The EpiLink

A public health news bulletin from the Texas Department of State Health Services
Infectious Disease Control Unit

Volume 64/Number 1/January 29, 2007 PREMIERE ISSUE

New Format and Name, Same Purpose:

The *EpiLink* provides information and resources for healthcare and public health professionals in Texas

Dear readers,

The legacy Texas Department of Health published the *Disease Prevention News* (*DPN*) under various names for over fifty years. *DPN* provided health care professionals throughout the state of Texas with a wide variety of timely public health information, including Texas morbidity and mortality data.

We are pleased to inform our readers that *DPN* will resume publication under its new name, the *EpiLink*. The monthly online publication will continue to provide investigative reports, case reports, surveillance summaries, and other articles about public health issues. As the name implies, the publication's new format will also allow reader to link to a variety of local, state, and national public health resources. From The *EpiLink* main page, readers can go directly to the articles of the current issue or use the sidebar to link to other features, including monthly data reports and information about programs within the Infectious Disease Control Unit and DSHS.

The *EpiLink* welcomes your input to make this publication as practical and informative as possible for our readers. Person or entities wishing to submit articles can go to the "Information for Authors" link.

We welcome you to the premiere issue of The *EpiLink* and invite you to learn more about the history of this publication in one of our new regular features, "The History of Public Health in Texas. "

Sincerely,

The *EpiLink* editorial staff

ACIP Issues New Guidelines on Immunization

General Recommendations on Immunization Issued by the Advisory Committee for Immunization Practices

MMWR December 1, 2006 / 55(RR15);1-48. *This report is a revision of General Recommendations on Immunization and updates the 2002 statement by the Advisory Committee on Immunization Practices (ACIP) (CDC. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices and the American Academy of Family Physicians. MMWR 2002;51[No. RR-2]). This report is intended to serve as a general reference on vaccines and immunization. The principal changes include 1) expansion of the discussion of vaccination spacing and timing; 2) an increased emphasis on the importance of injection technique/age/body mass in determining appropriate needle length; 3) expansion of the discussion of storage and handling of vaccines, with a table defining the appropriate storage temperature range for inactivated and live vaccines; 4) expansion of the discussion of altered immunocompetence, including new recommendations about use of live-attenuated vaccines with therapeutic monoclonal antibodies; and 5) minor changes to the recommendations about vaccination during pregnancy and vaccination of internationally adopted children, in accordance with new ACIP vaccine-specific recommendations for use of inactivated influenza vaccine and hepatitis B vaccine. The most recent ACIP recommendations for each specific vaccine should be consulted for comprehensive discussion. This report, ACIP recommendations for each vaccine, and other information about vaccination can be accessed at CDC's National Center for Immunization and Respiratory Diseases (proposed) (formerly known as the National Immunization Program) website at http// :www.cdc.gov/nip.*

This report provides technical guidance about common vaccination concerns for clinicians and other health-care providers who administer vaccines to infants, children, adolescents, and adults. Vaccine recommendations are based on characteristics of the immunobiologic product, scientific knowledge about the principles of active and passive immunization, epidemiology and burden of diseases (i.e., morbidity, mortality, costs of treatment, and loss of productivity), vaccine safety considerations, cost analysis of preventive measures, published and unpublished studies, and expert opinion of public health officials and specialists in clinical and preventive medicine. Benefits and risks are associated with using all immunobiologics (i.e., an antigenic substance or antibody-containing preparation). No vaccine is completely safe or effective. Benefits of vaccination include partial or complete protection against infection for the vaccinated person and overall benefits to society as a whole. Benefits include protection from symptomatic illness, improved quality of life and productivity, and prevention of death. Societal benefits include creation and maintenance of herd immunity against communicable diseases, prevention of disease outbreaks, and reduction in health-care—related costs. Vaccination risks range from common, minor, and local adverse effects to rare, severe, and life-threatening conditions.

Therefore, recommendations for vaccination practices balance scientific evidence of benefits for each person and to society against the potential costs and risks for vaccination for the individual and programs.

Standards for child and adolescent vaccination practices and standards for adult vaccination practiceshave been published to assist with implementing vaccination programs and maximizing their benefits. Any person or institution that provides vaccination services should adopt these standards to improve vaccination delivery and protect infants, children, adolescents, and adults from vaccine-preventable diseases.

To maximize the benefits of vaccination, this report provides general information about immunobiologics and provides practical guidelines about vaccine administration and technique. To minimize risk from vaccine administration, this report delineates situations that warrant precautions or contraindications to using a vaccine. These recommendations are intended for use in the United States because vaccine availability and use and epidemiologic circumstances differ in other countries. Individual circumstances might warrant deviations from these recommendations.

The relative balance of benefits and risks can change as diseases are controlled or eradicated. For example, because wild poliovirus transmission has been interrupted in the United States since 1979, the only indigenous cases of paralytic poliomyelitis reported since that time have been caused by live oral poliovirus vaccine (OPV). In 1999, to eliminate the risk for vaccine-associated paralytic poliomyelitis (VAPP), exclusive use of inactivated poliovirus vaccine (IPV) was recommended for routine vaccination in the United States. However, because of superior ability to induce intestinal immunity and to prevent spread among close contacts, OPV remains the vaccine of choice for areas where wild poliovirus is still present. Until worldwide eradication of poliovirus is accomplished, continued vaccination of the U.S. population against poliovirus will be necessary. For the complete report, go to: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5515a1.htm?s_cid=rr5515a1_e.

