



Pertussis Update For Health Care Providers

**Texas Department of State Health Services
Health Service Region 2/3**

GRAYSON COUNTY HEALTH DEPARTMENT



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To Medical Care Providers:

The Texas Department of State Health Services has observed a statewide increase in the number of cases of Pertussis. During the past five years, Pertussis cases have been reported in approximately two-thirds of the counties in HSR 2/3. Many of these cases have been observed in adolescents and adults where the disease has manifested as a chronic cough and/or diagnosed as allergies, chronic bronchitis, etc.

Health Service Region 2/3, headquartered in Arlington, Texas, has prepared a manual that provides current data on the epidemiologic patterns of Pertussis statewide and in HSR 2/3. This manual also contains guidance on current immunizations recommendation; guidance for treatment and prophylaxis; and recommendations for diagnostic tests for Pertussis.

We ask for your assistance in promoting measures to prevent and control Pertussis per DSHS guidance as follows:

- We encourage testing patients with chronic cough, etc. for Pertussis.
- Educate patients about this disease and measures to control the spread per the manual and tools found at the following link: www.co.grayson.tx.us (under Health Department).
- Distribute the Pertussis brochure that may be copied from the above website and given to your patients.
- Encourage adult patients, who will be in direct contact with a newborn baby to be vaccinated with Tdap prior to the time of delivery, (ie: fathers, grandparents, and the mother when she delivers).
- Encourage adults who work with young infants and children to be vaccinated with Tdap.

DSHS has also observed clusters of pneumonia in some areas of the region and so we have included a pocket guide for influenza and pneumonia on our local county web site.

If you have questions, please contact the local health department at the Sherman or Denison office per above.

Pertussis Update For Medical Care Providers In Health Service Region 2/3

Epidemiology and Surveillance

Epidemiologic data indicate an increase in the number of Pertussis cases reported statewide and also in Texas Department of State Health Services Health Service Region 2/3. In the past 5 years, Pertussis has been reported in approximately 65% of the counties in HSR 2/3.

Nationally, sixty percent (60%) of reported cases of Pertussis cases have been in adolescents (11-18 years of age) and adults (19 years of age or older). In HSR 2/3, we have also seen an increase in reported cases in adolescents and adults.

Pertussis in adolescents and adults may provide a source of infection for babies and young children that are around these adolescents and adults. Pertussis has been referred to as the "100 day cough". Many of the cases in adults have been initially diagnosed as chronic cough due to bronchitis, asthma, or allergies.

Diagnosis of Pertussis

We recommend diagnostic testing for Pertussis for those individuals with a chronic cough lasting 14 days or longer that can not be attributed to other medical conditions.

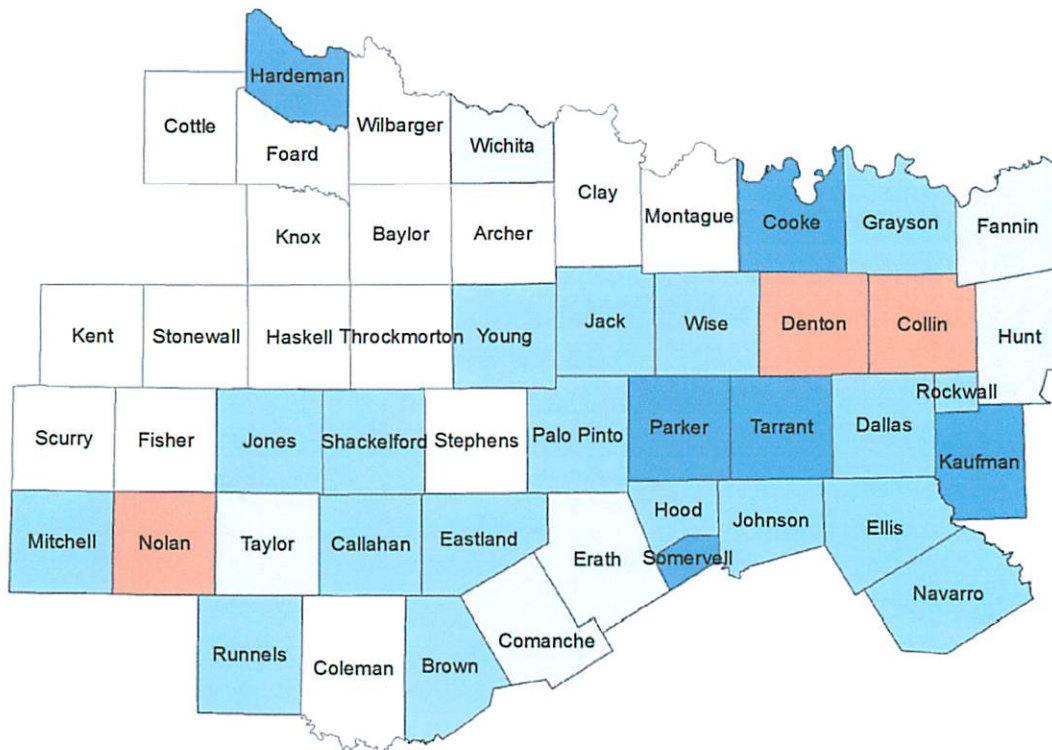
The preferred diagnostic test is PCR or culture.

