

Pertussis Cocooning Handbook

A physician's guide to successful pertussis prevention



Protect Babies.

Get Vaccinated.

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Purpose

The purpose of this handbook is to ask OB/GYNs, family physicians, pediatricians and hospital-based doctors to implement Cocooning strategies in their practices. Carrying out a Cocooning strategy simply means vaccinating adult and adolescent patients and their family members with the Tdap (tetanus, diphtheria, and pertussis) vaccine. Tdap keeps patients from contracting pertussis (whooping cough) — in addition to protecting the patients from getting tetanus and diphtheria. If adults who routinely surround an infant are protected, the infant will not likely catch pertussis. The mother is the most vital contact to be vaccinated, followed by the infant’s close contacts (child’s father, siblings, grandparents, and other caregivers). Information about the Tdap vaccine can be found in the appendix of this handbook.

This handbook gives suggestions regarding how to establish a Cocooning program in hospitals, OB/GYN offices or clinics, and family and pediatric practices. During the course of a woman’s pregnancy and childbirth, she will likely come in contact with these medical professionals. It is optimal to vaccinate the mother and the infant’s potential caregivers during this time frame.



Introduction

Background

Pertussis (whooping cough) is a significant cause of death in infants worldwide. Despite relatively high vaccination rates in the industrialized world, it continues to cause an excess burden of disease among infants. Severe complications often result in hospitalization and sometimes death.

In adults and adolescents whose immunity is waning or who are not vaccinated, pertussis may initially present as a common cold with a persistent cough. Hence, most of these individuals will be unaware that they are infected with pertussis. In infants, pertussis may present as a severe cough (some with the characteristic “whoop”) that can cause difficulty in breathing and may provoke episodes of apnea (breathing temporarily stopping).

The disease can be devastating to infants, especially in those less than six months old. Death from pertussis is most common in this age group. Most infants with pertussis contract it from a close family member who unknowingly has the disease. These close contacts can include the child’s mother, father, older siblings, grandparents, and other caregivers such as nannies and daycare providers.

Pertussis in Texas

In 2010, the pertussis rate in Texas was 13.5 per 100,000 residents. However, during the winter months of 2009–2010, rates in Williamson County reached 257 cases per 100,000,¹ and 1,054 confirmed and probable cases were reported. Most of the cases were among children under 15 years of age.¹

