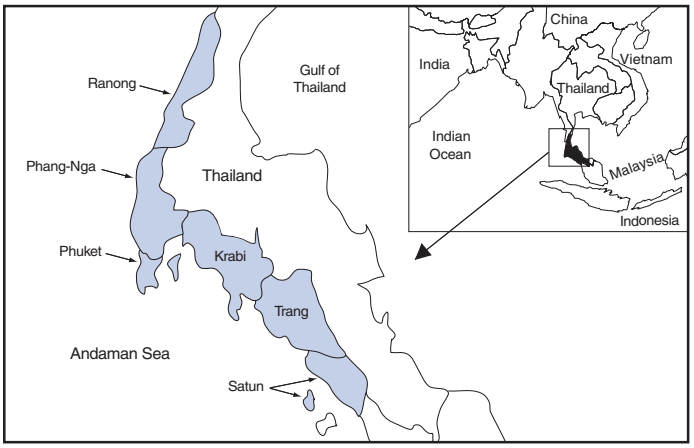
MMWR™
Morbidity and Mortality Weekly Report

Weekly January 28, 2005 / Vol. 54 / No. 3

Rapid Health Response, Assessment, and Surveillance After a Tsunami — Thailand, 2004–2005

On December 26, 2004, an earthquake triggered a devastating tsunami that caused an estimated 225,000 deaths in eight countries (India, Indonesia, Malaysia, Maldives, Seychelles, Somalia, Sri Lanka, and Thailand) on two continents. In Thailand, six provinces (Krabi, Phang-Nga, Phuket, Ranong, Satun, and Trang) were impacted (Figure 1), including prominent international tourist destinations. The Thai Ministry of Public Health (MOPH) responded with rapid mobilization of local and nonlocal clinicians, public health practitioners, and medical supplies; assessment of health-care needs; identification of the dead, injured, and missing; and active surveillance of syndromic illness. The MOPH response was augmented by technical assistance from the Thai MOPH–U.S. CDC Collaboration (TUC) and the Armed Forces Research Institute of Medical Sciences (AFRIMS), with support from the office of the World Health Organization (WHO) representative to Thailand. This report summarizes these activities. The experiences in Thailand underscore the value of written and rehearsed disaster plans, capacity for rapid mobilization, local coordination of relief activities, and active public health surveillance.

FIGURE 1. The six provinces in southern Thailand impacted by the tsunami



Rapid Response

MOPH rapidly activated mass casualty plans and deployed personnel and resources to meet local health-care needs. On December 26, a central command center in Bangkok and command centers in each of the six impacted provinces were established to coordinate activities. Deployments included approximately 100 teams providing emergency clinical care, 12 teams providing technical support and health education, five teams conducting active surveillance and investigating potential outbreaks, six teams providing mental health support, and three teams of MOPH-accredited massage therapists providing traditional Thai massage therapy for relief workers and displaced persons.

The first team from Bangkok arrived on December 26, approximately 6 hours after the tsunami struck. As of January 9, an estimated 90,000 persons in affected communities, relief centers, and displaced-person camps had received medi-

INSIDE

DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

The *MMWR* series of publications is published by the Coordinating Center for Health Information and Service*, Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, Atlanta, GA 30333.

SUGGESTED CITATION
Centers for Disease Control and Prevention. [Article Title]. MMWR 2005;54:[inclusive page numbers].

cal and mental health care; 9,798 received outpatient services, 2,233 received inpatient services (398 were in intensive care, and 1,254 underwent major surgical procedures), and approximately 80,000 persons received other types of care from mobile teams. Outbreak risks and sanitation, environmental, and community mental health needs were rapidly assessed and addressed. Health education programs on personal hygiene, water and food safety, garbage disposal, toilet construction, injury prevention, and mental health were initiated. Laboratories used for disease surveillance were supplemented with additional staff and equipment; food, drinking water, and sea water were assessed for safety.

Health and Needs Assessment

During December 30, 2004–January 6, 2005, three teams of Thai and U.S. health professionals from TUC and AFRIMS conducted a rapid health and needs assessment in the impacted provinces. Logistic and strategic support was provided by the Joint U.S.-Thai Military Advisory Group, Thailand.

Using a WHO rapid assessment tool (*1*), investigators collected data on hospital characteristics; damage to buildings and communication, electricity, water, and sewage systems; adequacy and condition of health-care personnel, medical supplies, and morgue facilities; and anticipated medical needs. Questions were initially directed to provincial health office staff members. However, on the provincial staffs' recommendation, staff from 10 mainland hospitals (four in Phuket, two in Phang-Nga, and one each in Krabi, Ranong, Satun, and Trang) and leaders from approximately 12 coastal and island communities in the six impacted provinces also were interviewed.

