Prevention bulletin

Publication of the Bureau of Epidemiology & Disease Control Services March/April 2002, Vol. 16, No. 2

Top Infectious Disease Issues: Year 2001 in Review

By Victorio Vaz, D.V.M., Ph.D.

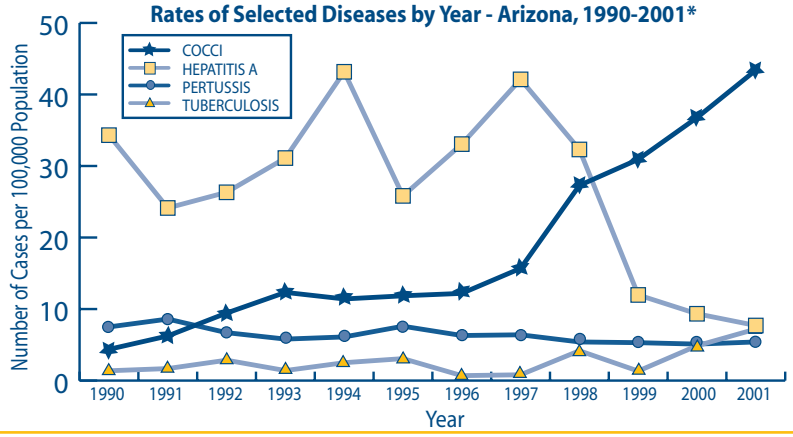
Looking back, 2001 was characterized by major events that impacted the public and those involved in protecting the public's health and safety nationwide and elsewhere. It is very unlikely that public health will return to business as usual. Below are some issues that the country has experienced with some emphasis on how these relate to us in Arizona and other issues specific to the State.

Bioterrorism. Historically, anthrax in humans has been a disease of those with close contact to animals or animal products contaminated with *B. anthracis* spores. Thus, the diagnosis of the first case of pulmonary anthrax in the U.S. since 1976 on October 4, 2001, was first considered a naturally occurring isolated case of inhalation anthrax. However, a second case in a co-worker in Florida, raised the specter of bioterrorism. Other cases were subsequently reported in New York City, New Jersey, Washington and Connecticut. These cases represent the first known victims of a successful release of *B. anthracis* as a biological weapon in the U.S.

The events strained scarce public health surveillance and laboratory resources, and intensified the concerns about the capacity of the country's public health system to respond to a larger bioterrorist attack. Its full impact in terms of costs, public mental health, disruption of other critical services, and

continued on page 2

Figure 1



Arizona Disease Facts

1. **Hepatitis A** - Rates have been traditionally high in the state with peak rates in 1990, 1994 and 1997 (34, 43 and 42/100,000). Rates have declined significantly for the past four years to less than 8/100,000 (Fig 1).
2. **Coccidioidomycosis** – Rates have climbed from approximately 4/100,000 in 1990 to 43/100,000 in 2001; is this a true increase or better awareness/reporting (Fig 1)?
3. **Tuberculosis** – Despite dramatic and consistent reductions in TB rates nationwide from 10.5/100,000 in 1992 to 5.8/100,000 in 2000, the trend in Arizona does not parallel the decline. The rates in the state have fluctuated from 6.7 to 5.1 during the same period (5.4, 5.3, 5.1 and 5.4, respectively for the past four years) (Fig 1).
4. **Pertussis** – Despite the effectiveness of vaccination, pertussis continues to occur in the United States. Pertussis was a major cause of morbidity and mortality among infants and children prior to the introduction of the vaccine in the mid-1940s. Since the early 1980s, incidence has increased cyclically every 3-4 years. In Arizona, recent peak rates were reported in 1992, 1995, 1998, 2000 and 2001. The highest rates for the past 12 years was in 2001 with 7.2/100,000, including three infant deaths (Fig 1).
5. **Chlamydia** – This disease continues to reflect the highest rate among reportable infectious diseases. The rate for 2001 was approximately 270/100,000. Rates have fluctuated from 260 (1992) to 314 (1991).
6. **Animal Rabies** – A record 129 animals tested positive for rabies in 2001. Fortunately, due to animal control measures, vaccination programs and risk assessment for post-exposure prophylaxis, the last human case of rabies in Arizona occurred in 1981.
7. **Aedes aegypti** – Mosquito surveillance efforts have revealed the presence of the mosquito not only in southern Arizona but also as far north as Maricopa or Yavapai Counties; however, no cases of locally acquired dengue have been reported.

Arizona Department of Health Services

Visit the ADHS Web site at www.hs.state.az.us

continued from page 1

widespread use of antibiotics for prophylaxis will not be known for some time.

More than 900 environmental samples were tested for anthrax at the Arizona State Health Laboratory. All tests were negative. The country experienced more anthrax cases during these two months than during the entire last century.

Public health officials discovered that anthrax transmission, albeit rare, can also occur through postal processing of sealed envelopes containing weaponized spores. Fortunately, many additional cases probably were averted through prophylaxis and, more importantly, the 40% mortality rate ended up being much lower than expected due to better treatment options.

