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# Tdap During Pregnancy

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[www.vaccinateindiana.org](http://www.vaccinateindiana.org)

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## Letters of Support



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## DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service  
Centers for Disease Control  
and Prevention (CDC)  
Atlanta GA 30341-3724

October 9, 2014

Dear Colleague,

Pregnant women and their babies are at increased risk for influenza-related complications, including premature labor and preterm birth. Additionally, pertussis outbreaks continue to occur in the United States with infants at highest risk of severe illness, including hospitalization and death. Influenza vaccination is recommended in any trimester for all women who are pregnant or who plan to become pregnant during the influenza season, and a pertussis vaccination (Tdap) is recommended between 27 and 36 weeks of each pregnancy.<sup>1</sup> Immunization rates for these vaccines are low, leaving many pregnant women and their infants unprotected against these serious vaccine-preventable diseases.

We ask you to recommend the influenza vaccine to your pregnant patients throughout the current influenza season. We ask that you also recommend the Tdap vaccination to your pregnant patients as they enter their third trimester. **Studies confirm that your recommendation and offer of vaccines are essential.** One study showed that patients who were offered influenza vaccination during an office visit were 7 times more likely to be vaccinated for influenza than patients who reported their provider did not recommend or offer vaccination. Patients who received a recommendation alone were twice as likely to be vaccinated as those that received no recommendation.<sup>2</sup>

We encourage you to adopt the National Adult Immunization Practice Standards to help ensure that your patients receive influenza and Tdap vaccinations as well as all other indicated vaccinations. We ask you to complete the following steps at each patient encounter:

- **Assess** the immunization status of each patient.
- **Recommend** the indicated vaccines to each patient
- **Administer** any necessary vaccines or, if you do not stock the vaccine, **refer** the patient to a provider or location that can vaccinate the patient.
- **Document** the vaccinations that your patient is given, ideally in your state or local immunization registry.

Your pregnant patients might be concerned about receiving a vaccination while pregnant. Influenza and Tdap vaccines are safe and important for pregnant women and their infants. Infants in the first several months of life are at the greatest risk of severe illness from influenza and pertussis but are too young to be directly immunized, thus vaccination during pregnancy is critical.

You play a crucial role in helping keep pregnant women and their newborns healthy. Assuring your patients are protected by recommended vaccines is key. For more information about the influenza vaccine, please visit: <http://www.cdc.gov/flu/professionals/index.htm>. For more information about the Tdap vaccine and pregnancy, please visit: <http://www.cdc.gov/pertussis/pregnant/hcp/>. For information about all vaccines for pregnant women visit: <http://www.cdc.gov/vaccines/pubs/preg-guide.htm>.

We thank you for your dedication to ensure the health and safety of pregnant women and their infants.

<sup>1</sup><http://www.cdc.gov/vaccines/hcp/acip-recs/index.html>

<sup>2</sup>[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6337a3.htm?s\\_cid=mm6337a3\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6337a3.htm?s_cid=mm6337a3_w)



The American College of  
Obstetricians and Gynecologists  
WOMEN'S HEALTH CARE PHYSICIANS



Fall 2013

Dear Colleague,

Vaccination is one of the many ways to help keep both mother and baby safe from disease. As you are aware, ACOG and ACIP recommend that all women, including those pregnant and breastfeeding, receive both the influenza and Tdap vaccine. Talk to your patients who are pregnant or planning to become pregnant about their immunization history. Strongly recommend that all of your pregnant patients receive the annual seasonal flu vaccine and the Tdap vaccine at *every* pregnancy, which will protect both mother and newborn.

We know that pregnant women, especially those in the third trimester, are beginning to think of what needs to be done when their new baby arrives. To help educate your patients, ACOG has teamed up with the national nonprofit organization, Every Child By Two - Carter/Bumpers Champions for Immunization. Arming mothers-to-be with *science-based* information on childhood immunizations will help them when they encounter the abundance of misinformation regarding the safety and necessity of timely vaccinations, much of which is found online. Every Child By Two's Vaccinate Your Baby website, [www.vaccinateyourbaby.org](http://www.vaccinateyourbaby.org), is directed towards families who seek scientifically-sound answers to questions about the safety of vaccines and the importance of immunizations. The website also provides links to other credible organizations and immunization resources including ACOG's Immunization for Women website [www.immunizationforwomen.org](http://www.immunizationforwomen.org).

Earlier this spring you received ACOG's new Immunization Tool Kit for Obstetricians & Gynecologists, which included resources to help you routinize immunizations into your practice. This new folder contains additional materials to help you and your staff communicate with pregnant women about the importance of adult vaccination as a way to "cocoon" their infants and protect them from pertussis (whooping cough) by getting the Tdap vaccine. The folder also contains a poster for placement in your office and a flier that can be copied and handed out to your patients on the topic of childhood immunizations.

We hope the enclosed materials are helpful to you, your practice team, and your patients. We would greatly appreciate your feedback and ask that you visit [www.ecbt.org/surveys/acog/mail.htm](http://www.ecbt.org/surveys/acog/mail.htm) to fill out a very short online survey. If you have any questions or would like additional materials from ACOG, please email us at [immunization@acog.org](mailto:immunization@acog.org) or call 202-863-2443. If you would like additional materials to help educate your patients about the importance of childhood immunization and cocooning, please visit Every Child By Two's website created specifically for vaccine advocates and healthcare providers [www.ecbt.org](http://www.ecbt.org).

Sincerely,

Gerald F. Joseph Jr, MD, FACOG  
Vice President, Practice Activities

Amy Pisani, MS  
Executive Director, Every Child By Two



## Provider Backgrounds



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## Updated Recommendations for Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccine (Tdap) in Pregnant Women — Advisory Committee on Immunization Practices (ACIP), 2012

In October 2011, in an effort to reduce the burden of pertussis in infants, the Advisory Committee on Immunization Practices (ACIP) recommended that unvaccinated pregnant women receive a dose of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis vaccine (Tdap) (1). Vaccination of women with Tdap during pregnancy is expected to provide some protection to infants from pertussis until they are old enough to be vaccinated themselves. Tdap given to pregnant women will stimulate the development of maternal antipertussis antibodies, which will pass through the placenta, likely providing the newborn with protection against pertussis in early life, and will protect the mother from pertussis around the time of delivery, making her less likely to become infected and transmit pertussis to her infant (1). The 2011 Tdap recommendation did not call for vaccinating pregnant women previously vaccinated with Tdap. On October 24, 2012, ACIP voted to recommend use of Tdap during every pregnancy. This report summarizes data considered and conclusions made by ACIP and provides guidance for implementing its recommendations. These updated recommendations on use of Tdap in pregnant women aim to optimize strategies for preventing pertussis morbidity and mortality in infants.

ACIP is chartered as a federal advisory committee to provide expert external advice and guidance to the Director of the Centers for Disease Control and Prevention (CDC) on use of vaccines and related agents for the control of vaccine-preventable diseases in the civilian population of the United States. Recommendations for routine use of vaccines in children and adolescents are harmonized to the greatest extent possible with recommendations made by the American Academy of Pediatrics, the American Academy of Family Physicians (AAFP), and the American College of Obstetricians and Gynecologists. Recommendations for routine use of vaccines in adults are reviewed and approved by the American College of Physicians, AAFP, the American College of Obstetricians and Gynecologists, and the American College of Nurse-Midwives. ACIP recommendations adopted by the CDC Director become agency guidelines on the date published in the *Morbidity and Mortality Weekly Report (MMWR)*.

The United States has experienced substantial increases in reported pertussis cases over the past several years. Provisional case counts for 2012 have surpassed the last peak year, 2010, with 41,880 pertussis cases and 14 deaths in infants aged <12 months (2) (CDC, unpublished data, 2012). To reduce this burden, optimizing the current vaccination program and protecting infants who are at highest risk for death are immediate priorities. Since the 2011 ACIP vaccination recommendation, uptake of Tdap among pregnant women has been low; one survey of 1,231 women (August 2011 to April 2012) estimated that only 2.6% of women received Tdap during their recent pregnancy (3). New data indicate that maternal antipertussis antibodies are short-lived; therefore, Tdap vaccination in one pregnancy will not provide high levels of antibodies to protect newborns during subsequent pregnancies (4).

### Methods

In monthly teleconferences during 2012, the ACIP Pertussis Vaccines Work Group considered published, peer-reviewed literature and unpublished data relevant to vaccinating pregnant women with Tdap. When data were not available, expert opinion was considered. Summaries of the data reviewed and work group discussions were presented to ACIP before recommendations were proposed. The proposed Tdap recommendation for pregnant women was presented at the October 2012 ACIP meeting and approved by ACIP.

### Summary of ACIP Deliberations and Rationale

#### A dose of Tdap during each pregnancy

Very young infants are dependent solely on maternal antibodies and lack the ability to mount a cell-mediated response (4). The effectiveness and optimal concentration of maternal antipertussis antibodies in newborns are not yet known, but high levels of antibodies in the first weeks after birth likely confer protection and might prevent pertussis or modify disease severity (5–7). Studies on the persistence of antipertussis antibodies following a dose of Tdap show antibody levels in healthy, nonpregnant adults peak during the first month after vaccination, with substantial antibody decay after 1 year (8–10). Antibody kinetics in pregnant women likely would be similar. One study evaluated persistence of maternal

antipertussis antibody concentrations from maternal delivery and cord blood pairs from women who received Tdap within the prior 2 years (4). The estimated antipertussis antibody concentrations at birth in most of these infants were considered unlikely to provide adequate protection. These findings indicate that maternal antibodies from women immunized before pregnancy waned quickly and the concentration of maternal antibodies was unlikely to be high enough to provide passive protection to infants (4). Because antibody levels wane substantially during the first year after vaccination, ACIP concluded a single dose of Tdap at one pregnancy would be insufficient to provide protection for subsequent pregnancies.

### Potential Impact of Tdap During Pregnancy

For the 2011 ACIP recommendation, ACIP reviewed a decision analysis model developed to assess the impact and cost effectiveness of Tdap vaccination during pregnancy compared with immediately postpartum vaccination (1). The model showed that Tdap vaccination during pregnancy would prevent more infant cases, hospitalizations, and deaths compared with the postpartum dose (11).

For this updated recommendation, the model was rereviewed and the analysis updated. To estimate the potential impact of Tdap given either during pregnancy or postpartum, percent mean reductions were applied to the annual mean number of reported pertussis cases in infants aged <12 months during 2000–2011 (CDC, unpublished data, 2011). During 2000–2011, the annual mean of pertussis cases in infants aged <12 months was 2,746 (range: 1,803–4,298), hospitalizations was 1,217 (range: 687–1,938), and deaths was 18 (range: 8–35) (CDC, unpublished data, 2011). Based on the model, Tdap vaccination during pregnancy might prevent 906 (range: 595–1,418) infant cases, 462 (range: 261–736) hospitalizations, and nine (range: 4–17) deaths; a postpartum dose might prevent 549 (range: 361–860) infant cases, 219 (range: 124–349) hospitalizations, and three (range: 1–6) deaths (CDC, unpublished data, 2012).

### Birth Statistics in the United States

To address the likelihood that women might receive Tdap during consecutive pregnancies in a short period, and therefore theoretically be at greater risk for adverse reactions, ACIP reviewed available data on birth statistics. In the United States, approximately 4 million births are reported each year, and an average of 2.06 children are born per woman in a lifetime (12,13). Among women with more than one pregnancy, only 2.5% have an interval ≤12 months between births (14). The majority of women, who have two pregnancies, have an interval of ≥13 months between births (14). For women of

lower socioeconomic status, the interval between pregnancies generally is ≥18 months (15). Approximately 5% of women have four or more babies (16). ACIP concluded that the interval between subsequent pregnancies is likely longer than the persistence of maternal antipertussis antibodies, and were reassured that most women would receive only 2 Tdap doses and a small proportion of women would receive ≥4 doses of Tdap.

### Safety of Repeat Tdap Administration to Pregnant Women

In 2011, ACIP concluded that available data did not suggest any elevated frequency or unusual patterns of adverse events in pregnant women who received Tdap and that the few serious adverse events reported were unlikely to have been caused by the vaccine; at that time, a dose of Tdap for every pregnancy was not considered (9). Published data on receipt of 2 doses of Tdap and multiple doses of tetanus toxoid–containing vaccines were reviewed. Receipt of a second dose of Tdap at a 5- or 10-year interval in healthy nonpregnant adolescents and adults was well tolerated; injection site pain was the most commonly reported adverse event (9,17–20). The frequency of reported adverse events for the second dose was similar to the first dose in these same subjects and in naïve controls receiving Tdap for the first time. Of the few serious adverse events reported, none were attributed to the vaccine. Fever was reported in 2.4%–6.5% of recipients of a Tdap booster; the frequency of fever was similar to that in the same subjects after their first Tdap dose and in naïve controls (9,17–19). Studies on short intervals (i.e., within 21 days or ≤2 years) between receipt of tetanus and diphtheria toxoids (Td) and Tdap or Tdap-inactivated polio vaccine in healthy, nonpregnant adolescents and adults found no serious adverse events (21–23). Fever was reported in 1.7%–6.8% of subjects who received Tdap ≤2 years after Td; rates were comparable to the control group and to cohorts that received Tdap longer after receipt of Td (21,22). The number of subjects in these studies was small, and therefore, the findings do not rule out the possibility of rare but serious adverse events.

