Vaccine-Preventable Disease Surveillance Report

Georgia, 2011

Disease Reporting

Individual cases of diphtheria, measles, mumps, pertussis, polio, rubella, tetanus, varicella are reportable in Georgia. Physicians, laboratories, and other health care providers are required by law to report patients with these conditions to the Georgia Department of Public Health.

Cases may be reported through the State Electronic Notifiable Disease Surveillance System (SENDSS), through the 24/7 reporting line, 1-866-PUB-HLTH (1-866-782-4584), or by directly calling the Acute Disease Epidemiology Section at the Georgia Department of Public Health, 404-657-2588.

For more information on notifiable disease reporting, please visit: http://health.state.ga.us/epi/disease/report.asp

Georgia Department of Public Health

Introduction

Vaccine-preventable disease (VPD) surveillance serves to document the impact of vaccination programs, evaluate the effectiveness of current vaccines and vaccination policies, and identify needed changes in program strategies. It also tracks trends in disease over time, monitors progress toward disease reduction and elimination goals and identifies outbreaks and the need for public health response. Though the prevalence of many VPDs are at an all time low in the United States, pertussis has shown a come-back in recent years, illustrating the importance of such surveillance activities. This report highlights 2011 surveillance data for vaccine preventable diseases in Georgia.

Georgia incidence rates in this report were calculated as cases per 100,000 population using 2010-based population final estimates from the Population Section of Georgia's Online Analytical Statistical Information System(OASIS). Vaccine preventable diseases reported in Georgia from 2005 through 2011 are summarized below in Table 1.

Table 1. Reported cases of vaccine-preventable diseases — Georgia, 2005 —2011

Report Year	Diphtheria	Measles	Mumps	Pertussis	Polio	Rubella	Tetanus
2005	0	0	11	79	0	0	0
2006	0	0	60	101	0	0	0
2007	0	0	0	37	0	0	2
2008	0	1	4	116	0	0	0
2009	0	1	1	230	0	0	0
2010	0	1	5	247	0	0	0
2011	0	0	5	180	0	0	2

Diphtheria

No cases of diphtheria were reported in Georgia during 2011. The last case of diphtheria reported in Georgia was in 1994.

Measles (Rubeola)

No cases of measles were reported in Georgia during 2011. Prior to 2011, the last case of measles occurred in 2010.

Mumps

During 2011, five (5) cases of mumps (0.05 per 100,000) were reported. Three (3) cases were laboratory-confirmed, including one (1) case

confirmed by PCR only and two (2) cases confirmed by IgM serology only. Two cases were epidemiologically linked to a source case. One (1) case had clinically compatible disease, no confirmatory lab results, and was not epidemiologically linked.

Case-patients' ages ranged from 4 to 50 years. Two cases (40%) had previously received 2 doses of mumps-containing vaccine. Three cases (60%) had unknown or undocumented vaccination status. No cases were hospitalized or reported any complications.

Of the five (5) mumps cases investigated, three (3) were part of a cluster. The index case was a four year-old, asymptomatic adoptee from Thailand who was IgM positive; vaccination status was unknown. Two (2) cases were exposed to this laboratory-confirmed case and subsequently developed disease. Of these two cases, both had previously received 2 doses of mumps-containing vaccine. One case was PCR positive and the other IgM positive. Sources of illness for the other two cases were unknown.

Pertussis

- 180 pertussis cases with cough onset in 2011 were reported to the Georgia Department of Public Health for a state incidence rate of 1.9 cases per 100,000 popluation.
    - o Pertussis disease activity levels decreased from 2010 to 2011 (Figures 1 and 2).
    - o Case Classification**:
        - Confirmed[§]: 126 (70%)
        - Probable[†]: 54 (30%)
- During 2011, the pertussis rate by county ranged from 0 to79.6 per 100,000 population.
    - o 48 counties in Georgia(30%) reported pertussis cases during 2011.
    - o Most cases were in the Atlanta metropolitan statistical area (MSA) and southern Georgia (Figure 4).
    - o Incidence was highest among (54.1 cases/100,000 in infants < 6 months; 15.0 cases/100,000 in infants 6-11 months (Figure 3). The majority of infant cases occurred in infants <3 months of age (Figure 5).
    - o Pre-adolescents (7 to 10 years of age) account for an increasing number of pertussis cases in Georgia (Figures 3, 6, and 7).

