
**EMERGENCY
GUIDELINES, POLICIES,
PROCEDURES AND
PROTOCOLS**

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2013-2014 EMERGENCY CLINICAL REVIEW TEAM

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GUIDELINES FOR EMERGENCY KITS/CARTS IN PUBLIC HEALTH CLINIC SITES

A. GENERAL POLICY

Local factors such as anticipated EMS response time, the availability of a physician and the ability of trained personnel to initiate an emergency procedure in the event of vasovagal syncope, and/or an acute anaphylaxis/allergic reaction will determine the need for supplies beyond the minimum and expanded protocol/procedure for some clinics. Emergency plans and procedures should be coordinated with the local Emergency Medical System (EMS).

All emergency drugs and supplies should be kept together in a secured kit or cart that is easily moveable and readily accessible/visible during clinic service hours. Inventory should be checked monthly with careful attention to medication expiration dates and the working condition of equipment.

B. DEFINITION OF EMERGENCY KIT/CART

Emergency kits/carts are those drugs and supplies which may be required to meet the immediate therapeutic needs of **patients** and which are not available from other authorized sources in sufficient time to prevent risk or harm to **patients**. Medications may be provided for use by authorized health care personnel in emergency kits/carts, provided such kits/carts meet the following requirements:

1. Storage

Emergency kits/carts shall be stored in limited-access areas and sealed with a disposable plastic lock to prevent unauthorized access and to insure a proper environment for preservation of the medications in them.

2. Labeling - Exterior

The exterior of emergency kits/carts shall be labeled so as to clearly and unmistakably indicate that it is an emergency drug kit/cart and is for use in emergencies only.

3. Labeling – Interior

All medications contained in emergency kits/carts shall be labeled in accordance with the name of the medication, strength, quantity, and lot # and expiration date.

4. Removal of Medications

Medications shall be removed from emergency kits/carts only pursuant to nurse protocol/procedure, by authorized clinic personnel or by a pharmacist.

5. Inspections

Each emergency kit/cart shall be opened and its contents inspected by RN/APRN/Pharmacist/MD monthly with the exception of oxygen (every 6 months). The monthly inspection shall be documented on an Emergency Check-Off Log sheet which includes:

- a. the listing of all emergency supplies and equipment,
- b. the name of the medication(s), its strength, quantity, lot # and expiration date,
- c. the staff member's name who performed the inspection and
- d. the inspection date.

Upon completion of the inspection, the emergency kit/cart shall be resealed with the appropriate disposable plastic key.

6. Minimum Medication(s)

- a. Epinephrine 1:1000, 1 ml (2 ampules)
- b. Diphenhydramine 50 mg/mL (2 ampules)
- c. Diphenhydramine elixir/solution 12.5 mg/5 mL (1 bottle)
- d. Diphenhydramine HCl 25 mg caps (1 bottle)
- e. Portable oxygen (by nasal cannula at **5 L/ min unless patient** has history of emphysema or chronic lung disease when it should be administered at 2L/min).

7. Minimum Supplies

- a. Blood pressure cuffs (adult and child)
- b. Stethoscope
- c. Flashlight/extra batteries
- d. Copy of emergency protocols/procedures
- e. Allergic Reaction/Acute Anaphylaxis Record
- f. Bag-valve-mask (AMBU) for resuscitation (Infant/Child/Adult)
- g. Copy of initialed current Monthly Checklist of Drugs and Supplies
- h. Nasal cannula for oxygen administration
- i. Needles and syringes
- j. Filter needles, 5 micron, for use when aspirating a medication from a glass ampule, to reduce contamination

8. Recommended Additional Supplies and Medications

(For use where additional protocol/procedures and trained personnel are available)

- a. Pulse-oximeter
- b. Automated external defibrillator (AED)
- c. Epinephrine Auto-injector 0.15 mg (3 doses)
- d. Epinephrine Auto-injector 0.3 mg (3 doses)

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GUIDELINES FOR ALTERED LEVEL OF CONSCIOUSNESS/SYNCOPE (FAINTING)/SEIZURE ACTIVITY