A theoretical risk exists for severe local reactions (e.g., Arthus reactions, whole limb swelling) for pregnant women who have multiple closely spaced pregnancies. Arthus reactions and whole limb swelling are hypersensitivity reactions that have been associated with vaccines containing tetanus toxoid, tetanus and diphtheria toxoids, and/or pertussis antigens. Historical data on multiple doses of Td and tetanus toxoid vaccines (TT) indicate that hypersensitivity was associated with higher levels of preexisting antibody (24–26). The frequency of side effects depended on antigen content, product formulation, preexisting antibody levels related to the interval since last dose, and the number of doses (24–26). Challenges

to reviewing historical data on multiple doses of TT and Td include differences in adjuvant and toxoid amounts in vaccines over time and severity of adverse events by number of vaccines received (24–26). Most of the data are historical, and the risk for severe adverse events likely has been reduced with current formulations that contain lower doses of TT.

TT and Td have been used extensively in pregnant women worldwide to prevent neonatal tetanus; large studies on use of TT during pregnancy have not reported clinically significant severe adverse events (27–30). Safety data on use of Td during multiple pregnancies have not been published. ACIP believes the potential benefit of preventing pertussis morbidity and mortality in infants outweighs the theoretical concerns of possible severe adverse events.

ACIP concluded that experience with tetanus-toxoid containing vaccines suggests no excess risk for severe adverse events for women receiving Tdap with every pregnancy. ACIP stated the need for safety studies of severe adverse events when Tdap is given during subsequent pregnancies. Plans for safety monitoring in pregnant women following Tdap administration include enhanced monitoring in Vaccine Adverse Event Reporting System (VAERS) and utilizing the Vaccine Safety Datalink (VSD) to assess acute adverse events, adverse pregnancy outcomes affecting the mother, and birth outcomes; assessing risks for rare adverse events in pregnant women after Tdap will require data collection for several years (31).

### Vaccination During the Third Trimester

Tdap may be administered any time during pregnancy, but vaccination during the third trimester would provide the highest concentration of maternal antibodies to be transferred closer to birth (4). After receipt of Tdap, a minimum of 2 weeks is required to mount a maximal immune response to the vaccine antigens (32,33). Active transport of maternal immunoglobulin G does not substantially take place before 30 weeks of gestation (34). One study of pregnant women who received Tdap within the prior 2 years noted that maternal antibodies waned quickly; even women immunized during the first or second trimester had low levels of antibodies at term (4). Therefore, to optimize the concentration of vaccine-specific antipertussis antibodies transported from mother to infant, ACIP concluded that pregnant women should be vaccinated with Tdap during the third trimester.

### ACIP Recommendations for Pregnant Women

ACIP recommends that providers of prenatal care implement a Tdap immunization program for all pregnant women. Health-care personnel should administer a dose of Tdap during

each pregnancy, irrespective of the patient's prior history of receiving Tdap.

### Guidance for Use

To maximize the maternal antibody response and passive antibody transfer to the infant, optimal timing for Tdap administration is between 27 and 36 weeks gestation although Tdap may be given at any time during pregnancy. For women not previously vaccinated with Tdap, if Tdap is not administered during pregnancy, Tdap should be administered immediately postpartum.

### Special Situations

**Pregnant women due for tetanus booster.** If a tetanus and diphtheria booster vaccination is indicated during pregnancy (i.e., >10 years since previous Td), then Tdap should be administered. Optimal timing is between 27 and 36 weeks gestation to maximize the maternal antibody response and passive antibody transfer to the infant.

**Wound management for pregnant women.** As part of standard wound management to prevent tetanus, a tetanus toxoid-containing vaccine might be recommended for wound management in a pregnant woman if ≥5 years have elapsed since the previous Td booster. If a Td booster is recommended for a pregnant woman, health-care providers should administer Tdap.

**Pregnant women with unknown or incomplete tetanus vaccination.** To ensure protection against maternal and neonatal tetanus, pregnant women who never have been vaccinated against tetanus should receive three vaccinations containing tetanus and reduced diphtheria toxoids. The recommended schedule is 0, 4 weeks, and 6 through 12 months. Tdap should replace 1 dose of Td, preferably between 27 and 36 weeks gestation to maximize the maternal antibody response and passive antibody transfer to the infant.

### Cocooning

ACIP recommends that adolescents and adults (e.g., parents, siblings, grandparents, child-care providers, and health-care personnel) who have or anticipate having close contact with an infant aged <12 months should receive a single dose of Tdap to protect against pertussis if they have not received Tdap previously. Guidance will be forthcoming on revaccination of persons who anticipate close contact with an infant, including postpartum women who previously have received Tdap.

### Research Needs

Future research needs will address the effectiveness of Tdap vaccination of pregnant women to prevent infant pertussis morbidity and mortality, the impact of timing of Tdap during

pregnancy on infant pertussis, and safety of multiple doses of Tdap in pregnant women. CDC will monitor and assess the safety of Tdap use during pregnancy. Results from these studies and monitoring systems will inform future considerations made by ACIP on use of Tdap in preventing infant pertussis morbidity and mortality.

#### Reported by

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#### Acknowledgments

Members of the Advisory Committee on Immunization Practices.

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WOMEN'S HEALTH CARE PHYSICIANS

# ACOG COMMITTEE OPINION

Number 718 • September 2017

(Replaces Committee Opinion Number 566, June 2013)

## Committee on Obstetric Practice Immunization and Emerging Infections Expert Work Group

*This Committee Opinion was developed by the Immunization and Emerging Infections Expert Work Group and the Committee on Obstetric Practice, with the assistance of Richard Beigi, MD.*

## Update on Immunization and Pregnancy: Tetanus, Diphtheria, and Pertussis Vaccination

**ABSTRACT:** The overwhelming majority of morbidity and mortality attributable to pertussis infection occurs in infants who are 3 months and younger. Infants do not begin their own vaccine series against pertussis until approximately 2 months of age. This leaves a window of significant vulnerability for newborns, many of whom contract serious pertussis infections from family members and caregivers, especially their mothers, or older siblings, or both. In 2013, the Advisory Committee on Immunization Practices published its updated recommendation that a dose of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) should be administered during each pregnancy, irrespective of the prior history of receiving Tdap. The recommended timing for maternal Tdap vaccination is between 27 weeks and 36 weeks of gestation. To maximize the maternal antibody response and passive antibody transfer and levels in the newborn, vaccination as early as possible in the 27–36-weeks-of-gestation window is recommended. However, the Tdap vaccine may be safely given at any time during pregnancy if needed for wound management, pertussis outbreaks, or other extenuating circumstances. There is no evidence of adverse fetal effects from vaccinating pregnant women with an inactivated virus or bacterial vaccine or toxoid, and a growing body of robust data demonstrate safety of such use. Adolescent and adult family members and caregivers who previously have not received the Tdap vaccine and who have or anticipate having close contact with an infant younger than 12 months should receive a single dose of Tdap to protect against pertussis. Given the rapid evolution of data surrounding this topic, immunization guidelines are likely to change over time, and the American College of Obstetricians and Gynecologists will continue to issue updates accordingly.

### Recommendations

The American College of Obstetricians and Gynecologists (ACOG) makes the following recommendations:

- Obstetric care providers should administer the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine to all pregnant patients during each pregnancy, as early in the 27–36-weeks-of-gestation window as possible.
- Pregnant women should be counseled that the administration of the Tdap vaccine during each pregnancy is safe and important to make sure that each newborn receives the highest possible protection against pertussis at birth.
- Obstetrician–gynecologists are encouraged to stock and administer the Tdap vaccine in their offices.
- Partners, family members, and infant caregivers should be offered the Tdap vaccine if they have not previously been vaccinated. Ideally, all family members should be vaccinated at least 2 weeks before coming in contact with the newborn.
- If not administered during pregnancy, the Tdap vaccine should be given immediately postpartum if the woman has never received a prior dose of Tdap as an adolescent, adult, or during a previous pregnancy.
- There are certain circumstances in which it is appropriate to administer the Tdap vaccine outside of the 27–36-weeks-of-gestation window. For example, in cases of wound management, a pertussis outbreak, or other extenuating circumstances, the need for protection from infection supercedes the benefit of

administering the vaccine during the 27–36-weeks-of-gestation window.

- If a pregnant woman is vaccinated early in her pregnancy (ie, before 27–36 weeks of gestation), she does not need to be vaccinated again during 27–36 weeks of gestation.

The overwhelming majority of morbidity and mortality attributable to pertussis infection occurs in infants who are 3 months and younger (1). Infants do not begin their own vaccine series against pertussis (with the diphtheria and tetanus toxoids and acellular pertussis [DTaP] vaccine) until approximately 2 months of age (the earliest possible vaccination is at 6 weeks of age) (2). This leaves a window of significant vulnerability for newborns, many of whom contract serious pertussis infections from family members and caregivers, especially the mother, or older siblings, or both (3–5). Starting in 2006, the Advisory Committee on Immunization Practices (ACIP) of the Centers for Disease Control and Prevention recommended an approach to combat neonatal pertussis infection referred to as “cocooning” (6). Cocooning is the administration of Tdap to previously unvaccinated family members and caregivers, and women in the immediate postpartum period, in order to provide a protective cocoon of immunity around the newborn. The Advisory Committee on Immunization Practices and ACOG continue to recommend that adolescent and adult family members and caregivers who previously have not received the Tdap vaccine and who have or anticipate having close contact with an infant younger than 12 months should receive a single dose of Tdap to protect against pertussis (7). However, the cocooning approach alone is no longer the recommended approach to preventing pertussis disease in newborns (and mothers) (8).

In June 2011, ACIP recommended that pregnant women receive a dose of Tdap if they have not previously received it (7). The Advisory Committee on Immunization Practices continued to reconsider this topic in the face of persistent increases in pertussis disease, including infant deaths (9) in the United States. Issues that were considered included an imperative to minimize the significant burden of disease in vulnerable newborns, the reassuring safety data (10, 11) on use of Tdap in adults, and the evolving immunogenicity data that demonstrate considerable waning of immunity after immunization (12). In 2013, ACIP published its updated recommendation that a dose of Tdap should be administered during each pregnancy, irrespective of prior history of receiving the Tdap vaccine (7). The recommended timing for maternal Tdap vaccination is between 27 weeks and 36 weeks of gestation. To maximize the maternal antibody response and passive antibody transfer and levels in the newborn, vaccination as early as possible in the 27–36-weeks-of-gestation window is recommended. However, the Tdap vaccine may safely be given at any time during pregnancy if needed in the case of wound management, pertussis outbreaks,

or other extenuating circumstances in which the need for protection from infection supercedes the benefit of administering the vaccine during the 27–36-weeks-of-gestation window. Additional data available since 2013 increasingly demonstrate that administration of Tdap during the late second or early third trimester (with at least 2 weeks from the time of vaccination to delivery) is highly effective in protecting against neonatal pertussis (13–16). In addition, even when maternal vaccination is not completely protective, infants with pertussis whose mothers received Tdap during pregnancy had significantly less morbidity, including risk of hospitalization and intensive care unit admission (13). Safety data also continue to be reassuring, including when women receive successive Tdap immunizations over a relatively short time because of short-interval pregnancies. New data demonstrate that immunizing against Tdap early within the 27–36-weeks-of-gestation window maximizes the maternal antibody response and passive antibody transfer to the fetus (17). Therefore, giving the Tdap vaccine as early as possible in the 27–36-weeks-of-gestation window appears to be the best strategy (18, 19). Linking the Tdap vaccination to screening for gestational diabetes will allow this to be implemented easily. For women who are Rh negative, another strategy worth consideration is to administer Tdap vaccination during the same visit as Rho(D) immune globulin administration.

Receipt of Tdap between 27 weeks and 36 weeks of gestation in each pregnancy is critical. For women who have never received a prior dose of Tdap, if Tdap was not administered during pregnancy, it should be administered immediately postpartum in order to reduce the risk of transmission to the newborns (7). A woman who did not receive the Tdap vaccine during her most recent pregnancy, but received it previously as an adolescent, adult, or during a prior pregnancy should not receive Tdap postpartum. Additionally, adolescent and adult family members and planned caregivers who have not received the Tdap vaccine also should receive Tdap at least 2 weeks before planned infant contact, as previously recommended (sustained efforts at cocooning) (6). The American College of Obstetricians and Gynecologists’ Immunization and Emerging Infections Expert Work Group and Committee on Obstetric Practice support these recommendations. Pregnant women should be counseled that Tdap vaccination during each pregnancy is safe and important to make sure that each newborn receives the highest possible protection against pertussis at birth. Since protection from previous vaccination is likely to decrease over time, a Tdap vaccination is necessary during every pregnancy to give the best possible protection to the newborn.

