



Rod R. Blagojevich, Governor
Damon T. Arnold, M.D., M.P.H., Director

122 S. Michigan Ave., Suite 7000 • Chicago, IL 60603-6119 • www.idph.state.il.us

Date: November 14, 2008
From: Craig S. Conover, MD, Medical Director, Office of Health Protection
Kenneth Soyemi, MD, Assistant Medical Director, Office of Health Protection
Karen McMahon, Chief, Immunization Section
To: Illinois Physicians
Re: Prevention of infant deaths and hospitalizations due to pertussis

Two hundred eighty-five cases of pertussis have been reported in Illinois to date this year, compared to 170 at this time in 2007. Fifty-five of these cases have occurred among infants less than 12 months of age. Pertussis poses the greatest risk to infants, who have more serious illness and are more likely to have complications and be hospitalized than persons in other age groups. In recent years, 15 to 21 pertussis-related infant deaths had been reported to CDC annually.

Protect infants from serious illness and death due to pertussis by taking the following actions:

1) Vaccinate infants –start and complete the DTaP series on time.

DTaP (containing pediatric doses of diphtheria and tetanus toxoids and acellular pertussis) vaccine prevents severe pertussis and death among infants and young children. **The best way to protect infants from pertussis is to give DTaP vaccine starting at 2 months of age.** Complete all the recommended doses of DTaP vaccine (at 2, 4, and 6 months of age).¹

2) Vaccinate adolescents and adults, including post-partum women, and other women of childbearing age, healthcare workers, and household contacts of infants.

■ Women should receive a single dose of vaccine containing tetanus toxoids, reduced diphtheria toxoid and acellular pertussis, called Tdap, before conception (e.g., during routine wellness visits) if they have not already received a dose of Tdap. For women who have not received Tdap previously (including women who are breastfeeding), Tdap is recommended as soon as feasible in the immediate postpartum period to protect the women from pertussis and reduce the risk for exposing their infants to pertussis.²

■ Adults less than 65 years of age who will have close contact with an infant less than 12 months of age should receive Tdap, ideally at least one month before beginning close contact with infants. In situations such as this, when it is important to protect against pertussis, intervals shorter than 10 years since the last Td vaccination may be used. A 2-year interval between Td and Tdap is suggested, but not required.

¹ An additional dose of DTaP vaccine is recommended at 15-18 months of age and at 4-6 years of age.

² Additional information about administration of Tdap during pregnancy is available at <http://www.cdc.gov/vaccines/pubs/preg-guide.htm#tdap>

- Health care workers who have direct patient contact in hospitals or clinics should get a dose of Tdap. A 2 year interval since the last Td is suggested, but not required.
- Adolescents should receive a dose of Tdap once between ages 11 and 18.

Note: Adults should substitute Tdap for one booster dose of Td. Only one formulation of Tdap, ADACEL[®], is licensed and recommended for adults aged 19-64 years. Adolescents should receive a single dose of Tdap instead of a Td booster between the ages of 11 and 18. BOOSTRIX[®] is the only Tdap product licensed and recommended for adolescents aged 10-18 years. A summary of ACIP recommendations for pertussis vaccination of adolescents and adults is attached.

3) Treat pertussis cases and provide prophylaxis for close contacts:

Untreated pertussis illness in mothers and other close contacts of newborn children can result in serious illness, and death of the newborn. Infants' close contacts who have cough illness that may be due to pertussis should be promptly evaluated and treated for pertussis as appropriate. Prophylaxis is recommended for close contacts of pertussis cases, including infants, regardless of immunization status. If a woman acquires pertussis late in pregnancy or shortly before delivery, CDC recommends that a macrolide be administered to the woman, her household contacts, and the neonate.

Patients with pertussis must be isolated from day care, school, work, and public gatherings until at least 5 days after the start of appropriate antibiotic therapy to limit further transmission. For more information visit: <http://www.cdc.gov/mmwr/PDF/rr/rr5414.pdf>

4) Minimize infants' exposure (close contact) to persons who have cold symptoms or cough illness.