DEFINITION	<p>Syncope (fainting) is a transient loss of consciousness accompanied by loss of postural tone due to decreased blood supply to the brain. Syncope is commonly a benign vasovagal event; however, it may represent a serious medical event, particularly in the elderly. Typical vasovagal syncope occurs in a person in upright position with appropriate stimulus (e.g., fear or pain from blood draw or injection). By definition, vasovagal symptoms resolve when recumbent position restores blood flow to the brain. The main goal of evaluation of patients who faint, are dizzy or have altered LOC is to identify those who are at risk for or are experiencing acute medical emergencies such as volume depletion, cardiac, metabolic or neurologic event.</p>
ETIOLOGY	<p>Vasovagal syncope is usually due to emotional stress related to fear or pain (e.g., having blood drawn or an injection).</p>
OBJECTIVE	<ol style="list-style-type: none">1. Fall in blood pressure2. Dizziness.3. Nausea.4. Diminished vision.5. Slow pulse.6. Pallor, perspiration.7. May progress to loss of postural tone and consciousness.8. Seizure Activity.
ASSESSMENT	<p>Loss of postural tone and consciousness, etiology to be determined</p>
PLAN	<ol style="list-style-type: none">1. Protect patient from fall injury. Position the patient in the recumbent position with legs elevated. Loosen tight clothing at the neck and waist. If the patient does not immediately regain consciousness, call 911 for EMS support and consider lateral decubitus position to prevent aspiration or airway obstruction. Consider initiating oxygen. If sitting, do not lower head by bending at waist (may further compromise venous return to heart).2. Monitor blood pressure and pulse. If these return to baseline normal for that patient and the patient regains consciousness and has no persistent complaints or abnormal signs/symptoms, observe the patient for at least 20 minutes.

3. Do not give anything by mouth or allow the **patient** to resume an upright position until feeling of weakness has passed.
4. **Patient** may leave the clinic (ideally accompanied) when able to take oral fluids and ambulate (unless- non-ambulatory as baseline), and has no complaints or symptoms.
5. If **patient** does not stabilize, call 911 for EMS transport to closest appropriate hospital Emergency Department.
6. Signs and symptoms of instability requiring hospital evaluation:
 - a. Persistent hypotension.
 - b. Cardiac arrhythmia (including bradycardia or tachycardia).
 - c. Persistent altered level of consciousness.
 - d. Persistent complaints (e.g., dizziness, chest pain, difficulty breathing, abdominal pain).
 - e. Any injury sustained during episode.
 - f. Seizure Activity

PATIENT EDUCATION/COUNSELING

1. Emphasize the importance of staying well hydrated.
2. Advise **patient** to resume normal activity.
3. Advise **patient** to call 911 for any chest or abdominal pain, difficulty breathing, dizziness or weakness or any recurrence of “fainting”.

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PROCEDURES FOR ALLERGIC REACTIONS, INCLUDING ACUTE ANAPHYLAXIS IN ADULTS, INFANTS AND CHILDREN

DEFINITIONS

Allergic reactions that are potentially life-threatening (anaphylactic) reactions, after exposure to an antigen which has been injected, ingested or inhaled.

Reactions range from mild, self-limited symptoms to rapid death:

1. Mild to moderate allergic reactions involve signs and symptoms of the gastrointestinal tract and skin. Observing the **patient** for rapid increase in severity of signs and symptoms is important, as the sequence of itching, cough, dyspnea and cardiopulmonary arrest can lead quickly to death.
2. Severe/anaphylactic reactions involve signs and symptoms of the respiratory and/or cardiovascular systems. These may initially appear minor (i.e., coughing, hoarseness, dizziness, mild wheeze) but any involvement of the respiratory tract or circulatory system has the potential to rapidly become severe. Death can occur within minutes. Therefore, prompt and effective treatment is mandatory if the **patient's** life is to be saved.

ETIOLOGY

Agents commonly associated with allergic reactions/anaphylaxis, include:

1. Medications:
 - a. Over the counter, especially non-steroidal anti-inflammatory drugs.
 - b. Prescribed medication, especially antibiotics; may occur with vaccines.
 - c. Illicit or illegal drugs.
 - d. Herbal or home remedies.
2. Food:
 - a. Especially tree nuts, peanuts, shellfish and eggs.
3. Environmental:
 - a. Stings (e.g., bee, wasp, yellow jacket, hornet, fire ants).
 - b. Pollens, grass, molds, smoke, animal dander.
 - c. Iodinated contrast media.

**SUBJECTIVE &
OBJECTIVE**

Allergic reaction may affect one or more organ systems:

1. Skin:
 - a. Itching and hives or welts (localized or generalized).
 - b. Flushing or skin edema.
 - c. Tingling.
 - d. Itching.
2. Gastrointestinal:
 - a. Abdominal pain.
 - b. Nausea, vomiting.
 - c. Diarrhea.
3. Cardiac:
 - a. Dizziness or fainting (hypotension).
 - b. Palpitations.
 - c. Chest pain.
4. Respiratory:
 - a. Difficulty breathing.
 - b. Bronchospasm, wheezing.
 - c. Upper airway swelling (including lips and tongue).

ASSESSMENT

Allergic reaction: By definition, involvement of two or more organ systems **OR** presence of respiratory compromise or shock indicate a severe allergic reaction (anaphylaxis). Most severe reactions occur soon after exposure. The faster a reaction develops, the more severe it is likely to be.

PLAN

THERAPEUTIC

1. Cutaneous symptoms only (mild)
 - Step 1 Diphenhydramine PO or IM:
Note: Children younger than 2 years of age should receive diphenhydramine only after consulting with a physician.

Diphenhydramine PO:
Pediatric:
2 to 5 years: 6.25 mg every 4-6 hours;
maximum: 37.5 mg/day.