Prevention and Control

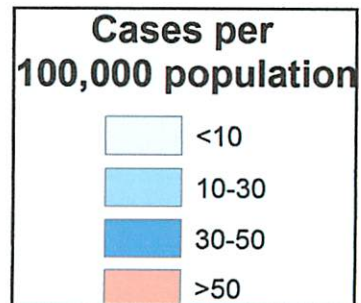
The current recommendations for prevention and control of Pertussis include:

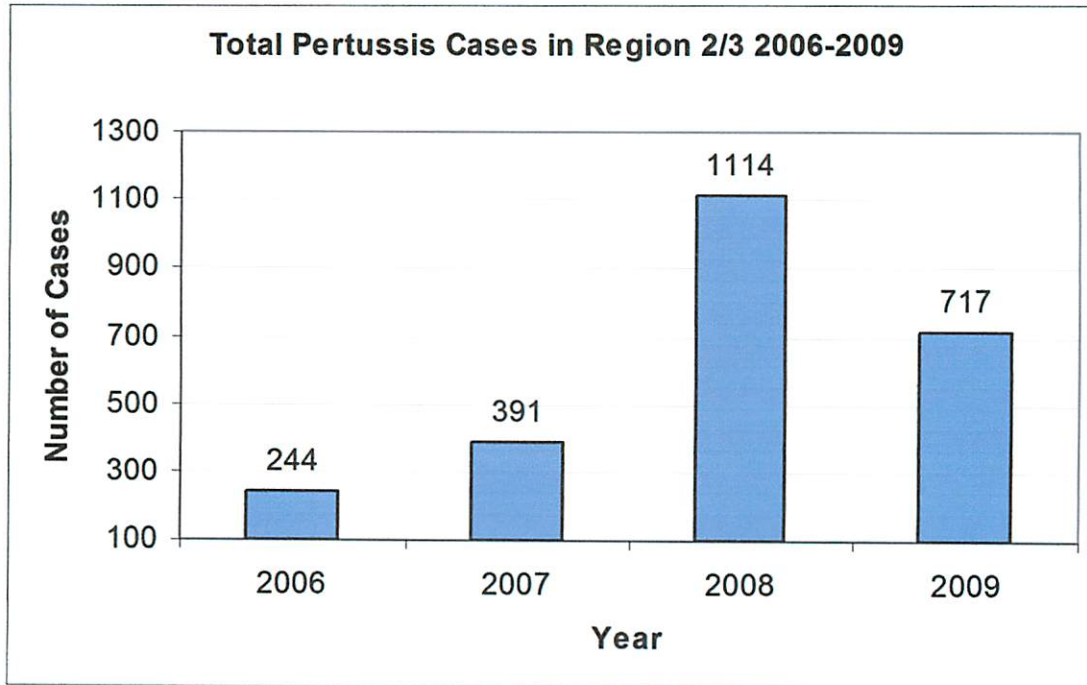
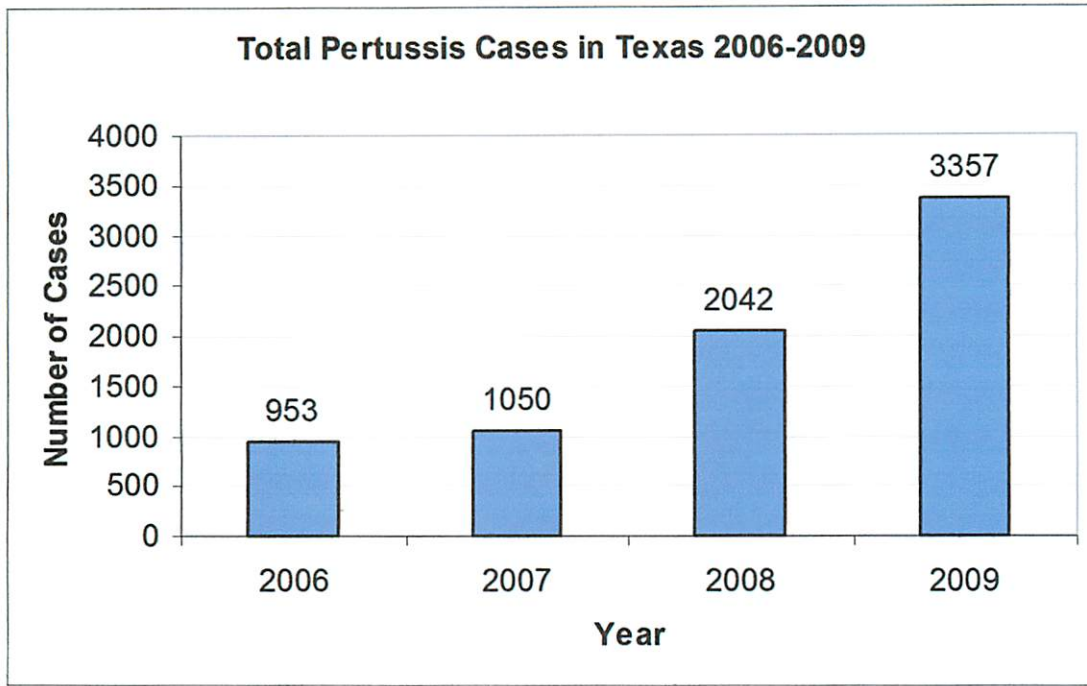
- Vaccination/Immunization Programs
- Prophylaxis of individuals exposed to a confirmed case of Pertussis
- Client education on the need for vaccination of children with DTaP and also vaccination of adolescents and adults with Tdap.

