

Annual Vaccine Preventable Diseases Surveillance Report – Georgia, 2010

Introduction

Vaccine preventable disease (VPD) surveillance serves to document the impact of vaccination programs, to evaluate the effectiveness of current vaccines and vaccination policies, and to identify needed changes in program strategies. It also tracks trends in disease over time, monitors progress toward disease reduction and elimination goals, identifies outbreaks, and the need for public health response. With many VPDs at an all time low, surveillance activities are essential to maintain low rates. This report highlights 2010 surveillance data for vaccine preventable diseases in Georgia.

Georgia rates in this report were calculated as cases per 100,000 population using 2009-based population final estimates from the Population Section of Georgia's Online Analytical Statistical Information System. Vaccine preventable diseases reported in Georgia during 2005 through 2010 are summarized below in Table 1.

Table 1. Reported cases of vaccine preventable diseases – Georgia, 2005 – 2010							
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

* Includes suspect and confirmed cases

† Includes probable and confirmed cases

Diphtheria

No cases of diphtheria were reported in Georgia during 2010. The last case of diphtheria reported in Georgia was in 1994.

Measles

One case of measles was reported. The case was a 22 year-old male, with unknown vaccination status, residing in DeKalb County. Clinical symptoms were suggestive of measles, including a high fever and maculopapular rash that progressed from head to trunk to extremities. The prodrome included diarrhea, cough, coryza and conjunctivitis. The case-patient emigrated from Ethiopia, a measles endemic country, three days prior to illness onset. The case was confirmed by positive measles IgM serology conducted by both Georgia Public Health Laboratory (GPHL) and CDC. No secondary cases were identified.

Mumps

Five cases of mumps (0.05 per 100,000) were reported. All 5 cases were laboratory confirmed by mumps IgM serology. One was exposed to a laboratory confirmed case in the Philippines. Sources of illness for the other four cases were unknown. Ages ranged from 4 to 31 years. One case (20%) had previously received 2 doses of mumps-containing vaccine. Three cases (60%) had previously received 1 dose of mumps-containing vaccine. One case (20%) had unknown vaccination status. Orchitis was reported in one case.

Pertussis

- 247 cases with cough onset in 2010 were reported to Georgia's Department of Public Health for a state rate of 2.5 cases /100,000.
 - Disease activity levels remained stable from 2009 to 2010 with more disease occurring in the spring and summer months (Figure 1 and 2).
 - Case Classification**:
 - Confirmed[¶]: 179 (72.8%)
 - Probable[†]: 68 (27.5%)
 - Incidence was highest in infants (85.9 cases/100,000 in infants < 6 months; 16.7; 16.66 cases/100,000 in infants 6-11 months). The majority of infant cases occurred in infants <3 months of age (Figure 3)
 - A number of cases were in pre-adolescents (9 and 10 year-olds) (Figure 4).
 - 61 (24.7%) cases were hospitalized (Table 2)
 - 37 (60.7%) of hospitalized cases were infants <3 months of age and 51 (83.6%) were infants <6 months of age.
 - 18 (35.3%) of the hospitalized infants <6 months of age with known race and ethnicity were Hispanic.
 - One pertussis infant death was reported in a 3 day old African American male, This diagnosis was based on clinical signs and symptoms and laboratory confirmation

*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

- Overall rates by race/ethnicity are highest in Hispanics (3.9 cases/100,000) and whites (2.74 cases/100,000), however based on age the highest rates were in Hispanic infants < 6 months of age (134.82 cases/100,000) and black infants (81.19 cases/100,000) (Figure 3 and 5)
- The most common symptom reported was paroxysmal cough, occurring in 91.5% of cases. Whoop was least common, being reported in 38.1% of cases. (Table 2)
- The mean rate by county was 3.73 cases per 100,000 (range 0-112.82)
 - 64 counties (40.3%) reported pertussis cases
 - The geographic distribution shifted south from 2009 to 2010 (Figure 6)
- Polymerase-chain reaction (PCR) was the most commonly used laboratory testing method among confirmed cases (Figure 7)

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 2010. The last case of rubella (including congenital rubella) was in 2004.

Tetanus

No cases of tetanus were reported in Georgia during 2010. The last case of tetanus reported in Georgia was in 2007.