6 to 11 years: 12.5-25mg every 4-6
hours; maximum: 150 mg/day.

12 years or older: 25-50 mg every 4-6
hours; maximum: 300 mg/day.

Adults: 25-50mg every 6-8 hours.

OR

Diphenhydramine IM:

<p>Diphenhydramine IM Dosing (The standard dose is 1 mg/kg body weight, up to 100 mg) May repeat dose every 6 – 8 hours; Adult not to exceed 400 mg/day. Child not to exceed 300 mg/day.</p>	
Weight lbs (kg)	Diphenhydramine Dose (Injection: 50 mg/mL)
24-37 (11-17)	15 mg / 0.3 mL
37-51 (17-23)	20 mg / 0.4 mL
51-77 (23-35)	30 mg / 0.6 mL
77-99 (35-45)	40 mg / 0.8 mL
>99 (>45)	50 mg / 1 mL

- Step 2 Complete Allergic Reaction Record.
- Step 3 Observe for 60 minutes.
- Step 4 If any respiratory or circulatory signs develop,
proceed to 2. below (Severe Reactions).
- Step 5 If, after 60 minutes, the **patient's** symptoms
are still limited to the skin and the patient is
comfortable, then:
 - a. Advise adult **patient** to take
diphenhydramine orally every 6 to 8
hours if symptoms persist. Advise that
if anytime the **patient** experiences
dizziness, difficulty breathing or chest
pain to call 911.
 - b. Advise parent to give pediatric **patient**
diphenhydramine orally every 4 - 6
hours, if symptoms persist. Advise that
if anytime the child experiences
dizziness, difficulty breathing or chest
pain to call 911.
 - c. Inform the **patient** that he/she has an
apparent allergy to the causative
agent and advise that this information
should be provided to all
healthcare givers in the future.
 - d. If the causative agent was a medication
being dispensed for additional use at
home, then this plan should be
reconsidered and an alternative

medication should be used that is in a different chemical family that is not regarded as having “cross-reactivity” with the causative agent.

2. Severe Reactions (anaphylaxis) Reactions involving more than one organ system or causing difficulty breathing or hypotension/shock are by definition severe and may progress rapidly to death. Early recognition and early treatment with epinephrine are essential in preventing this outcome.

- Step 1 Call for HELP
- a. Have someone call EMS/911 and/or the physician.
 - b. Do not leave the **patient** unattended!
 - c. Assure open airway; begin CPR if indicated.
 - d. Assign one person to keep the anaphylaxis record and be the timekeeper.
 - e. Administer epinephrine:

NOTE: Administer into thigh (more effective at achieving peak blood levels than into deltoid area).

Epinephrine IM Dosing	
(Dosing by body weight is preferred; the standard dose is 0.01 mg/kg body weight, up to 0.5 mg.)	
Weight lbs (kg)	Epinephrine IM Dose (1mg/ml=1:1,000 wt/volume)
<9 (<4)	Weigh baby and calculate appropriate dose
9-15 (4-7)	0.06 mg/0.06 mL
15-24 (7-11)	0.10 mg/0.10 mL
24-31 (11-14)	0.12 mg/0.12 mL
31-37 (14-17)	0.16 mg/0.16 mL
37-42 (17-19)	0.18 mg/0.18 mL
42-51 (19-23)	0.20 mg/0.20 mL
51-77 (23-35)	0.30 mg/0.30 mL
77-99 (35-45)	0.40 mg/0.40 mL
>99 (>45)	0.50 mg/0.50 mL
May repeat every 5 to 15 minutes PRN for a total of 3 doses (≤1.5 mL [1.5 mg] total)	

OR

If at least 33lbs (15kg)

Epinephrine Auto Injector may repeat using an additional Epinephrine Auto Injector every 5 to 15 minutes as needed for a total of 3 doses			
Weight lbs (kg)		Dose	Auto Injection
33-66lbs (15-29kg)	Epinephrine Auto Injector	0.15 mg	Delivers 0.15 mg per injection
66lbs (30kg) or greater	Epinephrine Auto Injector	0.3 mg	Delivers 0.3mg per injection

Note: There are several brands of Epinephrine Auto Injectors available. Please read the package insert prior to administration.

- f. Apply oxygen at **5 L/minute** by **nasal cannula** or at 2L/min if patient has history of emphysema or chronic lung disease.

- Step 2 Place **patient** in supine position, legs elevated, if tolerated.
- Step 3 Begin monitoring Vital Signs with BP every 5 minutes.
- Step 4 Any **patient** who has received epinephrine must be transported by EMS to closest appropriate hospital emergency department; copy of anaphylaxis record must go with **patient** to hospital.

