaccines						
Assists in evaluating immunizations from computer and or personal immunization record and accurately determines immunizations needed. Demonstrates basic knowledge of GRITS including accessing, querying, and reviewing records						
B. Administration Techniques						
Uses immunization resources appropriately (Georgia Immunization Program Manual, District Policies and Procedures, CDC's Recommendations for Travel, CDC's Epidemiology and Prevention of Vaccine Preventable Diseases, The Red Book etc.) to assess and administer vaccine indicated for age						
Utilizes current recommended schedule and recommendations and district policies and procedures to assess and administer adult and childhood vaccines; utilizes accelerated vaccination schedule when appropriate						
Checks expiration date and lot number of each vaccine prior to drawing up						
Shakes vaccine vial and/or reconstitutes and mixes using the diluent supplied. Inserts vial and draws up correct dose of vaccine. Rechecks vial label						

Demonstrates knowledge of proper vaccine storage and handling, e.g. protects MMR from light, logs refrigerator temperature						
Follows universal precautions and appropriate hand washing techniques during immunization administration						
Appropriately prepares site for administration						
Uses appropriate needle length and gauge for type of injection						
Uses appropriate route of administration for each vaccine (IM, Subcutaneous, PO, ID, intranasal). Uses correct technique for administering injectable, oral, intranasal and intradermal vaccines.						
Administers vaccine in appropriate site						
Utilizes appropriate positioning techniques to administer vaccine						
C. Documentation:						
Documents according to P&P, the type of vaccine administered, date of administration, manufacturer, lot number, site, route, nurse's' name/initials, and VIS publication date						
Demonstrates ability to use GRITS to update immunization history and accurately documents date next immunization due on clinic record and patient personal immunization record						

Demonstrates knowledge of VAERS (Vaccine Adverse Event Reporting System) reporting system according to Georgia Immunization Program regulations						
Provides patient/parent with the appropriate immunization certificate in accordance with Georgia laws and rules and regulations for school and child care attendance						
D. Counseling/Education						
Informs client/parent of any immunization problem (delinquent immunization status, screening for private provider use/MOGE status) under supervision of preceptor.						
Assists with scheduling follow-up as indicated (return visit coordinated with other clinics, labs, voucher pick-ups, etc.)						
Demonstrates knowledge of procedure for referrals (to private providers, Children First, CMS, etc.)						

Other (specify)						
DATE						
REVIEWER INITIALS						

SUMMARY

Description of Nurse Performance/ Plan of Action

_____
_____
_____
_____
_____

Signature of Nurse being reviewed: _____ Signature of Observer/Clinician: _____

Date: _____ Date: _____

If more than 1 Reviewer or Review Date:

Signature of Nurse being reviewed: _____ Signature of Observer/Clinician: _____

Date: _____ Date: _____

TABLE OF CONTENTS

14. STANDARD OPERATING GUIDELINES FOR MASS VACCINATION CLINICS
Mass Vaccination Guide

Standard Operating Guidelines for Conducting Mass Vaccination Clinics

Introduction

Any mass vaccinating effort in response to a bioterrorism or naturally occurring event will require pre-event planning and coordination of vaccines, personnel, facilities, communication, and other support activities. The purpose of this annex to the Immunization Program Manual is to provide standard operating **standards** and generic templates for the vaccinating processes that meet State and federal laws related to mass vaccination clinics. The **standards** will include the following information to assist districts and local clinics in planning and including mass vaccination activities in their written emergency operations plan:

- Guidelines for the administration of routinely supplied vaccines
- Determination of need for mass vaccination clinic(s)
- Mass clinic goals
- Vaccine supply
- Storing and handling vaccines
- Authority to vaccinate
- Suggested roles and responsibilities
- Informed consent
- Documentation of vaccination
- Adverse events following vaccination
- Recommended references

The templates included in the appendices are not meant to be all-inclusive and should be adapted according to the type of event and the number of persons that need to be served.