The 10 hospitals, with approximately 2,000 inpatient beds and 24 operating rooms, served as the primary referral centers for tsunami-related medical care. None of the 10 hospitals had been damaged by the tsunami; all had activated previously rehearsed, written mass casualty plans. Shortages of blood, blood products, and certain medical supplies (e.g., surgical devices and antibiotics) were noted during the first 2 days after the tsunami. Hospital morgue facilities were inadequate for the number of dead, and corpses were moved from hospitals to temporary morgues at nearby wats (temples).

Rapid mobilization of health professionals from multiple areas in Thailand resulted in adequate numbers of staff. By December 30, hospital patient loads were returning to usual levels, and the supplementary medical staff were released. By January 4, provincial health officials reported that needs for staff and supplies were being met. However, coordination of relief efforts was a challenge. One province was required to

coordinate the concurrent activities and service areas of 14 health teams from volunteer organizations.

A small hospital on the island of Koh Phi Phi in Krabi Province was destroyed by the tsunami, and four health clinics in coastal villages and islands were severely damaged or destroyed. Temporary clinics were established by provincial medical staff and volunteer organizations in some coastal villages and in displaced-person shelters. In the hospitals and communities assessed, food and bottled water were plentiful, and written guidance on water decontamination was posted.

Public Health Surveillance

As of January 25, in the six impacted provinces, 5,388 deaths had been confirmed; 8,457 persons were reported injured, and 3,120 persons remained missing (*2*). Phang-Nga Province was most severely affected, with 4,217 (78%) deaths, 5,597 (66%) persons injured, and 1,813 (58%) persons missing. Among the 3,762 confirmed dead whose nationality was established, 1,814 (48%) were reported to be Thai nationals (*2*).

Since 1970, MOPH has operated a national passive surveillance system for infectious diseases by using a standard reporting form; as of 2000, the system had 68 diseases under surveillance. After the tsunami, MOPH implemented active surveillance for 20 of these diseases plus wound infections and electric shock; five of these disease syndromes (i.e., clinically diagnosed acute diarrhea, wound infections, respiratory illness, meningitis, and febrile illness) are summarized in this report.

Active surveillance was initiated in all 20 districts in the six provinces impacted by the tsunami. Surveillance was established during December 26–January 2. Data for the 20 districts were collected from all medical facilities (77 health centers, 22 public hospitals, and four private hospitals), the two shelters for displaced persons, and the two forensic identification centers. Surveillance team members visited each site daily and collected individual case-report forms that included information on disease syndrome, age, sex, and nationality. Each day, these teams analyzed data and identified events requiring further investigation and preventive measures. Population data for 2004 from the Thai Ministry of the Interior were used to calculate incidences.

During December 26–January 11, the six provinces reported the following cases: 1,237 cases of acute diarrhea, 356 wound infections, 177 febrile illnesses, and 156 respiratory illnesses (including six cases of aspiration pneumonia). No cases of meningitis were reported; two deaths were attributed to pneumonia. The incidences of febrile illness and pneumonia were comparable with those during the same period a year ago.

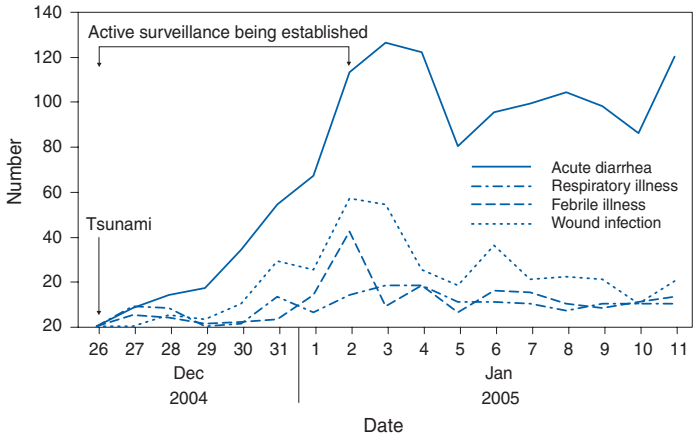
Cases of acute diarrheal disease increased steadily until January 3; since then, the number has stabilized at approximately 100 case reports per day (Figure 2). During December 26–January 11, seven disease clusters were detected; all were diarrheal disease. Implementation of active surveillance enhanced detection of diarrheal disease. The annualized rate from active surveillance was 1.7 times greater than that recorded from passive surveillance during the same period a year ago (2,950 cases per 100,000 population versus 1,758).