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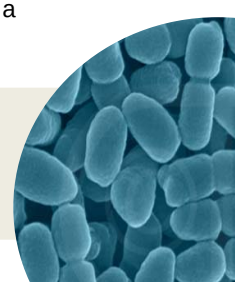
*Clinical case definition: A cough illness lasting ≥ 2 weeks, with at least one of the following symptoms: paroxysms of coughing; inspiratory "whoop"; or post-tussive vomiting

§Confirmed: a case that is culture positive and in which an acute cough illness of any duration is present, or a case that meets the clinical case definition and is confirmed by positive PCR; or a case that meets the clinical case definition and is epidemiologically linked directly to a case confirmed by either culture or PCR

† Probable: a case that meets the clinical case definition, is not laboratory confirmed, and is not epidemiologically linked to a laboratory-confirmed case; a case that meets the clinical case definition and is confirmed by positive serology



- 30 (17%) pertussis cases were hospitalized (Table 2).
    - 21 (70%) of hospitalized cases were infants <3 months of age and 23 (77%) were infants <6 months of age.
    - 12 (52%) and 9 (39%) of the hospitalized infants <6 months of age with known race and ethnicity were White non-Hispanic and Black non-Hispanic, respectively.
- One pertussis infant death was reported in a 2 month old white, non-Hispanic female.
- Overall pertussis incidence rates by race/ethnicity are highest in Hispanics (2.2 cases/100,000) and whites (2.2 cases/100,000); however, based on age, the highest rates were among white non-Hispanic infants < 6 months of age (65.2 cases/100,000) and black non-Hispanic infants < 6 months (55.7 cases/100,000) (Figures 3 and 5).

- The most common symptom reported was paroxysmal cough, occurring in 94% of cases. Whoop was least common, being reported in only 36% of cases. (Table 2)
- Polymerase-chain reaction (PCR) was the most commonly used laboratory testing method among confirmed pertussis cases (Figure 8)

Polio

In 1994, the World Health Organization (WHO) certified the Western Hemisphere as free of wild poliovirus. In the United States, the last case of polio caused by wild poliovirus was identified in 1979.

Rubella

No cases of rubella were reported in Georgia during 2011. The last case of rubella (including congenital rubella) reported in Georgia was in 2004.

Tetanus

Two case of tetanus were reported in Georgia during 2011. One (1) was laboratory-confirmed by culture. One (1) case-patient had received one tetanus-containing vaccine within the previous ten years; the other case-patient had unknown vaccination history.

Varicella (Chickenpox)

On July 1, 2011 individual cases of varicella became reportable in Georgia. From July 1 thru December 31, 2011, 132 cases of varicella were reported. Laboratory confirmation was available for five (5) cases, of which two (2) were confirmed by PCR and three (3) were confirmed by viral isolation. In addition to the laboratory-confirmed cases, 28 were confirmed based on clinical case definition and/or epidemiologic linkage. Ninety-nine (99) cases were confirmed based on clinical case definition only.

Case-patients' ages ranged from 2 months to 49 years of age. Ninety-two (92) cases (69.7%) had previously received a varicella containing vaccine; 41 cases (31.1%) had received one dose and 51

(38.6%) had received two doses of vaccine. Among those not vaccinated, three (3) varicella cases had a previous history of disease and 15 were too young to be vaccinated (Figure 9).

Forty-three (43) varicella cases (32.6%) saw a physician during the course of their illness. Three (3) cases were hospitalized.

