VIRGINIA
EPIDEMIOLOGY BULLETIN

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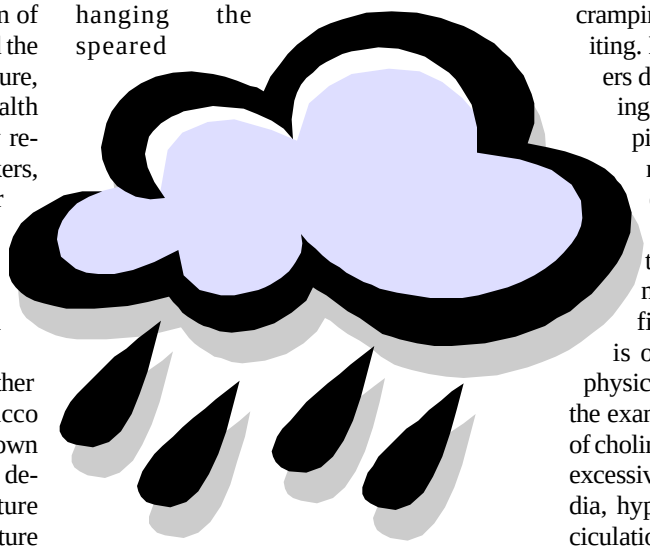
Green Tobacco Sickness, Scott County, Virginia

On August 19, 1998, the Scott County Health Department received a call from a local hospital in Kingsport, Tennessee, reporting that five seasonal farm workers had been seen in the emergency department with symptoms of weakness, nausea, vomiting, and dizziness beginning on the afternoon of August 17, 1998. The physician believed the illnesses were related to pesticide exposure, probably an organophosphate. The health department investigated the incident by reviewing medical records of the ill workers, interviewing the ill workers and other workers in the field with them, evaluating the food and water sources utilized by the farm workers, and determining the types of chemicals applied to the field and the dates of application.

The five seasonal workers lived together in a small apartment in the local tobacco warehouse; they prepared some of their own meals there. At the time of the health department visit, the apartment temperature was 90°F, and the refrigerator temperature was 60°F. The freezer temperature was below 32°F and food in the freezer was well frozen; there was no food remaining in the refrigerator at that time. None of the ill workers used tobacco products; all consumed moderate amounts of beer. The mean age of the ill workers was 32 years, with a range of 21 to 41 years. All were Hispanic and only one spoke any English.

In This Issue:

These five workers, who worked alone except in one instance when the farm owner and his son helped, cut tobacco on August 12-14 and August 16 and 17. Their tasks included cutting the tobacco plants, spearing several plants onto a wooden stake, hanging the speared



plants on the back of a flatbed trailer, and then transferring the tobacco into the barn. The owners drove the tractors pulling the flatbed trailers. The most recent chemical application to the fields was a growth inhibitor that had been applied one month previously. The Restricted Entry Interval for the product used is 24 hours, thus it should have posed no danger to workers one month later. Drinking water was taken from a farm well and supplied in coolers for all the workers; a commercial brand of beer was also available. Breakfast and lunch were individual orders brought to the field from a nearby restaurant. The weather was hot and dry until the afternoon of August 16, when a low pressure system brought cooler temperatures and drizzling rain showers that continued throughout the next day. All workers continued working in the fields of wet tobacco after their clothes became wet with rain. No protective clothing was worn.

On August 17, around 1 p.m., a 21 year-old worker whose job was cutting the tobacco plants, began experiencing abdominal cramping accompanied by nausea and vomiting. By 5 p.m., the remaining four workers developed similar symptoms of varying intensity. They presented to the hospital emergency department at approximately midnight, where they were evaluated.

A medical record review showed that their physical examinations were noncontributory, except that two of the five had heart rates below 60, which is of uncertain significance in young, physically active individuals. Specifically, the examinations did not document changes of cholinergic excess (e.g., pupillary changes, excessive salivation or lacrimation, tachycardia, hyper- or hypotension, or muscle fasciculations) as would be expected with organophosphate exposure. Laboratory tests, including a chemistry-twelve test panel and complete blood counts, were unremarkable. Arterial blood gases showed very mild hypocapnia with normal pH in two workers. Plasma cholinesterase levels were normal in all five patients; red blood cell cholinesterase levels were requested but due to improper specimen handling were not done. The five men were administered IV fluids and antiemetics. Two were hospitalized overnight and the other three were discharged after several hours observation. The two who were hospitalized were discharged the following day after complete resolution of their symptoms.