Coughing people of any age, including parents, siblings, and grandparents can have pertussis. When a person has cold symptoms or cough illness, they need to stay away from young infants as much as possible. Frequent hand washing and respiratory hygiene (covering coughs and sneezes with a tissue, and disposing of the soiled tissues) are also necessary to prevent further transmission.

For more information regarding diagnosis, management, and reporting of pertussis contact your local health department, or the IDPH Immunization Section, at 1-800-526-4372.

TABLE 2. Summary of recommendations of the Advisory Committee on Immunization Practices (ACIP) for vaccination to prevent pertussis, tetanus, and diphtheria among adults and adolescents,* with recommended intervals for vaccination from the most recent tetanus and diphtheria toxoids-containing vaccine† — United States, 2006–2008

| Setting | May 2008 | | |
|--|---|--|---|
| | March 2006 Adolescents (aged 11–18 yrs) | December 2006 Adults (aged 19–64 yrs) | Women of childbearing age, including pregnant and postpartum women |
| Routine* | Tdap at age 11–12 yrs; Tdap catch-up ages 11–18 yrs [§] | Tdap to replace the next decennial Td [¶] ; ideally, women will receive Tdap before becoming pregnant | Tdap to replace the next decennial Td [¶] ; Tdap is encouraged during preconception wellness visits |
| Special situations* | | | |
| Pregnant women | | | |
| Interval <10 yrs | Tdap as soon as feasible in the postpartum period [§] | Tdap postpartum before leaving hospital or birthing center; interval as short as 2 yrs [¶] | Tdap postpartum before leaving hospital or birthing center; interval as short as 2 yrs [¶] **†† |
| Interval ≥10 yrs | Td recommended during pregnancy | Td recommended during pregnancy | • Td recommended during pregnancy, ^{††} or • Tdap-postpartum before leaving hospital or birthing center instead of Td during pregnancy, if sufficient tetanus and diphtheria protection is likely until delivery |
| Nonpregnant adults and adolescents who anticipate having, or will have contact with an infant aged <12 mos | Tdap at age 11–12 yrs; Tdap catch-up ages 11–18 yrs [§] | Tdap ideally administered at least 2 wks before contact with the infant; interval as short as 2 yrs suggested [¶] | Tdap, ideally administered at least 2 wks before contact with the infant; interval as short as 2 yrs suggested [¶] |
| Increased risk for pertussis or its complications, e.g., health-care personnel with direct patient contact and persons in settings with a pertussis outbreak | Tdap ages 11–18 yrs [§] | Tdap; interval as short as 2 yrs [¶] | Tdap-postpartum before leaving hospital or birthing center; interval as short as 2 yrs [¶] **††; pregnant women should be advised of symptoms of pertussis and the benefits of treatment and early prophylaxis for household contacts exposed to pertussis |
| Increased risk for diphtheria | Tdap, when indicated [§] | Tdap to replace the next Td when indicated* | Td for urgent protection during pregnancy ^{††} ; Tdap postpartum before leaving hospital or birthing center |
| Tetanus wound management | Tdap instead of Td when indicated ^{§§} | Tdap instead of Td when indicated ^{§§} | Td when indicated for pregnant women ^{††§§} |
| No tetanus and diphtheria toxoids vaccination, or vaccination history incomplete or unknown | 1 dose Tdap, followed by Td ≥4 wks later and dose 2 Td 6–12 mos later | 1 dose Tdap, followed by Td ≥4 wks later and dose 2 Td 6–12 mos later | 1 dose Td during pregnancy followed by dose 2 Td ≥4 wks later ^{††} and dose 3 as Tdap 6–12 mos later (postpartum) |

Sources: CDC. Preventing tetanus, diphtheria, and pertussis among adolescents: use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccines. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(No. RR-3). CDC. Preventing tetanus, diphtheria, and pertussis among adults: use of tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine (Tdap). Recommendations of the Advisory Committee on Immunization Practices (ACIP) MMWR 2006;55(No. RR-17).