Data consistently demonstrate that when a physician recommends and offers a vaccine on site the rate of vaccine acceptance is significantly higher than when physicians either do not recommend, or recommend but do not offer the vaccine (20). The American College of

Obstetricians and Gynecologists encourages obstetrician–gynecologists and other obstetric care providers to strongly recommend and offer Tdap vaccination to all pregnant women between 27 weeks and 36 weeks of gestation in each pregnancy. Additionally, efforts to stock the Tdap vaccine in the obstetrician–gynecologist’s or other health care provider’s office and administer it as early in the recommended window as possible offers the best chance of vaccine acceptance and neonatal protection. Depending on the size of a practice and services provided, there may not be the means to supply and offer the Tdap vaccine in the office. If the Tdap vaccine cannot be offered in a practice, patients should be referred to another health care provider when possible. For example, pharmacists are well equipped to give immunizations, and the Tdap vaccine is available at most major pharmacies. If patients receive the Tdap vaccine outside of the obstetrician–gynecologist’s office, it is important for them to provide proper vaccine documentation so a patient’s immunization record can be updated. Given the rapid evolution of data surrounding this topic, immunization guidelines are likely to change over time, and ACOG will continue to issue updates accordingly.

### **General Considerations Surrounding Immunization During Pregnancy**

The American College of Obstetricians and Gynecologists recommends routine assessment of each pregnant woman’s immunization status and administration of indicated immunizations. Importantly, evolving data demonstrate maternal and neonatal protection against an increasing number of aggressive newborn pathogens through the use of maternal immunization, suggesting pregnancy is an optimal time to immunize for disease prevention in women and newborns (13–16, 21, 22). There is no evidence of adverse fetal effects from vaccinating pregnant women with an inactivated virus or bacterial vaccines or toxoids, and a growing body of robust data demonstrate safety of such use (11). Concomitant administration of indicated inactivated vaccines during pregnancy (ie, Tdap and influenza) is also acceptable, safe, and may optimize effectiveness of immunization efforts (10). Furthermore, no evidence exists that suggests that any vaccine is associated with an increased risk of autism or adverse effects due to exposure to traces of the mercury-containing preservative thimerosal (23–26). The Tdap vaccines do not contain thimerosal. The benefits of inactivated vaccines outweigh any unproven potential concerns. It is important to remember that live attenuated vaccines (eg, measles–mumps–rubella [MMR], varicella, and live attenuated influenza vaccine) do pose a theoretical risk (although never documented or proved) to the fetus and generally should be avoided during pregnancy. All vaccines administered during pregnancy as well as health care provider-driven discussions about the indications and benefits of immunization during pregnancy should be fully documented in the patient’s prenatal record. In

addition, if a patient declines vaccination, this refusal should be documented in the patient’s prenatal record, and the health care provider is advised to revisit the issue of vaccination at subsequent visits.

## **Special Situations During Pregnancy**

### **Ongoing Epidemics**

Pregnant women who live in geographic regions with new outbreaks or epidemics of pertussis should be immunized as soon as feasibly possible for their own protection in accordance with local recommendations for nonpregnant adults. In these acute situations, less emphasis should be given to targeting the proposed optimal gestation window (between 27 weeks and 36 weeks of gestation) given the imperative to protect the woman from locally prevalent disease. Newborn protection will still be garnered from vaccination earlier in the same pregnancy. Importantly, a pregnant woman should not be revaccinated later in the same pregnancy if she received the vaccine in the first or second trimester (7).

*Example case:* A pregnant woman at 8 weeks of gestation with one kindergarten-aged child at home calls the office and mentions that pertussis has recently been diagnosed in four different children by their pediatricians in her neighborhood. She is not sure what to do and has heard that she is supposed to get a Tdap vaccination in the third trimester. How should you best manage this patient?

*Answer:* Advise her to come that day and receive the Tdap vaccine in your office. She should be reassured that Tdap vaccination is safe to give at any point in pregnancy and that getting the vaccine now will directly protect her, indirectly protect her fetus, and also will offer some protection for her newborn from pertussis. She will only need to receive the Tdap vaccine once during pregnancy. All other adolescent and adult family members also should be advised to make sure they are up-to-date with their Tdap vaccine to ensure protection for themselves and the newborn.

### **Wound Management**

As part of standard wound management care to prevent tetanus, a tetanus toxoid-containing vaccine is recommended in a pregnant woman if 5 years or more have elapsed since her previous tetanus and diphtheria (Td) vaccination. If a Td booster vaccination is indicated in a pregnant woman for acute wound management, the obstetrician–gynecologist or other health care provider should administer the Tdap vaccine, irrespective of gestational age (7). A pregnant woman should not be revaccinated with Tdap in the same pregnancy if she received the vaccine in the first or second trimester.

*Example case:* An emergency department (ED) physician calls you about a patient, gravida 4, para 3, at 13 weeks of gestation who is being seen after accidentally stepping on a rusty nail. The patient cannot remember when she last received a tetanus booster and the ED physician is confused about when to administer the indicated

tetanus booster because the Centers for Disease Control and Prevention guidelines recommend the administration of Tdap between 27 weeks and 36 weeks of gestation. How should you advise the ED physician?

*Answer:* The ED physician should be advised that the appropriate acute wound management strategy for the patient is to receive a dose of Tdap now. This vaccine replaces the solitary tetanus booster vaccine, and administering it now as part of acute wound management is the most important factor. The patient should be told that getting Tdap now will preclude her getting it again between 27 weeks and 36 weeks of gestation in this pregnancy. She and her fetus will still receive pertussis prevention benefits from receipt at 13 weeks of gestation.

### Indicated Tetanus and Diphtheria Booster Vaccination

If a Td booster vaccination is indicated during pregnancy (ie, more than 10 years since the previous Td vaccination) then obstetrician–gynecologists and other health care providers should administer the Tdap vaccine during pregnancy within the 27–36-weeks-of-gestation window (7). This recommendation is because of the nonurgent nature of this indication and the desire for maternal immunity. It also will maximize antibody transfer to the newborn.

### Unknown or Incomplete Tetanus Vaccination

To ensure protection against maternal and neonatal tetanus, pregnant women who have never been vaccinated against tetanus should begin the three-vaccination series, containing tetanus and reduced diphtheria toxoids, during pregnancy. The recommended schedule for this vaccine series is at 0 weeks, 4 weeks, and 6–12 months. The Tdap vaccine should replace one dose of Td, preferably given between 27 weeks and 36 weeks of gestation (7).

### Vaccination of Adolescents and Adults in Contact With Infants

The Advisory Committee on Immunization Practices recommends that all adolescents and adults who have or who anticipate having close contact with an infant younger than 12 months (eg, siblings, parents, grandparents, child care providers, and health care providers) who previously have not received the Tdap vaccine should receive a single dose of Tdap to protect against pertussis and reduce the likelihood of transmission (7). Ideally, these adolescents and adults should receive the Tdap vaccine at least 2 weeks before they have close contact with the infant (6).

### For More Information

The American College of Obstetricians and Gynecologists has identified additional resources on topics related to this document that may be helpful for ob-gyns, other health care providers, and patients. You may view these resources at: [www.acog.org/More-Info/Tdap](http://www.acog.org/More-Info/Tdap).

These resources are for information only and are not meant to be comprehensive. Referral to these resources does not imply the American College of Obstetricians and Gynecologists' endorsement of the organization, the organization's website, or the content of the resource. The resources may change without notice.

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The American College of  
Obstetricians and Gynecologists  
WOMEN'S HEALTH CARE PHYSICIANS

# COMMITTEE OPINION

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(Reaffirmed 2018)

## Committee on Gynecologic Practice Committee on Obstetric Practice Immunization Expert Work Group

*This Committee Opinion was developed by the American College of Obstetricians and Gynecologists' Committee on Gynecologic Practice, Committee on Obstetric Practice, and Immunization Expert Work Group in collaboration with committee members Linda O'Neal Eckert, MD; Richard Beigi, MD, MSc; J. Martin Tucker, MD; and Howard Minkoff, MD.*

*This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.*

## Integrating Immunizations Into Practice

**ABSTRACT:** Immunization against vaccine-preventable diseases is an essential component of women's primary and preventive health care. Despite the importance of vaccination and clear guidance from public health agencies, rates of vaccination lag behind national goals. Obstetrician–gynecologists can play a major role in reducing morbidity and mortality from a range of vaccine-preventable diseases, including pertussis, influenza, human papillomavirus, and hepatitis. Given demonstrated vaccine efficacy and safety, and the large potential for prevention of many infectious diseases that affect adults, pregnant women, and newborns, obstetrician–gynecologists should include immunizations as an integral part of their practice. To do so, they must embrace their role as important sources of information and advice on immunization for adults, adolescents, and pregnant women, and advance their patients' well-being with continued efforts to augment immunization services in their offices. Increasing awareness combined with the many suggestions in this document will work to enhance immunization uptake.

### Recommendations

The American College of Obstetricians and Gynecologists (the College) has developed numerous resources, including a dedicated immunization web site, Immunization for Women ([www.immunizationforwomen.org](http://www.immunizationforwomen.org)), to help equip obstetrician–gynecologists to become routine vaccinators. Increasing awareness combined with the many suggestions in this document will work to enhance immunization uptake. Given demonstrated vaccine efficacy and safety, and the large potential for prevention of many infectious diseases that affect adults, pregnant women, and newborns, obstetrician–gynecologists should include immunizations as an integral part of their practice. The American College of Obstetricians and Gynecologists offers the following recommendations:

- Talk with each patient directly and strongly recommend indicated immunizations. Many studies have shown that a recommendation from an obstetrician–gynecologist or other health care provider for an immunization is one of the strongest influences on patient acceptance.
- If a patient declines an immunization, document the discussion and her decision. Inquire about her reasons for declining and reintroduce the discussion and offer the immunization at the next office visit.
- Designate an immunization coordinator in the office and identify a backup coordinator who is trained in case the designated coordinator is absent. Among other duties, the immunization coordinator orders the vaccines, receives vaccine deliveries, and ensures the vaccines are stored properly.
- Use prompts—paper or electronic—to remind physicians and staff which patients need to be immunized. Many electronic medical record systems have these prompts available.
- If allowed by state law, institute standing orders for indicated immunizations. Standing orders allow immunization administration to appropriate patients without an individual physician order. However, obstetrician–gynecologists and other health care providers should familiarize themselves with local statutory requirements before standing order protocols are established.

- After educating the patient, the obstetrician–gynecologist should document that the patient has been counseled regarding recommended immunizations, has been offered these immunizations, and that the patient accepted, declined, or obtained her immunization at an outside facility. Obstetrician–gynecologists should complete documentation in the patient’s chart and the state’s immunization registry.
- Federal law (the National Childhood Vaccine Injury Act of 1986) mandates that all health care providers who administer vaccines must give patients or their parents or legal representatives the appropriate vaccine information statement (VIS), which can be used to educate patients, before administration of each dose of a vaccine.

Immunization against vaccine-preventable diseases is an essential component of women’s primary and preventive health care. Despite the importance of vaccination and clear guidance from public health agencies, rates of vaccination lag behind national goals. Obstetrician–gynecologists can play a major role in reducing morbidity and mortality from a range of vaccine-preventable diseases, including pertussis, influenza, human papillomavirus, and hepatitis. To do so, they must embrace their role as important sources of information and advice on immunization for adults, adolescents, and pregnant women, and advance their patients’ well-being with continued efforts to augment immunization services in their offices (1). Obstetrician–gynecologists have a tradition of providing preventive care to women. An annual visit provides an excellent opportunity to counsel patients about maintaining a healthy lifestyle and minimizing health risks (2). The annual health assessment should include screening, evaluation, counseling, and immunization assessment and recommendations based on age and risk factors. By making state-of-the-art immunization practices a part of the culture of obstetrics and gynecology, obstetrician–gynecologists can continue to be recognized as the guardians of female and neonatal health. This document will outline the manner in which immunization advocacy and provision can be integrated into office practice. The College addresses specific immunization recommendations in separate Committee Opinions (3–5).

### **Tips for Office Immunization Program Success**

Many investigations have addressed successful implementation strategies that are relevant to immunizations indicated for obstetric patients and gynecologic patients. The following techniques have been successful in promoting immunization in office settings:

#### **Advocate**

Talk with each patient directly and strongly recommend indicated immunizations. Fellows from the College

should counsel their pregnant patients about vaccination in an evidence-based manner that allows patients to make an informed decision about its use (6). Share tailored reasons why immunization is beneficial for her and her family, and highlight the benefits of immunization and the risks of not immunizing. Address patient questions and concerns while reminding patients that immunizations are the best protection against many common and serious diseases. Many studies have shown that a recommendation from an obstetrician–gynecologist or other health care provider for an immunization is one of the strongest influences on patient acceptance (7, 8).

#### **Identify**

Use prompts—paper or electronic—to remind physicians and staff which patients need to be immunized. Many electronic medical record systems have these prompts available. Electronic medical records that use reminder systems can improve opportunities to immunize when patients are in the office for regularly scheduled appointments (9). Immunization Information Systems are also useful tools to assess and document a patient’s immunization history. All states have an existing immunization registry or a registry in development. Each state has unique functionality, age requirements, and limitations. Patient consent requirements vary from state to state (10). For information on how to access your state’s registry, see For More Information.