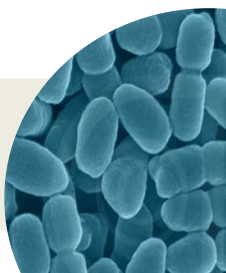
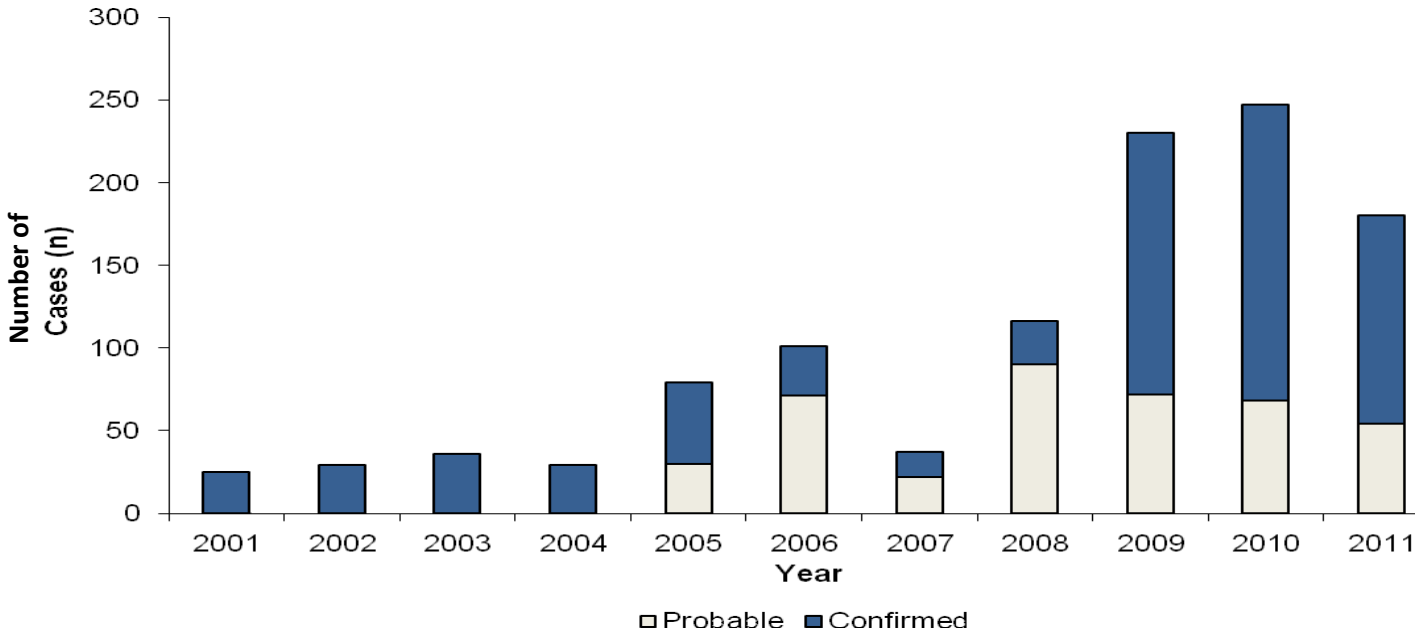


Figure 1. Pertussis cases by year — Georgia, 2001 – 2011 (n= 1,109)



*Surveillance data for 2001-2004 are limited. The data reflected may not be a true representation of the pertussis disease burden in Georgia during these years.

Figure 2. Pertussis cases by month of onset — Georgia, January 2010 – December 2011 (n=427)