Incidence of wound infections was substantially higher than that recorded in previous years. Preliminary results from an ongoing investigation of 33 patients at two government hospitals in Phuket Province indicated that approximately two thirds of the infections were polymicrobial. The most common organisms recovered included *Proteus* spp., *Klebsiella* spp., *Pseudomonas* spp., *Staphylococcus aureus*, *Enterobacter* spp., and *Escherichia coli*. *Aeromonas hydrophila* was recovered from two infections. Active disease surveillance continues in the six impacted provinces.

Reported by: *Ministry of Public Health; World Health Organization representative to Thailand; Thai Ministry of Health–US CDC Collaboration, Nonthaburi; Armed Forces Research Institute of Medical Sciences, Bangkok, Thailand.*

Editorial Note: Thailand has a well-developed public health infrastructure that provides residents with more than 90% of their health care. The MOPH response to the December 26 tsunami was rapid and effective at mitigating the health consequences of the tsunami among survivors. Mass casualty plans were immediately activated, and medical personnel, technical experts, and supplies arrived soon after the tsunami struck (*3*). Health assessments conducted 1 week after the tsunami

FIGURE 2. Number of post-tsunami cases of acute diarrhea, respiratory illness, febrile illness, and wound infection, by date of report — six provinces*, Thailand, 2004–2005



* Krabi, Phang-Nga, Phuket, Ranong, Satun, and Trang.

indicated that, despite a huge influx in the number of patients, the medical system was intact and functioning effectively. As seen in other disasters, rapid health assessments can identify immediate health needs and help prioritize public health interventions (*4*).

Active disease surveillance was useful in identifying disease events and clusters requiring intensive investigation. Although active surveillance demonstrated an increase in the number of acute diarrhea cases, much of this increase can likely be attributed to active searching for rather than passive reporting of cases. Concerns by WHO and other authorities about post-tsunami infectious disease mortality have centered on massive outbreaks of cholera and other epidemic forms of diarrhea (*5*). In comparison with the post-tsunami rates of diarrheal disease observed in Thailand (2,950 cases per 100,000 population), the rate of diarrhea during previously studied outbreaks in disaster settings in other countries has been much higher (i.e., 87,000–120,000 cases per 100,000 population) (*6*).

The increased number of wound infections suggests that many who survived the initial impact of the tsunami were injured by debris (*7*). A large tsunami in 1998 in Aitape, Papua New Guinea, had high numbers of persons with traumatic wounds; an Australian team of three surgeons and one nurse reported performing 182 surgical procedures in 15 days (*8*). The large number of enteric pathogens cultured from wounds in Thailand suggests surface contamination with enteric pathogens or true polymicrobial infections. Treatment should include empiric antibiotic coverage for a range of organisms until results from wound tissue cultures are available to guide therapy. Infection with organisms commonly associated with wounds exposed to sea water, including *A. hydrophila* and *Vibrio vulnificus,* should be considered in the differential diagnoses of these patients (*9,10*).

Substantial challenges remain for Thailand, including identification of approximately 5,000 bodies and reconciliation of remains with the bereaved in Thailand and other countries. Forensic experts from Thailand and approximately 30 other countries are working together to complete the identification and processing of human remains. Other challenges include maintaining active surveillance to detect infectious disease outbreaks, treating wound infections, preventing posttraumatic injuries, maintaining safe drinking water and sanitation, and meeting mental health needs. As of January 19, a total of 7,423 survivors had sought psychiatric help (MOPH, unpublished data, 2005). Further mental health interventions will likely be needed to mitigate the postdisaster effects on residents of coastal communities.

References

1. World Health Organization. Rapid health assessment protocols for emergencies. Geneva, Switzerland: World Health Organization; 1999.
2. Provincial Civil Service Center for the Prevention of Disaster, Department of Disaster Prevention and Mitigation, Ministry of Interior, Thailand. Announcement 57; 2005.
3. Watts J. Thailand shows the world it can cope alone. Lancet 2005;365.
4. CDC. Rapid assessment of the needs and health status of older adults after hurricane Charley—Charlotte, DeSoto, and Hardee Counties, Florida, August 27–31, 2004. MMWR 2004;53:837–40.
5. World Health Organization. Situation report 4. Geneva, Switzerland: World Health Organization; 2005. Available at http://www.who.int/hac/crises/international/asia_tsunami/sitrep/04/en.
6. Goma Epidemiology Group. Public health impact of Rwandan refugee crisis: what happened in Goma, Zaire, in July, 1994? Lancet 1995; 345:339–44.
7. CDC. Surveillance for fatal and nonfatal injuries—United States, 2001. MMWR 2004;53:20–1.
8. Holian AC, Keith PP. Orthopaedic surgery after the Aitape tsunami. Med J Aust 1998;169:606–9.
9. Cailleaux V, Dupont MJ, Hory B, Amsallem D, Michel-Briand Y. Why did infection with *Aeromonas hydrophila* occur when water contains so many other microorganisms? Clin Infect Dis 1993;16:174.
10. Tacket CO, Brenner F, Blake PA. Clinical features and an epidemiologic study of *Vibrio vulnificus* infections. J Infect Dis 1984;149:558–61.