In providing these **standards**, the assumption applies that districts have made arrangements for and have addressed the following issues in their written emergency operations plans:

- The securing of appropriate administration site facilities and medical supplies
- The provisions for staffing
- The addressing of liability, training and education issues
- The establishment of communication, security, transportation, and storage and handling procedures
- The establishment of guidelines for the requesting, obtaining, administration, and documentation of vaccines routinely provided to the districts and local health departments

Standards for the Administration of Routinely Supplied Vaccines

- The **standards** for administration of vaccines routinely provided by the State Immunization Program outlined in the "Recommended Schedule and **Standards"** section of the Georgia Immunization Program Manual should be followed and a written copy of this manual must be readily accessible to clinics. In addition, this manual may be accessed through the Georgia Immunization Program web site: https://dph.georgia.gov/immunization-publications

  These **standards** are based upon ACIP Recommendations located on the following web site: **http://www.cdc.gov/flu/professionals/vaccination/vax_clinic.htm**

  Clinics must be able to access the ACIP recommendations either as written copies located on site or through the above mentioned web site. In an emergency situation, a current hard copy must be accessible.

Standard Operating Guidelines for Conducting Mass Vaccination Clinics

Prior to the implementation of a mass vaccination clinic(s), determination of persons/populations who are considered to be "at risk" and need to receive vaccinations should be done by state and local health officials based on epidemiologic surveillance, reporting information and current CDC and ACIP recommendations.

Recommendations outlined in the current Georgia Immunization Program Manual and the following documents and/or web sites should be referenced regarding exposure to vaccine preventable diseases:

- Georgia Notifiable Disease Manual (Not available as a complete manual. Disease-specific fact sheets are available online at: **http://dph.georgia.gov/vaccine-preventable-diseases:**
  (Click on specific disease to view fact sheet {i.e. Notifiable Disease: xxxxxx})
- CDC Surveillance and Reporting of Vaccine Preventable Disease Manual at: **http://www.cdc.gov/vaccines/pubs/surv-manual/index.html**
- Current ACIP Recommendations Statements at: **http://www.cdc.gov/vaccines/hcp/acip-recs/**
- CDC Bioterrorism web site: www.bt.cdc.gov/bioterrism

The need to establish a mass clinic(s) will be dependent upon the number of persons who need to be vaccinated and the accessibility of appropriate vaccination sites.

Mass Clinic Goals

The goal of a mass vaccination clinic should be to vaccinate with the appropriate vaccine(s) and provide accompanying education to persons who have been determined to be "at risk" by epidemiological surveillance, public health reporting and CDC/ ACIP recommendations. Other arrangements should be made to vaccinate or dispense medications to persons who are unable to attend the mass dispensing /vaccination sites.

District and local plans should include estimates for how many persons can be vaccinated within designated time periods, utilizing a designated number of sites and stations at each site according to the current CDC recommendations.

District and local plans should also address the dispensing of medication at a mass clinic site, since there is a possibility that administration of vaccine(s) and dispensing of medications may need to occur simultaneously. In this incidence, nursing protocols that are included in the current Nurse Protocol Manual and the Protocol Manual for Chemical and Biological Agents should be referenced. See Appendix A to this document for samples of Vaccine Administration /Dispensing Flow charts.

Vaccine Supply

The provision and distribution of vaccines routinely supplied to public health clinics from the State and federally funded Vaccines for Children (VFC) Program is outlined in the **"Vaccine for Children and Adult Vaccine Program Policy and Procedure"** section of the Georgia Immunization Program Manual. District and local clinics should assess current vaccine supplies, estimate the amount of vaccine(s) needed for response, and request any additional vaccine needed according to **standards** outlined by the State Immunization Program and CDC. Vaccine usage and supply inventories should be documented according to the **standards** outlined in **"Vaccine for Children and Adult Vaccine Program Policy and Procedure"** section of the Georgia Immunization Program Manual.
In the event that an emergency situation may warrant the administration of vaccine(s) that are not routinely provided by the State or VFC program, the State Immunization Program, working in collaboration with Pharmacy, Epidemiology and Emergency Preparedness will follow CDC's guidelines for obtaining and administering vaccines. If an investigational new drug (IND) is recommended by CDC, guidance for requesting obtaining and administering this drug(s) will be obtained from the CDC and FDA and communicated to the districts.

Storing and Handling of Vaccine(s)

The storage and handling of vaccines that are routinely provided by the State and VFC is outlined in the "**Vaccine For Children & Adult Vaccine Program Policies and Procedures"** section of the Georgia Immunization Program Manual and should be adhered to. The guidelines include instructions and templates for documenting storage temperatures and transporting vaccines if indicated. Guidelines detailed in the **"McKesson Vaccine Return Instructions"** for reporting short-dated vaccine, rotation of stock, and returning unused vaccine should be followed.