2006-2007 Recommended Adult Immunization Schedule

Recommended Adult Immunization Schedule
United States, October 2006–September 2007

Recommended adult immunization schedule, by vaccine and age group

Vaccine ▼ / Age group (yrs) ▶	19–49 years	50–64 years	≥65 years
Tetanus, diphtheria, pertussis (Td/Tdap)[1*]	1-dose Td booster every 10 yrs; Substitute 1 dose of Tdap for Td		
Human papillomavirus (HPV)[2*]	3 doses (females)		
Measles, mumps, rubella (MMR)[3*]	1 or 2 doses	1 dose	
Varicella[4*]	2 doses (0, 4–8 wks)	2 doses (0, 4–8 wks)	
Influenza[5*]	1 dose annually	1 dose annually	
Pneumococcal (polysaccharide)[6,7]	1–2 doses		1 dose
Hepatitis A[8*]	2 doses (0, 6–12 mos, or 0, 6–18 mos)		
Hepatitis B[9*]	3 doses (0, 1–2, 4–6 mos)		
Meningococcal[10]	1 or more doses		

Recommended adult immunization schedule, by vaccine and medical and other indications

Vaccine ▼ / Indication ▶	Pregnancy	Congenital immunodeficiency; leukemia;[11] lymphoma; generalized malignancy; cerebrospinal fluid leaks; therapy with alkylating agents, antimetabolites, radiation, or high-dose, long-term corticosteroids	Diabetes, heart disease, chronic pulmonary disease, chronic alcoholism	Asplenia[11] (including elective splenectomy and terminal complement component deficiencies)	Chronic liver disease, recipients of clotting factor concentrates	Kidney failure, end-stage renal disease, recipients of hemodialysis	Human immunodeficiency virus (HIV) infection[3,11]	Health-care workers
Tetanus, diphtheria, pertussis (Td/Tdap)[1*]	1-dose Td booster every 10 yrs; Substitute 1 dose of Tdap for Td							
Human papillomavirus (HPV)[2*]		3 doses for women through age 26 years (0, 2, 6 mos)						
Measles, mumps, rubella (MMR)[3*]		1or 2 doses						
Varicella[4*]		2 doses (0, 4–8 wks)						2 doses
Influenza[5*]	1 dose annually			1 dose annually	1 dose annually			
Pneumococcal (polysaccharide)[6,7]	1–2 doses	1–2 doses						1–2 doses
Hepatitis A[8*]	2 doses (0, 6–12 mos, or 0, 6–18 mos)				2 doses (0, 6–12 mos, or 0, 6–18 mos)			
Hepatitis B[9*]	3 doses (0, 1–2, 4–6 mos)				3 doses (0, 1–2, 4–6 mos)			
Meningococcal[10]	1 dose			1 dose	1 dose			

*Covered by the Vaccine Injury Compensation Program

These recommendations must be read along with the footnotes, which can be found on the next 2 pages of this schedule.

For all persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination or have no evidence of prior infection)

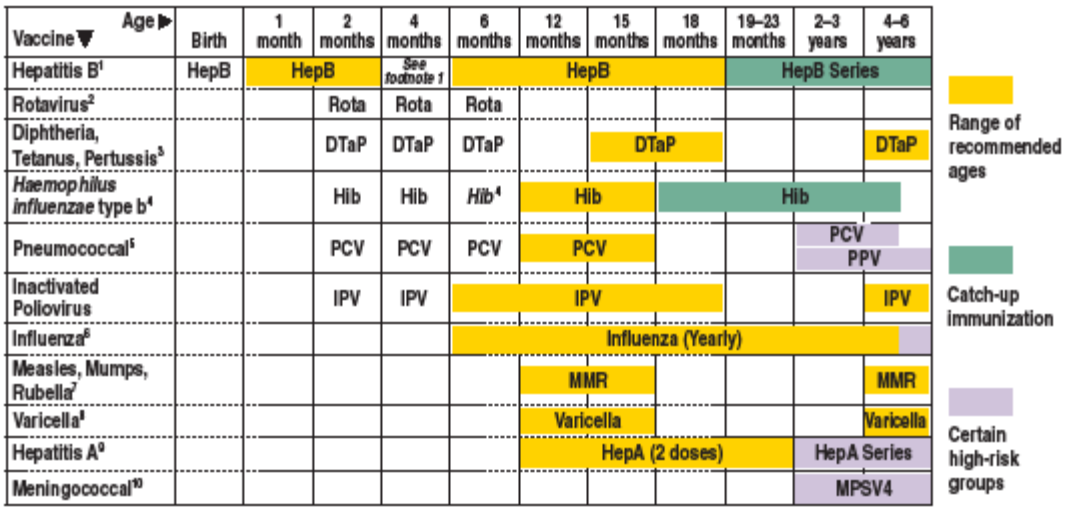
Recommended if some other risk factor is present (e.g., on the basis of medical, occupational, lifestyle, or other indications)

Contraindicated

Centers for Disease Control and Prevention website includes printable schedules, a summary of changes in the schedule since the last version, and a listing of the vaccines available for adults http://www.cdc.gov/nip/recs/adult-schedule.htm

2007 Recommended Immunization Schedule for Persons Aged 0-6 Years

FIGURE 1. Recommended immunization schedule for persons aged 0–6 years — United States, 2007



This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2006, for children aged 0–6 years. Additional information is available at http://www.cdc.gov/nip/recs/child-schedule.htm. Any dose not administered at the recommended age should be administered at any subsequent visit, when indicated and feasible. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the respective Advisory Committee on Immunization Practices statement for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at http://www.vaers.hhs.gov or by telephone, 800-822-7967.

1. Hepatitis B vaccine (HepB). *(Minimum age: birth)*
At birth:
- Administer monovalent HepB to all newborns before hospital discharge.
- If mother is hepatitis surface antigen (HBsAg)-positive, administer HepB and 0.5 mL of hepatitis B immune globulin (HBIG) within 12 hours of birth.
- If mother's HBsAg status is unknown, administer HepB within 12 hours of birth. Determine the HBsAg status as soon as possible and if HBsAg-positive, administer HBIG (no later than age 1 week).
- If mother is HBsAg-negative, the birth dose can only be delayed with physician's order and mothers' negative HBsAg laboratory report documented in the infant's medical record.