Public Health Consequences from Hazardous Substances Acutely Released During Rail Transit — South Carolina, 2005; Selected States, 1999–2004

On January 6, 2005, two freight trains collided in Graniteville, South Carolina (approximately 10 miles northeast of Augusta, Georgia), releasing an estimated 11,500 gallons of chlorine gas, which caused nine deaths and sent at least 529 persons seeking medical treatment for possible chlorine exposure (*1,2*; South Carolina Department of Health and Environmental Control [SCDHEC], unpublished data, 2005). The incident prompted the Agency for Toxic Substances and Disease Registry (ATSDR) to review data from its Hazardous Substances Emergency Events Surveillance (HSEES) system and update an analysis of 1993–1998 railroad events (*3*). The HSEES system is used to collect and analyze data concerning the public health consequences (e.g., morbidity, mortality, and evacuations) associated with hazardous-substance–release events* that occur in facilities or during trans-

* An HSEES event is the acute release or threatened release of a hazardous substance(s) into the environment in an amount that requires (or would have required) removal, cleanup, or neutralization according to federal, state, or local law (*4*). A hazardous substance is one that can reasonably be expected to cause an adverse health effect.

portation. This report describes the event in South Carolina, which is not part of the HSEES system, and two others from HSEES, and summarizes all rail events reported to HSEES from 16 state health departments[†] during 1999–2004[§]. Local government agencies, employers, and first responders can help reduce morbidity and mortality from transit-associated hazardous-substance releases by examining historical spill data for planning purposes, developing emergency response plans, undergoing proper hazardous materials (HazMat) training, and reviewing epidemiologic investigation data.

Case Reports

South Carolina. At approximately 2:40 a.m. on January 6, in Graniteville, South Carolina, a freight train with three chlorine tanker cars and one sodium hydroxide tanker car collided with a train parked on an industrial rail spur. The collision caused a breach in one chlorine car, which resulted in the immediate release of an estimated 11,500 gallons of chlorine gas. As a result, nine persons died, and at least 529 persons sought medical care. Because exposure to high levels of chlorine can result in corrosive damage to the eyes, skin, and respiratory tissues and lead to pulmonary edema and, in extreme cases, death (*5*), local emergency management officials initially issued a shelter-in-place order for a 1-mile radius around the site until 4:30 p.m. At noon, South Carolina declared a state of emergency, giving local authorities responsibility for issuing a mandatory evacuation for the 5,453 residents within the 1-mile radius. Area schools and businesses were closed. Four days later, an operation to patch the leaking chlorine tank car succeeded by applying a temporary repair (*2*). Federal responders from ATSDR, the U.S. Environmental Protection Agency (EPA), and the U.S. Coast Guard arrived to assist SCDHEC in sampling air in factories, homes, and schools within the 1-mile radius.

A rapid epidemiologic assessment determined that, of the 511 persons examined in emergency departments after exposure to chlorine gas, 69 were hospitalized in seven area hospitals. An additional 18 persons were treated at area physician offices. An ongoing assessment is examining the public health impact associated with exposure to chlorine gas. Those exposed are being interviewed about their symptoms, the location and duration of the exposures, and demographic information necessary for monitoring any long-term health effects and psychosocial consequences.

[†] Alabama, Colorado, Iowa, Louisiana, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Oregon, Rhode Island, Texas, Utah, Washington, and Wisconsin.

[§] Data for 2004 are preliminary.

Texas. In June 2004, a moving train struck a stationary train at a rail substation, causing a derailment. One tanker car was punctured, releasing approximately 90,000 pounds of chlorine gas. At least 60,000 pounds of chlorine reacted with sodium hydroxide to form sodium hypochlorite. Also released were approximately 78,000 gallons of urea fertilizer and 7,000 gallons of diesel fuel. Forty-four persons were injured, including three who died. The train conductor died from trauma sustained during impact, and two elderly residents near the site died from chlorine inhalation. Of the remaining 41 injured, 22 were members of the general public, 13 were employees, and six were first responders. The most frequent injuries were respiratory and eye irritation. The majority of those injured (22 [54%]) were treated at a hospital and released, 12 (29%) were treated on the scene, and seven (17%) were treated at a hospital and admitted. Nearby residents initially were ordered to shelter-in-place while a site assessment was conducted. Later, evacuation of 45 residents for 13 days was ordered when the company prepared to unload the chlorine car. Responding to the event were a certified HazMat team; railroad response team; EPA response team; teams from the National Transportation Safety Board and Federal Railroad Administration; and local health, environmental, fire, law enforcement, and emergency medical services (EMS) personnel. Twenty railroad employees and 80 first responders were decontaminated after responding to the event. The cause of the derailment was determined to be human error (i.e., failure to stop).