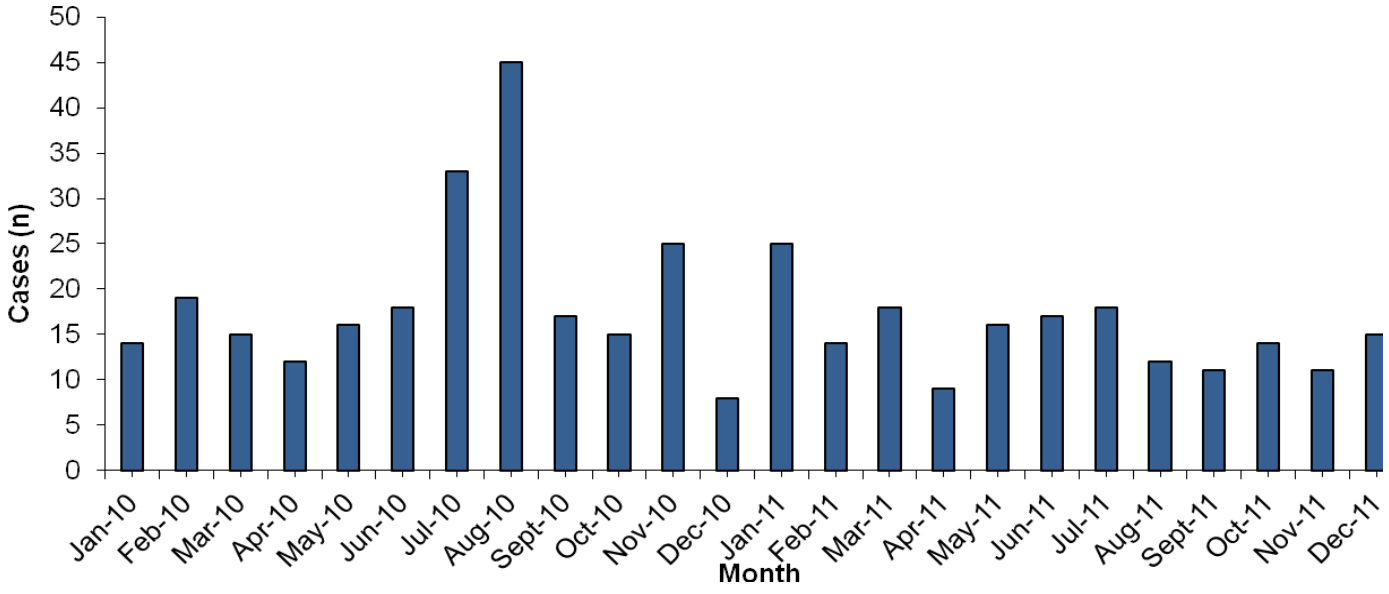


Figure 3. Reported pertussis incidence by age group — Georgia, 2005 – 2011 (n=990)