After the birth dose:
- The HepB series should be completed with either monovalent HepB or a combination vaccine containing HepB. The second dose should be administered at age 1–2 months. The final dose should be administered at age ≥24 weeks. Infants born to HBsAg-positive mothers should be tested for HBsAg and antibody to HBsAg after completion of ≥3 doses of a licensed HepB series, at age 9–18 months (generally at the next well-child visit).

4-month dose:
- It is permissible to administer 4 doses of HepB when combination vaccines are administered after the birth dose. If monovalent HepB is used for doses after the birth dose, a dose at age 4 months is not needed.

2. Rotavirus vaccine (Rota). *(Minimum age: 6 weeks)*
- Administer the first dose at age 6–12 weeks. Do not start the series later than age 12 weeks.
- Administer the final dose in the series by age 32 weeks. Do not administer a dose later than age 32 weeks.
- Data on safety and efficacy outside of these age ranges are insufficient.

3. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP). *(Minimum age: 6 weeks)*
- The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose.
- Administer the final dose in the series at age 4–6 years.

4. *Haemophilus influenzae* type b conjugate vaccine (Hib). *(Minimum age: 6 weeks)*
- If PRP-OMP (PedvaxHIB® or ComVax® [Merck]) is administered at ages 2 and 4 months, a dose at age 6 months is not required.
- TriHIBit® (DTaP/Hib) combination products should not be used for primary immunization but can be used as boosters following any Hib vaccine in children aged ≥12 months.

5. Pneumococcal vaccine. *(Minimum age: 6 weeks for pneumococcal conjugate vaccine [PCV]; 2 years for pneumococcal polysaccharide vaccine [PPV])*
- Administer PCV at ages 24–59 months in certain high-risk groups. Administer PPV to children aged ≥2 years in certain high-risk groups. See *MMWR* 2000;49(No. RR-9):1–35.

6. Influenza vaccine. *(Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 5 years for live, attenuated influenza vaccine [LAIV])*
- All children aged 6–59 months and close contacts of all children aged 0–59 months are recommended to receive influenza vaccine.
- Influenza vaccine is recommended annually for children aged ≥59 months with certain risk factors, health-care workers, and other persons (including household members) in close contact with persons in groups at high risk. See *MMWR* 2006;55(No. RR-10):1–41.
- For healthy persons aged 5–49 years, LAIV may be used as an alternative to TIV.
- Children receiving TIV should receive 0.25 mL if aged 6–35 months or 0.5 mL if aged ≥3 years.
- Children aged <9 years who are receiving influenza vaccine for the first time should receive 2 doses (separated by ≥4 weeks for TIV and ≥6 weeks for LAIV).

7. Measles, mumps, and rubella vaccine (MMR). *(Minimum age: 12 months)*
- Administer the second dose of MMR at age 4–6 years. MMR may be administered before age 4–6 years, provided ≥4 weeks have elapsed since the first dose and both doses are administered at age ≥12 months.

8. Varicella vaccine. *(Minimum age: 12 months)*
- Administer the second dose of varicella vaccine at age 4–6 years. Varicella vaccine may be administered before age 4–6 years, provided that ≥3 months have elapsed since the first dose and both doses are administered at age ≥12 months. If second dose was administered ≥28 days following the first dose, the second dose does not need to be repeated.

9. Hepatitis A vaccine (HepA). *(Minimum age: 12 months)*
- HepA is recommended for all children aged 1 year (i.e., aged 12–23 months). The 2 doses in the series should be administered at least 6 months apart.
- Children not fully vaccinated by age 2 years can be vaccinated at subsequent visits.
- HepA is recommended for certain other groups of children, including in areas where vaccination programs target older children. See *MMWR* 2006;55(No. RR-7):1–23.

10. Meningococcal polysaccharide vaccine (MPSV4). *(Minimum age: 2 years)*
- Administer MPSV4 to children aged 2–10 years with terminal complement deficiencies or anatomic or functional asplenia and certain other high-risk groups. See *MMWR* 2005;54(No. RR-7):1–21.

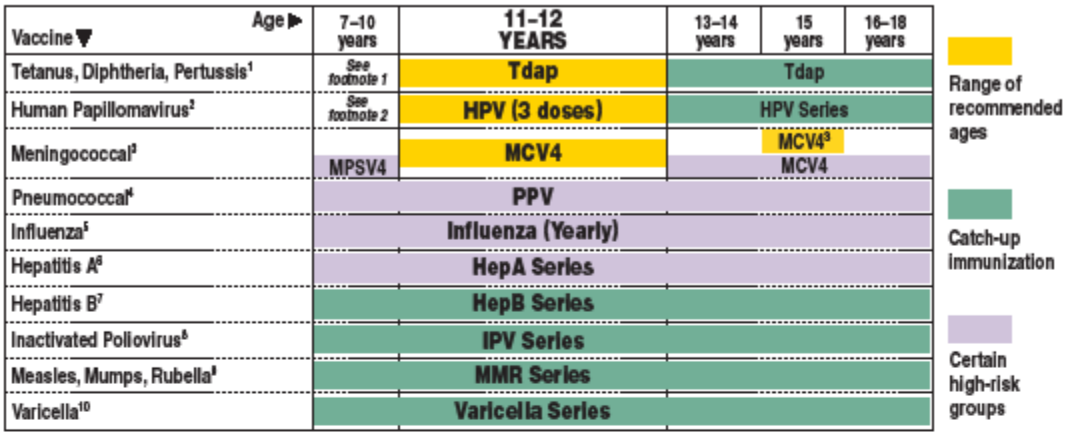
The Recommended Immunization Schedules for Persons Aged 0–18 Years are approved by the Advisory Committee on Immunization Practices (http://www.cdc.gov/nip/acip), the American Academy of Pediatrics (http://www.aap.org), and the American Academy of Family Physicians (http://www.aafp.org).