Missouri. In August 2002, approximately 16,900 pounds of chlorine gas were released from a railroad tanker car when a flex hose ruptured during unloading at a chemical plant. An automatic shut-off valve on the car and an emergency shut-off system at the plant failed to work as back-up prevention measures. Sixty-seven persons were injured: 61 members of the general public and six employees. The most common injury was respiratory irritation. Sixty-five (97%) of the injured were treated at a hospital and released; two (3%) were admitted. Approximately 400 nearby residents were evacuated for 7.5 hours; the release was stopped and contained through the efforts of a certified HazMat team; company response team; EPA response team; and law enforcement, fire, EMS, and local environmental personnel.

HSEES Data

Of the 49,450 events reported to HSEES during 1999–2004, a total of 12,845 (30%) were transportation related; of these, 1,165 (9%) were rail events. Fifteen of the 16 HSEES states reported rail events, with Texas (249 [21%] events) and Louisiana (175 [15%]) reporting the most. Rail events occurred

most frequently in industrial (47%) and commercial areas (27%). A total of 1,080 (93%) events involved the release of only one chemical. Of the 1,299 total substances released, the most common were sulfuric acid (73 [6%] releases), sodium hydroxide (60 [5%]), and hydrochloric acid (53 [4%]) (Table). Chlorine gas, the substance released in all three case reports, accounted for 11 (0.8%) of the releases reported to HSEES in rail events.

Approximately 60% of the known quantities released were measured in gallons. Of these, quantities ranged from <1 gallon to 400,000 gallons (median: 7.5 gallons). Of the 1,055 (91%) railroad events for which a primary cause was identified, 645 (61%) resulted from equipment failure and 258 (24%) from human error.

Forty-six (4%) of the 1,165 identified rail events resulted in injuries to 271 persons, including four deaths. The persons most frequently injured were members of the general public (e.g., nearby residents) (150 [55%]) and employees (e.g., of railroads and plants) (77 [28%]). Of the 370 total injuries sustained by the 271 persons, the most frequently reported were respiratory irritation (147 [40%]), headache (40 [11%]), and eye irritation (36 [10%]). Of the 271 injured, 205 (76%) were treated at hospitals and released, 29 (11%) were treated on the scene, 15 (6%) were treated at hospitals and admitted, and four (1%) died.

Of the 938 (81%) railroad events for which population data were available, 185,801 persons lived within one-quarter mile of the release (range: 0–3,000 persons; median: 38 persons). Seventy-five (6%) railroad events involved ordered evacuations, of which 61 had a known number of evacuees. A total of 11,497 persons (range: 2–2,500 persons; median: 50 persons) were known to have evacuated. Durations of evacuation ranged from <1 hour to 13 days (median: 4 hours).

TABLE. Most common hazardous substances released during rail events — Hazardous Substances Emergency Events Surveillance (HSEES) system, 16 states*, 1999–2004†

Substance	No. of releases§	(%)
Sulfuric acid	73	(5.6)
Sodium hydroxide	60	(4.6)
Hydrochloric acid	53	(4.1)
Ammonia	51	(3.9)
Methanol	36	(2.8)
Phosphoric acid	30	(2.3)
Mixture¶	27	(2.1)
Argon	22	(1.7)
Ethylene glycol	22	(1.7)
Diesel fuel	19	(1.5)
Ethanol	17	(1.3)
Hydrogen peroxide	16	(1.2)
Potassium hydroxide	15	(1.1)
Alcohol NOS**	11	(0.8)
Ammonium nitrate	11	(0.8)
Chlorine	11	(0.8)
Sodium chlorate	11	(0.8)

* Alabama, Colorado, Iowa, Louisiana, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Oregon, Rhode Island, Texas, Utah, Washington, and Wisconsin.
† 2004 data are preliminary.
§ A total of 1,299 substances were released during the 1,165 rail events.
¶ Substances mixed before release (e.g., benzene/toluene).
** Not otherwise specified.