Figure 1. Pertussis cases by year -- Georgia, 2001-2010

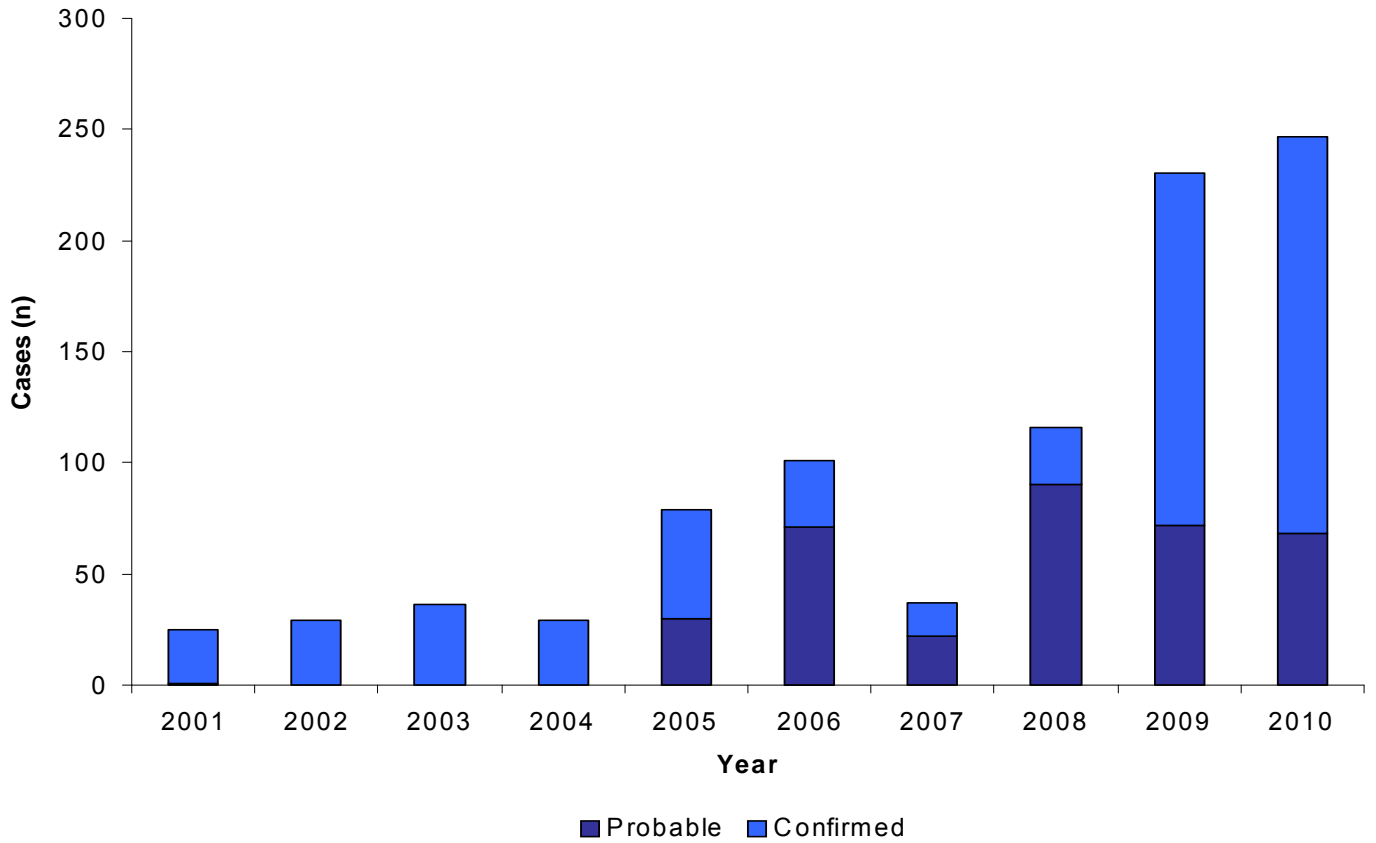


Figure 2. Pertussis cases by month of onset -- Georgia, January 2009 through December 2010