Centers for Disease Control and Prevention website includes printable schedules and a summary of changes in the schedule since the last version: http://www.cdc.gov/nip/recs/child-schedule.htm#Printable

2007 Recommended Immunization Schedule for Persons Aged 7-18 Years

Vol. 55 MMWR QuickGuide Q-3

FIGURE 2. Recommended immunization schedule for persons aged 7–18 years — United States, 2007



This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2006, for children aged 7–18 years. Additional information is available at http://www.cdc.gov/nip/recs/child-schedule.htm. Any dose not administered at the recommended age should be administered at any subsequent visit, when indicated and feasible. Additional vaccines may be licensed and recommended during the year. Licensed combination vaccines may be used whenever any components of the combination are indicated and other components of the vaccine are not contraindicated and if approved by the Food and Drug Administration for that dose of the series. Providers should consult the respective Advisory Committee on Immunization Practices statement for detailed recommendations. Clinically significant adverse events that follow immunization should be reported to the Vaccine Adverse Event Reporting System (VAERS). Guidance about how to obtain and complete a VAERS form is available at http://www.vaers.hhs.gov or by telephone, 800-822-7967.

1. **Tetanus and diphtheria toxoids and acellular pertussis vaccine (Tdap).** *(Minimum age: 10 years for BOOSTRIX® and 11 years for ADACEL™)*
   - Administer at age 11–12 years for those who have completed the recommended childhood DTP/DTaP vaccination series and have not received a tetanus and diphtheria toxoids vaccine (Td) booster dose.
   - Adolescents aged 13–18 years who missed the 11–12 year Td/Tdap booster dose should also receive a single dose of Tdap if they have completed the recommended childhood DTP/DTaP vaccination series.
2. **Human papillomavirus vaccine (HPV).** *(Minimum age: 9 years)*
   - Administer the first dose of the HPV vaccine series to females at age 11–12 years.
   - Administer the second dose 2 months after the first dose and the third dose 6 months after the first dose.
   - Administer the HPV vaccine series to females at age 13–18 years if not previously vaccinated.
3. **Meningococcal vaccine.** *(Minimum age: 11 years for meningococcal conjugate vaccine [MCV4]; 2 years for meningococcal polysaccharide vaccine [MPSV4])*
   - Administer MCV4 at age 11–12 years and to previously unvaccinated adolescents at high school entry (at approximately age 15 years).
   - Administer MCV4 to previously unvaccinated college freshmen living in dormitories; MPSV4 is an acceptable alternative.
   - Vaccination against invasive meningococcal disease is recommended for children and adolescents aged ≥2 years with terminal complement deficiencies or anatomic or functional asplenia and certain other high-risk groups. See *MMWR* 2005;54(No. RR-7):1–21. Use MPSV4 for children aged 2–10 years and MCV4 or MPSV4 for older children.
4. **Pneumococcal polysaccharide vaccine (PPV).** *(Minimum age: 2 years)*
   - Administer for certain high-risk groups. See *MMWR* 1997;46(No. RR-8):1–24, and *MMWR* 2000;49(No. RR-9):1–35.
5. **Influenza vaccine.** *(Minimum age: 6 months for trivalent inactivated influenza vaccine [TIV]; 5 years for live, attenuated influenza vaccine [LAIV])*
   - Influenza vaccine is recommended annually for persons with certain risk factors, health-care workers, and other persons (including household members) in close contact with persons in groups at high risk. See *MMWR* 2006;55 (No. RR-10):1–41.
   - For healthy persons aged 5–49 years, LAIV may be used as an alternative to TIV.
   - Children aged <9 years who are receiving influenza vaccine for the first time should receive 2 doses (separated by ≥4 weeks for TIV and ≥6 weeks for LAIV).
6. **Hepatitis A vaccine (HepA).** *(Minimum age: 12 months)*
   - The 2 doses in the series should be administered at least 6 months apart.
   - HepA is recommended for certain other groups of children, including in areas where vaccination programs target older children. See *MMWR* 2006;55 (No. RR-7):1–23.
7. **Hepatitis B vaccine (HepB).** *(Minimum age: birth)*
   - Administer the 3-dose series to those who were not previously vaccinated.
   - A 2-dose series of Recombivax HB® is licensed for children aged 11–15 years.
8. **Inactivated poliovirus vaccine (IPV).** *(Minimum age: 6 weeks)*
   - For children who received an all-IPV or all-oral poliovirus (OPV) series, a fourth dose is not necessary if the third dose was administered at age ≥4 years.
   - If both OPV and IPV were administered as part of a series, a total of 4 doses should be administered, regardless of the child's current age.
9. **Measles, mumps, and rubella vaccine (MMR).** *(Minimum age: 12 months)*
   - If not previously vaccinated, administer 2 doses of MMR during any visit, with ≥4 weeks between the doses.
10. **Varicella vaccine.** *(Minimum age: 12 months)*
    - Administer 2 doses of varicella vaccine to persons without evidence of immunity.
    - Administer 2 doses of varicella vaccine to persons aged ≤13 years at least 3 months apart. Do not repeat the second dose, if administered ≥28 days after the first dose.
    - Administer 2 doses of varicella vaccine to persons aged ≥13 years at least 4 weeks apart.

The Recommended Immunization Schedules for Persons Aged 0–18 Years are approved by the Advisory Committee on Immunization Practices (http://www.cdc.gov/nip/acip), the American Academy of Pediatrics (http://www.aap.org), and the American Academy of Family Physicians (http://www.aafp.org).

Vaccine-Preventable Diseases in Texas

Reported Morbidity and Mortality Cases of Vaccine-Preventable Diseases in Texas, 2005-2006

Disease	2005	2006 [4]
Congenital Rubella Syndrome	0	0
Hepatitis A	461	292
Hepatitis B	742	706
Hepatitis B, Perinatal[3]	8	0
Hib[1]	8	12
Measles	3	0
Mumps	25	56
Pertussis	2224 (9)	794 (1)
Rubella	0	0
Tetanus	0	0
Varicella (Chickenpox)[2]	8336 (0)	10,297 (0)

( ) Deaths

[1]Beginning in 1997, invasive *Haemophilus influenzae* type b infections were counted regardless of age. In 1996, all invasive infections in children 5 years of age and younger, due to any type of Haemophilus influenzae were counted. Prior to 1996, all invasive infections due to any type of *Haemophilus influenzae* were counted regardless of age.