Reported by: *C Henry, Missouri Dept of Health and Senior Svcs. A Belflower, MSPH, D Drociuk, MSPH, JJ Gibson, MD, Div of Acute Disease Epidemiology, South Carolina Dept of Health and Environmental Control. R Harris, Texas Dept of Health. DK Horton, MSPH, S Rossiter, MPH, M Orr, MS, Div of Health Studies; B Safay, T Forrester, Div of Regional Operations; S Wright, Div of Toxicology; Agency for Toxic Substances and Disease Registry. MA Wenck, DVM, EIS Officer, CDC.*

Editorial Note: Approximately 800,000 shipments of hazardous substances travel daily throughout the United States by ground, rail, air, water, and pipeline; approximately 4,300 shipments of hazardous materials travel each day by rail, including chemical and petroleum products (*6*). Although nearly all of these materials safely reach their destinations (*7*), many are explosive, flammable, toxic, and corrosive and can be extremely dangerous when improperly released. These materials frequently are transported over, through, and under areas that are densely populated or populated by schools, hospitals, or nursing homes, where the consequences of an acute release could result in environmental damage, severe injury, or death (*8*).

Findings from the HSEES system suggest that rail events constitute only 2% of total hazardous-substance releases. Furthermore, most rail events involved small-scale releases (75% of events involved ≤70 gallons). However, large-scale, acute releases during rail transit can occur (10% of events involved ≥2,200 gallons) and can cause substantial injury and death, as demonstrated by the case reports.

The findings in this report are subject to at least two limitations. Reporting of any event to HSEES is not mandatory; therefore, participating state health departments might not be informed about every event. Second, only 16 state health departments provided data to HSEES during the analysis period; therefore, the data represent only a proportion of the total hazardous-substance releases in the United States.

Examining data on locations, types, and times of previous hazardous-substance releases is crucial to preventing or planning responses to future releases (Box). HSEES does not anticipate a new funding announcement until 2008; however, nonparticipating states can use the U.S. Department of Transportation Hazardous Materials Information Reporting System (HMIRS) to acquire data on railroad and other transportation-related hazardous materials incidents in their area. Although HMIRS does not actively collect detailed public

BOX. Measures that government, employers, and first responders can implement to reduce morbidity and mortality from transit-associated hazardous-substance releases

- Route hazardous materials away from densely populated areas, where feasible.
- Use Hazardous Substances Emergency Events Surveillance data or other federal, state, and local databases to determine where most releases occur.
- Develop emergency response plans before hazardous-substance events occur, including a community-based public education campaign detailing proper evacuation (http://www.bt.cdc.gov/planning/evacuationfacts.asp), shelter-in-place plans (http://www.bt.cdc.gov/planning/shelteringfacts.asp), and decontamination procedures (http://www.bt.cdc.gov/planning/personalcleaningfacts.asp).
- Deploy public warning systems (e.g., sirens), practice drills, and public shelters.
- Ensure that employees who work with or around hazardous substances undergo continuous job safety training (e.g., hazardous materials training) and have access to appropriate personal protective equipment.
- Ensure that emergency medical service and hospital emergency department staffs have the necessary guidance to plan for, and improve their ability to respond to, incidents that involve human exposure to hazardous materials (http://www.atsdr.cdc.gov/mhmi.html).
- Emphasize the importance of preventive maintenance of equipment and vehicles used in transport (*3*,*9*).

health consequence data, nonparticipating states can request such data from HSEES participant states to increase their knowledge of hazardous-substance releases.

References

1. Environmental Protection Agency. Norfolk Southern Graniteville derailment. Washington, DC: Environmental Protection Agency; 2005. Available at http://www.epa.gov/region4.
2. South Carolina Emergency Management Division. Graniteville train accident situation reports. Available at http://www.scemd.org.
3. Orr MF, Kaye WE, Zeitz P, Powers ME, Rosenthal L. Public health risks of railroad hazardous substance emergency events. J Occup Environ Med 2001;43:94–100.
4. Agency for Toxic Substances and Disease Registry. Hazardous Substances Emergency Events Surveillance System biennial report, 1999–2000. Atlanta, GA: US Department of Health and Human Services, Agency for Toxic Substances and Disease Registry; 2001. Available at http://www.atsdr.cdc.gov/HS/HSEES.
5. Agency for Toxic Substances and Disease Registry. ToxFAQs™ for chlorine. Atlanta, GA: US Department of Health and Human Services, Agency for Toxic Substances and Disease Registry; 2002. Available at http://www.atsdr.cdc.gov/tfacts172.html.
6. US Department of Transportation. Hazardous materials shipments, Washington, DC: US Department of Transportation; 1998. Available at http://hazmat.dot.gov/pubs/hms/hmship.pdf.
7. Association of American Railroads. Railroads: the safe way to move. Washington, DC: Association of American Railroads; 2004. Available at http://www.aar.org/pubcommon/documents/policy/safe_way_to_move.pdf.
8. US Department of Transportation. Biennial report on hazardous materials transportation, calendar years 1996–1997. Washington, DC: US Department of Transportation; 1999. Available at http://hazmat.dot.gov/pubs/biennial/96_97biennial.rpt.pdf.
9. Horton DK, Berkowitz Z, Haugh GS, Orr MF, Kaye WE. Acute public health consequences associated with hazardous substances released during transit, 1993–2000. J Hazard Mater 2003;B98:161–75.