Testing of the drinking water stored in coolers at the field yielded some coliform bacteria including a few fecal coliforms (most

probable number=2). All workers, both ill and non-ill, had consumed water from this source, and by their accounts, the workers who became ill had consumed less water than other workers, as they also consumed beer which the other workers had not. A complete food and beverage intake history was obtained and no food items correlated with illness; there were no food samples available for testing.

An environmental health specialist in the district who grew tobacco recalled farming conventional wisdom and a National Institute of Occupational Safety and Health bulletin cautioning against working in wet tobacco. This and information in an article in the *Morbidity and Mortality Weekly Report*,[1] prompted a request for assays for nicotine and cotinine, a major metabolite of nicotine. The results of those tests are shown in the table below.

Based on these findings, the diagnosis of nicotine toxicity was believed probable. Nicotine poisoning, also referred to as "Green Tobacco Sickness" (GTS), is a result of dermal exposure to dissolved nicotine from wet tobacco leaves and/or cut tobacco stalks. Nicotine is one of the few natural liquid alkaloids. It is a colorless base that turns brown and acquires the odor of tobacco as it exudes from the freshly cut tobacco stalk and is exposed to air. The symptoms of GTS are those of nicotine toxicity. Nicotine is a ganglionic stimulating drug, well absorbed through intact skin and capable of both stimulatory and inhibitory effects on various organ systems. Its actions in the peripheral nervous system, central nervous system, cardiovascular system and gastrointestinal tract account for the complex and sometimes unpredictable changes that occur in the body after exposure to nicotine. Nausea, vomiting, weakness, headache, dizziness, and fluctuations in blood pressure or heart rate often characterize toxicity. Other effects of nicotine excess include muscle tremors and in larger doses, convulsions. Excitation of respiration occurs initially, followed by central respiratory depression in larger doses.

A study of GTS was done in Kentucky in 1992, with 47 cases and 83 controls.[1] The median time from starting work to onset of illness was 10 hours. The most frequently reported symptoms were weakness, nausea, vomiting, dizziness, abdominal cramps, headache, and difficulty breathing. The mean duration of illness was 2 days. Age under 30 years was a risk factor for illness. Current use of tobacco products conferred a weak protective effect. The use of protective clothing worn at least once in the growing season was similar in cases and controls and was reported as 5% for waterproof clothing and 32% for gloves.

The observed lower risk for GTS among older workers may result from work practices developed over time that reduce contact with wet tobacco. In addition, workers likely to develop symptoms of GTS may leave this work force at a young age. Personal use of tobacco products may be weakly protective, probably because of the development of tolerance to the effects of nicotine among regular tobacco users. Tobacco use may not be protective if dermal absorption substantially exceeds the user's customary nicotine intake.

The true economic and health impact of GTS is unknown. Many cases may not result in symptoms severe enough that affected persons seek medical treatment, yet affected persons may lose time from work. Other individuals seek medical care but may not be recognized as having GTS. Simple preventive measures can be taken if tobacco harvesters are aware of the risk. Tobacco farm owners should inform their employees of the hazards associated with harvesting wet tobacco and the importance of safe work practices in preventing GTS. They should discuss routes of exposure and symptoms associated with the disease. Workers should be allowed flexible hours to avoid work during or immediately after a rainfall or early in the morning when plants are wet with dew. Rainy seasons coinciding with tobacco harvests should heighten awareness of the condition. (We noted, however, that these five cases occurred in a month when the average rainfall was only 67% of the usual amount for that time.) The use of protective clothing (e.g., water-resistant aprons or rainsuits and rubber gloves) reduces the amount of nicotine absorbed by workers in contact with wet green tobacco. This method of worker protection, especially the use of water resistant clothing, must be tempered by awareness of and provision for the accompanying increase in heat stress to the individual. Health-care workers in areas where tobacco is harvested should consider GTS in workers who present with compatible symptoms and history.