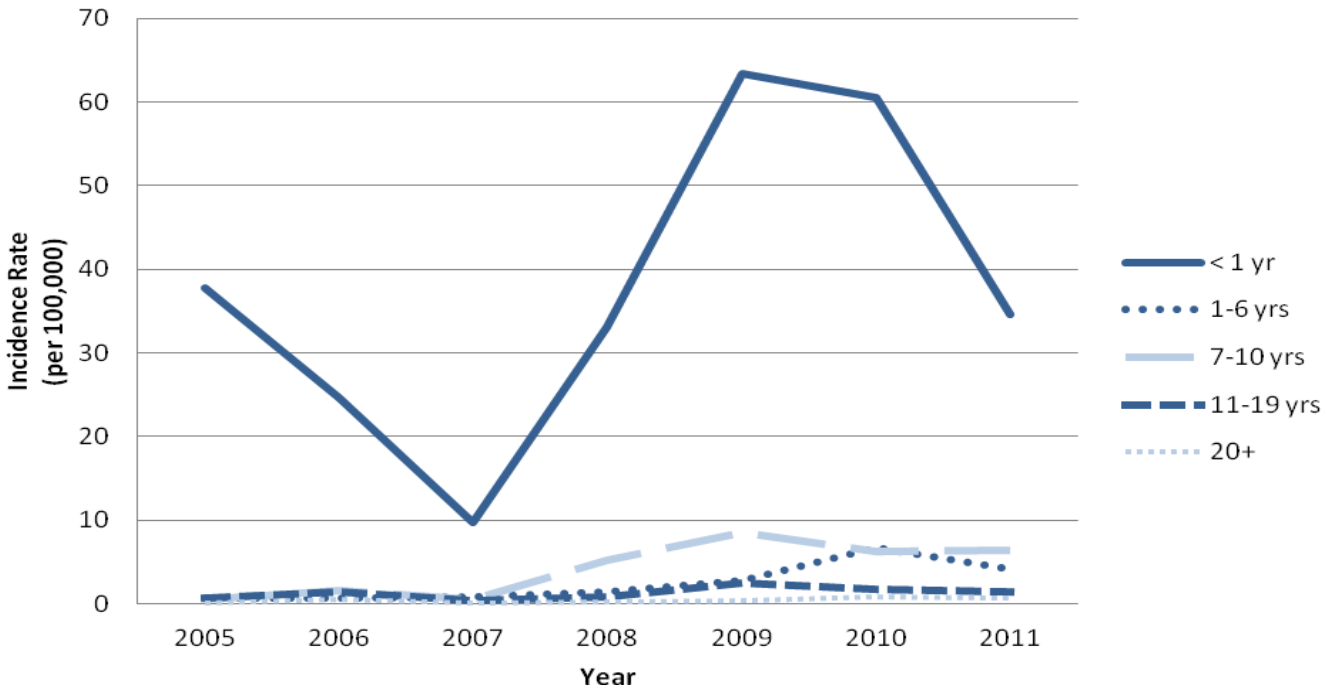


Figure 4. Pertussis incidence rates by county — Georgia, 2010 and 2011

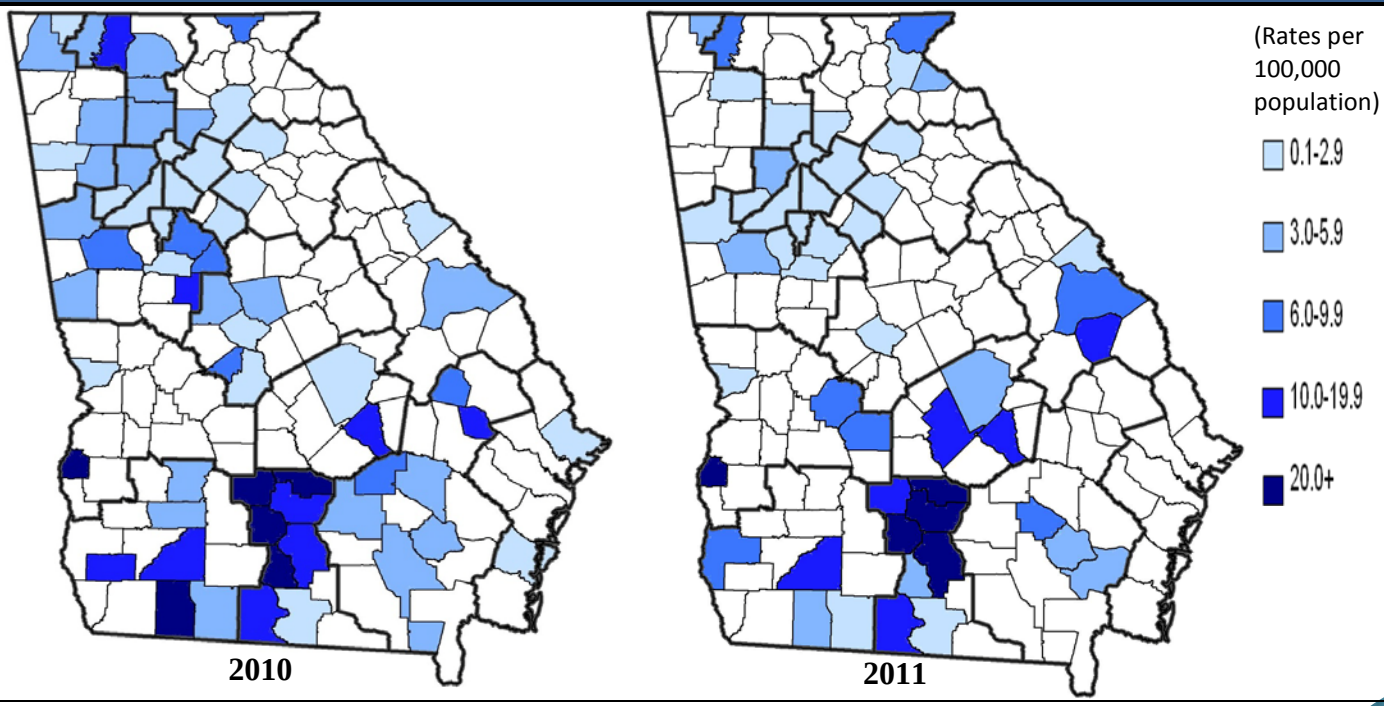


Figure 5. Pertussis cases by month of age and race/ethnicity – Georgia, 2011 (n=46)