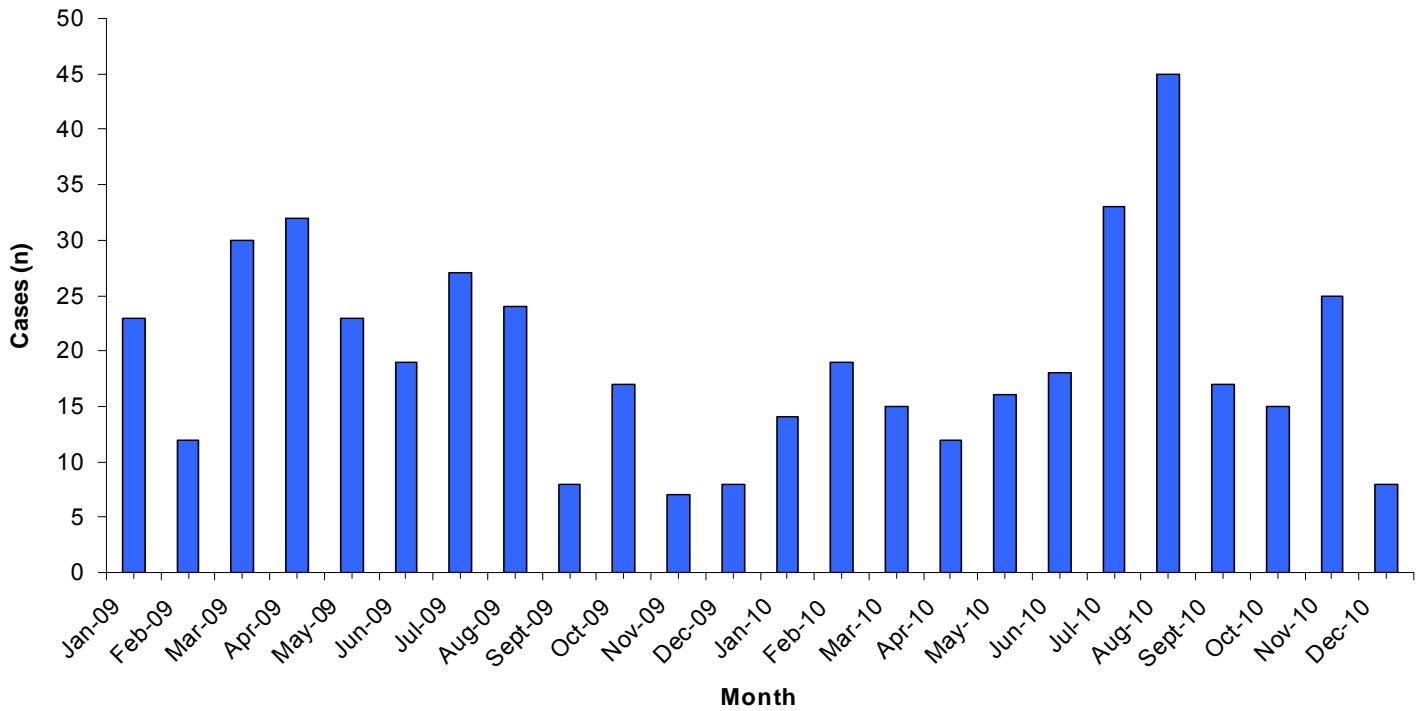


Figure 3. Infant pertussis cases by month of age and race/ethnicity -- Georgia, 2010