Standard Operating Guidelines for Conducting Mass Vaccination Clinics

Authority to Vaccinate

Georgia law empowers certain licensed health professionals to administer vaccines. There are no provisions in the Code or in the state's rules and regulations that explicitly give individuals who are not licensed health care professionals the same authority. However, the Georgia Emergency Management Act of 1981 may be interpreted to provide non-licensed health care professionals the authority to vaccinate by deeming such individuals emergency management workers and volunteers that are engaged in emergency management activities. It also appears that this issue can be resolved through the rules and regulations process. DPH can develop a rule that specifically authorizes volunteers, who are not licensed health care professionals, to administer the smallpox vaccine.

Various health professionals are currently considered to have the authority to administer vaccines under the Georgia Code due to their job duties, job descriptions, protocols, or delegation from a physician. Some of these professionals can only administer medications/drugs while under the supervision of another. Following is a list of health professionals followed by the statute that provides them with the authority to administer medications/ drugs, i.e. vaccinate:

- Physicians. O.C.G.A. §43-34-20 (2.1) & (3).
- Pharmacists. O.C.G.A. §26-4-4, 26-4-5 (30)(A)(31) and **(O.C.G.A. Section 43-34-26.1)**
- Licensed Practical Nurse (LPN). O.C.G.A. §43-26-3 (6) and §43-26-32 (7).
- Registered Professional Nurse (RN). O.C.G.A. §43-26-3 (6) and (8) and O.C.G.A. §43-34-26.1 (b).
- Advanced Practice Nurses – Certified Nurse Midwife, Certified Registered Nurse Anesthetist, Certified Nurse Practitioner and Clinical Nurse Specialist. O.C.G.A. §43-26-3 (1), (6) and (8) and §43-34-26.1 (b)(1)(B).
- Physician's Assistant (PA). O.C.G.A. §43-34-105 and O.C.G.A. §43-34-26.1 (b).
- Medical Student, Intern or Resident. O.C.G.A. §43-34-26 (b)(5) and (b)(10)(A).
- Certified Emergency Medical Technicians. O.C.G.A. §31-11-53.
- Paramedics. O.C.G.A. §31-11-54.
- Certified Cardiac Technicians. O.C.G.A. §31-11-55.

The Code does not give the following professionals explicit authority to administer drugs.

- Acupuncturists. O.C.G.A. §43-34-62 (1) and (4) (acupuncture does not include administering drugs).
- Veterinarians. O.C.G.A. §43-50-3 (5) (can only administer drugs to animals).
- Chiropractors. O.C.G.A. §43-9-1 (2) (cannot use drugs).
- Dentists. O.C.G.A. §§43-11-1 (5) and 43-11-17 (can prescribe drugs, but can only perform procedures in the oral cavity).

Suggested Roles and Responsibilities

District and local health departments written plans should include:

- Plans for recruitment, liability, training and use of personnel, including volunteers
- Detailed description of process of triage, registering and administering vaccine to appropriate individuals. Process should include venue specific roles and responsibilities for command and support personnel as outlined in CDC's Incident Command guidelines (See Appendix A)
- Lay out of clinic plan and flow chart
- List of supplies needed
- Plans to vaccinate first responders in a separate setting prior to implementation of a mass vaccination clinic, when indicated (i.e. smallpox)
- Plans for utilizing teams of personnel to administer and/or dispense medication to persons that would be unable to attend a mass clinic
- Plans for identifying persons who require personalized attention in the mass clinic setting due to physical, mental, or communication issues

See Appendices B1, B2, B3, and B4 to this document for sample templates of Dispensing/ Vaccination Site Command charts and Appendices C1, C2 and C3 for sample templates of Clinic, District and State Vaccination Report forms.

Standard Operating Guidelines for Conducting Mass Vaccination Clinics

Informed Consent

Prior to administering vaccines, informed consent should be secured. Consent for treatment is documentation that the person has been provided information about the purposes, risks, benefits, and alternatives for care. In Georgia, the legal definition of a person authorized to make a request for immunization is cited as the Georgia Medical Consent Law located in the Official Code of Georgia, Annotated, Title 31, Chapter 9, 12/2001. A copy of this law and an explanation of the informed consent process and the mandated use of current Vaccine Information Statements (VIS) prior to vaccinating are located in the "Informed Request Policy" section of the Georgia Immunization Program Manual. The policies outlined in this section should be referenced and utilized by districts in conducting vaccination clinics.