PAITENT EDUCATION/COUNSELING

1. When a **patient** is given an agent (e.g., antibiotic or vaccine) capable of inducing anaphylaxis, he/she should be advised or encouraged to remain in the clinic for at least 30 minutes.
2. Inform **patient** that he/she has an apparent allergy to the causative agent and advise that this information should be provided to all healthcare givers in the future.
3. Advise the **patient** to call 911 if any difficulty breathing, dizziness or chest pain occurs.

4. Advise the adult **patient** that cutaneous symptoms may be treated with diphenhydramine every 6 - 8 hours. Advise the pediatric **patient** that cutaneous symptoms may be treated with diphenhydramine every 4 – 6 hours. Persistent or worsening symptoms should be evaluated by the **patient's** primary care provider.

REFERRAL

1. Immediately refer **patients** with wheezing, laryngeal edema, hypotension, shock or cardiovascular collapse to ER via EMS.
2. Refer to primary care provider for further evaluation those patients with itching, redness welts/hives.

FOLLOW-UP

1. Place an allergy label on the front cover of the **patient's** medical record.
2. Educate the **patient**/caretaker about medical alert bracelets for anaphylactic reactions.
3. If the allergic reaction is immunization-induced, complete a vaccine adverse event record (VAERS).

ALLERGIC REACTION / ANAPHYLAXIS RECORD – page 1

District/Clinic Site _____ Date _____

Patient Demographic Information:

Name: _____

DOB ____/____/____ AGE _____ months / years

Estimated/Actual Weight (please circle one) Infant / Child / Adult _____ lbs/kg

Event which preceded reaction:

- _____ Immunization
- _____ Medication administered
- _____ Biologicals administered
- _____ Other: (please explain) _____

TIME OF REACTION: _____ AM / PM

TIME EMS CALLED: _____ AM / PM

Signs and Symptoms: (please check)

- | | |
|---|------------------------------------|
| _____ Apprehension | _____ Choking sensation |
| _____ Flushing and/or skin edema | _____ Coughing/hoarseness/wheezing |
| _____ Palpitations | _____ Difficulty breathing |
| _____ Numbness and tingling | _____ Nausea and vomiting |
| _____ Itching | _____ Severe hypotension |
| _____ Localized or generalized urticaria
(rash, welts) | _____ Vasomotor collapse |
| _____ Seizure Activity | _____ Loss of consciousness |

Other (e.g., dizziness): _____

OTHER OBSERVATIONS / COMMENTS: _____

SIGNATURE OF RN/APRN: _____

DISPOSITION: _____

REVIEWER: _____

NOTE: Send copies of both pages of this record with **patient** referred to a physician's office or hospital

ALLERGIC REACTION / ANAPHYLAXIS RECORD – page 2

1. Call for HELP.
Assign timekeeper/recorder.
TIME EMS CALLED: _____ AM/PM
TIME EMS ARRIVED: _____ AM/PM
TIME EMS DEPARTED TO HOSPITAL: _____ AM/PM
Hospital's Name: _____
Patient's status when transported to hospital: _____

2. Assure AIRWAY.
Check VITAL SIGNS q 5 minutes.
CPR if necessary.

Patient Name: _____
Patient Weight: _____
Patient DOB: _____

VITAL SIGNS (monitor every 5 minutes)

Time	B/P	Pulse	Resp
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____

CPR Indicated: _____ YES _____ NO
TIME CPR started: _____ AM / PM
TIME CPR ended: _____ AM / PM

Oral Diphenhydramine
12.5 mg/5 mL (Elixir/Solution)
OR 25 mg, 50 mg (Capsules)

<u>TIME</u>	<u>ORAL DOSE</u>
_____	_____
_____	_____

IM Diphenhydramine 50 mg/mL vial

<u>TIME</u>	<u>IM DOSE</u>
_____	_____

Epinephrine 1:1000 w/v ampule

<u>TIME</u>	<u>DOSE</u>	<u>ROUTE</u>
_____	_____	IM
_____	_____	IM
_____	_____	IM

EpiPen® Auto-Injector
TIME Administered: _____ AM/PM
TIME Administered: _____ AM/PM
TIME Administered: _____ AM/PM

EpiPen® Junior Auto-Injector
TIME Administered: _____ AM/PM
TIME Administered: _____ AM/PM
TIME Administered: _____ AM/PM

Twinject 0.15 mg/0.15 mL _____ AM/PM
Twinject 0.15 mg/0.15 mL _____ AM/PM
Twinject 0.15 mg/0.15 mL _____ AM/PM

Twinject 0.3 mg/0.3 mL _____ AM/PM
Twinject 0.3 mg/0.3 mL _____ AM/PM
Twinject 0.3 mg/0.3 mL _____ AM/PM

Adrenaclick 0.15 mg/0.15 mL _____ AM/PM
Adrenaclick 0.15 mg/0.15 mL _____ AM/PM
Adrenaclick 0.15 mg/0.15 mL _____ AM/PM

Adrenaclick 0.3 mg/0.3 mL _____ AM/PM
Adrenaclick 0.3 mg/0.3 mL _____ AM/PM
Adrenaclick 0.3 mg/0.3 mL _____ AM/PM

Auvi-Q 0.15 mg/0.15 mL _____ AM/
Auvi-Q 0.15 mg/0.15 mL _____ AM/PM
Auvi-Q 0.15 mg/0.15 mL _____ AM/PM

Auvi-Q 0.3 mg/0.3 mL _____ AM/PM
Auvi-Q 0.3 mg/0.3 mL _____ AM/PM
Auvi-Q 0.3 mg/0.3 mL _____ AM/PM

Other, please specify name, dosage and time administered: _____.