No Causal Association between MMR vaccine and Autism. The possibility of a link between the measles vaccine and autism was published in an article in the *Lancet* in 1998 based on intestinal abnormalities in 12 children with autism. Reports from parents of 8 of the study children also associated onset of behavioral symptoms of autism with receipt of MMR vaccine. The authors theorized that the measles vaccine could have led to malabsorption of vitamin B12, which is important for the central nervous system development, and could be a contributing factor for the development of autism. However, several studies addressing this issue since 1998 have failed to establish a causal association. In 2001, the IOM Safety Review committee, also found no causal relationship at the population level between MMR vaccine and autistic-spectrum disorders. We all agree that decisions to vaccinate or not should be made through objective assessment of the benefits and risks; however, no evidence exists to outweigh or diminish the overwhelming benefits of the vaccine. Thanks to vaccination, measles is rare in the U.S.

No Link between Hepatitis B Vaccine and Multiple Sclerosis. Reports of development of multiple sclerosis (MS) after receipt of hepatitis B vaccine have raised concerns about the possibility of this vaccine causing or exacerbating MS in healthy persons. However, two studies published in the NEJM in 2001 did not show an association between receipt of vaccine and development of MS and did not find an increase in the short term risk of relapse after vaccination.

Poliomyelitis outbreak. The 21 laboratory-confirmed cases of poliomyelitis in the Dominican Republic & Haiti from July 2000 through September 2001 represent the first outbreak of the disease in the Americas since 1991 when the last case of wild poliovirus was identified. Evidence seems to indicate that type 1 poliovirus from oral polio vaccine (OPV) may have reacquired some of the virulence and transmissibility characteristics of the wild poliovirus when transmitted among unimmunized persons. In the U.S., the last case of polio by a wild virus occurred in 1979. Major reductions in incidence were first achieved through improved sanitation, followed by the introduction of inactivated polio vaccine (IPV) in 1955 and OPV in 1961 (20,000+ cases in the early 1950's, 2,525 in 1960 and 61 in 1965). Due to about 140 vaccine-associated paralytic polio cases caused by live OPV from 1980 to 1999, the Advisory Committee on Immunizations Practices recommended that IPV be used exclusively in the U.S.

For more information on top infectious diseases of 2001, visit The Infectious Disease News Web site at http://infectiousdiseasenews.com

Victorio Vaz is acting State Epidemiologist and Office Chief of Infectious Diseases for ADHS. He can be reached at 602.230.5820 or vvaz@hs.state.az.us.

World TB Day 2002

By Cheryl McRill, M.D.

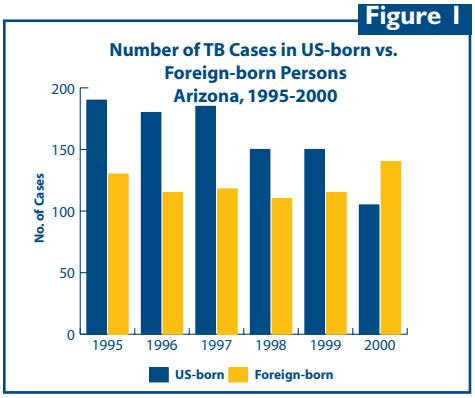
On March 24, 1882, Robert Koch announced his discovery of the organism responsible for what was then the leading cause of death in Western Europe, tuberculosis (TB). The date is now commemorated as World TB Day, a time to reflect on the current state of humankind's struggle with this ancient disease.

For the year 2000, 16,377 cases of TB were reported in the U.S., the lowest number ever which is reflective of the 6-7% annual decline since the recent peak in 1992. However, this decline has occurred almost entirely among the U.S.-born population while the number of cases in the foreign-born population has changed very little, thus accounting for a greater proportion of total cases each year (Fig 1). In 2000, 46% of all U.S. TB cases occurred among those not born in the U.S. The case rate for the U.S.-born was 3.5 cases per 100,000, compared to 25.8 among the foreign-born, more than seven times higher. In Arizona, the proportion of TB cases among the foreign-born exceeded half (58%) for the first time in 2000. Most TB in immigrants occurs within five years of arrival in the U.S., and more than a quarter of cases are reported within the first year.

Rates of multi-drug resistant (MDR) TB have also decreased in the U.S. in recent years, but show less improvement among the foreign-born. The proportion of MDR TB cases in the U.S. decreased from 3% in 1993 to 1% in 2000. However, the proportion of those cases occurring among the foreign born increased from 31% (150 of 486) in 1993 to 72% (101 of 141) in 2000. Physicians should maintain a high clinical suspicion for TB among foreign-born patients from high-incidence countries who present with compatible symptoms, especially if other risk factors (e.g., HIV, homelessness, or history of incarceration in jail or prison) are present.

Dr. Cheryl McRill is the chief medical officer for the Department and the State TB Control Officer. She can be reached at cmcrill@hs.state.az.us or 602.230.5808.

Figure 1



New Test Highlights Newborn Screening Changes

Effective February 2002, several changes took place in the Arizona Newborn Screening Program. Congenital Adrenal Hyperplasia (CAH) was added to the newborn screening panel; two specimens are needed from each baby for the newborn screening test; physicians need to verify that a baby of one year or less has had a newborn screening test; and the screening fee has increased from $15 to $20 per screen.