Pertussis Rates by County HSR 2/3, 2006-2009

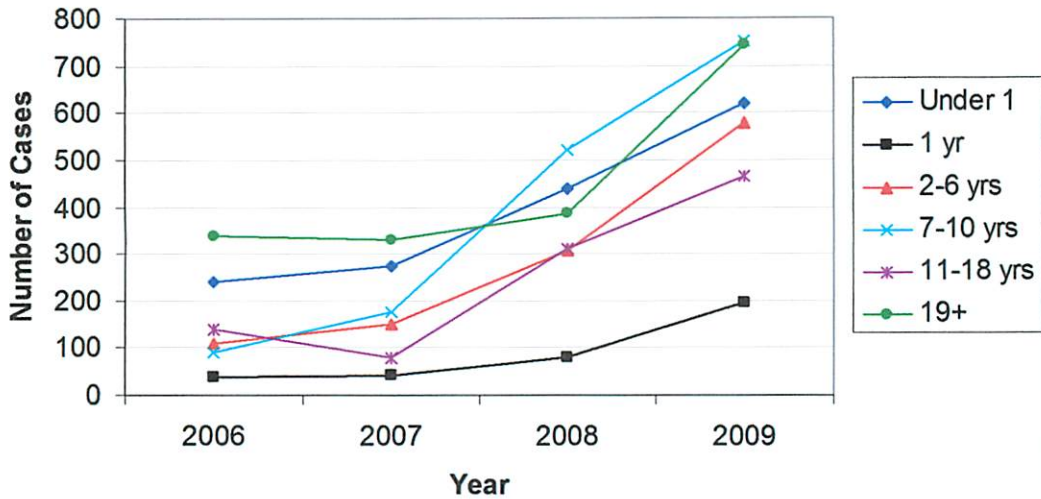


This map reflects the number of reported Pertussis cases. The absence of cases in any county does not imply the absence of the disease in that county, but only indicates that there were no reported cases during the time period used to calculate rates.