In the Scott County outbreak, flyers printed in Spanish and English describing the illness, risk factors and measures to minimize exposure, were distributed to tobacco farm owners and workers. Information about GTS was distributed to local primary care physicians, emergency departments, and urgent care centers, as well as published in a monthly newsletter circulated by the Farm Service Agency to all holders of tobacco allotments in many counties in the state. An annual educational campaign, prior to harvest time, on the condition and prevention measures is planned for the future.

PREVENTION OF GTS

- **Avoid handling wet tobacco**
- **Wear protective clothing**
  - **Chemical-resistant gloves**
  - **Plastic aprons or rainsuits**
- **Change from wet clothes into dry clothes as soon as possible**

SERUM NICOTINE AND COTININE LEVELS
(Collected 8/18/98)

	Nicotine	***Cotinine***
	3 - 63 NG/ML*	20 - 700 NG/ML*
Worker 1	**150**	**1100**
Worker 2	**170**	**1000**
Worker 3	**160**	**750**
Worker 4	**160**	**460**
Worker 5	**240**	**1100**

**Reference range - observed concentrations in habitual smokers*

Reference
1.CDC. MMWR 1993; 42(13):237-240.

Submitted by E. Sue Cantrell, M.D., Director, Lenowisco Health District.

Prevention of Varicella Updated:
Recommendations of the Advisory Committee on Immunization Practices (ACIP)

Summary

In February 1999, the Advisory Committee on Immunization Practices expanded recommendations for varicella (chickenpox) vaccine to promote wider use of the vaccine for susceptible children and adults. The updated recommendations include establishing child care and school entry requirements, use of the vaccine following exposure and for outbreak control, use of the vaccine for some children infected with the human immunodeficiency virus, and vaccination of adults and adolescents at high risk for exposure. These recommendations also provide new information on varicella vaccine post-licensure safety data.

The following is adapted from the MMWR article with the above title (1999;48[No. RR-6]:1-5). If you would like to receive a copy of the entire MMWR article, you may call the Office of Epidemiology at 804/786-6261 or visit the Centers for Disease Control and Prevention (CDC) web site at http://www.cdc.gov.

Introduction

Before the availability of varicella vaccine, varicella disease was responsible for an estimated 4 million cases, 11,000 hospitalizations, and 100 deaths each year in the United States. Approximately 90% of cases occurred in children. A vaccine was licensed in the United States in 1995, and the Advisory Committee on Immunization Practices (ACIP) issued recommendations for prevention of varicella in July 1996.

Recommendations

Day Care and School Entry Requirements

Because varicella incidence is highest among children aged 1-6 years, implementing vaccination requirements for child care and school entry will have the greatest impact on reducing disease incidence. ACIP recommends that all states require that children entering child care facilities and elementary schools either have received varicella vaccine or have other evidence of immunity to varicella. Other evidence of immunity should consist of a physician's diagnosis of varicella, a reliable history of the disease, or serologic evidence of immunity. To prevent susceptible older children from entering adulthood without immunity to varicella, states should also consider implementing a policy that requires evidence of varicella vaccination or other evidence of immunity for children entering middle school (or junior high school).

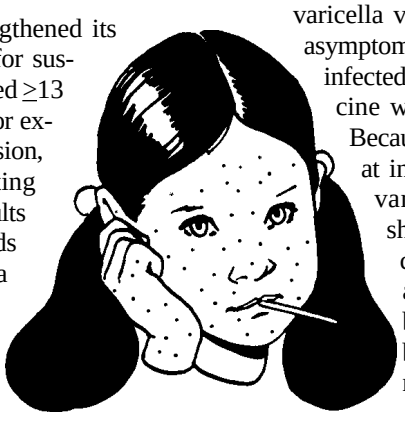
Postexposure Vaccination and Outbreak Control

Data from the United States and Japan from household, hospital, and community settings indicate that varicella vaccine is effective in preventing illness or modifying varicella severity if used within 3 days, and possibly up to 5 days, of exposure. ACIP now recommends the vaccine for use in susceptible persons following exposure to varicella. If exposure to varicella does not cause infection, postexposure vaccination should induce protection against subsequent exposure. If the exposure results in infection, no evidence indicates that administration of varicella vaccine during the presymptomatic or prodromal stage of illness increases the risk for vaccine-associated adverse events. Although postexposure use of varicella vaccine has potential applications in hospital settings, vaccination is routinely recommended for all susceptible health-care workers and is the preferred method for preventing varicella in health-care settings.