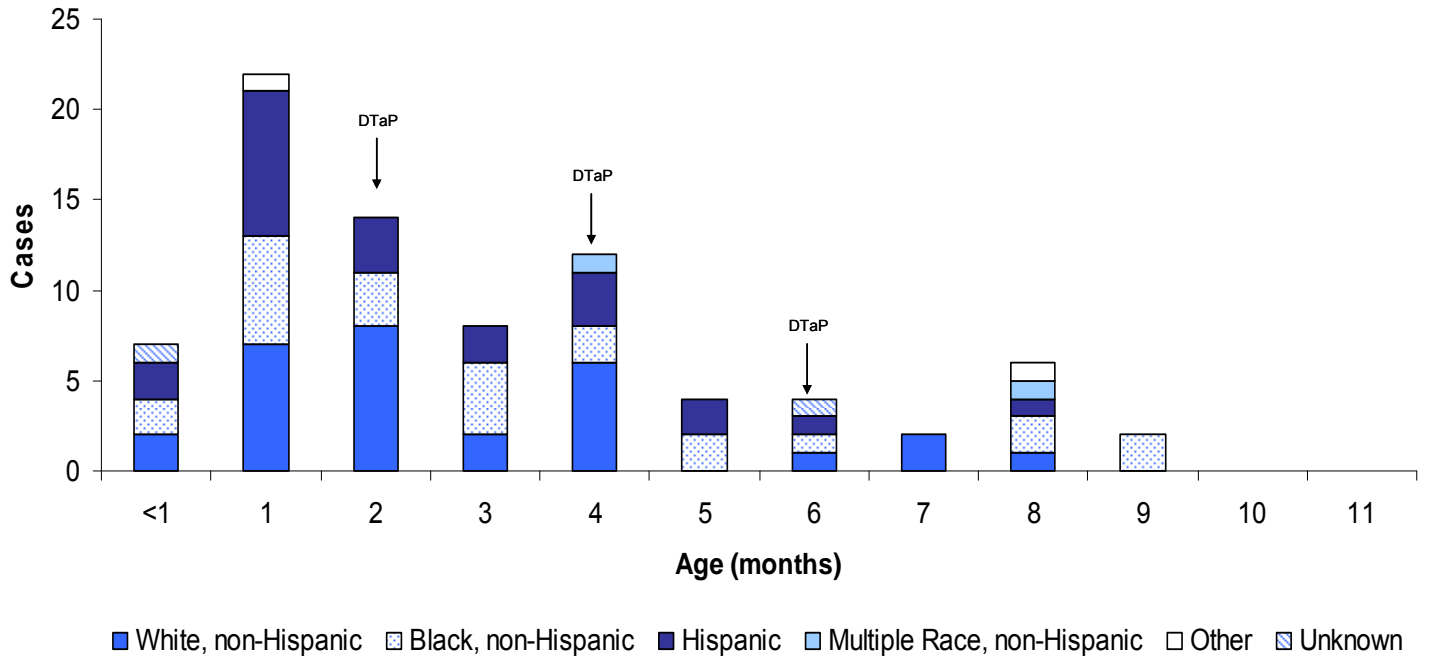


Figure 4. Pertussis cases by age and vaccine history -- Georgia, 2010

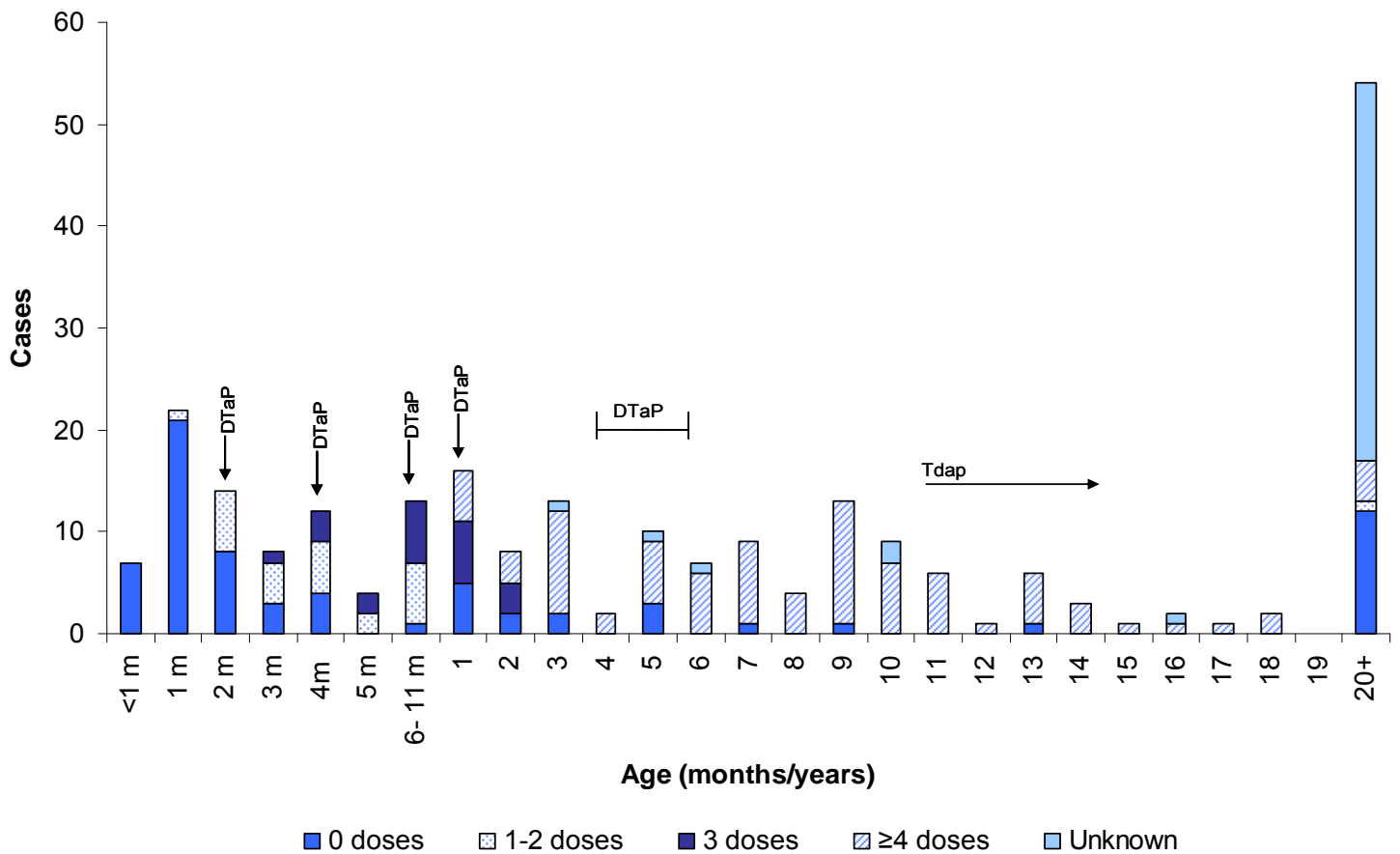


Figure 5. Pertussis cases by age and