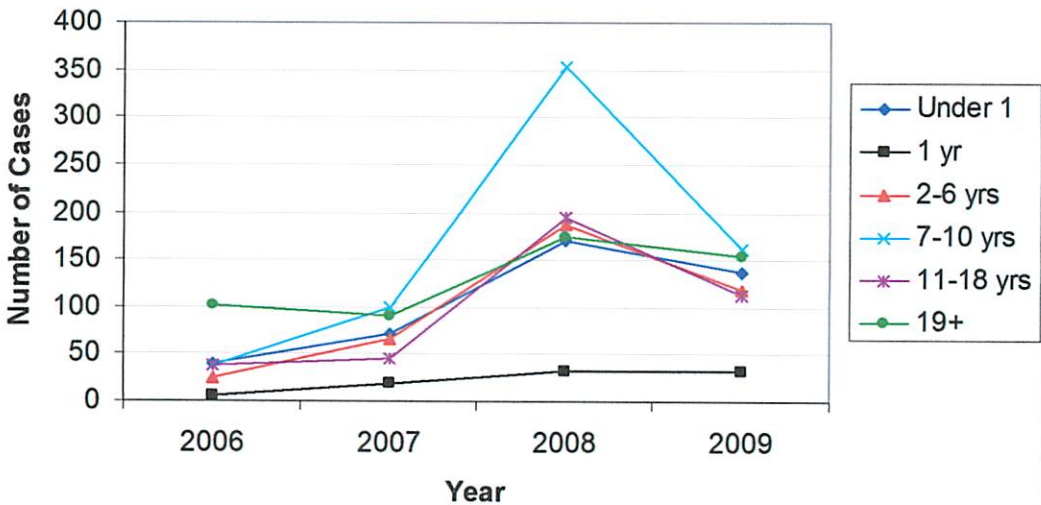




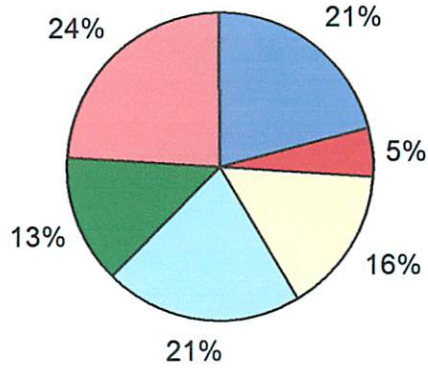
Pertussis Cases in Texas by Age Group 2006-2009



Pertussis Cases in Region 2/3 by Age Group 2006-2009

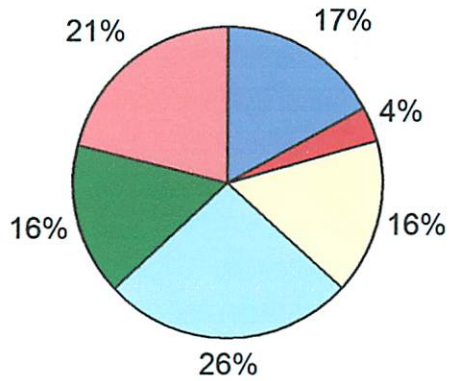


Pertussis Cases in Texas by Age Group 2006-2009



Under 1 1 yr 2-6 yrs 7-10 yrs 11-18 yrs 19+

Pertussis Cases in Region 2/3 by Age Group 2006-2009



Under 1 1 yr 2-6 yrs 7-10 yrs 11-18 yrs 19+

Pertussis Diagnostic Tests

Type of Test	Recommended By CDC?	Rationale for CDC Recommendation
PCR	Yes	This test has high specificity and sensitivity, and a short turn-around time for results. Will test positive in the first 4 weeks after cough onset. After that time period, the likelihood of PCR being positive will decrease. PCR is the CDC recommended test for pertussis diagnosis.
Culture	Yes	Isolation of <i>B. pertussis</i> by culture is 100% specific, but has a low sensitivity (30%-60%). Likelihood of positive result in first 72 hours to 2 weeks of cough illness; 1-2 week delay for definitive result
DFA	No	Interpretation of this test is subjective and is not recommended by CDC.
Serology (IgM, IgG, IgA)	No	Pertussis serology does not clearly differentiate immune responses to pertussis antigens following recent disease or from vaccination. Requires fourfold increase in acute and convalescent titers to detect current infection. Convalescent would have to be taken at least 4 weeks after cough onset. CDC does not recommend serologic testing for laboratory confirmation of pertussis.