Outbreaks of Pertussis Associated with Hospitals — Kentucky, Pennsylvania, and Oregon, 2003

Pertussis outbreaks have been reported in various settings, including sports facilities, summer camps, schools, and health-care facilities. Mild and atypical manifestations of pertussis among infected persons and the lack of quick and accurate diagnostic tests can make pertussis outbreaks difficult to recognize and therefore difficult to control. Outbreaks among health-care workers (HCWs) are of special concern because of the risk for transmission to vulnerable patients (*1*). This report describes three pertussis outbreaks among HCWs and patients that occurred in hospitals in Kentucky, Pennsylvania, and Oregon in 2003. These outbreaks illustrate the importance of complying with measures to reduce nosocomial infection when evaluating or caring for patients with acute respiratory distress or cough illness of unknown etiology.

Case Definitions

A clinical case of pertussis is defined as a cough illness lasting at least 2 weeks with one of the following: paroxysm of coughing, inspiratory "whoop," or posttussive vomiting, without other apparent cause (*2*). In addition, for the outbreaks described in this report, persons with cough lasting for >14 days were also considered to represent clinical cases of pertussis. A confirmed case was defined as 1) a cough illness of any duration with isolation of *Bordetella pertussis*, or 2) a case that met the clinical case definition and was either confirmed by a polymerase chain reaction (PCR) assay positive for *B. pertussis* DNA or had epidemiologic linkage to a confirmed case (*2*). In addition, sera from several patients with suspected pertussis were submitted to the Massachusetts State Laboratory Institute (MSLI) for serologic testing to support diagnoses.*

* MSLI has validated and standardized an enzyme-linked immunosorbent assay (ELISA) for IgG antibodies to pertussis toxin that is used to confirm pertussis in Massachusetts (*3*).

Case Investigations

Kentucky. In early August 2003, an infant aged 2 months, who was born at 26 weeks' gestation and hospitalized in the intermediate care nursery (ICN) since birth, exhibited cough and apnea. Two days later, the infant was transferred to a neonatal intensive care unit (NICU) and ventilated mechanically. Seven days later, pertussis was suspected; 3 days later, nasopharyngeal (NP) secretions tested positive for *B. pertussis* DNA by PCR. The infant was treated with azithromycin (10 mg/kg/day on day 1 and 5 mg/kg/day on days 2–5), and droplet precautions were initiated in the NICU.

A resident (physician A) in her first trimester of pregnancy examined the infant daily for 5 days in mid-August and did not wear a procedural or surgical mask. She experienced face-to-face exposure within 3 feet of the infant and was therefore designated as a close contact[†]. Nine days after initial exposure to the infant, physician A exhibited rhinorrhea and, 4 days later, a cough. Physician A declined recommended azithromycin prophylaxis. NP secretions obtained from the physician 4 days after symptom onset tested positive by PCR for *B. pertussis* DNA, and *B. pertussis* was isolated by culture.

The source of pertussis in the infant might have been one of four ICN nurses who provided care to the infant and who had onset of a pertussis-compatible cough illness during the 3-week period preceding the infant's illness. NP secretions obtained from these nurses more than 4 weeks after cough onset were negative for *B. pertussis* DNA by PCR and negative for *B. pertussis* by culture; however, three of the nurses had levels of IgG antibody to pertussis toxin that met MSLI criteria for a positive result (i.e., >20 μg/ml) (*3*), indicating response to recent *B. pertussis* infection. Azithromycin prophylaxis was administered to 72 exposed patients and 72 HCWs who were identified as close contacts. No additional cases were identified.