Varicella outbreaks in some settings (e.g., child care facilities, schools, institutions) can last 3-6 months. Varicella vaccine has been used successfully by state and local health departments and by the military for outbreak prevention and control. Therefore, state and local health departments should consider using the vaccine for outbreak control either by advising exposed susceptible persons to contact their health-care providers for vaccination or by offering vaccination through the health department.

Vaccination of Persons Aged ≥13 Years at High Risk for Exposure or Transmission

ACIP has strengthened its recommendations for susceptible persons aged ≥13 years at high risk for exposure or transmission, including designating adolescents and adults living in households with children as a new high-risk group. Varicella vaccine is recommended for susceptible persons in the following high-risk groups: a) persons who live or work in environments where transmission of varicella zoster virus is likely (e.g., teachers of young children, day care employees, and residents and staff members in institutional settings), b) persons who live and work in environments where transmission can occur (e.g., college students, inmates and staff members of correctional institutions, and military personnel), c) nonpregnant women of childbearing age, d) adolescents and adults living in households with children, and e) international travelers.



Vaccination of HIV-Infected Children and Other Persons with Altered Immunity

Varicella vaccine is not licensed for use in persons who have blood dyscrasias, leukemia, lymphomas of any type, or other malignant neoplasms affecting the bone marrow or lymphatic systems. The manufacturer makes free vaccine available to any physician through a research protocol for use in patients who have acute lympho-blastic leukemia (ALL) and who meet certain eligibility criteria. ACIP has previously recommended that varicella vaccine should not be administered to persons with primary or acquired immunodeficiency, including immunosuppression associated with acquired immunodeficiency syndrome (AIDS) or other clinical manifestations of human immunodeficiency virus (HIV) infections, cellular immunodeficiencies, hypogammaglobulinemia, and dysgammaglobulinemia.

ACIP maintains its recommendation that varicella vaccine should not be administered to persons who have cellular immunodeficiencies, but persons with impaired humoral immunity may now be vaccinated. In addition, some HIV-infected children may now be considered for vaccination. Limited data from a clinical trial in which two doses of varicella vaccine were administered to 41 asymptomatic or mildly symptomatic HIV-infected children indicated that the vaccine was immunogenic and effective. Because children infected with HIV are at increased risk for morbidity from varicella and herpes zoster (i.e., shingles) compared with healthy children, ACIP recommends that, after weighing potential risks and benefits, varicella vaccine should be considered for asymptomatic or mildly symptomatic HIV-infected

Rotavirus Vaccine Alert

CDC recommends that healthcare providers and parents postpone use of the rotavirus vaccine for infants, at least until November 1999, based on early surveillance reports of intussusception among some infants who received rotavirus vaccine. Although intussusceptions occur among infants who have not received rotavirus vaccine, CDC will be collecting additional data in the next several months that may indicate more clearly whether the rotavirus vaccine increases the risk of intussusception. The recommendation is being made with the consideration that rotavirus season is still 4-6 months away in most parts of the United States.

An estimated 1.5 million doses of rotavirus vaccine have been administered to infants since it was licensed on August 31, 1998. As of July 7, 1999, the Vaccine Adverse Event Reporting System (VAERS) has received 15 reports of intussusception. The rate of intussusception among children receiving the rotavirus vaccine appears to be increased in the first 2 - 3 weeks after vaccination. Parents and caretakers of infants should contact their health care provider if the child develops symptoms of intussusception (persistent vomiting, bloody stools, black stools, abdominal bloating or severe colic pain). Health care providers should be aware of the possible increased risk and consider this diagnosis among children presenting with these symptoms. Parents and health care providers should report intussusception and other adverse events following vaccination to VAERS. VAERS reporting forms and information can be requested 24 hours a day by calling (800)822-7967 or accessing the World Wide Web at: http://www.cdc.gov/nip/vaers.htm.