[2] Vaccine to prevent varicella (chicken pox) was licensed in 1995.

[3]Beginning in 2001, perinatal hepatitis B was counted in children younger than 2 years of age.

[4]Provisional as of January 5, 2007.

Pertussis in Texas

Nature of Problem

Pertussis, or whooping cough, is an acute, infectious, toxin-mediated disease caused by the bacterium *Bordetella pertussis*. The bacterium attaches to ciliated epithelial cells of the respiratory tract and produces toxins that cause inflammation of tissues and a subsequent cough, which proceeds from moderate to severe spasms with vomiting often following. These attacks may last for several weeks and convalescence may last for months.

Figure 1

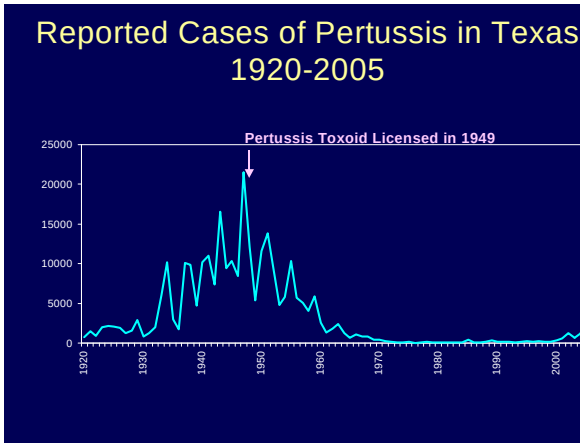
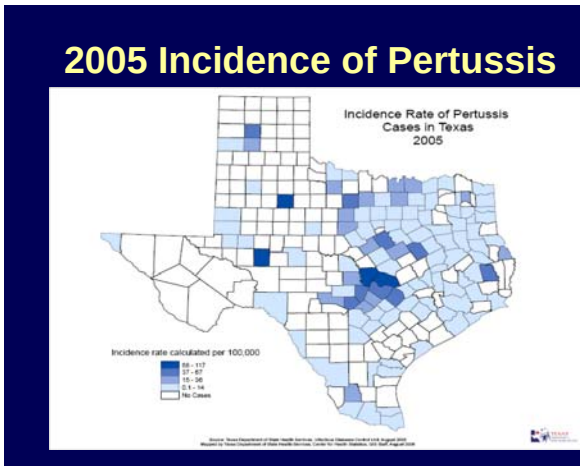


Figure 2



Prior to the introduction of the vaccine, up to 20,000 cases were reported annually in Texas, with an average of 9,000 cases reported annually between 1940 through 1959 (range: 4,020-21,558). After the introduction of the vaccine, the number of cases steadily dropped. From 1980 through 1999 the average number of cases reported dropped to 300 (range: 60-379) (Figure 1).

Though pertussis has been a vaccine-preventable disease since the 1949, it resurged in 2000 as a public health issue affecting many in Texas. Although this increase may be due in part to increased awareness and reporting, corresponding increases in the number of hospitalizations and deaths indicates that pertussis is once again a major public health problem. In 2005, over 2,000 Texas cases of pertussis were reported to the Centers for Disease Control and Prevention (CDC), including nine deaths (8 among infants). Cases of pertussis were spread throughout the state as depicted in Figure 2.

The majority of hospitalizations occur in infants less than 6 months of age. Twenty-six infant pertussis deaths have been recorded since 2000 in 21 different counties. Deaths occurred in both urban and rural counties. In some of the rural counties no cases of pertussis had been reported in 2 or more years prior to the death.

As demonstrated in the graph below, pertussis occurs in a cyclical pattern of every 3 to 4 years.

Review of the data by age group reveals that 27% of the 2005 pertussis cases occurred among infants younger than 1 year of age, and another 27% among

adults. Of those younger than 1 year of age, 21% of the cases occurred among infants 1 to 6 months of age. Adolescents (age 10 to 19 years of age) comprised 21% of the pertussis case.

Clinical Symptoms and Considerations

Pertussis should be considered when evaluating any patient with an acute cough illness characterized by one or more of the following symptoms: prolonged cough, cough with paroxysms, whoop, or post-tussive gagging/vomiting. Infants may present with apnea and/or cyanosis. An increased white blood cell count with lymphocytosis is a characteristic but nonspecific finding. Adults, teens, and vaccinated children often have mild symptoms that mimic bronchitis or asthma.

Pertussis immunity is not absolute (100%) and wanes over time (approximately 5 to 10 years after completion of childhood vaccinations). Therefore, being vaccinated may not prevent infection. Older children and adults with mild illness can transmit the infection and are often the source of illness in infants. Therefore, early recognition and treatment of pertussis in contacts of young infants and prophylaxis of their household members is especially important.

Laboratory tests should be used in conjunction with clinical symptoms for diagnosis and can be used to confirm but not rule out pertussis. The organism is more likely to be found early in the coughing phase. After 3 to 4 weeks of cough the organism may have cleared the nasopharyngeal area, although unvaccinated infants may remain culture-positive for more than six weeks. The gold standard for pertussis laboratory testing is isolation of *B. pertussis* by culture. However, the organism is difficult to isolate by culture. The preferred testing is polymerase chain reaction (PCR) testing of nasopharyngeal swabs. The PCR is rapid, sensitive, and specific. Serologic testing is not yet standardized. Because of the lack of association between antibody levels and immunity to pertussis, results of serologic testing are difficult to interpret and are not used to confirm a pertussis diagnosis. Direct fluorescent antibody (DFA) testing of nasopharyngeal specimens has low sensitivity and variable specificity. DFA should no longer be used for laboratory confirmation of pertussis.