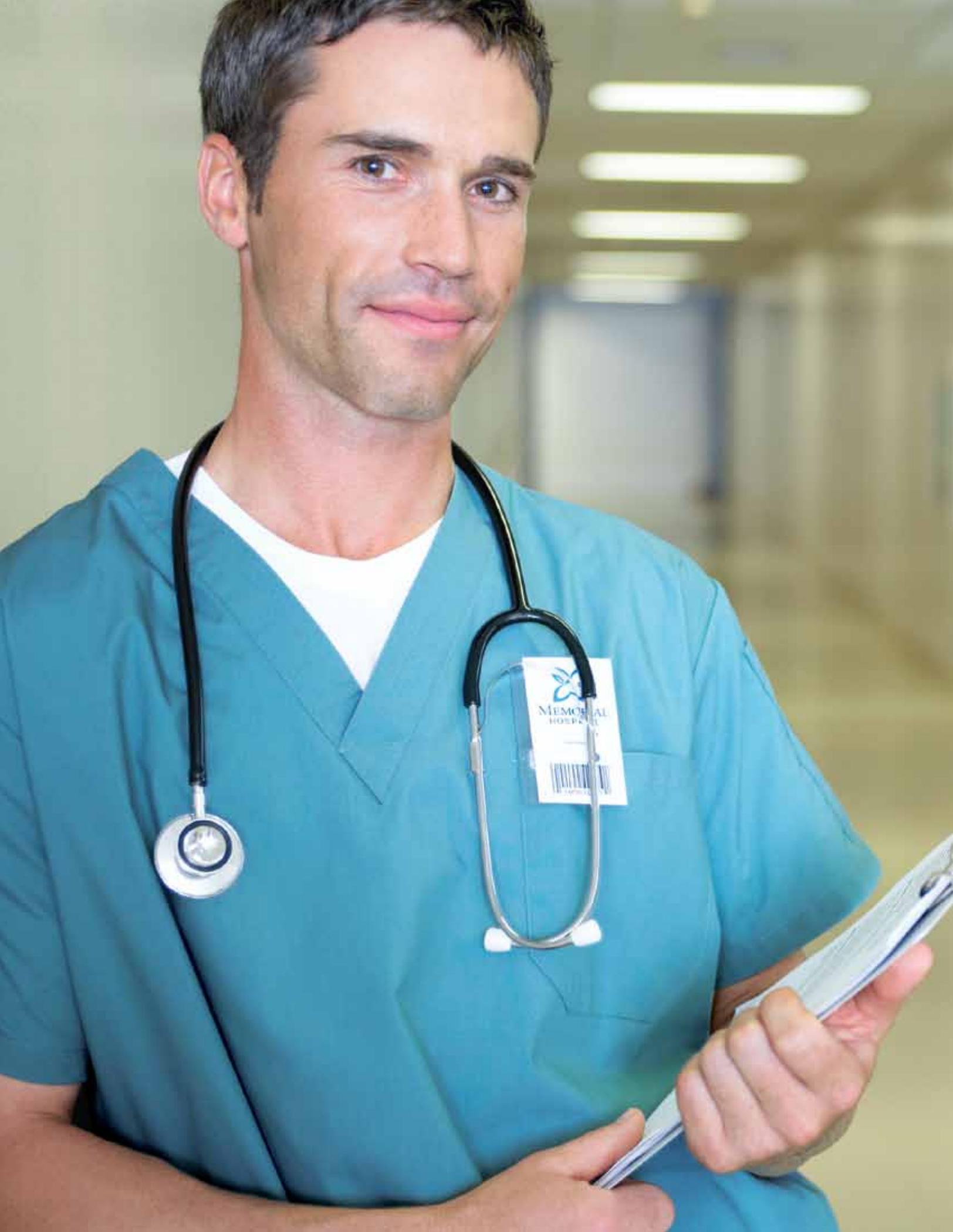
In a recent study of select hospitals in South Texas, pertussis admissions ranged from 0 to 7.4 per 10,000 hospitalizations between 1996 and 2003, and from 16.3 to 27.4 per 10,000 hospitalizations from 2004 to 2006. The majority (78%) of patients were less than four months old, and 52% had a sick contact who was a family member. Nearly a third of these patients required intensive care unit (ICU) admission, and three died.

Cocooning

Recently the Centers for Disease Control and Prevention (CDC) recommended a strategy called Cocooning to protect infants against pertussis and other infectious diseases. Cocooning is a practice of vaccinating all close contacts of infants to protect the newborn from disease. By getting a pertussis-containing vaccine (Tdap), adults and adolescents remain disease free, thereby protecting infants from pertussis.

In 2010–2011, The Texas Department of State Health Services (DSHS) launched a Cocooning project in which DSHS conducted interviews among Cocooning experts and advocates to identify best practices regarding pertussis Cocooning in Texas and across the nation. The result of this project is this handbook, a promotional poster, a brochure, and a website with information for both providers and the public. The website can be found at www.PreventPertussis.com.





Cocooning Strategies for All Physicians

The following headings in this section outline how to carry out a new Cocooning project. This section is also invaluable for nurses, medical assistants (MAs), and office administrators. The next section highlights Cocooning strategies specific to OB/GYNs, pediatricians, and hospital-based doctors.

Get a Champion and Leadership Buy-In

Successful Cocooning projects require a strong team of physicians, nursing staff, medical assistants, interpreters, and administrative staff. Education and training are also vital to ensuring team success. The best projects identify Cocooning champions who promote the cause by getting buy-in from leadership, encouraging staff education/training about pertussis, and supporting the adoption of standing order protocols around the Tdap vaccine.

Establish Standing Orders

Standing orders facilitate a health-care professional's ability to screen, educate, and vaccinate. A good standing order incorporates clinical eligibility. See the following link for an example: www.immunize.org/catg.d/p3078.pdf. Note that MAs are not legally recognized by the State of Texas as providers and therefore can only give the vaccine to patients if the physician in charge takes on the responsibility of training and authorizing the MAs to vaccinate.