children in CDC class N1 or A1 with age-specific CD4+ T-lymphocyte percentages of greater than or equal to 25%.* Eligible children should receive two doses of varicella vaccine with a 3-month interval between doses. Because persons with impaired cellular immunity are potentially at greater risk for complications after vaccination with a live vaccine, these vaccinees should be encouraged to return for evaluation if they experience a postvaccination varicella-like rash. The use of varicella vaccine in other HIV-infected children is being investigated further. Recommendations regarding use of varicella vaccine in persons with other conditions associated with altered immunity (e.g., immunosuppressive therapy) or in persons receiving steroid therapy have not changed.

Adverse Reactions

Reporting of Postlicensure Adverse Events

Data on potential adverse events are available from the Vaccine Adverse Event Reporting System (VAERS). During March 1995-July 1998, a total of 9.7 million doses of varicella vaccine were distributed in the United States. During this time, VAERS received 6,580 reports of adverse events, 4% of them serious. Approximately two thirds of the reports were for children aged less than 10 years. The most frequently reported adverse event was rash (rate: 37/100,000 vaccine doses distributed). Polymerase chain reaction (PCR) analysis confirmed that most rash events occurring within 2 weeks of vaccination were caused by wild-type virus. Postlicensure VAERS and vaccine manufacturer reports of serious adverse events, without regard to causality, have included encephalitis, ataxia, erythema multiforme, Stevens-Johnson syndrome, pneumonia, thrombocytopenia, seizures, neuropathy, and herpes zoster. For serious adverse events for which background incidence data are known, VAERS reporting rates are lower than the rates expected after natural varicella or the background rates of disease in the community. However, VAERS data are limited by underreporting and unknown sensitivity of the reporting system, making it difficult to compare adverse event rates following vaccination reported to VAERS with those from complications following natural disease. Nevertheless, the magnitude of these differences makes it likely that serious adverse events following vaccination occur at a substantially lower rate than following natural disease. In rare cases, a causal relationship between the varicella vaccine and a serious adverse event has been confirmed (e.g., pneumonia in an immunocompromised child or herpes zoster). In some cases, wild-type VZV or other causal organisms have been identified. However, in most cases, data are insufficient to determine a causal association. Of the 14 deaths reported to VAERS, eight had definite other explanations for death, three had other plausible explanations for death, and three had insufficient information to determine causality. One death from natural varicella occurred in a child aged 9 years who died from complications of wild-type VZV 20 months after vaccination.

Development of Herpes Zoster

The VAERS rate of herpes zoster after varicella vaccination was 2.6/100,000 vaccine doses distributed. The incidence of herpes zoster after natural varicella infection among healthy children aged less than 20 years is 68/100,000 person years and, for all ages, 215/100,000 person years. However, these rates should be compared cautiously because the latter rates are based on populations monitored for longer time periods than were the vaccinees. For PCR-confirmed herpes zoster cases, the range of onset was 25-722 days after vaccination. Cases of herpes zoster have been confirmed by PCR to be caused by both vaccine virus and wild-type virus, suggesting that some herpes zoster cases in vaccinees might result from antecedent natural varicella infection.

Transmission of Vaccine Virus

Transmission of the vaccine virus is rare and has been documented in immunocompetent persons by PCR analysis on only three occasions out of 15 million doses of varicella vaccine distributed. All three cases resulted in mild disease without complications. In one case, a child aged 12 months transmitted the vaccine virus to his pregnant mother. The mother elected to terminate the pregnancy, and fetal tissue tested by PCR was negative for varicella vaccine virus. The two other documented cases involved transmission from healthy children aged 1 year to a healthy sibling aged 4 1/2 months and a healthy father, respectively. Secondary transmission has not been documented in the absence of a vesicular rash postvaccination.

Conclusion

This report updates previous ACIP recommendations for the prevention of varicella. Implementing state requirements that children entering day care facilities and schools either have received varicella vaccine or have evidence of immunity will increase vaccine coverage. Vaccination is now recommended for outbreak control and postexposure, and the vaccine is now available to children with humoral immunodeficiencies and selected children with HIV infection. Recommendations for adult vaccination have been strengthened for persons at high risk for exposure and now include adolescents and adults who live in households with children.