race/ethnicity – Georgia, 2010

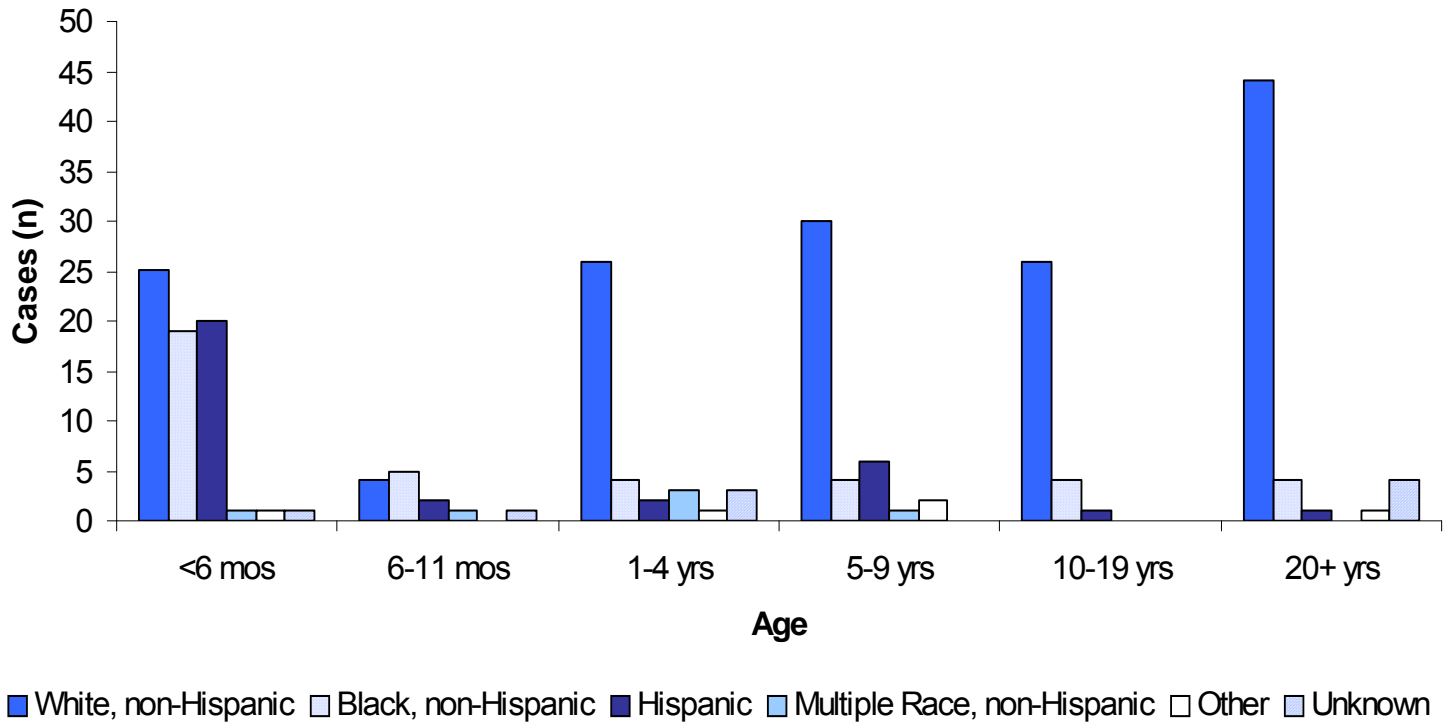


Table 2. Percent of pertussis case-patients with specific signs, symptoms and complications by age group – Georgia, 2010