Monitor Cost of Carrying and Administering Vaccine

Cocooning projects aim to provide the vaccine at an affordable cost within a rate that is reimbursed to include a profit margin. Below are suggested guidelines to minimize cost and maximize reimbursement. Most payers are willing to reimburse Tdap for a well woman visit (in a family practice or OB/GYN); however, hospital birthing packages typically do not include Tdap in the services offered. Private practices can minimize vaccine costs by 25–30% via purchasing groups.

Other methods to lower costs include:

- ① Calculating and assuring payment for vaccination costs that separate vaccine acquisition and vaccine product-related costs and is calculated to be 17–28% above the cost of the vaccine. A formula for calculating Relative Value Units for Immunization Administration can be found here: www.aap.org/immunization/pediatricians/pdf/TheBusinessCase.pdf.²
- ② Including the \$0.75 excise tax per product in cost calculations.
- ③ Negotiating and/or amending contracts with third-party payers to include language that guarantees payment for vaccine purchase, storage, handling, and administration.
- ④ Enrolling in the Texas Vaccines for Children program.

Create Patient Demand

Great Cocooning projects create patient demand for the vaccine. For example, many practices put posters and flyers in the exam rooms, waiting rooms, and delivery/postpartum areas to educate patients and recommend the Tdap vaccine. Another way to bring in patients for the vaccine is to prompt them with reminders. This is an excellent way to get sometimes evasive teens in for well checks. It is important to consider Tdap vaccination for any young person who is sexually active and senior citizens who have not yet received a dose of Tdap.

Train Staff

Physicians who were interviewed for this project suggested that doctors, nurses, and other health-care workers ought to:

- ① Take the CME-accredited physician education course on Cocooning available online through the Texas Medical Association (TMA).³
- ② Ensure that all staff is trained to promote and answer questions about Tdap/Cocooning.
- ③ Ensure that all staff is vaccinated with Tdap.
- ④ Establish a clinic/hospital policy requiring vaccination of all health-care providers who have any direct contact with infants less than one year of age.



Order Vaccine

Numerous factors go into buying, transporting, storing, and administering vaccine. Although the purpose of this handbook is not to describe this process in detail, it is vital to mention that optimal vaccine storage and use can be ensured by:

- Switching to Tdap if still carrying Td.
- Maintaining the cold chain by using a commercial-grade refrigeration unit to protect expensive vaccine inventories.
- Maintaining Texas Vaccine for Children vaccine in a separate unit from private vaccine, with separate tracking and accountability systems for each.
- Maintaining insurance coverage against catastrophic loss.
- Training and covering staff time to monitor the inventory and the temperature at which it is stored.
- Accounting for the cost of using an alarm company for off-hours to monitor the cold chain.

Screen and Vaccinate Patients

Screening tools are necessary to assess contraindications and patient eligibility for Tdap and save steps and time in the exam room. For every patient who enters the practice, staff should ask patients if they or any close friends or relatives are planning a pregnancy, are pregnant, or have an infant under one year old; if so, health-care providers should screen the patient for Tdap status by using a reliable screening tool. For example, staff could ask the patient, “Have you ever had the new tetanus shot that also includes the pertussis (whooping cough) vaccine? It is also called Tdap, Adacel,[®] or Boostrix.[®]” Cocooning champions and other office staff can also recommend vaccination for a mother’s close contacts by asking her,

“Who do you anticipate will be helping you most with your new baby?” See an example of a good Adult Immunization Screening Questionnaire at www.immunize.org/catg.d/p4065.pdf.

In addition, it is helpful to provide patients with the Tdap Vaccine Information Statement (www.immunize.org/vis/td_tdap.pdf) and introduce a physician/nurse reminder system so that staff remember to vaccinate adults. Adult immunization status can be monitored via ImmTrac (see www.ImmTrac.com).

Cocooning projects are well served by providing specific information when making referrals, promoting Cocooning through parenting or birthing classes, and by encouraging patients to recruit family members and close contacts to get vaccinated.

Screen and Vaccinate Close Contacts

Cocooning projects capitalize on the unique access to family members who accompany expectant mothers to clinic visits and hospitals. Cocooning projects provide a mechanism to enlist the close contacts for vaccination, such as requiring a record of the infant’s anticipated close contacts. Ideally, the clinic or hospital would provide vaccination services to more than three close contacts prior to the birth.