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**POLICY FOR REVIEWING EMERGENCY PROTOCOLS/
PROCEDURES IN PUBLIC HEALTH CLINIC SITES**

A review of emergency protocol/procedures shall be completed at least once annually at each clinic site. The Nursing Supervisor shall arrange for the annual review and completion of the attached checklist.

Staff member(s) listed below participated in training updates for all age ranges and performed in a mock emergency drill on _____.
(Date)

District Health Director:

Printed Name _____

Signature _____ Date _____

District Public Health Nursing and Clinical Director:

Printed Name _____

Signature _____ Date _____

Name(s) of Staff Member(s)

EMERGENCY CHECKLIST FOR PUBLIC HEALTH CLINIC SITES

PURPOSE

To assure that each site is equipped and prepared to handle emergencies that may occur. The Nursing Supervisor and District Public Health Nursing & Clinical Director will assure that this checklist is completed annually for each site and that follow-up occurs for any inadequacies/incomplete areas.

#	EMERGENCY ITEM	Complete/ Adequate	Incomplete/ Inadequate	Comments
1.	Emergency numbers posted on each phone			
2.	Exits clear			
3.	Hallways clear			
4.	Staff able to describe action to take in case of emergency			
5.	Staff demonstrates use of anaphylaxis equipment			
6.	Emergency kit/cart stored in secured area except during clinic hours			
7.	Emergency kit/cart stocked according to district protocol for anaphylaxis			
8.	All staff trained in emergency procedures and certified in CPR (every 2 years)			
9.	Practice emergency drill(s) conducted and documented at least annually. NOTE: Drills should include age-group variations (i.e., adults, infants and children.)			

County _____

Nursing Supervisor: Printed Name _____

Signature _____

Date of Review: _____

Date Corrected: _____

District Public Health Nursing
& Clinical Director: Printed Name _____

Signature _____

EVALUATION TOOL FOR PRACTICE DRILL

	<u>Yes</u>	<u>No</u>
A. <u>Response Team</u>		
1. Team effort utilized and well-coordinated.	_____	_____
2. Response team timely.	_____	_____
3. Patient assessment complete.	_____	_____
4. Code Blue* called.	_____	_____
5. Emergency Medical Services/ Physician notified.	_____	_____
6. Emotional support provided to significant others, if applicable.	_____	_____
B. <u>Patient Outcome</u>		
1. Level of consciousness assessed.	_____	_____
2. Vital signs monitored.	_____	_____
3. Appropriate drugs given.	_____	_____
4. CPR instituted, if applicable.	_____	_____
5. EMS/physician responded.	_____	_____
6. Documentation complete.	_____	_____

C. Recommendations/Comments:

Site _____ Date _____

Evaluator: Printed Name _____

Signature _____

**Though Code Blue is not specified in the anaphylaxis protocol/procedures,
it should be used to signal the emergency.*

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STANDARD NURSE PROTOCOL FOR SHOCK/ HEMORRHAGE

DEFINITION	Shock is a critical condition brought on by a sudden drop in blood flow (and thus oxygen delivery) through the body. Shock that is unrecognized and untreated can lead to permanent organ damage or death.
ETIOLOGY	Shock may result from blood loss, dehydration, allergic reaction, infection, pulmonary embolism, or myocardial infarction/heart failure. Common causes of shock in females with reproductive capacity include 1) ruptured ectopic pregnancy, 2) pulmonary embolism (especially smokers on birth control pills), 3) ruptured ovarian cyst, 4) placental abruption, 5) severe, chronic untreated dysfunctional bleeding, and 6) severe PID.
SUBJECTIVE	Symptoms: dizziness, nausea, weakness, sweating, agitation and/or confusion
OBJECTIVE	<ol style="list-style-type: none">1. Cardiac: rapid weak pulse; low blood pressure;2. Skin: pale or ashen; cool; sweaty;3. Neuro: altered level of consciousness (agitated, confused, or somnolent)
ASSESSMENT	Shock, etiology to be determined, requiring urgent evaluation and treatment
PROCEDURE	<ol style="list-style-type: none">1. Call 911 or your local emergency number.2. If patient is unresponsive, not breathing and/or has no pulse, begin CPR.3. Stop visible bleeding by applying direct pressure to bleeding site.4. Administer oxygen. . If only nasal cannula is available, administer oxygen at 5 L/ minute unless patient has history of emphysema or chronic lung disease when the administration rate should be limited to 2L/minute.5. Monitor with pulse-oximeter, if available.6. Have the person lie down on his or her back with feet higher than the head, if the patient can tolerate this position (some patients with respiratory distress cannot tolerate supine position)7. Keep the person warm and comfortable. Loosen belt and tightly fitted clothing and cover the person with a blanket. Even if the person complains of thirst, give nothing by mouth.

