



Mississippi Morbidity Report

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Pertussis in Mississippi and Recommendations for the New Adult Vaccine

The Disease: Pertussis, or whooping cough, characteristically begins insidiously with coryza, sneezing, a low grade fever and occasional coughing, making it difficult to distinguish from a viral upper respiratory tract infection. The cough gradually becomes more severe and paroxysmal, with a distinctive inspiratory whoop when the patient attempts to inhale. Often infants, who are more at risk for severe disease and death from pertussis, will not have the inspiratory whoop. The incubation period is usually 7 to 10 days, but may be as long as 6 weeks. The disease is highly communicable during the catarrhal stage through respiratory secretions, and is usually no longer transmissible 3 weeks into the illness.

Adults and adolescents become susceptible to pertussis as their immunity wanes 5 to 10 years after completion of childhood vaccination, and they may have less severe disease, indistinguishable from a cold. Often the first case in a household is an adult or adolescent, who then spreads it to the more susceptible unvaccinated or partially vaccinated infants and small children.

Epidemiology: With general vaccine use in the United States, the prevalence of pertussis throughout the last several decades has decreased more than 80%. However, among the diseases for which universal childhood vaccination is recommended, it is the only one for which there has been an increase in reported cases since 1980, with 25,827 cases reported in 2004, compared to 1,730 reported in 1980. In 2004 – 2005 there were 66 deaths reported to the National Immunization Program, and 85% were among infants less than 3 months of age.

In Mississippi, there has been an increase in the number of cases reported over the last few years. There were 37 cases reported in 2006, and this year through July 31, there have been 54 cases with 1 death. Of these, 38 (70%) have been from the east central portion of the state among the Mississippi Band of Choctaw Indians. Most of the cases this year have been among children or young adults, with 44% being 4 years of age or younger, and 44% being aged 5 through 24 years.

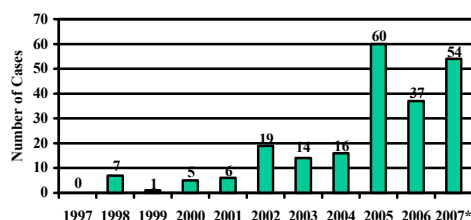
All pertussis cases are reportable to the Mississippi State Department of Health. Please call 1(800)556-0003 (outside of the Jackson area) or (601)576-7725 in the Jackson area to report.

Vaccine: Until recently, the only pertussis vaccine available was approved solely for children under the age of 7. In the United States in last few years, two combined tetanus, diphtheria, and acellular pertussis vaccines (Tdap), have been licensed for adolescents and/or adults. ADACEL[®] (Sanofi Pasteur, Toronto, Ontario, Canada) is licensed for use in persons aged 11 - 64 years as a single dose active booster vaccination against tetanus, diphtheria, and pertussis. BOOSTRIX[®] (GlaxoSmithKline, Rixensart, Belgium), is licensed for use in adolescents aged 10 – 18, but not for use among persons aged ≥ 19 years.

Vaccine recommendations:

- *All health care workers who have direct patient contact should receive a dose of Tdap if two years or more have elapsed since their last tetanus containing vaccination (a shorter interval may be used, however large local reactions may be more common).*

Table 1. Number of Probable or Confirmed Cases of Pertussis in MS, by Year



*Through July 31, 2007

- *Adolescents who have not received their booster dose of tetanus/diphtheria vaccine (td) should receive a single dose of Tdap instead. For those who have already received their tetanus booster and more than 2 years have elapsed, it is encouraged that they receive the Tdap, and if more than 5 years have elapsed, it is recommended.*
- *Adults who anticipate having close contact with an infant aged <12 months should receive a single dose of Tdap to reduce the risk for transmitting pertussis. An interval as short as 2 years from the last Td is suggested; shorter intervals can be used.*
- *All adults aged 19 - 64 years should receive a single dose of Tdap to replace tetanus and diphtheria toxoids vaccine (Td) for booster immunization against tetanus, diphtheria, and pertussis if they received their last dose of Td ≥ 10 years earlier and they have not previously received Tdap.*

Every county health department currently has Tdap for adolescents and adults in stock. Adolescent vaccine is available for a \$10 administration fee, and adult vaccine is available for a charge of \$44. Please contact your local health department for more information.