Currently, the Arizona Newborn Screening Program screens babies for seven disorders. CAH will be the eighth disorder tested. All babies born in Arizona are required to have a newborn screening test to identify those babies with one or more of the disorders. Finding these babies and giving them early treatment can prevent serious problems, such as mental retardation or even death.

CAH is a genetic disorder affecting the adrenal glands' ability to produce enough cortisol, and possibly aldosterone, to meet the body's needs; however, androgen production may increase. A baby born with this disorder may have a crisis within five to ten days after birth. This crisis can include dehydration, cardiac arrest and death. CAH is treated with a cortisol replacement and, as appropriate, electrolyte and water balance medications.

CAH disorder is detected through screening of samples for elevated levels of 17-hydroxyprogesterone (17-OHP). High levels of 17-OHP and androgens are seen due to the blockage of the pathway converting steroids to corticosteroids resulting from 21-hydroxylase deficiency.

The Department's State Health Laboratory will be testing the newborn samples by a method known as Time Resolved Fluorescence (TRF) to detect elevated levels of 17-OHP. Samples in the top 3 percent of the test runs or any sample yielding results of 50 ng/ml or greater will be retested. Normal values are based upon the birth weight of the baby. Samples yielding abnormal results will be referred to the Newborn Screening Program for follow up and treatment.

CAH exists in three forms; salt wasting, simple virilizing, and non-classical. If left untreated, the salt wasting form can result in life-threatening adrenal crisis within the first weeks of life.

The classical disease incidence of CAH in the general population is one in 15,000 births while the non-classical form has been estimated to occur in one percent of the population. If the incidence rate in Arizona is similar to the national statistics, it is anticipated that there will be six cases per year of the classical forms of CAH detected by the State Lab.

Two newborn screening specimens, rather than one specimen, will be required for the newborn screening test. The second specimen can verify the results of the first specimen. In addition, many babies have the first screen prior to 24 hours of life, just prior to discharge from the hospital.

Early collection of the first screen presents some problems. Some metabolic conditions may not be detected if the blood for the newborn screen is taken soon after birth. This may lead to a false negative on the first screen. The second screen can also detect delayed onset of a condition, as well as those conditions in which accumulation of a specific metabolic product occurs over time. About 8% of State Lab confirmed positive cases were normal on the first screen, but abnormal on the second.

To ensure that every newborn has been adequately screened, physicians will verify that a baby of one year or less entering the practice has had a valid newborn screening.

If you have any questions regarding these changes please call the Newborn Screening Program at 602.364.1409 or 800.548.8381.

Vaccine Shortages Affect Arizona

Arizona, as well as other states, has been affected by shortages of several recommended vaccines in both the public and private sectors. Reasons for the various vaccine shortages vary. In early 2001, the shortage of tetanus-diphtheria (Td) vaccine began when Wyeth Lederle stopped producing diphtheria-tetanus containing vaccines. The shortage should not affect children less than 7 years of age. All providers were asked to defer the adolescent Td booster dose and the routine adult booster doses. Td continues to be prioritized for those requiring tetanus vaccination for wound management. Supply of Td is anticipated to normalize sometime this Fall.

DTaP vaccine is also in short supply as a result of Wyeth Lederle's withdrawal from the marketplace. It has been recommended that all vaccine providers defer the 4th dose of DTaP that is usually given at 12 to 18 months of age until the DTaP vaccine supply becomes adequate. Currently, providers should continue to administer the DTaP dose given between 4-6 years of age for entry into kindergarten. Supply of DTaP is anticipated to reach sufficient quantities sometime this Fall.

The 7-valent pneumococcal conjugate vaccine (PCV7) is also in short supply due to a greater demand for the vaccine than the manufacturer anticipated. It has been recommended that the existing vaccine be prioritized to infants less than 1 year of age and to the highest risk children 2 through 5 year of age. Supply of PCV7 is anticipated to normalize sometime this summer.

Varicella vaccine and some of the other Merck vaccines were delayed. This delay has caused spot shortages of some of these vaccines. Merck indicated that shortages are due to interruptions in their manufacturing operations. It is recommended that Varicella vaccine be prioritized to children 1 through 5 years of age. There is no recommendation, at this time, to defer or delay administration of any Merck vaccines.

Progress in Controlling Chronic Disease Risk Factors: Nutrition

By Sharon Sass, R.D., Judy Nowak, M.P.H., Jennifer Koslo, M.S., R.D.

Editor's Note: In the Nov./Dec. 2001 issue of Prevention Bulletin, Dr. Tim Flood presented a perspective of the major causes of death of Arizonans. As a follow-up, Prevention Bulletin will present a series of articles this year examining the status of various behavioral risk factors and how these factors may affect the rates of chronic diseases in Arizona. The second of six articles in the series appears below.

The combination of poor diet and physical inactivity together was first identified as the second leading cause of preventable death in 1993, accounting for nearly as many deaths as tobacco each year.[1] With accelerating rates of obesity and diabetes, it is likely that poor diet and physical inactivity may soon exceed tobacco as the nation's leading preventable cause of death. Physical inactivity as a risk factor for chronic disease will be considered in a future article of this series.