8. Turn the person on his or her side to prevent choking if the person vomits or bleeds from the mouth.
9. **Patient** should be transported by EMS to closest appropriate hospital emergency department.

REFERENCES1. "Hypovolemic Shock"; Kolecki, P; updated March -21, 2012.

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STANDARD NURSE PROTOCOL FOR RECOGNIZING ALLERGIC REACTIONS, INCLUDING ACUTE ANAPHYLAXIS, AND USE OF AUTO-INJECTABLE EPINEPHRINE BY PUBLIC HEALTH NURSES WORKING IN SCHOOL HEALTH SETTINGS

DEFINITION “Anaphylaxis is a serious allergic reaction that is rapid in onset and may cause death.”¹ Allergic reactions after exposure to an antigen which has been applied topically, injected, ingested or inhaled can range from mild, self-limited symptoms to rapid death.

1. Mild allergic reactions typically involve the skin (rash, itching).
2. Severe/anaphylactic reactions involve multiple organ systems, including skin, respiratory, GI, and cardiac. These may initially appear minor (e.g., coughing, hoarseness, dizziness, mild wheeze, nausea) but any involvement of the respiratory tract or circulatory system has the potential to rapidly become severe. Death can occur within minutes. Therefore, prompt and effective lifesaving treatment is mandatory.

ETIOLOGY Any agent capable of producing a sudden degranulation of mast cells or basophils can induce anaphylaxis. Agents commonly associated with allergic reactions/anaphylaxis include:

1. Medications: over the counter, illicit, illegal or prescribed.
2. Food: especially tree nuts, peanuts, shellfish, or eggs.
3. Environmental: stings, pollen, iodinated remedies.

Anaphylaxis can also be exercise induced or idiopathic. Idiopathic anaphylaxis has no identified cause.

**SUBJECTIVE and
OBJECTIVE**

Allergic reaction may affect one or more organ systems:

1. Skin: hives, itching, swelling, redness
2. Gastrointestinal: nausea, vomiting, diarrhea
3. Cardiac: palpitations, dizzy, chest pain
4. Respiratory: wheezing, difficulty breathing, airway/tongue/lips swelling, cough

ASSESSMENT Acute Anaphylaxis, suspected based on clinical presentation and history. Involvement of two or more organ systems OR presence of respiratory difficulty or shock indicate a severe allergic reaction (anaphylaxis). See Table 1. Most severe reactions occur soon after exposure. The faster a reaction develops, the more severe it is likely to be.

TABLE I. Clinical criteria for diagnosing anaphylaxis¹

Anaphylaxis is highly likely when any one of the following 3 criteria is fulfilled:

1. Acute onset of an illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (e.g., generalized hives, pruritus or flushing, swollen lips-tongue-uvula)
AND AT LEAST ONE OF THE FOLLOWING
 - a. Respiratory compromise (e.g., dyspnea, wheeze-bronchospasm, stridor, reduced peak expiratory flow, hypoxemia)
 - b. Reduced BP or associated symptoms of end-organ dysfunction (e.g., hypotonia [collapse], syncope, incontinence)

2. Two or more of the following that occur rapidly after exposure to a likely allergen for that **patient** (minutes to several hours):
 - a. Involvement of the skin-mucosal tissue (e.g., generalized hives, itch-flush, swollen lips-tongue-uvula)
 - b. Respiratory compromise (e.g., dyspnea, wheeze-bronchospasm, stridor, reduced peak expiratory flow, hypoxemia)
 - c. Reduced BP or associated symptoms (e.g., hypotonia [collapse], syncope, incontinence)
 - d. Persistent gastrointestinal symptoms (e.g., crampy abdominal pain, vomiting)

3. Reduced BP after exposure to known allergen for that **patient** (minutes to several hours):
 - a. Children: low systolic BP (age specific) or greater than 30% decrease in systolic BP*
 - b. Adults: systolic BP of less than 90 mm Hg or greater than 30% decrease from that person's baseline

*Low systolic blood pressure for children is defined as less than (70 mm Hg + [2 x age]) from 1 to 10 years, and less than 90 mm Hg from 11 to 17 years.

¹Sampson HA, Munoz-Furlong A, Campbell RL, et al: Second symposium on the definition of anaphylaxis: a summary report-Second National Institute of Allergy and Infectious Diseases/Food Allergy and Anaphylaxis Network Symposium. *J Allergy Clin Immunol* 117:391, 2006.