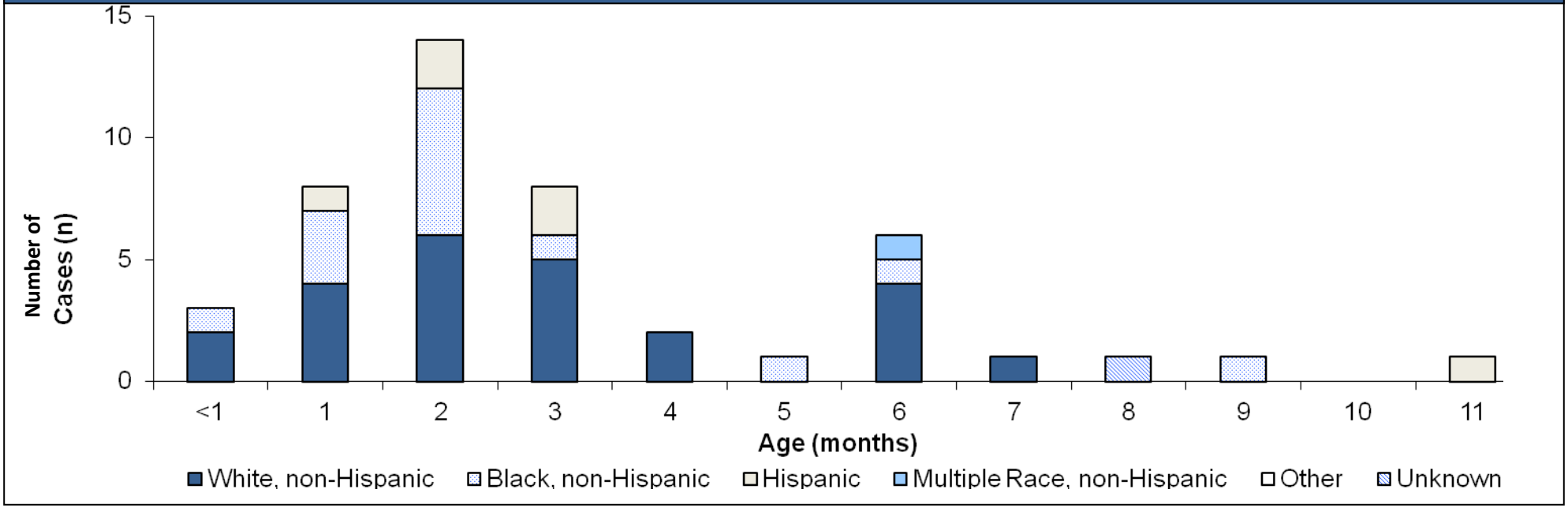


Figure 6. Pertussis cases by age and doses of pertussis containing vaccine — Georgia, 2011 (n=180)