* ACIP recommends routine vaccination with tetanus and diphtheria toxoids every 10 years to boost tetanus and diphtheria protection. In 2006, ACIP recommended that adults and adolescents who have not been vaccinated previously with tetanus and reduced diphtheria toxoids and acellular pertussis (Tdap), including persons with a history of pertussis, receive a dose of Tdap to boost pertussis protection in addition to tetanus and diphtheria protection. Tdap is licensed for single-dose administration. In persons who have received Tdap, tetanus and reduced diphtheria toxoids (Td) vaccine should be administered when subsequent decennial booster vaccination is indicated for tetanus or diphtheria protection.

† For adults and adolescents, tetanus and diphtheria toxoids-containing vaccines include tetanus toxoid (TT), Tdap, and Td; for infants and children, tetanus toxoid and diphtheria toxoids-containing vaccines include pediatric diphtheria and tetanus toxoids and whole-cell pertussis (DTP), pediatric diphtheria and tetanus toxoids and acellular pertussis (DTaP), pediatric diphtheria and tetanus toxoids and acellular pertussis, inactivated poliovirus and hepatitis B (DTaP-IPV-Hep B), and pediatric diphtheria and tetanus toxoids (DT).

§ During 2000–2006, U.S. adolescents aged 10–19 years had the highest incidence of reported pertussis outside of infancy (CDC, unpublished data, 2008). For this reason, a catch-up dose of Tdap is recommended for adolescents aged 11–18 years to add protection against pertussis if they have received Td but not Tdap. For catch-up Tdap, an interval of at least 5 years from the most recent tetanus and/or diphtheria toxoids-containing vaccine is encouraged to reduce the risk for local and systemic reactions that could result when concentration of tetanus and/or diphtheria antitoxin is high. An interval less than 5 years after Td may be used, particularly when the benefit of providing pertussis protection is likely to be increased. Adolescents who have received a childhood series of pediatric DTP or DTaP and Td or Tdap are protected against tetanus and diphtheria.

¶ A shorter interval may be used.

** Limited evidence informs the risk of local and systemic reactions after Tdap at intervals of <2 years. Higher rates of local and systemic reactions and more severe reactions can occur with high preexisting serum titers of tetanus or diphtheria antitoxin. Providers may choose to administer Tdap in postpartum women who received a tetanus toxoid- and/or diphtheria toxoid-containing vaccine (e.g., Td or TT) less than 2 years previously if the women have no history of serious adverse reaction after the most recent dose of tetanus and/or diphtheria toxoid-containing vaccine.

†† In special situations, a dose of Tdap might be warranted during pregnancy. Health-care providers who choose to administer Tdap to pregnant women should discuss with the women the lack of evidence of safety and effectiveness for the mother, fetus, pregnancy outcome, and effectiveness of transplacental maternal antibodies to provide early pertussis protection to the infant. These women should be informed that no study has examined the effectiveness of transplacental pertussis antibodies induced by Tdap on the adequacy of the infant immune response to pediatric DTaP and conjugate vaccines containing tetanus toxoid or diphtheria toxoid. Because adverse outcomes of pregnancy are most common in the first trimester, vaccinating these pregnant women with Tdap during the second or third trimester is preferred to minimize the perception of an association of Tdap with an adverse outcome, unless vaccine is needed urgently.

§§ A Td booster might be recommended for wound management if ≥5 years have elapsed since the previous Td. Persons who have completed the 3-dose primary tetanus vaccination series and have received a tetanus toxoid-containing vaccine within the preceding 5 years are protected against tetanus and do not require a tetanus toxoid-containing vaccine as part of wound management.