PLAN

THERAPEUTIC

NOTE: Schools may receive and store prescription auto-injectable epinephrine onsite on behalf of a student who is not able to self-administer the medication because of age or any other reason if the parent or guardian provides [O.C.G.A. § 20-2-776(g)]:

1. A written statement from a physician detailing the name of the medication, method, amount, time schedules by which the medication shall be given must be on file [O.C.G.A § 20-2-776(g)(1)]
2. A written statement from the parent or guardian providing release for the school nurse or other designated school personnel to consult with the physician regarding any questions that may arise with regard to the medication, and releasing the school system and its employees and agents from civil liability. The written statement shall be provided at least annually and more frequently if the medication, dosage, frequency of the administration or reason for administration changes. [O.C.G.A. § 20-2-776(g)(2)]

Severe reaction (Anaphylaxis)

Reactions involving more than one organ system or causing difficulty breathing or hypotension/shock are by definition severe and may progress rapidly to death. Early recognition and early treatment with epinephrine are essential in emergent treatment if needed.

- 1) Call EMS/911.
- 2) Do not leave the **student** unattended.
- 3) Assure open airway; begin CPR if indicated.
- 4) Assign one person to keep the anaphylaxis record and be the timekeeper.
- 5) Administer epinephrine according to the label of the dispensed epinephrine for those **students** who are not able to self-administer medication based on age or any other reasons.
- 6) Refer to Correct Method of Administering Auto-Injectable Epinephrine below:
 - a. Epinephrine dose may be repeated in 5 to 15 minute intervals (up to 3 doses) for **patient** with no clinical improvement or deterioration of status, especially respiratory symptoms.

- 7) Place **student** in supine position with legs elevated, if tolerated (precluded for **student** with emesis and some **students** with respiratory distress may not be able to tolerate this position).
- 8) Monitor vital signs (pulse, respiration and BP) every 5 minutes.
- 9) Apply and monitor pulse oximetry, if available.
- 10) Terminate exposure to the causative agent, if it can be identified
 - a. If insect stinger is present, immediate removal is more important than the method of removal. “Although conventional teaching suggested scraping the stinger out to avoid squeezing remaining venom from the retained venom gland into the tissues, involuntary muscle contraction of the gland continues after evisceration, and the venom contents are quickly exhausted.” Tintinalli, et al.

DISPOSITION Every **student** treated with epinephrine must be transported by EMS to the closest appropriate hospital emergency department. Copy of Anaphylaxis Record is sent with **student** to hospital.

CORRECT METHOD OF ADMINISTERING AUTO-INJECTABLE EPINEPHRINE

Directions for use: Different brands of this medication have different directions for preparing the injector. (**Several** brands of epinephrine auto-injector are currently available.) All are designed to inject through clothing.

Injection must be to the lateral thigh (do not inject to buttock, deltoid, or IV). Hold the device against the thigh for 10 seconds for drug delivery. Massage the site to enhance absorption.

Student must be transported by EMS to closest appropriate hospital emergency department.

Contraindications: no contraindications in life-threatening allergic reaction

Side effects: increased heart rate and blood pressure. (There are rare cases of stroke and heart attack resulting from epinephrine injection in patients with underlying cardiovascular disease. In patients known to have heart disease, the potential benefit of preventing death from anaphylaxis must be weighed against the potential risk of causing a stroke or heart attack.)

ANAPHYLAXIS RECORD – page 1

School/Site _____ Date _____

Patient Demographic Information:

Name: _____

DOB ____/____/____ AGE _____ months / years

Estimated/Actual Weight (please circle one) Infant / Child / Adolescent ____lbs/kg

Event which preceded reaction:

- _____ Food ingested
- _____ Medication administered
- _____ Environmental exposure
- _____ Other: (please explain) _____

TIME OF REACTION: _____ AM / PM

TIME EMS CALLED: _____ AM / PM

Signs and Symptoms: (please check)

- | | |
|---|------------------------------------|
| _____ Apprehension | _____ Choking sensation |
| _____ Flushing and/or skin edema | _____ Coughing/hoarseness/wheezing |
| _____ Palpitations | _____ Difficulty breathing |
| _____ Numbness and/or tingling | _____ Nausea and/or vomiting |
| _____ Itching | _____ Severe hypotension |
| _____ Localized or generalized urticaria
(rash, welts) | _____ Vasomotor collapse |
| | _____ Loss of consciousness |

Other (e.g., dizziness): _____

OTHER OBSERVATIONS / COMMENTS: _____

SIGNATURE OF RN/APRN: _____

DISPOSITION: _____

REVIEWER: _____

*NOTE: Send copies of both pages of this record with **patient** referred to hospital*

ALLERGIC REACTION / ANAPHYLAXIS RECORD – page 2

1. Call for HELP.

Assign timekeeper/recorder.