#### **Educate and Vaccinate**

Designate an immunization coordinator in the office and identify a backup coordinator who is trained in case the designated coordinator is absent. Among other duties, the immunization coordinator orders the vaccines, receives vaccine deliveries, and ensures the vaccines are stored properly. All state health departments have an immunization department with an immunization program manager who is able to help practices. The immunization coordinator and the backup coordinator should know whom to contact at the local, regional, or national level for answers to clinical or logistical immunization questions. See For More Information to access a complete list of state immunization program managers.

Educate office staff about the recommendations, safety, and efficacy of immunizations. Office personnel may express their own uncertainty or lack of knowledge to patients. This may have a detrimental effect on a patient’s willingness to receive an immunization. In contrast, a study showed that educational efforts for all office staff can markedly increase patient immunization rates (11, 12). Immunize office health care providers and staff as recommended. This serves to meet quality criteria for practices and ethical obligations for clinicians to decrease vaccine-preventable diseases for health care providers and staff, provide leadership through example, develop an immunization culture in the office, and importantly, avoid being the source of infection in your office (6).

Federal law (National Childhood Vaccine Injury Act of 1986) mandates that all health care providers who administer vaccines must give patients or their parents or legal representatives the appropriate VIS, which can be used to educate patients, before administration of each dose of a vaccine. Vaccine information statements are official documents and are not the same as vaccine fact sheets (see For More Information for additional resources on VISs and patient education materials).

### **Integrate**

If allowed by state law, institute standing orders for indicated immunizations. Standing orders allow immunization administration to appropriate patients without an individual physician order (see For More Information). However, obstetrician–gynecologists and other health care providers should familiarize themselves with local statutory requirements before standing order protocols are established. Standing orders can be an effective way to integrate immunizations into practice flow (13). Encourage all office staff to use standing orders and offer necessary immunizations. After educating their patients, obstetrician–gynecologists should document that recommended immunizations have been offered and that the patient accepted, declined, or obtained her immunization at an outside facility. Physicians should be aware that patients are protected by the National Vaccine Injury Compensation Program and if a patient believes that she has been harmed by a vaccine covered by this program, she can file a claim to the U.S. Court of Federal Claims (14).

### **Practice Management Considerations**

Many obstetrician–gynecologists perceive a lack of reimbursement as a major barrier to including immunization services in their practices (15). However, with proper documentation and coding, these services can be reported to third-party payers, and appropriate reimbursement can be received.

The practice should adhere to basic coding principles when billing for immunization services. In general, one should always report the appropriate vaccine product code along with the appropriate *Current Procedural Terminology* (CPT) vaccine administration code. These codes should be linked to the appropriate ICD-10-CM code to support the medical necessity for the service(s). The inherent components of a vaccine administration code include making an appointment for the patient, pulling the chart or accessing the electronic record, and billing the service. Clinical services such as greeting the patient, taking vital signs, reviewing the immunization history and allergies, and charting the immunization administration also are considered inherent components of this service.

The CPT guidelines state that vaccination services should be reported separately from a standard preventive medicine service or “wellness” visit. In addition, immunization services are not part of the global obstetric package

and should be reported separately as well. If a significant, separately identifiable, problem-oriented evaluation and management service is performed, the appropriate CPT Evaluation and Management code should be reported in addition to the immunization codes.

It is important for a practice to track reimbursement for immunization services. Explanation of benefits should be examined at periodic intervals to ensure that reimbursement covers the costs of the vaccine product. With diligent oversight, immunization services will be sustainable for most practices.

The American College of Obstetricians and Gynecologists provides several resources to help physicians and their staff with coding and reimbursement issues related to immunization services. Additional resources about the implementation of an immunization program in your office, including vaccine purchasing, storage, and handling, and safety can be found on the College’s Immunization for Women web site ([www.immunizationforwomen.org](http://www.immunizationforwomen.org)) and in the College’s Immunization Guide “Immunizations and Routine Obstetric–Gynecologic Care: A Guide for Providers and Patients” (see For More Information).

### **For More Information**

These resources are for information only and are not meant to be comprehensive. Referral to these resources does not imply the American College of Obstetricians and Gynecologists’ endorsement of the organization, the organization’s web site, or the content of the resource. The resources may change without notice.

ACOG has identified additional resources on topics related to this document that may be helpful for ob-gyns, other health care providers, and patients. You may view these resources at [www.acog.org/More-Info/ImmunizationsinPractice](http://www.acog.org/More-Info/ImmunizationsinPractice).

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**409 12th Street, SW, PO Box 96920, Washington, DC 20090-6920**

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## Standing Orders for Administering Tdap to Pregnant Women

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**Purpose:** To reduce morbidity and mortality from tetanus, diphtheria, and pertussis by vaccinating all pregnant women who meet the criteria established by the Centers for Disease Control and Prevention’s Advisory Committee on Immunization Practices.

**Policy:** Under these standing orders, eligible nurses and other healthcare professionals (e.g., pharmacists), where allowed by state law, may vaccinate people who meet the criteria below.

### Procedure

1. Identify pregnant women, including teens, who, during their current pregnancy, lack vaccination with tetanus and diphtheria toxoids with pertussis vaccine (Tdap), regardless of number of years since prior Td or Tdap vaccination.
2. Screen all pregnant women for contraindications and precautions to Tdap, as follows:
  - a. **Contraindications:**
    - a history of a severe allergic reaction (e.g., anaphylaxis) after a previous dose of Td or Tdap or to a vaccine component. For information on vaccine components, refer to the manufacturer’s package insert ([www.immunize.org/packageinserts](http://www.immunize.org/packageinserts)) or go to [www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf](http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/appendices/B/excipient-table-2.pdf).
    - a history of encephalopathy within 7 days following DTP, DTaP, or Tdap not attributable to another identifiable cause
  - b. **Precautions:**
    - history of Guillain-Barré syndrome within 6 weeks of previous dose of tetanus toxoid-containing vaccine
    - history of an arthus-type reaction following a previous dose of tetanus-containing or diphtheria-containing vaccine; defer vaccination until at least 10 years have elapsed since the last tetanus-containing vaccine
    - moderate or severe acute illness with or without fever
    - progressive or unstable neurologic disorder, uncontrolled seizures, or progressive encephalopathy until a treatment regimen has been established and the condition has stabilized
3. Provide all pregnant women with a copy of the most current federal Vaccine Information Statement (VIS). You must document, in the woman’s medical record or office log, the publication date of the VIS and the date it was given to her. Provide non-English speaking women with a copy of the VIS in their native language, if available and preferred; these can be found at [www.immunize.org/vis](http://www.immunize.org/vis).
4. Administer 0.5 mL Tdap vaccine intramuscularly (22–25g, 1–1½" needle) in the deltoid muscle or, alternatively, the anterolateral thigh can be used. (Note: a 5/8" needle may be used for people weighing less than 130 lbs [60 kg] for injection in the deltoid muscle *only* if the subcutaneous tissue is not bunched and the injection is made at a 90-degree angle.) The optimal time to administer Tdap is during 27 through 36 weeks’ gestation, although vaccination may occur at any time during pregnancy. If woman has no history of Tdap and vaccine is not administered during pregnancy, vaccinate immediately post-partum.
5. Document each pregnant woman’s vaccine administration information and follow up in the following places:
  - a. **Medical chart:** Record the date the vaccine was administered, the manufacturer and lot number, the vaccination site and route, and the name and title of the person administering the vaccine. If vaccine was not given, record the reason(s) for non-receipt of the vaccine (e.g., medical contraindication, patient refusal).
  - b. **Personal immunization record card:** Record the date of vaccination and the name/location of the administering clinic.
6. Be prepared for management of a medical emergency related to the administration of vaccine by having a written emergency medical protocol available, as well as equipment and medications. To prevent syncope, vaccinate patients while they are seated or lying down and consider observing them for 15 minutes after receipt of the vaccine.
7. Report all adverse reactions to Tdap vaccine to the federal Vaccine Adverse Event Reporting System (VAERS) at [www.vaers.hhs.gov](http://www.vaers.hhs.gov) or (800) 822-7967. VAERS report forms are available at [www.vaers.hhs.gov](http://www.vaers.hhs.gov).

This policy and procedure shall remain in effect for all patients of the \_\_\_\_\_ until rescinded or until \_\_\_\_\_ (date).  
(name of practice or clinic)

Medical Director’s signature: \_\_\_\_\_ Effective date: \_\_\_\_\_

For standing orders for other vaccines, go to [www.immunize.org/standing-orders](http://www.immunize.org/standing-orders)

Technical content reviewed by the Centers for Disease Control and Prevention

**IMMUNIZATION ACTION COALITION** St. Paul, Minnesota • 651-647-9009 • [www.immunize.org](http://www.immunize.org) • [www.vaccineinformation.org](http://www.vaccineinformation.org)

[www.immunize.org/catg.d/p3078B.pdf](http://www.immunize.org/catg.d/p3078B.pdf) • Item #P3078B (2/14)

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# **Pertussis (Whooping Cough): Questions and Answers**

## ***Information about the disease and vaccines***

### **What causes pertussis?**

Pertussis, commonly known as whooping cough, is caused by a bacterium, *Bordetella pertussis*.

### **How does pertussis spread?**

Pertussis is spread through the air by infectious droplets and is highly contagious.

### **How long does it take to show signs of pertussis after being exposed?**

The incubation period of pertussis is commonly 7 to 10 days, with a range of 4–21 days.

### **What are the symptoms of pertussis?**

Pertussis disease can be divided into three stages:

**Catarrhal stage:** can last 1–2 weeks and includes a runny nose, sneezing, low-grade fever, and a mild cough (all similar symptoms to the common cold).

**Paroxysmal stage:** usually lasts 1–6 weeks, but can persist for up to 10 weeks. The characteristic symptom is a burst, or paroxysm, of numerous, rapid coughs. At the end of the cough paroxysm, the patient can suffer from a long inhaling effort that is characterized by a high-pitched whoop (hence the name, "whooping cough"). Infants and young children often appear very ill and distressed, and may turn blue and vomit. "Whooping" does not necessarily have to accompany the cough.

**Convalescent stage:** usually lasts 2–6 weeks, but may last for months. Although the cough usually disappears after 2–3 weeks, paroxysms may recur whenever the patient suffers any subsequent respiratory infection. The disease is usually milder in adolescents and adults, consisting of a persistent cough similar to that found in other upper respiratory infections. However, these individuals are still able to transmit the disease to others, including unimmunized or incompletely immunized infants.

### **How serious is pertussis?**

Pertussis can be a very serious disease, especially for infants. Infants (6 months of age and younger) are the children most likely to die from this disease. Rates of hospitalization and complications increase with decreasing age. The breathing difficulties associated with this disease can be very distressing and frightening for the patient and his or her family.

Although adults are less likely than infants to become seriously ill with pertussis, most make repeat-

ed visits for medical care and miss work, especially when pertussis is not initially considered as a reason for their long-term cough. In addition, adults with pertussis infection have been shown to be a frequent source of infection to infants with whom they have close contact.

### **What are possible complications from pertussis?**

Younger patients have a greater chance of complications from pertussis than older patients. The most common complication is secondary bacterial infection, which is the cause of most pertussis-related deaths. Pneumonia occurs in one out of 20 cases; this percentage is higher for infants younger than age 6 months.

Infants are also more likely to suffer from such neurologic complications such as seizures and encephalopathy, probably due to the reduction of oxygen supply to the brain. Other less serious complications include ear infection, loss of appetite, and dehydration.

Adults with pertussis can have complications such as pneumonia (up to 5% of cases) and rib fracture from coughing (up to 4% of cases). Other reported side effects include (among others), loss of consciousness, female urinary incontinence, hernias, angina, and weight loss.

### **How do I know if my child has pertussis?**

The diagnosis of pertussis is usually made based on its characteristic history and physical examination. A laboratory test may be done, which involves taking a specimen from the back of the patient's throat (through the nose).

### **Is there a treatment for pertussis?**

Antibiotics are necessary in treating pertussis cases. The drug of choice is usually a form of erythromycin that is also given to all household and other close contacts of the patient to minimize transmission, regardless of age and vaccination status.

Patients also need supportive therapy such as bed rest, fluids, and control of fever.

All close contacts younger than seven years of age should complete their DTaP vaccine series if they have not already done so. If they have completed their primary four dose series, but have not had a

Page 1 of 4

dose from age 4 to 6 years, they should be given a booster dose if it has been at least 6 months since the last dose. People age 10 years and older should receive a dose of Tdap if they haven't received it already.

#### **How long is a person with pertussis contagious?**

People with pertussis are most infectious during the catarrhal period and during the first two weeks after onset of the cough (approximately 21 days).

#### **How common is pertussis in the United States?**

Before a vaccine against pertussis was available, pertussis (whooping cough) was a major cause of childhood illness and death in the United States. From 1940–1945, over one million cases of pertussis were reported. With the introduction of a vaccine in the late 1940s, the number of reported pertussis cases in the U.S. declined from approximately 200,000 a year in the pre-vaccine era to a low of 1,010 cases in 1976.