Treatment

Antibiotic treatment of suspects and contacts is recommended. For specifics on treatment please refer to the CDC's treatment guidelines, which can be found on-line in pdf format or html format.

Treatment more than 3 weeks after cough onset has limited benefit to the patient or their contacts except for high-risk patients. Symptomatic women late in pregnancy and exposed infants should be treated within 6 weeks of onset or exposure.

Symptomatic children and/or adults may return to school or work only after completing 5 days of treatment.

If pertussis is clinically suspected:

- Report immediately to your local health authority. This will initiate an epidemiological investigation and assure that appropriate control measures are initiated in all settings.
- Begin chemoprophylaxis of patient and all household and close

Quick*Links*

IDCU Pertussis Information

IDCU Reporting Information

DSHS Laboratory Services Section

DSHS Immunization Branch

***Centers for Disease Control and Prevention* Guidelines for the Control of Pertussis Outbreaks**

contacts *regardless of age or vaccination status*.

- Submit specimens for laboratory confirmation. The preferred laboratory test for confirmation of pertussis is polymerase chain reaction (PCR) testing.
- Review immunization records for children younger than 7 years of age. Children in this age group who have not completed the DTaP 4-dose primary series should complete the series with minimal intervals. Those who have completed the primary series should be given a booster dose if their last dose of DTaP was given more than 3 years ago.
- Consider vaccinating adolescents and adults with tetanus-diphtheria-acellular pertussis (Tdap) if they are due for a Td booster.

For more information on Tdap, please please refer to the following CDC recommendations:

Adolescents

- http://www.cdc.gov/mmwr/PDF/rr/rr5503.pdf (pdf format)
- http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5503a1.htm (html format)

Adults

- http://www.cdc.gov/mmwr/PDF/rr/rr5517.pdf (pdf format)
- http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a1.htm (html format)

Healthcare Personnel

- http://www.cdc.gov/mmwr/PDF/rr/rr5517.pdf (pdf format)
- http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5517a1.htm (html format)

Prepared by Rita Espinoza, MPH, Department of State Health Services Infectious Disease Control Unit.

Public Health in Action:
Raising Vaccine Coverage Levels in Texas

Texas faces challenges in raising vaccine coverage levels among children. Most children under 12 months of age are being vaccinated, but there is a considerable loss of coverage during the second year of life. Nearly 20% of Texas children fail to receive the fourth dose of DTP/DTaP between 15 months and 18 months of age. Children who are uninsured, underinsured, or who lack a medical home are at greatest risk for being under-vaccinated. Additionally, some provider practices and beliefs may result in under-vaccination, or 'missed opportunities' for immunization.

Raising vaccine coverage levels for Texas children has historically been a Department of State Health Services (DSHS) priority. The 2005 National Immunization Survey (NIS) results, published in 2006, showed that 76.8% of Texas children 19-35 months of age were fully vaccinated in the 4:3:1:3:3:1 vaccine series. This represented a 10.8% increase over the previous year. The 4:3:1:3:3:1 series consists of 4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 hepatitis B, and 1 varicella.

A rise in coverage levels for a single year may or may not indicate a positive trend in vaccine coverage levels. DSHS must continue activities to raise coverage levels, and continue to support strategies that are consistent with higher coverage levels including:

- Promoting the use of the statewide registry, ImmTrac
- Promoting the use of reminder and recall systems
- Expanding provider education
- Developing public and private partnerships
- Increasing public and parent education
- Promoting the medical home

To increase the use of the statewide registry, ImmTrac has made significant business improvements and enhancements for ease of use and functionality, including reminder-recall capability. Improvements have been made in the ability to import records electronically from providers, health plans, and local registries. ImmTrac has created a provider working group to provide ongoing recommendations for improving the registry. ImmTrac will continue the following activities to increase provider participation:

- Improve the registry value and benefits to providers
- Increase registry marketing, promotion, and education efforts
- Improve registry customer support
- Implement incentive/recognition program
- Develop technical improvements

The use of reminder-recall systems is promoted by DSHS in several ways. Providers may use ImmTrac to generate reminder-recall lists, parent letters, and mailing labels. Monthly, ImmTrac generates a statewide list of children who are 15 months old that month and sends reminder cards to the parents. Quality assurance site visits to providers enrolled in the Texas Vaccines for Children Program (TVFC) provide additional opportunities for one-on-one assistance to providers and their staff in implementing reminder-recall systems.

Quick*Links*

DSHS Immunization Branch

ImmTrac

Texas Vaccines for Children Program

National Immunization Survey Home Page

National Center for Immunization and Respiratory Diseases (NIP)

DSHS contracts with the Texas Medical Foundation Health Quality Institute (TMF) to conduct quality assurance site visits in private provider offices across Texas. In 2007, over 2,700 provider office site visits are planned. Each visit includes an assessment of the vaccine coverage level for the provider practice, and offers an opportunity for provider education. Topics covered include the use of reminder-recall systems, appropriate assessment of immunization history at each patient visit, and decreasing missed opportunities.

DSHS also maintains communications with provider groups through the Texas Immunization Stakeholder Working Group (TISWG), which includes representatives from the Texas Medical Association, the Texas Pediatric Society, the Texas Nurses Association, the Texas Academy of Family Physicians, other state agencies, the Texas Association of Health Plans, Texas Association of Obstetricians and Gynecologists, the Texas Osteopathic Medical Association, the Texas Association of Local Health Officials, and other stakeholders.

TISWG is an ongoing public-private partnership that has been in effect since 2004 and includes over 140 subject matter experts. TISWG has become a national model and serves as a real-time network to the DSHS Immunization Branch that allows for rapid dissemination of information to communities and partners.

DSHS conducted two media campaigns in 2006 to increase public awareness of the importance of vaccines. In August, a campaign to educate the public about pertussis and the importance of the 4th DTaP at the recommended age, and the need to vaccinate older children and adults with the new Tdap vaccine was launched. In the Fall, a general immunization media campaign was aired and contained the message, *Vaccines Build Your Child's Health*. Additionally, DSHS provides printed literature, a toll free information telephone line, and an immunization website for provider and public information.