In Arizona, the three leading causes of death are diseases influenced by one's diet: heart disease, cancer, and cerebrovascular disease. The 15 leading causes of death in our state include the additional diet-related diseases of diabetes (8th), liver disease (10th), renal disease (11th) and hypertension (15th). In 2000, these diseases caused 24,545 or nearly two-thirds (61%) of all the deaths in Arizona.[2] To decrease the burden of diet-related diseases in Arizona, significant changes in food consumption will be needed. The Year 2000 Behavioral Risk Factor Survey found that only 37.9% of Arizona adults ate the recommended five or more servings of vegetables and fruits each day.[3] In 1995, a random digit dial telephone survey of 3,600 adults in Arizona showed:

- 58% consumed >30% of calories from fat;
- 60% consumed >10% of calories from saturated fat;
- 97% consumed inadequate fiber;
- 51% consumed inadequate folate;
- 30% consumed >3,000 mg sodium.[4]

In Arizona, similar to national trends, the number of overweight adults (BMI >25 kg/m2) has increased in recent years from 44.7% in 1994 to 54.2% in 2000.[3] Last year, Surgeon General David Satcher issued a call to action, identifying overweight and obesity a significant public health problem in America. The Surgeon General identified that for most people, overweight and obesity are due to excess calorie intake and/or inadequate physical activity.

Overweight and obesity are associated with increased risk for heart disease; type 2 diabetes; endometrial, colon, postmenopausal breast, and other cancers; stroke; hypertension; sleep apnea; gallbladder disease; osteoarthritis; depression; and psychological difficulties due to social stigmatization.[5] For a copy of the call to action on overweight and obesity and patient fact sheets, visit http://www.surgeongeneral.gov/topics/obesity/calltoaction.

In *Healthy Arizona 2010: Collaborating for a Healthier Future*, nutrition was selected as one of the 12 focus areas.[6] Five nutrition and two maternal/infant health objectives address critical areas that represent the most significant nutrition-related concerns in Arizona. The nutrition-related objectives include:

- Healthy Weight
- Fruit and vegetable intake (especially dark green or deep yellow vegetables)
- Dietary Calcium
- Folate
- Breastfeeding
- Iron Deficiency Anemia
- Food Security.

National recommendations from Healthy People 2010, the Surgeon General's Call to Action and other health experts are consistent in identifying the food consumption patterns outlined in the Dietary Guidelines for Americans as the cornerstone of prevention and treatment efforts needed to promote health and prevent disease in the United States.[7] These guidelines are listed in Table 1. The United States Department of Agriculture (USDA) indicates that only three percent of Americans meet four of the five recommendations for the intake of grains, fruits, vegetables, dairy products and meats.[8]

For more information on dietary recommendations, visit the USDA's Center for Nutrition Policy and Promotion website at www.usda.gov/cnpp. This website includes information on the Dietary Guidelines, the Food Guide Pyramid and an interactive "Healthy Eating Index" assessment tool.

Table 1

Nutrition and Your Health: Dietary Guidelines for Americans

Aim for Fitness

- Aim for a healthy weight
- Be physically active each day

Build a Healthy Base

- Let the Pyramid guide your food choices
- Choose a variety of grains daily, especially whole grains
- Choose a variety of fruits and vegetables daily
- Prepare and keep food safe to eat

Choose Sensibly

- Choose a diet that is low in saturated fat and cholesterol and moderate in total fat
- Choose beverages and foods to moderate your intake of sugars
- Choose and prepare foods with less salt
- If you drink alcoholic beverages, do so in moderation