Since the 1980s, the number of cases of pertussis has increased, especially among babies younger than 6 months and teenagers. In recent years, several states have reported a significant increase in cases, with outbreaks of pertussis reaching epidemic levels in some states. Many infants have died from whooping cough during this epidemic.

#### **Can you get pertussis more than once?**

Reinfection appears to be uncommon but does occur. With natural infection, immunity to pertussis will likely wane as soon as seven years following disease; reinfection may present as a persistent cough, rather than typical pertussis.

#### **When did vaccine first become available for diphtheria, tetanus, and pertussis?**

The first inactivated toxin, or toxoid, against diphtheria was developed around 1921, but it was not widely used until the 1930s. In 1924, the first tetanus toxoid (inactivated toxin) was produced and was used successfully to prevent tetanus in the armed services during World War II. The first pertussis vaccine was developed in the 1930s and was in widespread use by the mid-1940s, when pertussis vaccine was combined with diphtheria and tetanus toxoids to make the combination DTP vaccine. A series of 4 doses of whole-cell DTP vaccine was quite (70–90%) effective in preventing serious pertussis disease; however, up to half of the children who received the vaccine developed local reactions such as redness, swelling, and pain at the injection site. In 1991, concerns about safety led to the development

of more purified (acellular) pertussis vaccines that are associated with fewer side effects. These acellular pertussis vaccines have replaced the whole cell DTP vaccines in the U.S.

In 2005, two new vaccine products were licensed for use in adolescents and adults that combine the tetanus and diphtheria toxoids with acellular pertussis (Tdap) vaccine. These vaccines are the first acellular pertussis-containing vaccines that make it possible to vaccinate adolescents and adults against pertussis.

#### **How are vaccines made that prevent diphtheria, tetanus and pertussis?**

These vaccines are made by chemically treating the diphtheria, tetanus, and pertussis toxins to render them nontoxic yet still capable of eliciting an immune response in the vaccinated person. They are known as “inactivated” vaccines because they do not contain live bacteria and cannot replicate themselves, which is why multiple doses are needed to produce immunity.

#### **What's the difference between all the vaccines containing diphtheria and tetanus toxoids and pertussis vaccine?**

It's like alphabet soup! Here is a listing of the various products:

- DTaP: Diphtheria and tetanus toxoids and acellular pertussis vaccine; given to infants and children ages 6 weeks through 6 years. In addition, three childhood combination vaccines include DTaP as a component.
- DT: Diphtheria and tetanus toxoids, without the pertussis component; given to infants and children ages 6 weeks through 6 years who have a contraindication to the pertussis component.
- Tdap: Tetanus and diphtheria toxoids with acellular pertussis vaccine; given to adolescents and adults, usually as a single dose; the exception is pregnant women who should receive Tdap during each pregnancy.
- Td: Tetanus and diphtheria toxoids; given to children and adults ages 7 years and older. Note the small “d” which indicates a much smaller quantity of diphtheria toxoid than in the pediatric DTaP formulation.

#### **How are these vaccines given?**

The DTaP and DT preparations are all given as an injection in the anterolateral thigh muscle (for infants and young toddlers) or in the deltoid muscle (for older children and adults). Tdap and Td are given

in the deltoid muscle for children and adults age 7 years and older.

#### **Who should get these vaccines?**

All children, beginning at age 2 months, and all adults need protection against these three diseases—diphtheria, tetanus, and pertussis (whooping cough). Routine booster doses are also needed throughout life.

#### **How many doses of vaccine are needed?**

The usual schedule for infants is a series of four doses of DTaP given at 2, 4, 6, and 15–18 months of age. A fifth shot, or booster dose, is recommended between age 4 and 6 years, unless the fourth dose was given late (after the fourth birthday).

For people who were never vaccinated or who may have started but not completed a series of shots, a 3-dose series of Td should be given with 1 to 2 months between dose #1 and #2, and 6 to 12 months between dose #2 and #3. One of the doses, preferably the first, should also contain the pertussis component in the form of Tdap.

Because immunity to diphtheria and tetanus wanes with time, boosters of Td are needed every ten years.

#### **When adolescents and adults are scheduled for their routine tetanus and diphtheria booster, should they get vaccinated with Td or Tdap?**

Immunization experts recommend that the first dose of Tdap be given to all adolescents at age 11–12 years as a booster during the routine adolescent immunization visit if the adolescent has finished the childhood DTaP schedule and has not already received a dose of Td or Tdap. If a child age 7–10 years did not complete a primary series in childhood, a dose of Tdap may be given earlier as part of the catch-up vaccinations.

All adults should receive a single dose of Tdap as soon as feasible. Then, subsequent booster doses of Td should be given every ten years. Pregnant teens and women should receive Tdap during each pregnancy. Adolescents and adults who have recently received Td vaccine can be given Tdap without any waiting period.

If someone experiences a deep or puncture wound, or a wound contaminated with dirt, an additional booster dose may be given if the last dose was more than five years ago. This could be a dose of Td or Tdap, depending on the person's vaccination history. It is important to keep an up-to-date record of all immunizations so that repeat doses don't be-

come necessary. Although it is vital to be adequately protected, receiving more doses than recommended can lead to increased local reactions, such as painful swelling of the arm.

#### **Who recommends the use of these vaccines?**

The Centers for Disease Control and Prevention (CDC), the American Academy of Pediatrics (AAP), the American Academy of Family Physicians (AAFP), and the American College of Physicians (ACP) all recommend this vaccine.

#### **What side effects have been reported with these vaccines?**

Local reactions, such as fever, redness and swelling at the injection site, and soreness and tenderness where the shot was given, are not uncommon in children and adults. These minor local and systemic adverse reactions are much less common with acellular DTaP vaccine; however, a determination of more rare adverse effects can only be made when additional data are available following extended use of DTaP.

Side effects following Td or Tdap in older children and adults include redness and swelling at the injection site (following Td) and generalized body aches, and tiredness (following Tdap). Older children and adults who received more than the recommended doses of Td/Tdap vaccine can experience increased local reactions, such as painful swelling of the arm. This is due to the high levels of tetanus antibody in their blood.

#### **How effective are these vaccines?**

After a properly spaced primary series of DTaP or Td/Tdap, approximately 95% of people will have protective levels of diphtheria antitoxin and 100% will have protective levels of tetanus antitoxin in their blood. However, antitoxin levels decrease with time so routine boosters with tetanus and diphtheria toxoids are recommended every 10 years. Estimates of acellular pertussis vaccine efficacy range from 80% to 85%—a level believed to be far more efficacious than the previously-used whole cell pertussis vaccine.

#### **Can a pregnant woman receive Tdap vaccine?**

Yes. All pregnant women should receive Tdap during each pregnancy, preferably between 27 and 36 weeks' gestation. Because infants are not adequately protected against pertussis until they have received at least 3 doses of DTaP, it is especially important that all contacts (family members, caregivers) of infants younger than age 12 months are vaccinated with Tdap. If a new mother hasn't been vaccinated with

Tdap, she should receive it before hospital discharge, even if she is breastfeeding.

**Who should not receive these vaccines?**

Generally, any person who has had a serious allergic reaction to a vaccine component or a prior dose of the vaccine should not receive another dose of the same vaccine. People who had a serious allergic reaction to a previous dose of DTaP or Tdap vaccine should not receive another dose.

Certain rare adverse events following pertussis vaccination usually serve as a precaution against receiving further doses. Such events include a temperature of 105°F or higher within two days, collapse or shock-like state within two days, persistent crying for more than three hours within two days, or convulsions within three days. Even if one of these precautions exists, there may be occasions when the benefit of immunization outweighs the risk (for example, during a community-wide outbreak of pertussis). A person who developed one of these adverse events after pediatric DTaP vaccine may receive Tdap as an adolescent or adult.

A person with a recognized, possible, or potential neurologic condition should delay receiving DTaP or Tdap vaccine until the condition is evaluated, treated, and/or stabilized. Although DTaP vaccine does not cause neurological disorders, receiving the vaccine can cause an already-present underlying condition to show itself.

**Can the vaccine cause the disease?**

No.

## VACCINE INFORMATION STATEMENT

# Tdap Vaccine

## What You Need to Know

(Tetanus,  
Diphtheria and  
Pertussis)

Many Vaccine Information Statements are available in Spanish and other languages. See [www.immunize.org/vis](http://www.immunize.org/vis)

Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite [www.immunize.org/vis](http://www.immunize.org/vis)

### 1 Why get vaccinated?

**Tetanus, diphtheria and pertussis** are very serious diseases. Tdap vaccine can protect us from these diseases. And, Tdap vaccine given to pregnant women can protect newborn babies against pertussis.

**TETANUS** (Lockjaw) is rare in the United States today. It causes painful muscle tightening and stiffness, usually all over the body.

- It can lead to tightening of muscles in the head and neck so you can't open your mouth, swallow, or sometimes even breathe. Tetanus kills about 1 out of 10 people who are infected even after receiving the best medical care.

**DIPHTHERIA** is also rare in the United States today. It can cause a thick coating to form in the back of the throat.

- It can lead to breathing problems, heart failure, paralysis, and death.

**PERTUSSIS** (Whooping Cough) causes severe coughing spells, which can cause difficulty breathing, vomiting and disturbed sleep.

- It can also lead to weight loss, incontinence, and rib fractures. Up to 2 in 100 adolescents and 5 in 100 adults with pertussis are hospitalized or have complications, which could include pneumonia or death.

These diseases are caused by bacteria. Diphtheria and pertussis are spread from person to person through secretions from coughing or sneezing. Tetanus enters the body through cuts, scratches, or wounds.

Before vaccines, as many as 200,000 cases of diphtheria, 200,000 cases of pertussis, and hundreds of cases of tetanus, were reported in the United States each year. Since vaccination began, reports of cases for tetanus and diphtheria have dropped by about 99% and for pertussis by about 80%.

### 2 Tdap vaccine

Tdap vaccine can protect adolescents and adults from tetanus, diphtheria, and pertussis. One dose of Tdap is routinely given at age 11 or 12. People who did *not* get Tdap at that age should get it as soon as possible.

Tdap is especially important for healthcare professionals and anyone having close contact with a baby younger than 12 months.

Pregnant women should get a dose of Tdap during **every pregnancy**, to protect the newborn from pertussis. Infants are most at risk for severe, life-threatening complications from pertussis.

Another vaccine, called Td, protects against tetanus and diphtheria, but not pertussis. A Td booster should be given every 10 years. Tdap may be given as one of these boosters if you have never gotten Tdap before. Tdap may also be given after a severe cut or burn to prevent tetanus infection.

Your doctor or the person giving you the vaccine can give you more information.

Tdap may safely be given at the same time as other vaccines.

### 3 Some people should not get this vaccine

- A person who has ever had a life-threatening allergic reaction after a previous dose of any diphtheria, tetanus or pertussis containing vaccine, OR has a severe allergy to any part of this vaccine, should not get Tdap vaccine. Tell the person giving the vaccine about any severe allergies.
- Anyone who had coma or long repeated seizures within 7 days after a childhood dose of DTP or DTaP, or a previous dose of Tdap, should not get Tdap, unless a cause other than the vaccine was found. They can still get Td.
- Talk to your doctor if you:
  - have seizures or another nervous system problem,
  - had severe pain or swelling after any vaccine containing diphtheria, tetanus or pertussis,
  - ever had a condition called Guillain-Barré Syndrome (GBS),
  - aren't feeling well on the day the shot is scheduled.



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Control and Prevention

## 4 Risks

With any medicine, including vaccines, there is a chance of side effects. These are usually mild and go away on their own. Serious reactions are also possible but are rare.

Most people who get Tdap vaccine do not have any problems with it.

### Mild problems following Tdap

*(Did not interfere with activities)*

- Pain where the shot was given (about 3 in 4 adolescents or 2 in 3 adults)
- Redness or swelling where the shot was given (about 1 person in 5)
- Mild fever of at least 100.4°F (up to about 1 in 25 adolescents or 1 in 100 adults)
- Headache (about 3 or 4 people in 10)
- Tiredness (about 1 person in 3 or 4)
- Nausea, vomiting, diarrhea, stomach ache (up to 1 in 4 adolescents or 1 in 10 adults)
- Chills, sore joints (about 1 person in 10)
- Body aches (about 1 person in 3 or 4)
- Rash, swollen glands (uncommon)

### Moderate problems following Tdap

*(Interfered with activities, but did not require medical attention)*

- Pain where the shot was given (up to 1 in 5 or 6)
- Redness or swelling where the shot was given (up to about 1 in 16 adolescents or 1 in 12 adults)
- Fever over 102°F (about 1 in 100 adolescents or 1 in 250 adults)
- Headache (about 1 in 7 adolescents or 1 in 10 adults)
- Nausea, vomiting, diarrhea, stomach ache (up to 1 or 3 people in 100)
- Swelling of the entire arm where the shot was given (up to about 1 in 500).

### Severe problems following Tdap

*(Unable to perform usual activities; required medical attention)*

- Swelling, severe pain, bleeding and redness in the arm where the shot was given (rare).