** In CDC's pediatric HIV Classification system, Class 1 is an immunologic category defined as "no evidence of suppression." For this ACIP recommendation, two clinical categories under Class 1 are used — N1, defined as "no signs or symptoms," and A1, defined as "mild signs or symptoms."*

Thimerosal in Vaccines: A Joint Statement of the American Academy of Pediatrics and the Public Health Service

Recently, concern has been raised about the potential risk of mercury exposure posed by thimerosal in vaccines. Thimerosal is a mercury-containing preservative used in some vaccines to prevent bacterial contamination. It has been in use since the 1930s. Some but not all of the vaccines recommended routinely for children in the United States contain thimerosal.

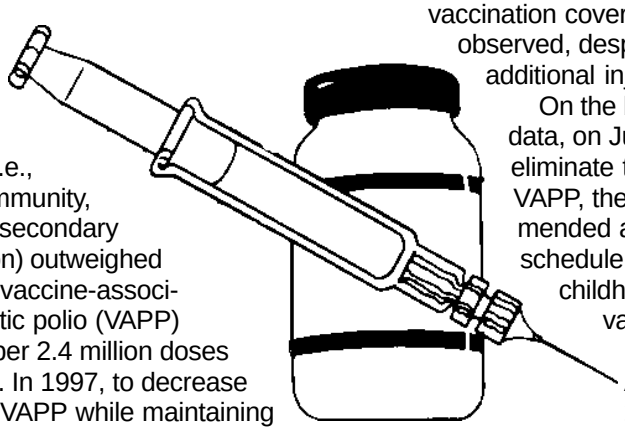
The Public Health Service (PHS) and the American Academy of Pediatrics (AAP) believe that the large risks of not vaccinating children far outweigh the unknown and much smaller risk, if any, of exposure to thimerosal-containing vaccines over the first 6 months of life. There is no evidence of any harm caused by the level of exposure that children have encountered in following the existing immunization schedule, and the testing of children for mercury exposure from vaccines is not recommended. The PHS and AAP continue to recommend that all children be immunized against the diseases indicated in the recommended immunization schedule.

Nevertheless, because any potential risk is of concern, the PHS, the AAP, and vaccine manufacturers agree that thimerosal-containing vaccines should be removed as soon as possible. In the meantime, clinicians and parents wishing to take extra precautions can take advantage of the flexibility within the existing schedule for infants born to hepatitis B surface antigen (HBsAg)-negative women by postponing the first dose of hepatitis B vaccine from birth until 2 to 6 months of age when the infant is considerably larger. Preterm infants born to HBsAg-negative mothers should similarly receive hepatitis B vaccine, but ideally not until they reach term gestational age and a weight of at least 5.5 lbs (2.5 kg). Because of the substantial risk of disease, there is no change in the recommendations for infants of HBsAg-positive mothers or of mothers whose status is not known. Also, in populations where HBsAg screening of pregnant women is not routinely performed, vaccination of all infants at birth should be maintained, as is currently recommended.

The PHS and AAP are working to ensure that thimerosal-containing vaccines are removed from the market as soon as possible without adversely affecting vaccination coverage levels. They will continue to monitor the situation and may make additional statements. Anyone with questions about immunizations may call the VDH Division of Immunization at (804) 786-6246.

*Recommendations of the Advisory Committee on Immunization Practices: Revised Recommendations for Routine Poliomyelitis Vaccination**

Since 1979, the only indigenous cases of poliomyelitis reported in the United States (n=144) have been associated with use of the live oral poliovirus vaccine (OPV) (an additional six imported cases have been reported since 1979, the last of which occurred in 1993). Until recently, the benefits of OPV use (i.e., intestinal immunity, preventing secondary transmission) outweighed the risk for vaccine-associated paralytic polio (VAPP) (one case per 2.4 million doses distributed). In 1997, to decrease the risk for VAPP while maintaining the benefits of OPV, the Advisory Committee on Immunization Practices (ACIP) recommended a sequential schedule of inactivated poliovirus vaccine (IPV) followed by OPV. Since 1997, the global polio eradication initiative has progressed rapidly, and the likelihood of poliovirus importation into the United States has decreased substantially. In addition, since 1997, the sequential schedule has been well accepted. No declines in childhood vaccination coverage were observed, despite the need for additional injections.