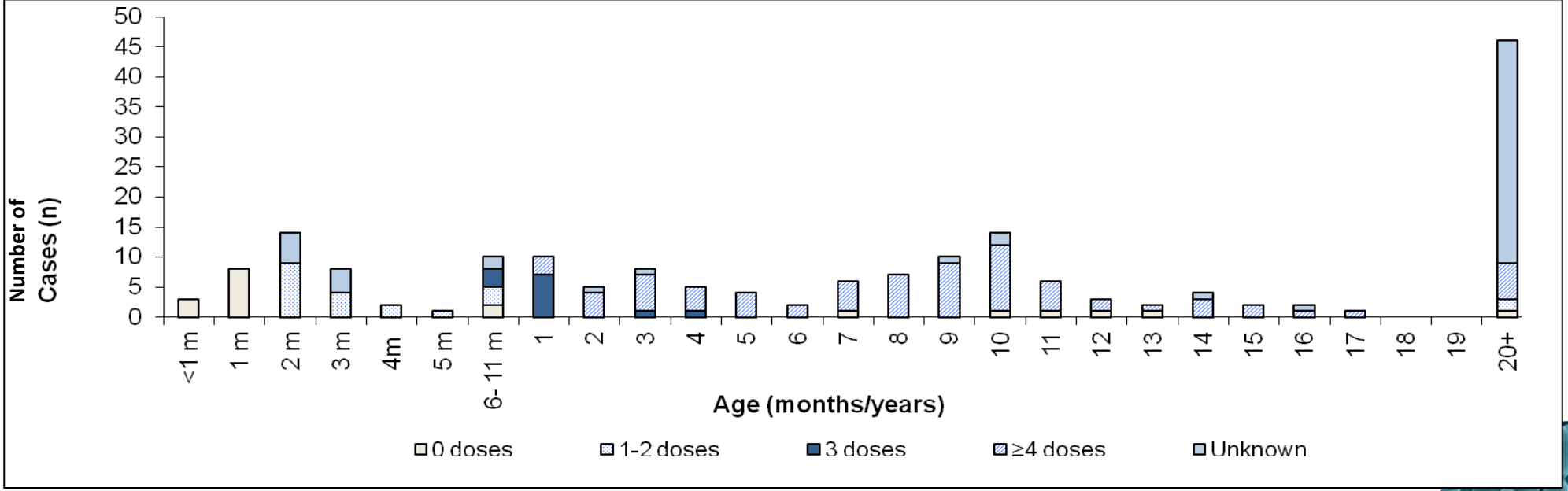


Figure 7. Pertussis cases by age and race/ethnicity — Georgia, 2011 (n=180)

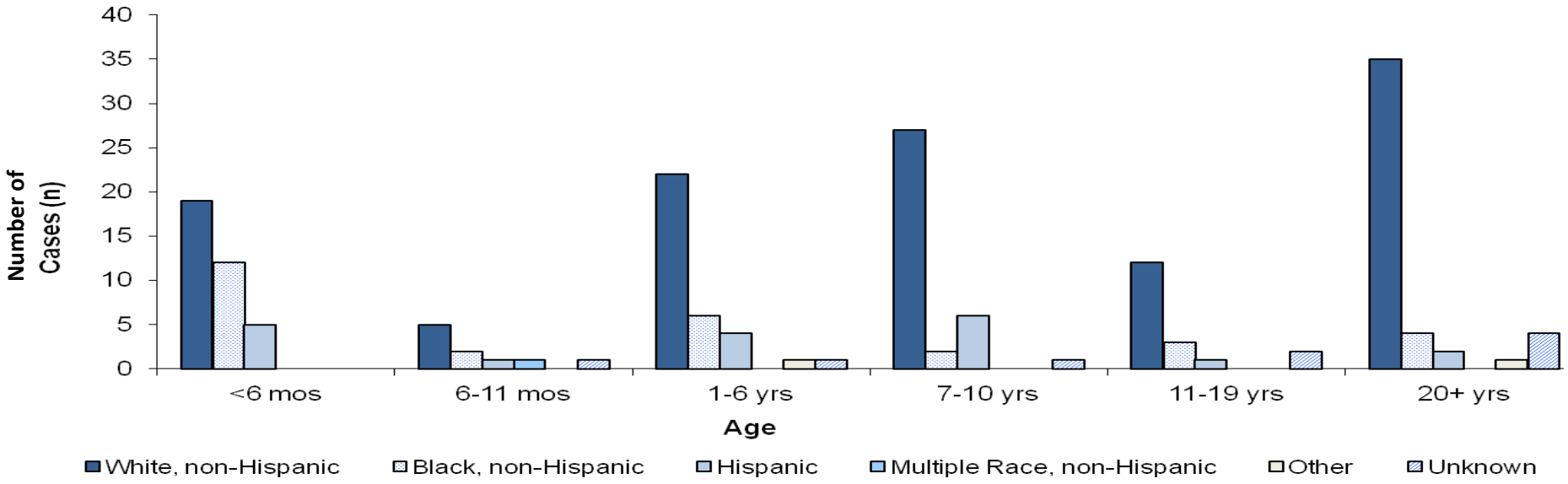


Table 2. Percent of pertussis case-patients with specific signs, symptoms and complications by age —Georgia, 2011

Signs/Symptoms & Complications (%)	Age Group						
	< 6 mos (n= 36)	6-11 mos (n=10)	1-6 yrs (n=34)	7-10 yrs (n=36)	11-19 yrs (n=18)	20+ yrs (n=46)	Total (n=180)
Paroxysmal Cough	94.4	100.0	97.1	94.4	88.9	91.3	93.9
Post-tussive Vomiting	55.6	80.0	67.7	44.4	66.7	39.1	53.8
Whoop	41.7	30.0	38.2	22.2	33.3	41.3	35.6
Apnea	55.6	30.0	2.9	0.0	0.0	6.5	15.0
Hospitalized	63.9	20.0	0.0	0.0	11.1	6.5	16.7
Neurologic Symptoms	0.0	0.0	0.0	2.8	0.0	0.0	0.6
Radiographically Confirmed Pneumonia	5.7	10.0	0.0	0.0	0.0	10.7	4.4