### Problems that could happen after any vaccine:

- People sometimes faint after a medical procedure, including vaccination. Sitting or lying down for about 15 minutes can help prevent fainting, and injuries caused by a fall. Tell your doctor if you feel dizzy, or have vision changes or ringing in the ears.
- Some people get severe pain in the shoulder and have difficulty moving the arm where a shot was given. This happens very rarely.
- Any medication can cause a severe allergic reaction. Such reactions from a vaccine are very rare, estimated at fewer than 1 in a million doses, and would happen within a few minutes to a few hours after the vaccination.

As with any medicine, there is a very remote chance of a vaccine causing a serious injury or death.

The safety of vaccines is always being monitored. For more information, visit: [www.cdc.gov/vaccinesafety/](http://www.cdc.gov/vaccinesafety/)

## 5 What if there is a serious problem?

### What should I look for?

- Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or unusual behavior.
- Signs of a severe allergic reaction can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness. These would usually start a few minutes to a few hours after the vaccination.

### What should I do?

- If you think it is a severe allergic reaction or other emergency that can't wait, call 9-1-1 or get the person to the nearest hospital. Otherwise, call your doctor.
- Afterward, the reaction should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor might file this report, or you can do it yourself through the VAERS web site at [www.vaers.hhs.gov](http://www.vaers.hhs.gov), or by calling 1-800-822-7967.

*VAERS does not give medical advice.*

## 6 The National Vaccine Injury Compensation Program

The National Vaccine Injury Compensation Program (VICP) is a federal program that was created to compensate people who may have been injured by certain vaccines.

Persons who believe they may have been injured by a vaccine can learn about the program and about filing a claim by calling 1-800-338-2382 or visiting the VICP website at [www.hrsa.gov/vaccinecompensation](http://www.hrsa.gov/vaccinecompensation). There is a time limit to file a claim for compensation.

## 7 How can I learn more?

- Ask your doctor. He or she can give you the vaccine package insert or suggest other sources of information.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
  - Call 1-800-232-4636 (1-800-CDC-INFO) or
  - Visit CDC's website at [www.cdc.gov/vaccines](http://www.cdc.gov/vaccines)

## Vaccine Information Statement Tdap Vaccine

2/24/2015

42 U.S.C. § 300aa-26



# Provide the best prenatal care to prevent pertussis



## Strategies for healthcare professionals



**P**ertussis is on the rise and outbreaks are happening across the United States. In recent years, up to 1,450 infants have been hospitalized and about 10 to 20 have died each year in the United States due to pertussis. Most of these deaths are among infants who are too young to be protected by the childhood pertussis vaccine series that starts when infants are 2 months old.

These first few months of life are when infants are at greatest risk of contracting pertussis and having severe, potentially life-threatening complications from the infection. To help protect babies during this time when they are most vulnerable, women should get the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine during **each** pregnancy. A strong recommendation from you may ultimately be what most influences whether or not your patients' newborns are protected against pertussis.

**Strongly recommend Tdap to your patients during the 3rd trimester of each pregnancy.**

## 5 Facts about Tdap and Pregnancy

### 1. Tdap during pregnancy provides the best protection for mother and infant.

- Recommend and administer or refer your patients to receive Tdap during every pregnancy.
- Optimal timing is between 27 and 36 weeks gestation to maximize the maternal antibody response and passive antibody transfer to the infant.
- Fewer babies will be hospitalized for and die from pertussis when Tdap is given during pregnancy rather than during the postpartum period.

### 2. Postpartum Tdap administration is NOT optimal.

- Postpartum Tdap administration does not provide immunity to the infant, who is most vulnerable to the disease's serious complications.
- Infants remain at risk of contracting pertussis from others, including siblings, grandparents, and other caregivers.
- It takes about 2 weeks after Tdap receipt for the mother to have protection against pertussis, which means the mother is still at risk for catching and spreading the disease to her newborn during this time.

### 3. Cocooning alone may not be effective and is hard to implement.

- The term "cocooning" means vaccinating anyone who comes in close contact with an infant.
- It is difficult and can be costly to make sure that everyone who is around an infant is vaccinated.

### 4. Tdap should NOT be offered as part of routine preconception care.

- Protection from pertussis vaccines does not last as long as vaccine experts would like, so Tdap is recommended during pregnancy in order to provide optimal protection to the infant.
- If Tdap is administered at a preconception visit, it should be administered again during pregnancy between 27 and 36 weeks gestation.

### 5. Tdap can be safely administered earlier in pregnancy if needed.

- Pregnant women should receive Tdap anytime during pregnancy if it is indicated for wound care or during a community pertussis outbreak.
- If Tdap is administered earlier in pregnancy, it should not be repeated between 27 and 36 weeks gestation; only one dose is recommended during each pregnancy.

February, 2015

# Resources about Tdap and Pregnancy for Healthcare Professionals

## Get Reimbursed for Tdap Vaccination

Coding and billing are known barriers to administering vaccines during pregnancy. Correct coding enables an office to report these activities to third-party payers and receive appropriate reimbursement for these services.

- ACOG's Tdap Toolkit provides coding and billing information for Tdap: [www.acog.org/TdapToolkit](http://www.acog.org/TdapToolkit)

## Get Vaccine Referral Tips

Not all clinicians are able to stock and administer Tdap or influenza vaccines in their office.



- Making a Strong Vaccine Referral to Pregnant Women fact sheet offers tips to increase patient follow through for referrals: [www.cdc.gov/pertussis/pregnant/hcp](http://www.cdc.gov/pertussis/pregnant/hcp)

## Read the Current Recommendations

Advisory Committee on Immunization Practices: [www.cdc.gov/mmwr/preview/mmwrhtml/mm6207a4.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6207a4.htm)

American College of Obstetricians and Gynecologists: [www.acog.org/TdapCommitteeOpinion](http://www.acog.org/TdapCommitteeOpinion)

American College of Nurse-Midwives: <http://www.midwife.org/Immunization-in-Pregnancy-and-Postpartum>

Stay up to date on the studies that support the safe and effective use of the Tdap vaccine in pregnant women at [www.cdc.gov/pertussis/pregnant/research.html](http://www.cdc.gov/pertussis/pregnant/research.html)

## Get Free Materials for Your Patients

The following resources help explain the importance of and health benefits behind the Tdap recommendation. They are free to download and ready for color or black and white printing and reproduction. English and Spanish language versions are available.

### Posters/Print Ads



English



Spanish

### Q&A Fact Sheet



You can start protecting your baby from whooping cough before birth

### Informational Article for Patient Newsletters and Websites



Record High Cases of Whooping Cough: Vaccinate to Protect



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention





The American College of  
Obstetricians and Gynecologists  
WOMEN'S HEALTH CARE PHYSICIANS

## Physician Script Concerning Tdap Vaccination

All women should receive the tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine; this is particularly important for pregnant women because they are susceptible to acquiring pertussis (whooping cough) and newborns are at highest risk of having severe complications from pertussis. The American College of Obstetricians and Gynecologists recommends that pregnant women receive a Tdap vaccination, preferably between 27 weeks and 36 weeks of gestation to maximize the maternal antibody transfer to the fetus. Unvaccinated adolescents and adults, including adults aged 65 years and older, who will have contact with infants younger than 12 months also should receive a single dose of Tdap.

For women not previously vaccinated with Tdap, if Tdap was not administered during pregnancy, it should be administered immediately postpartum to provide pertussis immunity and reduce the risk of transmission to the newborn. The American College of Obstetricians and Gynecologists recommends that unvaccinated women receive a Tdap vaccination as part of routine preventive care. Educate your patients about the Tdap vaccine and provide guidance on where to find it. It is also important that you and your staff who are unvaccinated receive a single dose of Tdap.

To properly administer any vaccine in your office, according to federally established guidelines, you must give your patients a Vaccine Information Statement (VIS) upon their receipt of an immunization. It is also important to provide immunizations in accordance with your state guidelines. Vaccine Information Statement forms can be found in multiple languages at [www.immunize.org/vis/](http://www.immunize.org/vis/).

Multiple studies show that the most effective way to increase your patients' vaccination acceptance rate is for you to directly recommend and provide the vaccine. Talk to your patients about Tdap today. Here is a script for your consideration:

"I strongly recommend that you get the Tdap shot today. I offer Tdap vaccination to all of my patients who need it. This includes pregnant women, who preferably should get the shot between 27 weeks and 36 weeks of gestation to maximize the maternal antibody transfer to the fetus. The vaccine is safe and effective and has not been shown to cause any adverse effects during pregnancy, including autism. Your family members who will be in contact with your newborn, or who have contact with other infants younger than 12 months, also should be vaccinated. This helps provide protection for your newborn because he or she cannot get this vaccination until 2 months of age."

### RESOURCES

The American College of Obstetricians and Gynecologists  
Immunization for Women

[http://www.immunizationforwomen.org/immunization\\_facts/vaccine-preventable\\_diseases/pertussis](http://www.immunizationforwomen.org/immunization_facts/vaccine-preventable_diseases/pertussis)

Centers for Disease Control and Prevention

<http://www.cdc.gov/vaccines/vpd-vac/pertussis/default.htm>



The American College of  
Obstetricians and Gynecologists  
WOMEN'S HEALTH CARE PHYSICIANS

## Coding Information on Tdap Immunization for Patients

### CPT Codes for Vaccine Administration

Code	Method	Route of Administration	Type of Service	Reporting Rules
90471	Injection	Percutaneous, intradermal, subcutaneous, or intramuscular	Primary	Report only one primary vaccine administration per encounter.
+90472	Injection	Percutaneous, intradermal, subcutaneous, or intramuscular	Additional	Report for secondary or subsequent vaccine administration. Report only with code 90471 or code 90473.
90460	Any Route	Percutaneous, intradermal, subcutaneous, or intramuscular	Primary	Report only one primary vaccine administration per day. Report for administration of first vaccine if more than one was provided. Physician also provides counseling. Patient is 18 years of age or younger.
90461	Any Route	Percutaneous, intradermal, subcutaneous, or intramuscular	Additional	Report for secondary or subsequent vaccine administration. Physician also provides counseling. Patient is 18 years of age or younger.

### Tdap Vaccines Administered to Adolescents and Adults

Vaccine	Code for Vaccine Product	CPT Administration Code
Tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap), patient 7 years of age or older, intramuscular	90715	90471-90472

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For more information, please visit the Coding section on the Immunization for Women web page, [http://www.immunizationforwomen.org/practice\\_management/coding](http://www.immunizationforwomen.org/practice_management/coding).

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# Making a strong **vaccine referral** to pregnant women



## Strategies for healthcare professionals



**S**tocking and administering vaccines in your office may not be feasible for all prenatal healthcare professionals, often due to issues with reimbursement. By making a strong vaccine referral, you can help ensure that your pregnant patients receive the recommended influenza (flu) and tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccines even if you are unable to administer them in your office. The strategies outlined are based on research with healthcare professionals and pregnant women. The goal is to strengthen vaccine referrals to increase the likelihood of patient follow through.

### Making the Referral

**Begin each referral with a vaccine recommendation that includes information on why the vaccine is beneficial and safe for mother and baby.**

Tailoring your message with scientific data or personal anecdotes may help convey the vaccine's importance to individual patients.

**Provide information on where patients can get the vaccine(s) you recommend.** For help locating vaccines in your area, the HealthMap Vaccine Finder is available at: <http://vaccine.healthmap.org>.

**Always write a patient-specific prescription.** This will help your patients obtain the vaccine at another location where a prescription may be required.

**Anticipate questions on why patients cannot get vaccinated in your office.** For example, if you stock flu vaccine, but not Tdap, be prepared to explain why you offer one vaccine but not the other.

**Re-emphasize vaccine importance.** Remember to emphasize the fact that just because you do not stock a specific vaccine in your office does not mean it is not important, is less important than other vaccines you do stock, or that you have concerns about its safety.

**Have a plan in place to answer questions from other immunization providers who are concerned with vaccinating your pregnant patients.** Questions should be answered promptly, as it is likely your patient is with them at the time they contact you.

### Vaccines Routinely Recommended for Pregnant Women

It is safe for the flu vaccine and Tdap vaccine to be given to pregnant patients at the same time.

#### Flu Vaccine

- Is recommended for pregnant women and safe to administer during any trimester.
- Is the best way to protect pregnant women and their babies from the flu, and prevent possible flu-associated pregnancy complications.
- Is safe and can help protect the baby from flu for up to 6 months after birth. This is important because babies younger than 6 months of age are too young to get a flu vaccine.

#### Tdap Vaccine

- Is recommended during every pregnancy, ideally between 27 and 36 weeks gestation.
- When given during pregnancy, boosts antibodies in the mother, which are transplacentally transferred to her unborn baby. Third trimester administration optimizes neonatal antibody levels.
- Helps protect infants, who are at greatest risk for developing pertussis and its life-threatening complications, until they are old enough to start the childhood pertussis vaccine series.

## Timing the Referral

Vaccines recommended for pregnant women should be discussed with patients early in pregnancy, with the formal referral made during the recommended timeframe for administration.