Where possible, Cocooning projects also dedicate a visible vaccination station for family members to receive Tdap. A good time to do this would be during flu season, when close contacts may be coming in for this vaccination.



No single provider is responsible for vaccinating a child's close contacts because these contacts are not patients of the provider. However, there are strategies to encourage close contacts to consider vaccination. For example, physicians might:

- Use a short-form patient registration for non-patients.
- Establish a self-pay system for non-patient vaccinations to avoid complicated billing processes.
- File non-patient records within the chart of the primary patient (mother or infant).
- Provide extended clinic hours one day a week for vaccination of working families.
- Provide stop-in vaccination clinics one day a week.
- Collaborate with the local health department to provide on-site, hospital-based vaccination clinics (for hospitals).
- Review insurance policy to assess legal constraints on vaccinating non-patient family members and caretakers.

Cocooning Strategies — Specific to OB/GYNs, Pediatricians, and Hospitals

OB/GYNs who are involved in Cocooning projects stated that it is essential to vaccinate every patient either before pregnancy or postpartum, preferably before hospital discharge. It is also important to note that all vaccines should be given in accordance with CDC recommendations. OB/GYNs also noted that if the patient is in a high-risk situation, the doctor should vaccinate prenatally during the third trimester (i.e., during a pertussis outbreak).

Pediatricians stated that questions regarding the Tdap vaccination status of household contacts should be included in checklists reviewed at well-child checkups and that all family members should be screened for their Tdap vaccination status at the infant's first well check. Pediatricians also said that pertussis and the importance of Tdap vaccination for close contacts would ideally be discussed at any prenatal appointments.



Cocooning champions in hospitals across the country agreed on several recommendations for Cocooning projects in hospitals. Hospital Cocooning champions should:

- ① Provide education to physicians, nurses, and other staff (i.e., hospital interpreters, hospital pharmacists, nursing administration, and nurses who work in the neonatal ICU and in the prenatal, labor and delivery, and postnatal units) about Cocooning through small group in-services and grand rounds including both day and night sessions. A special educational session and presentation to the OB/GYNs should also be conducted.
- ② Put standing orders in place to give Tdap to postpartum mothers and a minimum of three close contacts so that nurses do not have to get standing orders from individual doctors.
- ③ Work with the hospital pharmacy to stock Tdap and to reduce lag times in getting doses from pharmacy to patient.
- ④ Provide literature for the family in the labor and delivery waiting room to encourage vaccination of close contacts at a 24-hour in-hospital vaccination station.
- ⑤ Vaccinate mother postpartum, preferably before hospital discharge.
- ⑥ Work with the hospital ERs to replace the Td vaccine with a Tdap vaccine to be used for wound treatment.

Appendix

Tdap Vaccine

In mid-2005 a new vaccine against pertussis for adolescents and adults was licensed by the Food and Drug Administration (FDA). In the fall of the same year the Advisory Committee on Immunization Practices (ACIP) recommended the use of the Tdap (Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis) vaccine for persons 11–64 years of age to provide protection against tetanus, diphtheria, and pertussis.

Two vaccines are currently available. Boostrix® (GlaxoSmithKline) is approved for persons 10 through 64 years of age, and Adacel® (sanofi pasteur) is approved for persons 11 through 64 years of age. Both vaccines are supplied in single-dose vials or syringes. Both are approved for one dose only. The 2011 ACIP adult immunization schedule recommends substituting a one-time dose of Tdap for a Td booster and then a Td booster every ten years. See ACIP immunization schedule for adults here: www.cdc.gov/vaccines/recs/schedules/downloads/adult/adult-schedule-11x17.pdf

Population-specific vaccine recommendations for Tdap can be found in the most recent 12th edition, April 2011 of *The Epidemiology and Prevention of Vaccine-Preventable Diseases*, The Pink Book.⁴ See here: www.cdc.gov/vaccines/pubs/pinkbook/downloads/pert.pdf

On October 27, 2010, the ACIP addressed gaps in the recommendations. The revisions included the following:

- Tdap vaccine is approved regardless of interval since the last tetanus or diphtheria-toxoid-containing vaccine.
- Tdap is approved in certain adults 65 years and older.
- Tdap is approved in under-vaccinated children 7 through 10 years of age.⁵

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