TIME EMS CALLED: _____ AM/PM

TIME EMS ARRIVED: _____ AM/PM

TIME EMS DEPARTED TO HOSPITAL: _____ AM/PM

Hospital's Name: _____

Patient status when transported to hospital: _____

2. Assure AIRWAY.

Check VITAL SIGNS q 5 minutes.

CPR if necessary.

Patient Name: _____

Patient Weight: _____

Patient DOB: _____

VITAL SIGNS (monitor every 5 minutes)

Time	B/P	Pulse	Resp
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____
_____	____/____	_____	____

CPR Indicated: _____ YES _____ NO

TIME CPR started: _____ AM / PM

TIME CPR ended: _____ AM / PM

EpiPen® Auto-Injector

TIME Administered: _____ AM/PM

TIME Administered: _____ AM/PM

TIME Administered: _____ AM/PM

EpiPen® Junior Auto-Injector

TIME Administered: _____ AM/PM

TIME Administered: _____ AM/PM

TIME Administered: _____ AM/PM

Twinject 0.15 mg/0.15 mL _____ AM/PM

Twinject 0.15 mg/0.15 mL _____ AM/PM

Twinject 0.15 mg/0.15 mL _____ AM/PM

Twinject 0.3 mg/0.3 mL _____ AM/PM

Twinject 0.3 mg/0.3 mL _____ AM/PM

Twinject 0.3 mg/0.3 mL _____ AM/PM

Adrenalick 0.15 mg/0.15 mL _____ AM/PM

Adrenalick 0.15 mg/0.15 mL _____ AM/PM

Adrenalick 0.15 mg/0.15 mL _____ AM/PM

Adrenalick 0.3 mg/0.3 mL _____ AM/PM

Adrenalick 0.3 mg/0.3 mL _____ AM/PM

Adrenalick 0.3 mg/0.3 mL _____ AM/PM

Auvi-Q 0.15 mg/0.15 mL _____ AM/

Auvi-Q 0.15 mg/0.15 mL _____ AM/PM

Auvi-Q 0.15 mg/0.15 mL _____ AM/PM

Auvi-Q 0.3 mg/0.3 mL _____ AM/PM

Auvi-Q 0.3 mg/0.3 mL _____ AM/PM

Auvi-Q 0.3 mg/0.3 mL _____ AM/PM

Other, please specify name, dosage and time administered: _____.

PATIENT EDUCATION/COUNSELING

3. Advise **students and parents of students** to contact their primary care physician for follow-up after discharge from the hospital/emergency room.

REFERRAL

2. Immediately refer **individuals** with suspected acute anaphylaxis to ER via EMS.

FOLLOW-UP

2. Document and prominently display known allergies in **student's** record.
2. Educate the **individual**/caretaker about medical alert bracelets for anaphylactic reactions as appropriate.
4. Develop a written individualized **health** care plan as per organizational policy.

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Pediatric Vital Signs - Resource

Normal Pediatric Vital Signs by Age and Weight:

Age	Weight (kilograms)	Pulse	Respirations	Systolic BP	Diastolic BP
Premature	1	145	< 60	42 +/- 10	21 +/- 8
Premature	1-2	135	< 60	50 +/- 10	28 +/- 8
Newborn	2-3	125	< 60	60 +/- 10	37 +/- 8
1 month	4	120	24-35	80 +/- 16	46 +/- 16
6 month	7	120	24-35	89 +/- 29	60 +/- 10
1 year	10	120	20-30	96 +/- 30	66 +/- 25
2-3 years	12-14	115	20-30	99 +/- 25	64 +/- 25
4-5 years	16-18	100	20-30	99 +/- 20	65 +/- 20
6-9 years	20-26	100	12-25	100 +/- 20	65 +/- 15
10-12 years	32-42	75	12-25	112 +/- 20	68 +/- 15
Over 14 years	> 50	70	12-25	120 +/- 20	75 +/- 15

Abnormal Vital Signs by Age:

Age	Pulse	Respirations	Systolic BP	Temperature
0 days - <1mo	<80 > 205	<30 > 60	<60	<36 >38
≥ 1 mo - < 3 mos	<80 > 205	<30 > 60	<70	<36 >38
≥ 3 mos – < 1 yr	<75 > 190	<30 > 60	<70	<36 >38.5
≥ 1 yr – < 2 yrs	<75 > 190	<24 >40	<70 + (age x 2)	<36 >38.5
≥ 2 yrs – < 4 yrs	<60 >140	<24 >40	<70 + (age x 2)	<36 >38.5
≥ 4 yrs – < 6 yrs	<60 >140	<22 >34	<70 + (age x 2)	<36 >38.5
≥ 6 yrs – < 10 yrs	<60 >140	<18 > 30	<70 + (age x 2)	<36 >38.5
≥ 10 yrs – < 13 yrs	<60 >100	<18 > 30	<90	<36 >38.5
≥ 13 yrs – < 18 yrs	<60 >100	<12 >18	<90	<36 >38.5