On the basis of these data, on June 17, 1999, to eliminate the risk for VAPP, the ACIP recommended an all-IPV schedule for routine childhood polio vaccination in the United States. As of January 1, 2000, all children should receive four doses of IPV at ages 2 months, 4 months, 6-18 months, and 4-6 years.

OPV should be used only for the following special circumstances:

- Mass vaccination campaigns to control outbreaks of paralytic polio.
- Unvaccinated children who will be traveling in less than 4 weeks to areas where polio is endemic.
- Children of parents who do not accept the recommended number of vaccine injections. These children may receive OPV only for the third or fourth dose or both; in this situation, health-care providers should administer OPV only after discussing the risk for VAPP with parents or caregivers.

Availability of OPV is expected to be limited in the future in the United States. ACIP reaffirms its support for the global polio eradication initiative and use of OPV as the vaccine of choice to eradicate polio from the remaining countries where polio is endemic.

*CDC. MMWR 1999;48(27):590.

Cases of Selected Notifiable Diseases Reported in Virginia*

Disease	Total Cases Reported, June 1999: State	Regions: NW	N	SW	C	E	Total Cases Reported Statewide, January through June: This Year	Last Year	5 Yr Avg
AIDS	70	3	10	9	22	26	366	433	590
Campylobacteriosis	80	21	9	17	19	14	258	263	254
***E. coli* O157:H7**	8	3	3	1	0	1	26	30	16
Giardiasis	22	5	9	3	4	1	149	167	144
Gonorrhea	892	42	59	77	301	413	4739	2945	4666
Hepatitis A	22	2	12	2	5	1	76	126	94
B, acute	9	0	2	2	2	3	49	53	59
C/NANB, acute	2	2	0	0	0	0	10	5	9
HIV Infection	73	3	8	5	24	33	340	446	494
Lead in Children†	26	5	3	6	5	7	153	244	291
Legionellosis	3	0	1	0	0	2	13	8	8
Lyme Disease	3	1	0	1	1	0	18	20	15
Measles	0	0	0	0	0	0	3	2	1
Meningococcal Infection	2	0	0	0	2	0	26	23	33
Mumps	0	0	0	0	0	0	8	4	10
Pertussis	0	0	0	0	0	0	13	6	14
Rabies in Animals	42	11	9	4	7	11	249	330	260
Rocky Mountain Spotted Fever	1	0	0	0	1	0	1	2	3
Rubella	0	0	0	0	0	0	0	0	1
Salmonellosis	251	16	24	8	166	37	489	386	395
Shigellosis	9	1	6	1	1	0	38	66	194
Syphilis, Early§	40	0	5	17	9	9	203	237	477
Tuberculosis	15	0	8	1	3	3	124	148	163

Localities Reporting Animal Rabies This Month: Accomack 2 raccoons; Alexandria 1 bat; Augusta 2 raccoons, 1 skunk; Caroline 1 cat; Charles City 1 raccoon; Chesapeake 2 raccoons; Clarke 1 raccoon; Fairfax 1 fox, 5 raccoons; Halifax 1 raccoon, 1 skunk; Hanover 3 skunks; Henrico 1 raccoon; King George 1 raccoon; Montgomery 2 raccoons; Newport News 1 cat, 1 raccoon; Northumberland 2 raccoons; Page 1 bat, 1 horse, 1 raccoon; Patrick 1 raccoon; Prince William 1 fox, 1 raccoon; Rockingham 1 raccoon; Stafford 1 raccoon; Suffolk 1 raccoon; Virginia Beach 2 raccoons; Washington 1 skunk.
Occupational Illnesses: Asbestosis 18; Cadmium Exposure 1; Carpal Tunnel Syndrome 57; Hearing Loss 40; Lead Exposure 6; Pneumoconiosis 12; Silicosis 1.

*Data for 1999 are provisional. †Elevated blood lead levels ≥10µg/dL.
§Includes primary, secondary, and early latent.

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