Reference:

Preventing Tetanus, Diphtheria, and Pertussis Among Adults: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine. MMWR 2006, 55 RR-17.



Information about Pertussis and Post Exposure Prophylaxis

Recommendations for PEP

Antimicrobial agents are recommended for treatment and post exposure prophylaxis (PEP) for pertussis. Antibiotics will eradicate *Bordetella pertussis* from the nasopharynx of infected persons, whether they are symptomatic or asymptomatic. Post exposure prophylaxis can be administered to close contacts of patients and to persons who are at high risk for having severe or complicated pertussis. The list of recommendations for pertussis treatment and chemoprophylaxis can be found on the next page of this manual.

Who is considered a close contact to someone who has pertussis?

For pertussis, a close contact is defined as a person who had face-to-face exposure within 3 feet of a symptomatic patient.

Close contacts can include persons who have:

- direct contact with respiratory, oral, or nasal secretions from a symptomatic patient through:
 - cough
 - sneeze
 - sharing food and eating utensils
 - mouth-to-mouth resuscitation
 - performing a medical examination of the mouth, nose, and throat
- shared the same confined space in close proximity with a symptomatic patient for greater than 1 hour

High risk close contacts for acquiring severe pertussis infection include:

- infants aged less than 1 year
- persons with immunodeficiency conditions
- persons with other underlying medical conditions such as chronic lung disease, respiratory insufficiency, or cystic fibrosis

When would PEP be effective?

An antimicrobial agent administered *early* in the course of illness can reduce the duration and severity of symptoms, lessen the period of communicability, and prevent secondary cases. Close asymptomatic contacts can be administered post exposure prophylaxis to prevent secondary cases as long as there are not any contraindications. It is recommended that the PEP be administered within 21 days of the index patient's cough onset.

Reference:

Recommended antimicrobial agents for the treatment and postexposure prophylaxis of pertussis: 2005 CDC guidelines. MMWR 2005;54(RR-14): 1-13.



Pertussis

Treatment and Chemoprophylaxis

Antibiotic	Age	Dose
Azithromycin	Infants < 6 months	10-12 mg/kg/day(max 500) for five days
Azithromycin	Infants and children \geq 6 months	10/mg/kg on day 1 (max 500 mg) on day one Followed by 5 mg/kg/day (max 250 mg) for day 2-5
Azithromycin	Adults	500 mg on day 1 Followed by 250 mg /day on days 2-5.
Erythromycin	Infants < 1 month	Not preferred because of risk of IHPS. Azithromycin is the recommended antimicrobial agent. If azythromycin is unavailable the dose is 40-50mg/kg/day in 4 divided doses for 14 days. These infants should be monitored for IHPS.
Erythromycin	Infants \geq 1 month and older children	40-50 mg /day (max. 2 gm/day) in 4 divided doses for 14 days.
Erythromycin	Adults	2 g /day in 4 divided doses for 14 days
Clarithromycin	Infants < 1 month	Not recommended
Clarithromycin	Infants and children \geq 1 month	15 mg/kg/day (max. 1g/day) in 2 divided doses for 7 days
Clarithromycin	Adults	1 g/day in 2 divided doses for 7 days
TMP-SMZ	Infants < 2 months	Contraindicated
TMP-SMZ	Infants \geq 2 months and children	TNP 8 mg/day SMZ 40 mg/day in 2 divided doses for 14 days
TMP-SMZ	Adults	TMP 320 mg/day and SMZ 1,600 mg / day in 2 divided doses for 14 days.

Pregnant Women: If a pregnant woman is symptomatic, she should be treated for pertussis regardless of pregnancy trimester. The macrolides (azithromycin, erythromycin) for class B, and clarithromycin for Class C are preferred. Azithromycin is the first choice for treatment and prophylaxis because of its shorter course, once daily dosing, and fewer GI side effects as compared to the others. Cotrimoxazole (Class C) is a last resort and is used if a symptomatic patient has prior hypersensitivity reactions to macrolides. It also has more adverse events associated with its use.

If a pregnant woman is exposed and asymptomatic, an alternative strategy to chemoprophylaxis would be to closely monitor for respiratory symptoms, and treat ASAP if symptoms manifest.