Figure 8. Confirmed pertussis cases by method of confirmation — Georgia, 2011 (n=126)

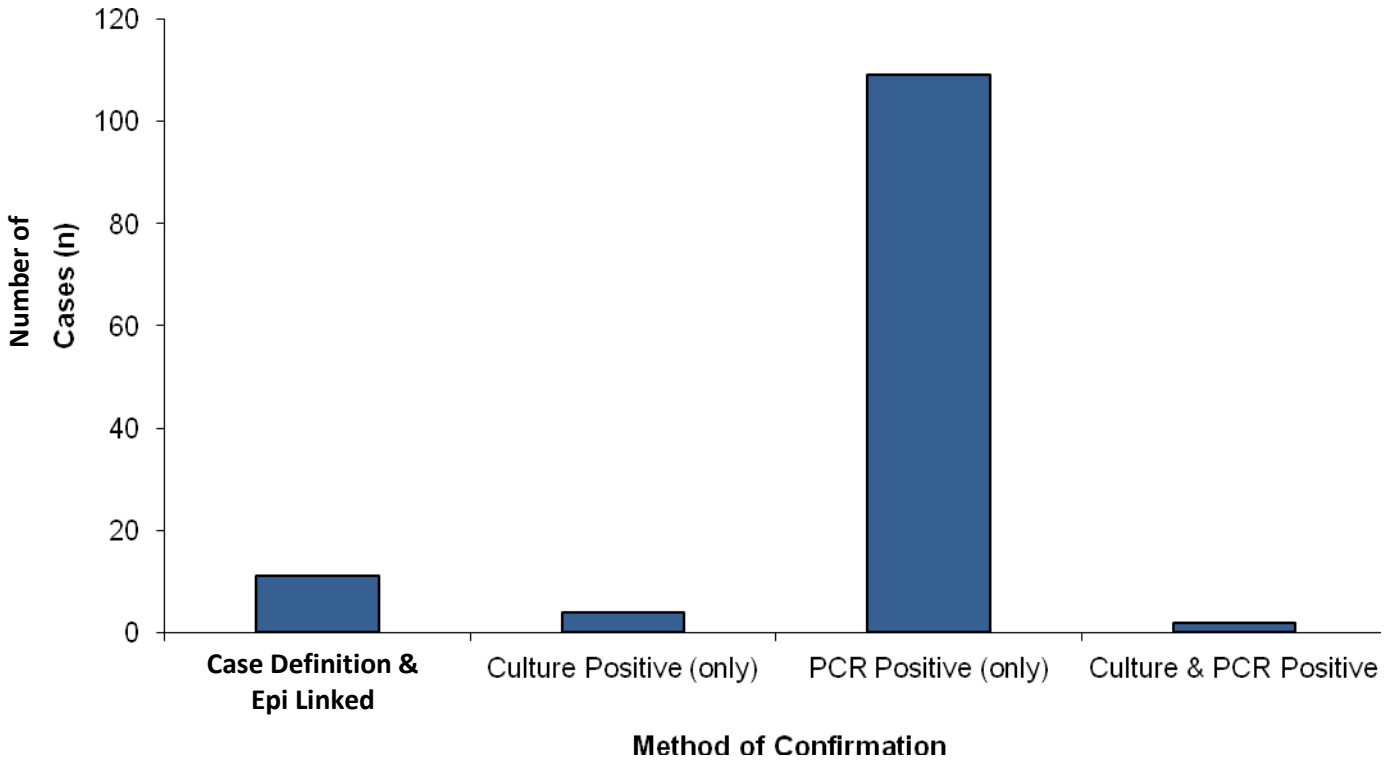


Figure 9. Vaccination status of varicella cases- Georgia, July – December 2011 (n=132)

Vaccination Status	**n (%)**
Vaccinated	**91 (68.9%)**
1 dose	41 (31.1%)
2 doses	50 (37.9%)
Not Vaccinated	**41 (31.1%)**
Reason for not being vaccinated	
History of disease	3 (2.3%)
Born outside of the U.S.	5 (3.8%)
Too young (<12 months)	15 (11.4%)
Never offered vaccine	2 (1.5%)
Parent forgot to vaccinate	1 (.8%)
Parent refusal	4 (3.0%)
Unknown	9 (6.8%)