The DSHS Immunization Branch promotes the medical home concept: children who have a regular source of healthcare are more likely to be current on immunizations. Moreover, strategies to raise coverage levels are best implemented and most effective in the medical home. DSHS supports the medical home by ensuring Medicaid, Children's Health Insurance Program (CHIP), Federally Qualified Health Centers (FQHCs), and other Texas Vaccines for Children (TVFC) providers have recommended vaccines on hand, and by providing ImmTrac consolidated immunization histories and reminder-recall lists. Immunization Branch staff participate in the Medical Home Workgroup, the Texas Early Childhood Comprehensive Systems Initiative, and Texas Health Steps activities.

The Immunization Branch is responsible for maintaining the immunization service delivery infrastructure in Texas. This includes TVFC and ImmTrac provider recruitment, orientation, and ongoing technical assistance. TVFC is responsible for vaccine distribution to private providers, DSHS regional clinics, contracted local health departments, some WIC clinics and FQHCs. TVFC ensures appropriate handling and storage of vaccines, and oversees the contracted quality assurance site visits to private provider offices.

In September 2006, DSHS provided the opportunity to apply for additional funds

to 50 local health departments to implement innovative strategies within their communities to raise vaccine coverage levels, and to hire staff to find children with incomplete immunization histories in ImmTrac, locate additional immunization records, and ensure that all immunizations given are entered in ImmTrac.

The Healthy People 2010 goals for immunizations are 90% coverage levels for individual antigens. Texas meets the 90% goal for most vaccines, but falls short on the 4th DTaP at 84%, according to the 2005 NIS. DSHS will continue to focus on those strategies that are consistent with higher vaccine coverage levels, and continue efforts to improve the coverage level of the 4th DTaP in 19-35 month old children.

Prepared by Anita Freeman, RN, MSN, Department of State Health Services Immunization Branch

Program Spotlight:

The Methicillin Resistant *Staphylococcus aureus* Program

Background

Staphylococcus aureus, or "staph," is a commonly occurring bacterium carried on the skin and in the nose of healthy persons but capable of causing minor and serious infections. Methicillin-resistant *Staphylococcus aureus* (MRSA) have become resistant to beta-lactam antibiotics. Initially, MRSA infections were associated with healthcare facility exposure. However, MRSA strains now affect previously healthy persons without healthcare facility contact, indicating exposure at the community level. Persons with MRSA skin infections commonly complain of "an infected pimple," "a spider bite," or "a sore."

MRSA Conference and State Plan Development

In 2002, epidemiologists at the Texas Department of Health, now part of the Department of State Health Services, noted a marked increase in inquiries regarding MRSA outbreaks in community settings and began developing informational materials to assist high risk groups in preventing and controlling MRSA. The department formalized its efforts in September 2004 by hosting a conference in which attendees heard presentations by nationally recognized experts on MRSA and then divided into discussion groups to develop a state plan to reduce MRSA mortality and morbidity by (1) decreasing inappropriate use of antimicrobials and increasing compliance with antisepsis; (2) developing and utilizing evidence-based treatment and prevention protocols; (3) mobilizing resources to achieve reduction in infection rates; (4) employing legislative and regulatory measures, as needed; (5) and, designing and implementing evaluating tools for education, control, and prevention measures, as they are developed.

MRSA State Plan Implementation

Correctional Facilities

Administrative and healthcare personnel in correctional facilities have participated actively in the MRSA state plan by providing subject matter expertise in the development of the manual "Prevention, Treatment, and Containment of Methicillin-Resistant *Staphylococcus aureus* Infections in County Jails." Personnel at correctional facilities have also hosted research projects that have included bacterial cultures to explore the role of inanimate objects in transmission and to measure nasal carriage in inmates and medical record abstraction to quantify variables related to antibiotic use, treatment duration, and proportion of infections present at booking compared with jail acquired infections. Students and faculty at Texas State University and The University of Texas at Austin have assisted with data collection.

High School Athletic Departments

Licensed athletic trainers (LATs) in high school athletic departments have also collaborated on many projects. For three years, LATS reported skin infections in high school athletes. To our knowledge, this constitutes the largest community-based MRSA infection surveillance project and has facilitated mobilization of resources, as outlined in the state plan. DSHS has produced educational materials, published results for physicians, and conducted

continuing education presentations at professional conferences and informal school meetings. Future DSHS projects call for development of evidence-based prevention protocols emphasizing the role of environmental sources in infection transmission.

Community

DSHS is currently forming a workgroup from regional and local health departments, homeless shelters, schools, daycare, industry, and outpatient education representatives who will develop guidelines applicable across community settings and identify and/or develop accurate and appropriate educational materials.

Available Resources

Use our web site at www.mrsaTexas.org to access MRSA information, download pamphlets, posters, and flyers. Call us at telephone number 512.458.7676, we will answer your MRSA and *Staphylococcus aureus* questions or refer you to the appropriate regional office. All telephone calls are confidential. To request workshops and speakers for your school or organization, e-mail TEXSAS@dshs.state.tx.us.

Reprints of the April 2006 publication *High school athletic departments as sentinel surveillance sites for community-associated methicillin-resistant staphylococcal infections* are available from: Marilyn Felkner, DrPH, Texas Department of State Health Services, 1100 W. 49th Street, Austin, TX 78756; e-mail: Marilyn.Felkner@dshs.state.tx.us.