Laboratory testing: The MSDH Public Health Laboratory (PHL) can provide pertussis testing using culture and Polymerase chain reaction (PCR) free of charge to providers. Culture for *Bordetella pertussis* remains the “gold” standard for laboratory testing. Although culture is 100% specific, it is not very sensitive and may miss cases. Specialized transport media (Regan-Lowe) is required and final culture results may not be available for 10 days.

PCR is now being utilized to provide a more rapid detection of *B. pertussis* and provides an increased sensitivity. Collection of specimens for PCR testing requires collection of nasopharyngeal specimens with a Dacron swab placed in a sterile transport container and no preservative. Please contact the MSDH PHL at (601) 576-7582 (Monday through Friday, 8AM-5PM) for guidance on submission of specimens for culture and/or PCR testing.

References:

- CDC. Epidemiology and prevention of vaccine-preventable diseases. Atkinson W, Hamborsky J, McIntyre L, Wolfe S, eds. 9th ed. Washington DC: Public Health Foundation.
- CDC. Preventing tetanus, diphtheria and pertussis among adults; use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(RR-17):1-33.
- CDC. Pertussis---United States, 1997--2000. MMWR 2002;51:73--6.
- CDC. Preventing tetanus, diphtheria and pertussis among adolescents; use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006; 55(RR-03):1-34.

Submitted by Mary Currier, MD, MPH, Interim State Epidemiologist, MSDH and Director of Medical Education, Department of Medicine at UMMC.

Dear Colleagues,

Please let us know if you would like to receive the MMR by email or by US Postal Service. Please respond by email to <mailto:mmr@msdh.state.ms.us> and include your name, and email address or preferred physical address. Alternatively you may respond by calling 1(877)978-6453 with your information.

Thank you,

**Mary Currier, MD, MPH
Interim State Epidemiologist**



Mississippi Provisional Morbidity Report

July 2007

		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	July 2007	July 2006	YTD 2007	YTD 2006
Sexually Transmitted Diseases	Primary & Secondary Syphilis	0	0	1	0	3	0	2	0	3	9	4	65	36
	Total Early Syphilis	2	1	2	0	18	0	2	3	8	36	17	258	112
	Gonorrhea	69	59	96	62	173	89	40	86	103	777	732	4809	4029
	Chlamydia	175	155	283	150	448	157	132	146	197	1843	1965	12802	10787
	HIV Disease	2	3	3	2	19	3	1	8	2	43	43	362	360
Mycobacterial Diseases	Pulmonary Tuberculosis (TB)	0	0	2	0	2	0	3	2	3	12	6	57	53
	Extrapulmonary TB	0	0	0	0	0	1	1	0	0	2	0	6	4
	Mycobacteria Other Than TB	4	2	1	1	7	3	0	1	7	26	15	139	115
Vaccine Preventable Diseases	Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	0	1	1	1	0	28	0	0	0	31	3	54	19
	Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0
	Polioomyelitis	0	0	0	0	0	0	0	0	0	0	0	0	0
	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mumps	0	0	0	0	0	0	0	0	1	1	0	1	2
Viral Hepatitis	Hepatitis A (acute)	0	0	0	0	0	0	0	0	0	0	1	6	5
	Hepatitis B (acute)	0	0	1	0	0	0	1	0	0	2	0	14	8
	Hepatitis C (Non-A, Non-B)	0	0	0	0	1	0	0	0	0	1	0	4	3
Enteric Diseases	Salmonellosis	7	19	4	9	49	15	8	10	7	128	129	403	340
	Shigellosis	0	3	3	2	26	0	1	6	17	58	6	259	40
	Campylobacter Disease	3	2	0	1	6	0	4	2	6	24	9	87	53
	E. coli O157:H7/HUS	0	0	0	0	0	0	0	0	0	0	0	3	2
Other Conditions of Public Health Significance	Meningococcal Infections	0	0	0	0	0	0	0	1	1	2	0	10	2
	Invasive <i>H. influenzae</i> Disease	0	0	0	0	0	0	0	0	0	0	1	6	10
	RMSF	0	0	0	0	0	0	0	0	0	0	0	2	3
	West Nile Virus	0	0	0	0	0	2	0	1	1	4	46	14	52
	Lyme Disease	0	0	0	0	0	0	0	0	0	0	3	0	3
	Animal Rabies (bats)	0	0	0	0	0	0	0	0	0	0	0	0	4

* Totals include reports from Department of Corrections and those not reported from a specific District

** Temporarily not available