Source: Centers for Disease Control and Prevention, Recommended antimicrobial agents for the treatment and postexposure prophylaxis of pertussis: 2005 CDC guidelines. MMWR 2005; 54 (No. RR-14) accessed at <http://www.cdc.gov/mmwr/pdf/rr/rr5414.pdf>.



Exclusion Criteria for Pertussis (Whooping Cough) in Schools and Child Care Centers*

Condition	Incubation Period	Signs/Symptoms	Exclusion	Readmission Criteria
Pertussis	Range 6-21 days Commonly 7-10 days	Low-grade fever, runny nose, and cough lasting about two weeks, followed by paroxysmal coughing spells and “whoop” on inspiration.	Yes	After completion of five days of antibiotic therapy.
<p>Prevention, Treatment and Comments: Vaccine available. Unimmunized contacts should be immunized and receive antibiotic prophylaxis. Adults with persistent cough greater than 2 weeks should be evaluated.</p>				

* Abstracted from the Recommendations for the Prevention and Control of Communicable Diseases in a Group-Care Setting. Texas Department of State Health Services 2004.



Pertussis: Summary of Vaccine Recommendations

Summary of DTaP and Tdap Vaccine Recommendations across the Lifespan

Age/Status	Recommendations
0 - 6 years	DTaP is routinely recommended at 2, 4, and 6 months, at 15 through 18 months, and at 4 through 6 years.
11- 18 years	Tdap is routinely recommended as a single dose with preferred administration at 11 to 12 years of age. If your adolescent patient was not fully vaccinated for pertussis as a child, check the Advisory Committee on Immunization Practices (ACIP) recommendations and catch-up schedule to determine what's indicated. If adolescents (13 through 18 years) missed getting Tdap, administer at the next patient encounter or sooner if patient will have close contact with infants.
19 - 64 years	Any adult 19 through 64 years of age who has not received a dose of Tdap should get one, which can replace one of the 10-year Td booster doses. However, it is not necessary to wait the typical 10 years to get the adult dose of Tdap after the last dose of Td. Shorter intervals between Tdap and last Td may increase the risk of mild local reactogenicity but may be appropriate if your patient is at high risk for contracting pertussis, such as during an outbreak, or has close contact with infants.
65 years and older	There is currently no pertussis vaccine licensed for persons 65 years and older, therefore the ACIP has no recommendation on the use of pertussis vaccine in this age group. This may change when more data in this age group becomes available. Providers may choose to give Tdap in persons 65 years and older. The decision to use any vaccine off-label depends on the clinician and patient agreeing that the benefit of the vaccine exceeds the risk. This may be especially important during a community outbreak and/or if caring for an infant. The safety of Tdap in persons 65 years and older is likely the same as in 18-64 year olds. A dose of Tdap is likely to boost antibody levels to pertussis.
Pregnant women	Women should ideally receive Tdap before becoming pregnant. Pregnant women who were not vaccinated previously with Tdap should receive Tdap in the immediate postpartum period before discharge from hospital or birthing center. Although pregnancy is not a contraindication for receiving Tdap vaccine, healthcare providers should weigh the risks and benefits before choosing to administer Tdap vaccine to a pregnant woman including the possibility of increased risk of contracting pertussis during a community outbreak. Keep in mind that Tdap is not just for moms, it's for all family members and caregivers of the infant.
Healthcare personnel*	Healthcare personnel who have direct patient contact should receive a single dose of Tdap if they have not previously received Tdap as an adult. It is not necessary to wait the typical 10 years to get the adult dose of Tdap after the last dose of Td. However, shorter intervals between Tdap and last Td may increase the risk of mild local reactogenicity. Tdap vaccination can protect healthcare personnel against pertussis and help reduce transmission to others. Priority should be given to vaccinating healthcare personnel who have direct contact with babies younger than 12 months of age.

*Healthcare personnel include but are not limited to physicians, other primary care providers, nurses, aides, respiratory therapists, radiology technicians, students (e.g., medical, nursing, and pharmaceutical), dentists, social workers, chaplains, volunteers, and dietary and clerical workers.

Page Located on the Web at <http://www.cdc.gov/vaccines/vpd-vac/pertussis/recs-summary.htm>

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