The Evolution of the *EpiLink*:

New Name and Format, Same Purpose

The *EpiLink* has, in actuality, been around under various names since 1941. Archival records attribute its origin to a publication called "Communicable Diseases in Texas," published before 1940. The Texas Department of State Health Services (DSHS) Medical and Research Library now houses copies of all publications preceding the *EpiLink* dated from 1941 until 2003, when the publication ceased being printed and went online. *Texas Morbidity This Week* (*TMTW*) was first printed on January 4, 1941 and was issued by the then Texas State Department of Health. *TMTW* had a simple format: the mimeographed, two-sided sheet had a heading, which consisted of three sections: a graph chart, a Texas county map, and a comments section. The graph chart was usually used to depict the trend for a particular disease during a set time frame. The county map would illustrate a variety of information from the number of hospitals with maternity wards in Texas to the counties reporting malaria cases to the amount and types of medicines issued to treat syphilis. The comments section would usually explain the chart or county map, succinctly summarize trends of a particular disease, or contain other editorial comments that would, for example, alert the reader that "the smallpox season is near."

Under the heading, the document would then list the reported cases of disease in Texas by county for that week. The report compared the number of cases reported that week with a 7-year median for the same week. The January 4, 1941 document listed 14 reportable condition in Texas: diphtheria (32 cases for the first week of publication), dysentery (4), influenza (33,283), malaria (18), measles (50), meningitis (2), pneumonia (595), poliomyelitis (1), scarlet fever (46), smallpox (0), tuberculosis (45), tularemia (0), typhoid fever (9), undulant fever (2), and whooping cough (232). In a separate box, the document listed other diseases of interest, such as pellagra (although not a communicable disease, it was a notifiable disease, 18 cases), trachoma (7), ophthalmia neonatorum (1), and rabies (14).

In subsequent issues, the editor would, in the back manuscript, occasionally expound on a particular disease, usually focusing on an endemic area or county. The reports for 1941 did not contain cumulative cases, but, starting in 1942, an annual report containing the number of cases per 100,000 population was included for selected diseases. By 1943, the State Health Officer, George W. Cox, MD, would sporadically include a "Letter to Doctors," typed again in the back of the manuscript, which offered "practical and on time" information, about a particular disease, such as the clinical features and treatment regiments.

This format remained unaltered for almost 30 years. By the end of 1969, a new form was introduced and the format changed slightly to include cumulative case numbers. The list of reportable diseases had change throughout the years: the report for the first week of 1969, for example, included leptospirosis (8 cases), malaria acquired outside the United States (393), mumps (8,342), rheumatic fever (21), and Q fever (3). The new form had an expanded section for comments, which became a somewhat formalized source of information about communicable diseases. Readers could obtain detailed

The importance of reporting disease as a measure of community need, as an index of preventive activity, and in the present situation as a defense measure cannot be over-emphasized. The fact remains, however, that, unless an estimate is developed of the adequacy of morbidity reporting both locally and on the state level, gross misinterpretations may result in determining actual conditions.

-*Texas Morbidity This Week*, No. 1, (Supplement) 1941

information about a single topic. The topics would range from lice control to instructions on how to order yellow fever vaccine to announcements by the federal government to disease trends to immunizations levels. In 1971, now under the Texas Department of Health (TDH), *TMTW* issued its first *Annual Summary of Morbidity Report* and, in 1979, started indexing the article contents.

On the first week of 1982, the *TMTW*, now published by the TDH Bureau of Epidemiology, underwent a significant change in format and structure, more in line with traditional scientific journals. Morbidity and mortality data were now published separately from the narrative. The publication contained one or more articles, which were written in a formalized structure. The types of article also increased: outbreak reports, case reports, disease reviews, surveillance summaries, and reprints from other journals were often included. According to the editorial comments, this change was prompted by the realization that the *TMTW* was becoming an increasingly useful resource for local health departments and healthcare workers. The editors actively sought articles from these readers to "share experiences and information relating to public health interest or concern."

On June 26, 1982, *TMTW* became *Preventable Disease News* (*PDN*). This was partly the result of a change in perspective in the TDH Bureau of Epidemiology, which was to become the Bureau of Disease Control and Epidemiology. The editor wrote: "The activities of the Bureau of Epidemiology are no longer restricted to communicable diseases—our name change reflects this new emphasis." The new goal was to promote good health by preventing diseases and the new emphasis of *PDN* was to provide practical information to readers to reach this goal. Although the format remained the same, the contents reflected this change in emphasis. Along with epidemiological outbreak reports and reviews of infectious diseases, readers could also find information about heat-related illnesses prevention, dental sealants, or public health nursing in Texas. The *Annual Summary of Disease* contained the following headings: infectious diseases, vaccine-preventable diseases, sexually transmitted disease morbidity trends, environmental epidemiology, and injury control. *PDN* became a biweekly publication.

During the 1980s and early 90s, the production, design, and layout of the *PDN* evolved with new technological advances. Readership expanded to over 8,000 healthcare professionals and included physicians, public health and infection control personnel, public health nurses, laboratorians, and private and governmental agencies.

On February 8, 1993, under new editorial leadership, the publication underwent another name change to *Disease Prevention News* (DPN). The goals, contents, and target readership remained the same. The new emphasis was the quality and editorial consistency of the content and the increased involvement of respected health professionals, from within and outside the agency, in contributing articles and reviewing content. An editorial board was established in March 1999. In January 2003, TDH stopped issuing printed copies of the *DPN*, which became an online publication. *DPN* posted its last issue on May 7, 2003.

Starting in January 2007, the *DPN* has become the *EpiLink*. The new name reflects both the publication's origins and the technological advances now available to disseminate information. The *EpiLink* is now published under the auspices of the (DSHS) Infectious Disease Control Unit. The *EpiLink* will continue to follow the same agenda as its predecessors, to provide current information and resources related to matters of professional public health interest or concern.

Acknowledgements

The EpiLink staff would like to thank David McLellan, from the DSHS Medical and Research Library, for his help and input researching this article.

The *EpiLink* Online Bulletin

Phone: (512) 458-7676
1100 West 49th Street
Austin, TX 78756-3199
To subscribe and for general correspondence, contact us at: epilink@dsdh.state.tx.us

DSHS Publication Number E59-12544