Documentation of Vaccination

Required documentation of vaccine administration is outlined in the "Informed Request Policy" section of the Georgia Immunization Program Manual. Documentation of each vaccine administered and the receipt by vaccine recipients (or their parent or legal representative) of the current appropriate VIS is required in the vaccine recipient's medical record. Georgia law requires that vaccines administered to individuals of all ages must be documented in the Georgia Registry of Immunization Transactions and Services (GRITS). This legal requirement is referenced in the "Requirements of Law" section of the Immunization Program Manual. GRITS may be utilized as an individual's medical record of immunization. In addition, immunizations may be recorded on form number 25-IMM-002 E, "Georgia Vaccine Administration Record", which is located in the "Informed Request Policy" section of the Georgia Immunization Program Manual.

When vaccines are administered in a mass vaccination clinic situation, each clinic is responsible for tracking, documenting, and reporting the number of doses of each vaccine administered during designated time periods. The Vaccine Site Coordinator is ultimately responsible for submitting summary reports of the number of doses administered to the District Command Site at the designated times. See Appendix C 1, "Clinic Site Vaccination Report" for a suggested tabulating template. In addition, each clinic site is responsible for tracking, documenting and keeping a record of the number of personnel working in the mass vaccination clinic.

The District Command Site is responsible for collecting, tabulating, and reporting to the Georgia Immunization Program, the total number of vaccines doses administered in all of the sites located within their district for the time periods that have been established in collaboration with the State Immunization Program and the Emergency Operation Center (EOC). See Appendix C 2, "District Command Site Vaccination Report" for a suggested tabulating template. The District Command Sites should submit the total number of doses administered, requests for additional vaccine, and any other pertinent information as part of their "Situation Report" which is located on the web based EOC. See Appendix C 3, "Georgia Immunization Vaccination Report" for a suggested tabulating template.

Screening for contraindications to vaccines shall be completed prior to administration of a vaccine. Sample forms (one for children and teens and another for adults) that can be utilized to screen for contraindications to the vaccines routinely recommended by ACIP and to document the screening process are located in the "Recommended Schedule and Standards" section of the Georgia Immunization Program Manual.

In the event of an emergency situation where an investigational new drug (IND) might be recommended by CDC, an IND consent form for off-labeled use must be utilized. In this instance, guidance and forms obtained from the CDC and FDA will be utilized and distributed to the districts.

Adverse Events Following Vaccination

Each district should utilize the guidelines outlined in the Nursing Protocols for Registered Nurses, Chapter 12, Emergency Guidelines, Policies, Procedures and Protocol located on the Georgia Public Health Nursing website at https://dph.georgia.gov/nurse-protocols or develop and utilize emergency protocols and procedures consistent with those outlined in the State Nurse Protocols.

Standard Operating Guidelines for Conducting Mass Vaccination Clinics

Any adverse reaction or event occurring after the administration of a routinely recommended vaccine should be documented and reported to the Vaccine Adverse Event Reporting System (VAERS) according to the guidelines established in the "Adverse Events Following Vaccination" section of the Georgia Immunization Program Manual. VAERS is a national vaccine safety surveillance program. Reporting an event to VAERS does NOT file a claim for compensation. **VAERS form can be downloaded at http://vaers.hhs.gov/index**

The National Childhood Vaccine Injury Act created the Vaccine Injury Compensation Program (VICP) to compensate individuals whose injuries may have been caused by vaccines recommended by the CDC for routine use. VICP provides liability protection to both vaccine companies and health care providers. If there is an adverse reaction requiring medical treatment, that treatment should be paid for by the individual or their insurance company, not the administrator or the vaccine company. If the reaction is one covered by the VICP, an individual can file a claim with VICP. A civil claim can only be filed against the vaccine company and/or the vaccine administrator after first filing a claim under the VICP and then rejecting the decision of the Court. **Information on VICP can be obtained from the VICP website** http://www.hrsa.gov/vaccinecompensation/index.html**.**

Recommended References

Current versions of reference materials should be readily accessible for individuals administering the vaccines routinely recommended by the ACIP. A listing of these references is located in the "Quality Assurance/Quality Improvement for Public Health Immunization Nurses" which can be found on the Department of Public Health Immunization section website at https://dph.georgia.gov/immunization-publications.

Additional references specifically providing guidelines for mass influenza vaccination clinic planning can be found at the CDC website: http://www.cdc.gov/flu/professionals/vaccination/vax_clinic.htm

Georgia Pandemic Influenza Preparedness Information can be found on the Georgia Public Health website at http://dph.georgia.gov/georgia-pandemic-influenza-preparedness-information