Signs/Symptoms & Complications (%)	Age Group						Total
	< 6 mos	6-11 mos	1-4 yrs	5-9 yrs	10-19 yrs	20+ years	
Paroxysmal Cough	91.0	84.6	92.3	90.7	93.6	92.6	91.5
Post-tussive Vomiting	64.2	76.9	66.7	58.1	58.1	35.2	57.1
Whoop	35.8	38.5	35.9	34.9	45.2	40.7	38.1
Apnea	64.2	23.1	20.5	20.9	19.4	11.1	30.4
Hospitalized	76.1	30.8	7.7	2.3	0.0	3.7	24.7
Neurologic Symptoms	4.5	0.0	0.0	0.0	0.0	0.0	1.2
Pneumonia	14.9	15.4	2.6	0.0	6.5	3.7	6.9

Figure 6. Pertussis incidence rates by county – Georgia 2009 – 2010

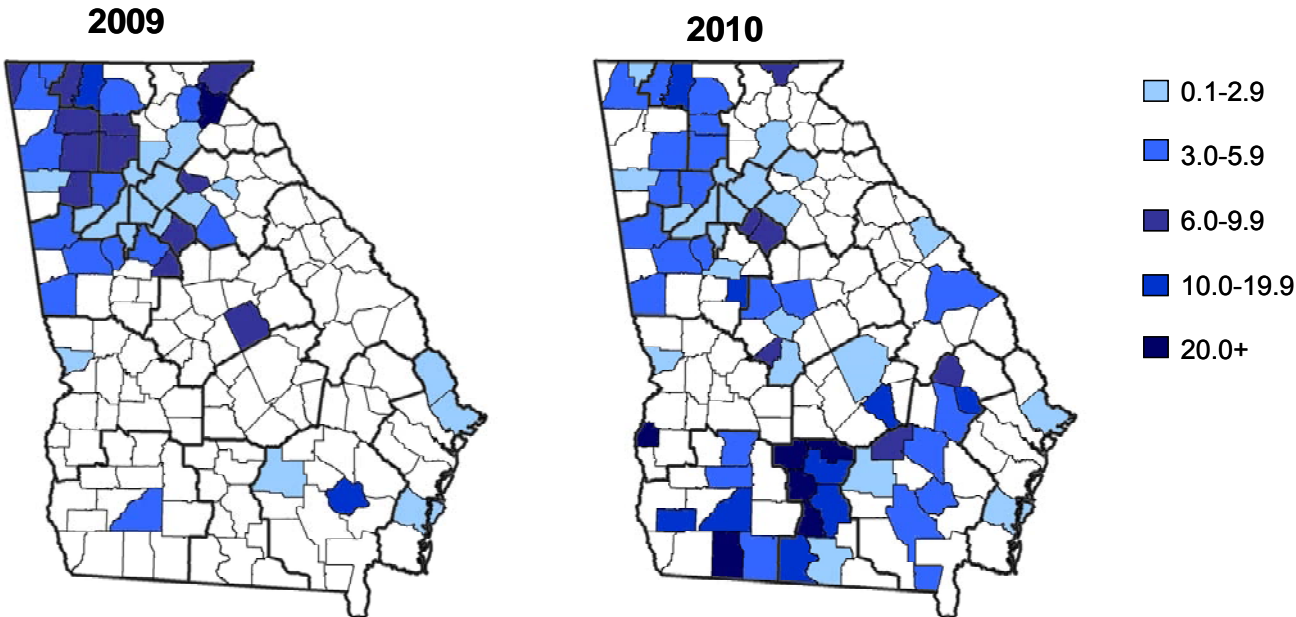


Figure 7. Confirmed pertussis cases by method of confirmation -- Georgia, 2010