continued on page 8

SUMMARY OF SELECTED REPORTABLE DISEASES

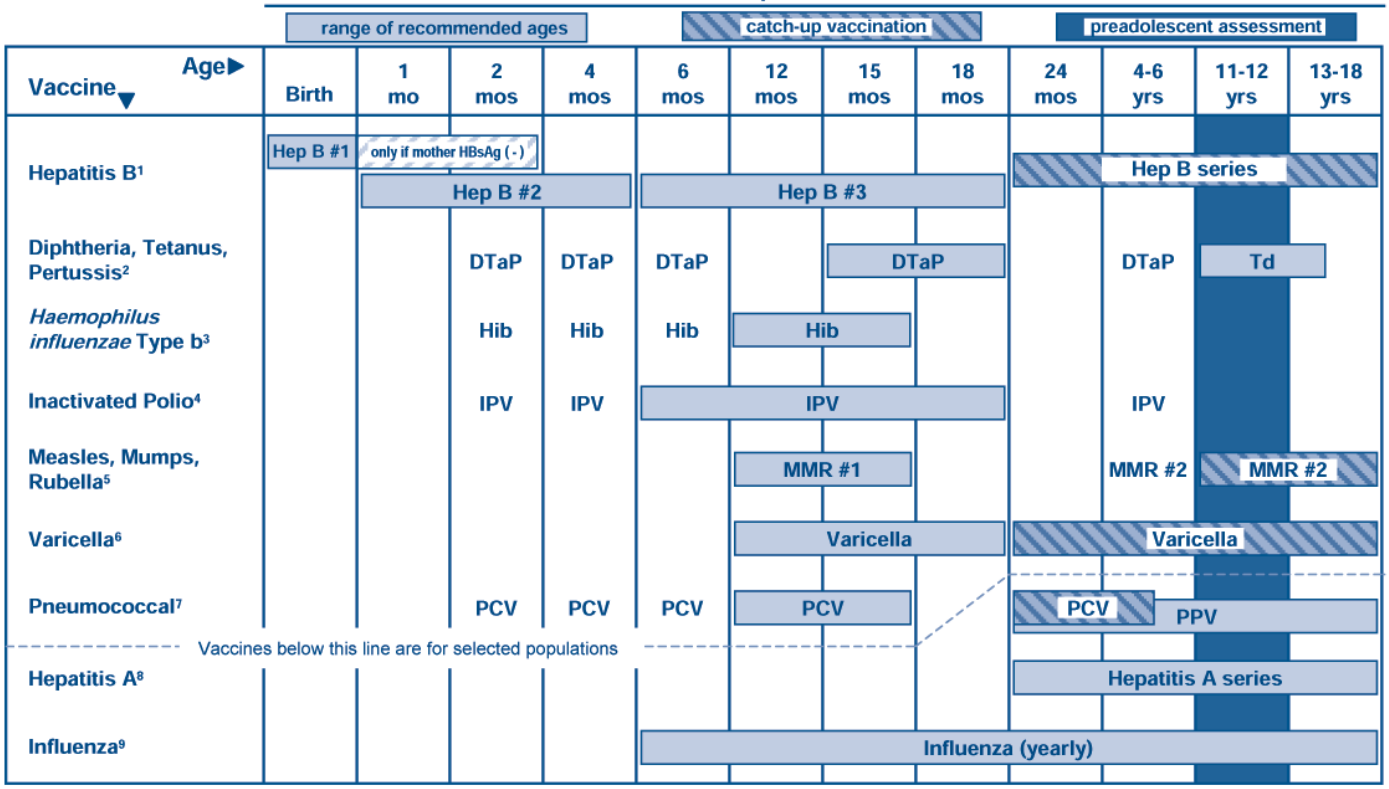
(January - December, 2001)[1]

	Jan - Dec 2001	Jan - Dec 2000	5 Year Median Jan - Dec
VACCINE PREVENTABLE DISEASES:			
Haemophilus influenzae, serotype b invasive disease (<5 years of age)	10 (4)	5 (3)	6 (3)
Measles	1	0	5
Mumps	1	5	5
Pertussis (<12 years of age)	382 (160)	102 (52)	71 (43)
Rubella (Congenital Rubella Syndrome)	0 (0)	1 (0)	2 (1)
FOODBORNE DISEASES:			
Campylobacteriosis	655	619	537
E.coli O157:H7	31	56	*
Listeriosis	10	20	19
Salmonellosis	743	795	844
Shigellosis	491	568	638
VIRAL HEPATITIDES:			
Hepatitis A	411	466	1760
Hepatitis B	163	212	202
Hepatitis B: non-acute[2]	1186	1121	*
Hepatitis C	9	21	25
Hepatitis C: non-acute[3]	6391	6331	5565
INVASIVE DISEASES:			
Streptococcus pneumoniae	787	813	*
Streptococcus Group A	199	214	183
Streptococcus Group B in infants <30 days of age	56	42	*
Meningococcal Infection	21	33	44
SEXUALLY TRANSMITTED DISEASES:			
Chlamydia	14357	12610	11431
Gonorrhea	3923	4136	4136
P/S Syphilis (Congenital Syphilis)	180 (32)	189 (26)	185 (21)
DRUG-RESISTANT BACTERIA:			
TB isolates resistant to at least INH (resistant to at least INH & Rifampin)	11 (3)	17 (3)	16 (2)
Vancomycin resistant *Enterococci* isolates	876	1089	*
VECTOR-BORNE & ZOONOTIC DISEASES:			
Hantavirus Pulmonary Syndrome	1	4	3
Plague	0	1	1
Animals with Rabies	128	101	52
ALSO OF INTEREST IN ARIZONA:			
Coccidioidomycosis	2305	1917	1464
Tuberculosis	289	261	262
HIV	281	386	346
AIDS	260	357	496
Lead Poisoning (<16 years of age)	197 (169)	275 (212)	319 (285)
Pesticide Poisoning[4]	27	24	30

1 Data are provisional and reflect case reports during this period except HIV, AIDS, and Lead Poisoning which are by date of diagnosis.
2 The non-acute hepatitis B case count includes individuals with a positive HBsAg or HbeAg test alone and may include some acutely infected individuals. These counts reflect the year reported or tested and not the date infected. Case counts are not available before 1997.
3 The non-acute hepatitis C case count includes individuals with a positive screening test alone and may include falsely positive individuals. Known risk factors such as intravenous drug use increases the likelihood of these screening tests to be true positives. These counts reflect the year reported or tested and not the date infected. Case counts are not available before 1997.
4 Not all reports will be confirmed as meeting the case definition for pesticide poisoning upon further investigation.