- Flu vaccine: Your referral should be made as early as possible once pregnancy is confirmed. Pregnant women can be vaccinated during any trimester, keeping in mind that flu vaccine is typically available August to May, covering the duration of flu season.
- Tdap vaccine: Your recommendation and referral should be made as close to 27 weeks as possible so there is ample time during the recommendation window (between 27 and 36 weeks) to follow up and re-emphasize the importance of getting the Tdap vaccine, if the patient has not received it yet.

You may find linking the timing of the Tdap referral with another third trimester practice beneficial. Many clinicians have been successful pairing their Tdap referral with the glucose test conducted at 28 weeks.

## Follow-Up after Referral

After every referral, you should follow-up with each patient during subsequent appointments to ensure the patient received the vaccine(s). It may be helpful to include a reminder in your electronic medical records (EMR).

As part of the follow-up, document vaccine receipt in each patient's medical record. If your patient did not follow through with the referral, repeat the recommendation and referral and try to identify and address any questions or concerns that she may have encountered. Your commitment to making a strong referral and following up with patients is vital to increasing vaccination rates among pregnant women and protecting them and their babies from serious diseases.

## Vaccines for Pregnant Women Resources

There are several resources available to help you make an effective recommendation and referral. All are free to download and ready for color or black and white printing and reproduction.

### For Your Patients

**CDC Website on Pregnancy and Whooping Cough**  
[www.cdc.gov/pertussis/pregnant](http://www.cdc.gov/pertussis/pregnant)

**CDC Website on Pregnancy and Flu**  
[www.cdc.gov/flu/protect/vaccine/pregnant.htm](http://www.cdc.gov/flu/protect/vaccine/pregnant.htm)

**Vaccine Information Statement on Tdap**  
[www.cdc.gov/vaccines/hcp/vis/vis-statements/tdap.html](http://www.cdc.gov/vaccines/hcp/vis/vis-statements/tdap.html)

**Vaccine Information Statement on Flu**  
[www.cdc.gov/vaccines/hcp/vis/vis-statements/flu.html](http://www.cdc.gov/vaccines/hcp/vis/vis-statements/flu.html)

### For You and Your Staff

**CDC Website on Pregnancy and Whooping Cough:** Information on the Tdap recommendation for pregnant women and tips on providing the best prenatal care to prevent pertussis.  
[www.cdc.gov/pertussis/pregnant/HCP](http://www.cdc.gov/pertussis/pregnant/HCP)

**ACOG Tdap Toolkit:** Information and resources about Tdap vaccination, including frequently asked questions for patients and a physician script.  
[www.acog.org/TdapToolKit](http://www.acog.org/TdapToolKit)

**ACOG Flu Vaccine Materials:** Information and resources about flu vaccination, including frequently asked questions for patients and a physician script.  
[www.immunizationforwomen.org/immunization\\_facts/seasonal\\_influenza](http://www.immunizationforwomen.org/immunization_facts/seasonal_influenza)

**ACOG Immunization Coding for Obstetrician-Gynecologists 2013:** A guide on reimbursement and coding for vaccinations.  
[www.acog.org/-/media/Department-Publications/immunizationCoding.pdf](http://www.acog.org/-/media/Department-Publications/immunizationCoding.pdf)

**AAFP's Immunization Page:** Information on vaccine schedules.  
[www.aafp.org/patient-care/immunizations/schedules.html](http://www.aafp.org/patient-care/immunizations/schedules.html)



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

[www.cdc.gov/whoopingcough](http://www.cdc.gov/whoopingcough)



American Academy of Pediatrics  
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## Patient Handouts



**INDIANA**  
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**COALITION**

# Tdap vaccination during pregnancy



By the Society for Maternal-Fetal Medicine (SMFM), with the assistance of Dr. Lorelei L. Thornburg and the SMFM Education Committee

## Why is vaccination against pertussis (whooping cough) important during pregnancy?

In 2012, more than 48,000 cases of pertussis were reported in the United States. For people who have not been vaccinated, pertussis is highly contagious. Pertussis is easily spread through the air when infected people cough. Approximately 90% of those who are not immune to pertussis can become infected. Pertussis in adults can cause significant illness such as a severe chronic cough lasting up to 3 months, but in newborns it can be life-threatening. Recent studies have shown that almost 1% of infants who need to be hospitalized die from pertussis, usually due to pneumonia and seizures.

The majority of pertussis cases in the United States, specifically hospitalizations and deaths related to this infection, occur in infants younger than 3 months of age. Babies cannot be vaccinated until they are 2 months old, so a newborn is at risk of getting infected until he or she can receive a vaccine. Vaccinating women in pregnancy may reduce the likelihood that their babies will be exposed to pertussis.

## Is the vaccine safe during pregnancy?

Tdap (combined tetanus, diphtheria and pertussis) vaccination in pregnancy has been shown in studies to be very safe. The vaccine contains pertussis bacteria that have been made inactive and proteins from tetanus and diphtheria that contain no bacteria. There are no known harmful effects on the developing baby.

## When and how often should the pertussis vaccine be given?

The vaccine should be administered in the third trimester, between 27 and 36 weeks' gestation. Following vaccination, the pregnant woman produces antibodies against the bacteria. These antibodies cross the placenta to the fetus, protecting the newborn against infection after delivery. Pregnant women should receive a Tdap vaccine during every pregnancy, regardless of when prior vaccinations were given, in order to provide maximum protection for the newborn.

## Who else in the household should get a Tdap vaccine?

All family members and caregivers who will have contact with the newborn should also be sure that their Tdap "booster" vaccine status is up to date. Even if they received a standard tetanus booster within the past 10 years, they should get the Tdap vaccination at least 2 to 3 weeks before the baby is born, to make sure immunity has started to develop.

## What are some side effects of the Tdap vaccine?

The vaccine has very few side effects. Pain and redness can occur where the injection is given. Rarely, inflammation of the blood vessels where the injection is given can occur. If any pain, redness, or swelling persists beyond a few days, contact your doctor.

FROM THE  
PAGES OF

Contemporary  
**OB/GYN**  
Expert Advice for Today's Ob/Gyn



# Tdap Vaccine for Pregnant Women

## What is Tdap?

Tdap is a booster vaccine against tetanus, diphtheria, and pertussis (whooping cough). Protecting mothers and babies against pertussis is a high priority because pertussis has become increasingly common in Minnesota over the last few years and it can be life-threatening or even fatal to infants.

## What are the dangers of pertussis?

It causes violent coughing attacks that keep recurring for weeks or months: in fact, the disease used to be known as “the 100-day cough.” Adults with pertussis may experience vomiting, incontinence, or rib fractures because of the force of the coughing. Infants may stop breathing entirely.

## How effective is Tdap?

It prevents most cases of pertussis, but not every case. Some people may still get pertussis even after being vaccinated, but they will have less severe symptoms and are less likely to infect others.

## How does Tdap protect newborns?

Getting Tdap during pregnancy makes it less likely that you will have pertussis during the time when your baby is most at risk. It is also likely to provide immunity to the baby, since the protective antibodies your body makes in response to the vaccine will be shared with the baby. However, because it’s not guaranteed that these antibodies will be enough to fully protect the baby, every teenager or adult who will spend time around the baby should get Tdap too.

## When should I get Tdap?

Between 27 and 36 weeks’ gestation.

## What if I’m not due for a tetanus booster?

The recommendation for Tdap applies even if you had a tetanus booster or Tdap before becoming pregnant. You have the most pertussis antibodies to share with your baby in the first months after you receive the vaccine.

## Can I wait and get Tdap after I deliver?

If you wait, you won’t be protected for about two weeks after the baby is born, and it’s possible you could get pertussis during that time and pass it to the baby. Also, getting vaccinated after delivery doesn’t provide any antibody protection to the baby. However, if that’s what you choose, it’s fine to get Tdap while breastfeeding.

## Should babies be vaccinated against pertussis?

Yes, they should, but they need a series of three doses at 2, 4, and 6 months to build up initial immunity. After that, additional doses are given in childhood and throughout life.

## Is Tdap vaccine safe?

Most side effects of Tdap vaccination are mild enough that they don’t require medical attention. The most common are pain, redness, or swelling at the injection site. Severe injection site reactions and allergic reactions are rare.

## Tdap Vaccine for Pregnant Women – Page 2

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Talk to your health care provider about your personal risk if any of the following are true:

- You had a severe reaction to any vaccine against diphtheria, tetanus, and/or pertussis in the past
- You have a nervous system condition, including unstable epilepsy
- You have had Guillain-Barré syndrome
- You had severe swelling or severe pain after a previous tetanus vaccination
- You are moderately to severely ill at the time of your visit

### **Is Tdap covered by my insurance?**

Most insurance plans provide full coverage for Tdap and other vaccines, but you can check by calling the customer service number on the back of your insurance card. You may want to verify that it will be covered if given by your prenatal care provider, if this is different from your usual primary care provider.

# Cocooning Protects Babies

## Everyone in a baby's life needs to get vaccinated against whooping cough and flu!

### What is cocooning?

Babies younger than 6 months old are more likely to develop certain infectious diseases than older children. Cocooning is a way to protect babies from catching diseases from the people around them – people like their parents, siblings, grandparents, friends, child-care providers, babysitters, and healthcare providers. Once these people are vaccinated, they are less likely to spread these contagious diseases to the baby. They surround the baby with a cocoon of protection against disease until he or she is old enough to get all the doses of vaccine needed to be fully protected.

### Why is cocooning important?

Babies less than 6 months old are too young to have received all the doses of vaccine that are needed to protect them from whooping cough (pertussis), flu (influenza), and other dangerous diseases. To be fully protected, babies need to get **all** the vaccine doses in a series – not just the first dose.

Unvaccinated adults and family members, including parents, are often the ones who unknowingly spread dangerous diseases to babies.

Currently, towns and cities across the nation have had whooping cough outbreaks. Influenza outbreaks happen every year.

### How can we protect babies?

Everyone has the opportunity to protect babies by getting vaccinated themselves. Cocooning is an easy and effective way that people can work together to prevent the spread of whooping cough and flu to babies.



### How can we protect babies against whooping cough?

- All children should be vaccinated on schedule with DTaP (the childhood whooping cough vaccine).
- All teenagers and adults need a one-time dose of Tdap vaccine (the teen and adult whooping cough vaccine).
- Pregnant women should receive a Tdap vaccination in each pregnancy, preferably during the 3rd trimester. This will protect the pregnant woman as well as her baby!

### How can we protect babies against flu?

Everyone age 6 months and older needs to receive flu vaccine every year.

#### INFORMATION FROM TRUSTED SOURCES

- ▶ **Video: Surround Your Baby with Protection**  
(about whooping cough)  
<http://cocooning.preventpertussis.org>  
*From the Texas Department of State Health Services*
- ▶ **Diseases and the Vaccines That Prevent Them**  
[www.cdc.gov/vaccines/hcp/patient-ed/conversations/prevent-diseases/index.html](http://www.cdc.gov/vaccines/hcp/patient-ed/conversations/prevent-diseases/index.html)  
*From the Centers for Disease Control and Prevention*
- ▶ **Vaccine Educational Materials for Parents**  
[www.chop.edu/service/vaccine-education-center/order-educational-materials](http://www.chop.edu/service/vaccine-education-center/order-educational-materials)  
*From the Vaccine Education Center, Children's Hospital of Philadelphia*
- ▶ **Vaccine Information Website**  
[www.vaccineinformation.org](http://www.vaccineinformation.org)  
*From the Immunization Action Coalition*
- ▶ **Cocooning and Tdap Vaccination Web Section**  
(cocooning information about whooping cough)  
[www.immunize.org/cocooning](http://www.immunize.org/cocooning)  
*From the Immunization Action Coalition*

Technical content reviewed by the Centers for Disease Control and Prevention

**IMMUNIZATION ACTION COALITION** 1573 Selby Avenue • St. Paul, MN 55104 • 651-647-9009 • [www.immunize.org](http://www.immunize.org) • [www.vaccineinformation.org](http://www.vaccineinformation.org)

[www.immunize.org/catg.d/p4039.pdf](http://www.immunize.org/catg.d/p4039.pdf) • Item #P4039 (3/13)

# You can start protecting your baby from whooping cough before birth



Information for pregnant women



**W**hooping cough (sometimes called pertussis) is a serious disease that can cause babies to stop breathing. Unfortunately, babies must be 2 months old before they can start getting their whooping cough vaccine. The good news is you can avoid this gap in protection by getting the whooping cough vaccine (also called the Tdap shot because it protects against tetanus, diphtheria, and pertussis) in your third trimester, preferably between your 27<sup>th</sup> and 36<sup>th</sup> week of pregnancy. By getting vaccinated, you will pass antibodies to your baby so she is born with protection against whooping cough.

*When you get the whooping cough vaccine during your 3<sup>rd</sup> trimester, your baby will be born with protection against whooping cough.*

## **Why do I need to get a whooping cough vaccine while I am pregnant?**

The whooping cough vaccine is recommended during your third trimester so that your body can create antibodies and pass them to your baby before birth. These antibodies will help protect your newborn right after birth and until your baby gets his own first whooping cough vaccine at 2 months of age. During the first few months of life, your baby is most vulnerable to serious complications from this disease.