** Vancomycin Resistant Enterococci, E.coli O157:H7, Streptococcus pneumoniae, and Group B Streptococcal disease not reportable until 4/97.*

Recommended Childhood Immunization Schedule
United States, 2002



This schedule indicates the recommended ages for routine administration of currently licensed childhood vaccines, as of December 1, 2001, for children through age 18 years. Any dose not given at the recommended age should be given at any subsequent visit when indicated and feasible. Indicates age groups that warrant special effort to administer those vaccines not previously given. 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 the vaccine's other components are not contraindicated. Providers should consult the manufacturers' package inserts for detailed recommendations.

1. Hepatitis B vaccine (Hep B). All infants should receive the first dose of hepatitis B vaccine soon after birth and before hospital discharge; the first dose may also be given by age 2 months if the infant's mother is HBsAg-negative. Only monovalent hepatitis B vaccine can be used for the birth dose. Monovalent or combination vaccine containing Hep B may be used to complete the series; four doses of vaccine may be administered if combination vaccine is used. The second dose should be given at least 4 weeks after the first dose, except for Hib-containing vaccine which cannot be administered before age 6 weeks. The third dose should be given at least 16 weeks after the first dose and at least 8 weeks after the second dose. The last dose in the vaccination series (third or fourth dose) should not be administered before age 6 months.

Infants born to HBsAg-positive mothers should receive hepatitis B vaccine and 0.5 mL hepatitis B immune globulin (HBIG) within 12 hours of birth at separate sites. The second dose is recommended at age 1-2 months and the vaccination series should be completed (third or fourth dose) at age 6 months.

Infants born to mothers whose HBsAg status is unknown should receive the first dose of the hepatitis B vaccine series within 12 hours of birth. Maternal blood should be drawn at the time of delivery to determine the mother's HBsAg status; if the HBsAg test is positive, the infant should receive HBIG as soon as possible (no later than age 1 week).

2. Diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP). The fourth dose of DTaP may be administered as early as age 12 months, provided 6 months have elapsed since the third dose and the child is unlikely to return at age 15-18 months. **Tetanus and diphtheria toxoids (Td)** is recommended at age 11-12 years if at least 5 years have elapsed since the last dose of tetanus and diphtheria toxoid-containing vaccine. Subsequent routine Td boosters are recommended every 10 years.

3. *Haemophilus influenzae* type b (Hib) conjugate vaccine. Three Hib conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB® or ComVax® [Merck]) is administered at ages 2 and 4 months, a dose at age 6 months is not required. DTaP/Hib combination products should not be used for primary immunization in infants at age 2, 4 or 6 months, but can be used as boosters following any Hib vaccine.

4. Inactivated poliovirus vaccine (IPV). An all-IPV schedule is recommended for routine childhood poliovirus vaccination in the United States. All children should receive four doses of IPV at age 2 months, 4 months, 6-18 months, and 4-6 years.

5. Measles, mumps, and rubella vaccine (MMR). The second dose of MMR is recommended routinely at age 4-6 years but may be administered during any visit, provided at least 4 weeks have elapsed since the first dose and that both doses are administered beginning at or after age 12 months. Those who have not previously received the second dose should complete the schedule by the visit at 11-12 years.

6. Varicella vaccine. Varicella vaccine is recommended at any visit at or after age 12 months for susceptible children (i.e. those who lack a reliable history of chickenpox). Susceptible persons aged ≥13 years should receive two doses, given at least 4 weeks apart.

7. Pneumococcal vaccine. The heptavalent **pneumococcal conjugate vaccine (PCV)** is recommended for all children aged 2-23 months and for certain children aged 24-59 months. **Pneumococcal polysaccharide vaccine (PPV)** is recommended in addition to PCV for certain high-risk groups. See *MMWR* 2000;49(RR-9);1-37.

8. Hepatitis A vaccine. Hepatitis A vaccine is recommended for use in selected states and regions, and for certain high-risk groups; consult your local public health authority. See *MMWR* 1999;48(RR-12);1-37.

9. Influenza vaccine. Influenza vaccine is recommended annually for children age ≥ 6 months with certain risk factors (including but not limited to asthma, cardiac disease, sickle cell disease, HIV, and diabetes; see *MMWR* 2001;50(RR-4);1-44), and can be administered to all others wishing to obtain immunity. Children aged ≤12 years should receive vaccine in a dosage appropriate for their age (0.25 mL if age 6-35 months or 0.5 mL if aged ≥ 3 years). Children aged ≤ 8 years who are receiving influenza vaccine for the first time should receive two doses separated by at least 4 weeks.

For additional information about vaccines, vaccine supply, and contraindications for immunization, please visit the National Immunization Program Website at www.cdc.gov/nip or call the National Immunization Hotline at 800-232-2522 (English) or 800-232-0233 (Spanish).

Approved by the Advisory Committee on Immunization Practices (www.cdc.gov/nip/acip), the American Academy of Pediatrics (www.aap.org), and the American Academy of Family Physicians (www.aafp.org).

Pertussis Endemic in Maricopa County

By Sarah Santana

Pertussis is endemic in Maricopa County, with intervals from two to six years between epidemic years (Fig.1) The most recent epidemic years in Maricopa County have been 1988-89, 1992, 1998, and now 2000-2001. Of note in 2001 are three pertussis related infant deaths, two in Maricopa County and a third in Pinal County.

According to the Centers for Disease Control and Prevention, during the period 1990-1996, 17% of reported cases less than 6 months of age experienced pneumonia, and 72% of infant cases required hospitalization. With a case fatality rate of one in 500 cases, 72% of deaths occurred among those less than 6 months of age. Cases among adolescents and adults contribute 60% of the total (Fig. 2).

The periodic resurgence of the disease is attributable to several factors:

- the cyclic nature of the disease;
- both natural and vaccine immunity wane with age, and no vaccine is licensed for use among those 7 years of age or older;
- an increase in the proportion of adolescent and adult pertussis cases who serve as an important reservoir in the transmission of disease to non-immune children.

Physicians and the public are reminded that pertussis occurs in adolescents and adults, and that they should suspect pertussis in any person having an unexplained cough for a period of more than two weeks. Providers should report a suspected case of pertussis immediately to the county health department. County health department investigators will interrupt transmission of pertussis by ensuring antibiotic prophylaxis of close contacts. The State Laboratory offers free culturing of suspected pertussis cases through your county health department.

Sarah Santana is the Director of the Division of Epidemiology and Statistics for Maricopa County Department of Public Health. She can be reached at sarahsantana@mail.maricopa.gov or 602.506.6952.

Figure 1

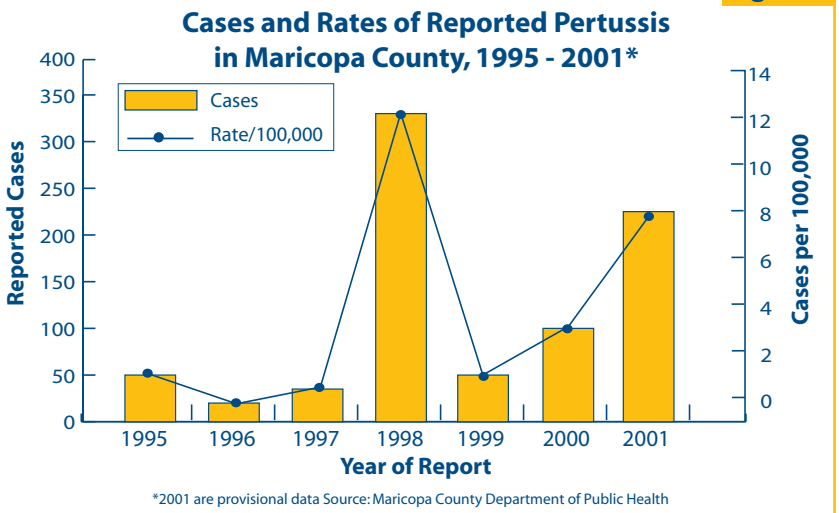
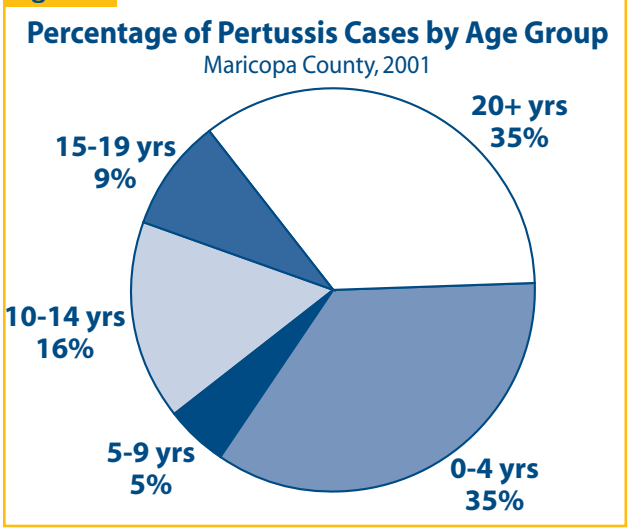


Figure 2



Noteworthy. . .

Perchlorate contamination of Colorado River water

The Colorado River below Lake Mead is contaminated with low levels of the perchlorate ion (ClO_4^-) originating from rocket fuel contamination in the Las Vegas Wash, near Henderson, Nevada. Perchlorate levels in the Colorado River water range from non-detectable to 8 micrograms per liter.

Cleanup efforts are currently underway at the source, but complete removal will take several years. The thyroid appears to be the most sensitive organ in the body to perchlorate since perchlorate can interfere with iodine uptake. Studies in human clinical drug trials have shown that daily doses of several milligrams of perchlorate are required to alter thyroid iodine uptake. However, the Federal EPA is conducting new toxicology studies to better understand the health effects, if any, from consuming water contaminated with low concentrations of perchlorate.