## **Is this vaccine safe for me and my baby?**

Yes. The whooping cough vaccine is very safe for you and your baby. The most common side effects are mild, like redness, swelling or pain where the shot is given in the arm. This should go away within a few days. You cannot get whooping cough from the vaccine. The vaccine does not contain any live bacteria.

Doctors and midwives who specialize in caring for pregnant women agree that the whooping cough vaccine is safe and important to get during the third trimester of each pregnancy. Getting the vaccine during pregnancy does not put you at increased risk for pregnancy complications like low birth weight or preterm delivery.

## **If I recently got this vaccine, why do I need to get it again?**

The amount of antibodies in your body is highest about 2 weeks after getting the vaccine, but then starts to decrease over time. That is why the vaccine is recommended during every pregnancy – so that each of your babies gets the greatest number of protective antibodies from you and the best protection possible against this disease.

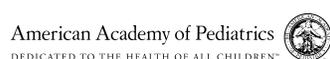
## **Are babies even getting whooping cough anymore in the United States?**

Yes. In fact, babies are at greatest risk for getting whooping cough. We used to think of this as a disease of the past, but it's making a comeback. Recently, we saw the most cases we had seen in 60 years. Since 2010, we see between 10,000 and 50,000 cases of whooping cough each year in the United States. Cases, which include people of all ages, are reported in every state.



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

[www.cdc.gov/whoopingcough](http://www.cdc.gov/whoopingcough)



February 2015

## **Mom, only you can provide your newborn baby with the best protection possible against whooping cough.**

*You may have heard that your baby's father, grandparents, and others who will be in contact with your baby will need to get their whooping cough vaccine as well. This strategy of surrounding babies with protection against whooping cough is called "cocooning." However, cocooning might not be enough to prevent whooping cough illness and death. This is because cocooning does not provide any direct protection (antibodies) to your baby, and it can be difficult to make sure **everyone** who is around your baby has gotten their whooping cough vaccine. Since cocooning does not completely protect babies from whooping cough, it is even more important that you get the vaccine while you are pregnant.*

### **How dangerous is whooping cough for babies?**

Whooping cough is very serious for babies. Many babies with whooping cough don't cough at all. Instead it can cause them to stop breathing. About half of babies younger than 1 year old who get whooping cough are hospitalized. Since 2010, about 10 to 20 babies die from whooping cough each year in the United States. Most whooping cough deaths are among babies who are too young to be protected by their own vaccination.

### **How could my baby be exposed to whooping cough?**

Whooping cough spreads from person to person when coughing or sneezing or when spending a lot of time near one another where you share breathing space, like when you hold your newborn on your chest. Some people with whooping cough may just have a mild cough or what seems like a common cold. Since symptoms can vary, children and adults may not know they have whooping cough and can end up spreading it to babies they are in close contact with.

### **Why is the vaccine recommended during pregnancy instead of in the hospital after my baby is born?**

When you get the whooping cough vaccine during pregnancy, you will pass protective antibodies to your baby before birth, so both you and your baby have protection.

The whooping cough vaccine used to be recommended for women to get in the hospital after giving birth. This helped prevent moms from getting whooping cough and passing it on to their babies. Unfortunately, the babies did not benefit from the protective antibodies and could still get whooping cough from others.

### **Is it safe to breastfeed after getting the whooping cough vaccine?**

Yes, in fact you can pass some whooping cough protection to your baby by breastfeeding. When you get a whooping cough vaccine during your pregnancy, you will have protective antibodies in your breast milk that you can share with your baby as soon as your milk comes in. However, your baby will not get protective antibodies immediately if you wait to get a whooping cough vaccine until after you give birth. This is because it takes about 2 weeks after getting vaccinated before your body develops antibodies.

### **Where can I go for more information?**

Pregnancy and Whooping Cough website:  
[www.cdc.gov/pertussis/pregnant](http://www.cdc.gov/pertussis/pregnant)

Immunization for Women website:  
[www.immunizationforwomen.org/immunization\\_facts/vaccine-preventable\\_diseases/pertussis](http://www.immunizationforwomen.org/immunization_facts/vaccine-preventable_diseases/pertussis)

Vaccines during Pregnancy website:  
[www.midwife.org/omot-vaccines-during-pregnancy](http://www.midwife.org/omot-vaccines-during-pregnancy)

American Academy of Family Physicians website:  
[www.aafp.org/patient-care/immunizations/disease-population.html](http://www.aafp.org/patient-care/immunizations/disease-population.html)

Tdap Vaccine Information Statement (VIS):  
[www.cdc.gov/vaccines/hcp/vis/vis-statements/tdap.html](http://www.cdc.gov/vaccines/hcp/vis/vis-statements/tdap.html)

Ask your doctor or midwife about getting the whooping cough vaccine during your 3<sup>rd</sup> trimester.



The American College of  
Obstetricians and Gynecologists  
WOMEN'S HEALTH CARE PHYSICIANS



Society for  
Maternal • Fetal  
Medicine

## Frequently Asked Questions for Pregnant Women Concerning Tdap Vaccination

### **What is pertussis (whooping cough)?**

Pertussis (also called whooping cough) is a highly contagious disease that causes severe coughing. People with pertussis may make a “whooping” sound when they try to breathe and gasp for air. In newborns (birth to 1 month), pertussis can be life threatening. Recent outbreaks have shown that infants younger than 3 months are at very high risk of severe infection.

### **What is Tdap?**

The tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine is used to prevent three infections: 1) tetanus, 2) diphtheria, and 3) pertussis.

### **I am pregnant. Should I get a Tdap shot?**

Yes. All pregnant women should get a Tdap shot in the third trimester, preferably between 27 weeks and 36 weeks of pregnancy. The Tdap shot is an effective and safe way to protect you and your baby from serious illness and complications of pertussis. You should get a Tdap shot during each pregnancy.

### **Is it safe to get the Tdap shot during pregnancy?**

Yes. There are no theoretical or proven concerns about the safety of the Tdap vaccine (or other inactivated vaccines like Tdap) during pregnancy. The shot is safe when given to pregnant women.

### **During which trimester is it safe to get a Tdap shot?**

It is safe to get the Tdap shot during all three trimesters of pregnancy. Experts recommend that you get Tdap during the third trimester (preferably between 27 weeks and 36 weeks of pregnancy). This gives your newborn the most protection. The shot causes you to make antibodies against pertussis. These antibodies are passed to the fetus. They protect your newborn until he or she begins to get vaccines against pertussis at 2 months of age.

### **Can newborns be vaccinated against pertussis?**

No. Newborns cannot start their vaccine series against pertussis until they are 2 months of age because the vaccine does not work in the first few weeks of life. This is partly why newborns are at a higher risk of getting pertussis and becoming very ill.

### **What else can I do to protect my baby against pertussis?**

Getting your Tdap shot is the most important step in protecting yourself and your baby against pertussis. It also is important that all family members and caregivers are up-to-date with their vaccines. If they need the Tdap shot, they should get it at least 2 weeks before having contact with your newborn. This makes a safety “cocoon” of vaccinated caregivers around your baby.

*(see reverse)*

**I am breastfeeding my baby. Is it safe to get the Tdap vaccine?**

Yes. The Tdap shot can safely be given to breastfeeding women if they did not get the Tdap shot during pregnancy and have never received the Tdap shot before.

**I did not get my Tdap shot during pregnancy. Do I still need to get the vaccine?**

If you have never gotten the Tdap vaccine and you do not get the shot during pregnancy, be sure to get the vaccine right after you give birth, before you leave the hospital or birthing center. It will take about 2 weeks for your body to make protective antibodies in response to the vaccine. Once these antibodies are made, you are less likely to give pertussis to your newborn. But remember, your baby still will be at risk of catching whooping cough from others.

**I got a Tdap shot during a past pregnancy. Do I need to get the shot again during this pregnancy?**

Yes. All pregnant women should get a Tdap shot during each pregnancy, preferably between 27 weeks and 36 weeks of pregnancy. This time frame is recommended because it gives the most protection to the pregnant woman and the fetus. It appears to maximize the antibodies present in the newborn at birth.

**I received a Tdap shot early in this pregnancy, before 27–36 weeks of pregnancy. Do I need to get another Tdap shot between 27 weeks and 36 weeks of pregnancy?**

A pregnant woman does not need to get the Tdap shot later in the same pregnancy if she got the shot in the first or second trimester.

**Can I get the Tdap vaccine and flu vaccine at the same time?**

Yes. You can get more than one vaccine in the same visit.

**What is the difference between Tdap, Td, and DTaP?**

Children receive the diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccine. Teenagers and adults are given the Tdap vaccine as a booster to the DTaP they got as children. Adults receive the tetanus and diphtheria (Td) vaccine every 10 years to protect against tetanus and diphtheria. Td does not protect against pertussis.

Uppercase letters in these abbreviations mean full-strength doses of diphtheria (D) and tetanus (T) toxoids and pertussis (P) are used in the vaccine. Lowercase “d” and “p” mean reduced doses of diphtheria and pertussis are used in the vaccines for teenagers and adults. The “a” in DTaP and Tdap stands for “acellular,” meaning that the pertussis component contains only a part of the pertussis organism.

**RESOURCES**

American College of Obstetricians and Gynecologists

[www.acog.org](http://www.acog.org)

Immunization for Women

[www.immunizationforwomen.org](http://www.immunizationforwomen.org)

Centers for Disease Control and Prevention

<http://www.cdc.gov/vaccines/vpd-vac/tetanus/default.htm>

Society for Maternal–Fetal Medicine

[www.smfm.org](http://www.smfm.org)

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Getting your whooping cough vaccine in your 3<sup>rd</sup> trimester...

helps protect your baby from the start.

**Outbreaks of whooping cough are happening across the United States.** This disease can cause your baby to have coughing fits, gasp for air, and turn blue from lack of oxygen. It can even be deadly. When you get the whooping cough vaccine (also called Tdap) during your third trimester, you'll pass antibodies to your baby. This will help keep him protected during his first few months of life, when he is most vulnerable to serious disease and complications.

**Talk to your doctor or midwife about the whooping cough vaccine.**



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**Born with protection against whooping cough.**

[www.cdc.gov/whoopingcough](http://www.cdc.gov/whoopingcough)



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February 2015  
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**“The whooping cough vaccine I got during my 3<sup>rd</sup> trimester will help protect my baby starting at her first breath.”**

**Whooping cough can make your baby very sick with coughing fits and gasping for air.**

It can even be deadly, and there are outbreaks happening across the United States. When you get the whooping cough vaccine (also called Tdap) during the third trimester of your pregnancy, you'll pass antibodies to your baby that will help protect her from this disease from the time she's born. These antibodies will last for the first few months of her life, when she is most vulnerable to serious disease and complications.

**Talk to your doctor or midwife about the whooping cough vaccine.**



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## PERTUSSIS

# Katie and Craig Van Tornhout

## How Pertussis Changed Our Lives



On December 24, 2009 I gave birth to a feisty 4lb 5oz baby girl named Callie. She was our “miracle” baby after 5 years of trying and 4 miscarriages. She came 6 weeks early due to pre-eclampsia and spent 12 days in the neonatal intensive care unit. She came home and she thrived. She was happy, and gaining weight. She was the PERFECT baby. On January 24 we noticed she had a small cough. On Monday I took her to the doctor and they told me it was “just a cough” and would be gone in a few days. Tuesday, she was more tired than usual. Wednesday she was lethargic and wasn’t eating. We went back to the doctor and while waiting, she stopped breathing in my arms. She came back on her own, but we were rushed to the emergency department and admitted into the pediatric intensive care unit. It wasn’t until Friday that they tested for Meningitis and Pertussis (whooping cough). At 11:00 pm after a respiratory therapy session, her condition worsened. At 1:17 am she was GONE. It wasn’t until Monday, February 1 that we learned she passed from Pertussis. February 1 was her original due date....the same date as her viewing.

We keep Callie’s spirit alive by educating others about pertussis and the importance of the DTaP vaccine for infants and young children and the Tdap vaccine for pregnant women, adolescents and adult family members.

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Pertussis, also known as whooping cough, is a highly contagious respiratory disease. It is caused by the bacterium *Bordetella pertussis*. Babies can contract the disease from family members or others who don’t know they have the disease. Whooping Cough or Pertussis is spread easily through the air when the infected person coughs or sneezes. Pregnant women who are infected can also transmit the disease to their unborn baby.

Pertussis is known for uncontrollable, violent coughing which often makes it hard to breathe. After fits of many coughs, someone with pertussis often needs to take deep breathes which result in a “whooping” sound. Pertussis most commonly affects infants and young children and can be fatal, especially in babies less than 1 year of age.

The best way to protect against pertussis is to be vaccinated with the DTaP or Tdap vaccine which protects against diphtheria, tetanus and pertussis. Pregnant women should be vaccinated in their third trimester to protect their newborns. All family members should receive the vaccine to protect the newborn baby. Infants should receive the vaccine at 2 months of age with five doses given up to 6 years of age.

**Ask your doctor about the DTaP or Tdap vaccine.**

**For more information, visit [www.vaccinateindiana.org](http://www.vaccinateindiana.org)**



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