The EPA published a draft toxicological review and risk characterization for perchlorate in drinking water in January 2002. The draft document is currently out for public comment. The report recommends a drinking water clean-up level of 1 microgram per liter. The new draft recommended level incorporates the latest information from various studies and includes a wide safety margin. More information is available at: http://www.epa.gov/safewater/ccl/perchlor/perchlo.html.

Prevention Bulletin will provide updates on this important issue as more information becomes available.

continued on page 8

continued from page 1

To improve nutrition new approaches to dietary change are needed. Some of these include: improving nutrition information and education, increasing access to medical nutrition therapy, increasing the availability of healthy foods in a variety of settings, focusing on prevention of chronic disease beginning in childhood, maintaining a sound science base for dietary recommendations and effective interventions, strengthening state and community data systems for nutrition indicators and building community-based efforts by public and private sector partners to improve dietary habits in Arizona.

References

1. McGinnis JM, Foege, WH. Actual causes of death in the United States. JAMA 1993;270:2207-2212.
2. ADHS. Arizona Health Status and Vital Statistics 2000. ADHS, 2001.
3. ADHS. Behavioral Risk Factor Survey 2000. ADHS, 2001.
4. University of Arizona Prevention Center and Arizona Department of Health Services. *Dietary Profile of the State of Arizona 1995: Nutrient Intake and Fruit and Vegetable Consumption*. Tucson: University of Arizona, 1995.
5. United States Department of Health and Human Services, Public Health Service, Office of the Surgeon General. The Surgeon General's Call to Action To Prevent and Decrease Obesity 2001. Bethesda: USHHS, 2001.
6. Arizona Department of Health Services. Healthy Arizona 2010: Collaborating for a Healthier Future. ADHS, 2001. The ADHS website contains the nutrition-related objectives: http://www.hs.state.az.us/phs/healthyaz2010 .
7. United States Department of Agriculture. Nutrition and Your Health: Dietary Guidelines for Americans, 5th edition. Washington, D.C: USDA/USHHS, (Home and Garden Bulletin 232), 2000.
8. United States Department of Agriculture. USDA Continuing Survey of Food Intakes by Individuals, 1994-96. Washington, D.C.: USDA, 1998.

Noteworthy. . .

Wellness Symposium Highlights Public Health Month

National Public Health Week is April 1-7, 2002. However, in an effort to increase awareness of public health, Gov. Hull has issued a proclamation to extend the state's celebration to the entire month of April. Throughout the month, county health departments will sponsor activities across Arizona including smoking cessation classes, screenings, immunization clinics, safety demonstrations and teen health fairs. To highlight the month, the 7th Annual Wellness Symposium will be held in Phoenix on April 18th and 19th at the Arizona Biltmore. For more information, contact Jana Granillo at 602.364.0155.

Study shows clarithromycin is effective treatment for pertussis

Drs. Lebel and Mehra conducted a prospective, randomized, single blind trial comparing the 14 day course of erythomycin to a 7 day course of clarithromycin among 153 patients aged one month to 16 years in Montreal, Canada. Clarithromycin was equally effective in *Bordetella pertussis* eradication rates and clinical cure rates. There were significantly fewer drug-related adverse events and significantly better compliance. Also there was a significant incidence of otitis media in the erythomycin treatment group versus clarithromycin, 6 vs. 0.

Corrections

There was an error in the Public Health Services Phone Directory in the Jan./Feb. issue of Prevention Bulletin. The correct number for Health Registries is 602.542.7308. The fax number for the State Health Laboratory also was incorrect. The correct fax number is 602.542.0760.

We apologize for any confusion these errors may have caused.

Prevention bulletin

Arizona Department of Health Services
Public Information Office
3815 North Black Canyon Hwy.
Phoenix, AZ 85015
602.230.5901 • Fax 602.230.5959

Jane Dee Hull, Governor
Catherine R. Eden, Ph.D., Director ADHS
Lee A. Bland, Chief, Bureau of Epidemiology
and Disease Control Services

Editorial Board
Victorio Vaz, D.V.M., Ph.D., Acting State Epidemiologist
Tim Flood, M.D.
Kathy Fredrickson, M.P.H.
Will Humble, M.P.H.
Ken Komatsu, M.P.H.
Cheryl McRill, M.D.
Wesley Press, M.S.
Sam Van Leeuwen
Emma N. Viera, M.P.H.

Managing Editor: Courtney Casillas
e-mail: ccasill@hs.state.az.us
Contributors: Jennifer Koslo, Cheryl McRill, Judy Nowak, Sarah Santana, Sharon Sass, Bill Slanta, RuthAnn Smejkal, Victorio Vaz

This publication is supported by the Preventive Health and Health Services Block Grant from the Centers for Disease Control and Prevention (CDC). Its contents do not necessarily represent the views of the CDC.
If you need this publication in alternative format, please contact the ADHS Public Information Office at 602.230.5901 or 1.800.367.8939 (State TDD/TTY Relay).

❍ Change of Address/Name
❍ Delete my name from your mailing list
❍ I received more than one copy

Please include your mailing label with all requests for changes. Fax changes to 602.230.5959

PRSRT STD
US Postage
PAID
Phoenix, AZ
Permit No. 957