Pennsylvania. In early September 2003, an infant aged 3 weeks was admitted to the pediatric unit at hospital A for 1 day before being transferred to a referral hospital. The infant had cough, posttussive vomiting, and fever for 5 days. Pertussis infection was considered unlikely in the differential diagnosis, the patient was not tested for pertussis, and droplet precautions were not observed by staff. NP secretions were obtained for culture from the infant at the referral hospital, and *B. pertussis* was isolated 16 days later. Pediatrician B, who cared for the infant at hospital A, had onset of a cough illness 9 days after exposure. Even though he remained symptom-

[†] For all outbreaks cited in this report, close contacts were defined as those persons who experienced face-to-face contact within 3 feet of a pertussis patient, including those who shared a room or living space with a pertussis patient or who were directly cared for by an HCW with pertussis.

atic, the pediatrician continued to treat patients without wearing a mask and was in contact with other HCWs, family members, and friends. Twenty-two days after his initial exposure, NP secretions obtained from pediatrician B were positive for *B. pertussis* DNA by PCR.

Further investigation identified seven other pertussis cases in HCWs (a respiratory therapist, a radiograph technician, and five student nurses) who had been exposed to the infant at hospital A. In addition, nine of their HCW contacts had cough illnesses lasting >14 days. The first seven HCWs were tested too late (i.e., >3 weeks after symptom onset) and were negative; their nine contacts were tested within 2 weeks of symptom onset but were negative by culture and by PCR. In addition, two children who had been examined by pediatrician B tested positive for *B. pertussis* DNA by PCR.

To prevent further transmission, hospital infection-control personnel screened exposed employees for cough illness and treated all symptomatic HCWs with a 5-day course of azithromycin (500 mg on day 1 and 250 mg on days 2–5), and these HCWs were excluded from work for 5 days. A total of 307 close contacts of the symptomatic HCWs, including other HCWs, household members, patients, residents of an institution for mentally impaired persons, and residents of a dormitory for student nurses, received prophylaxis with a 5-day course of azithromycin. In addition to notifying exposed patients by letter and by telephone, the hospital established an informational telephone hotline and conducted press conferences to inform patients and health-care providers of potential exposures.

Oregon. In late September 2003, physician C treated an infant aged 12 months with PCR-confirmed pertussis in the pediatric ICU. Physician C, who wore a mask while providing care to the infant, had been exposed to a colleague who had prolonged cough illness since mid-September. The colleague was subsequently found to have elevated IgG anti–pertussis-toxin antibody levels (i.e., >20 μg/mL, as measured by the MSLI assay) (*3*) consistent with recent pertussis infection.

Approximately 2 weeks after treating the infant, physician C had onset of a cough illness; 2 weeks later, the physician's NP secretions tested positive for *B. pertussis* DNA by PCR. Physician C was treated with a 5-day course of azithromycin (500 mg on day 1 and 250 mg on days 2–5) and was excluded from work for 5 days. The hospital infection-control program identified 129 close contacts of physician C, including 22 pediatric ICU patients, 78 employees, and 29 medical students and physicians. One exposed patient had severe cough illness and tested positive for *B. pertussis* DNA by PCR, and three employees had pertussis-like illness. The patient with confirmed pertussis and three symptomatic contacts were treated with a 5-day course of azithromycin; the remaining 125 contacts accepted prophylaxis.

Because of increased awareness among staff and active case-finding by hospital infection-control personnel, three additional pertussis cases unrelated to the cases described previously were identified among employees, including a medical assistant from the perinatal clinic who might have exposed as many as 300 pregnant women, a surgical physician assistant who might have exposed 26 patients and 17 staff members, and a nurse midwife who might have exposed 17 patients and 21 staff members. An NP specimen from one of the employees tested positive by PCR, but the source of infection was unknown. The other two symptomatic employees reported exposure to their children who had recent PCR-confirmed pertussis. All three employees were treated, and their contacts were offered prophylaxis with azithromycin.

The hospital used e-mail with a link to an Internet-based questionnaire to survey approximately 14,000 employees, students, and volunteers for recent onset of cough illness; 209 employees with cough illness responded, and 189 employees were interviewed. Azithromycin was recommended for 90 persons with cough illness of ≥7 days' duration. NP secretions were obtained from 64 survey respondents; all tests were negative for *B. pertussis* DNA by PCR. No additional linked cases among hospital employees were identified.

Reported by: *K Bryant, MD, Univ of Louisville; K Brothers, MD, Univ of Louisville School of Medicine; K Humbaugh, MD, Louisville Metro Health Dept, Kentucky. V Kistler, Allentown Health Bur; S Stites, S Madeja, Bethlehem Health Bur; JA Jahre, MD, SJ Schweon, B Coyle, MD, C Kalman, St. Luke's Hospital, Bethlehem; TL Burger, Lehigh Valley Hospital, Lehigh Valley; P Lurie, MD, Div of Infectious Disease Epidemiology; H Stafford, P Tran, MEd, Div of Immunizations; T Metcalf, J Naugle, W Miller, J Bart, DO, Bur of Community Health Systems, Pennsylvania Dept of Health. P Lewis, MD, R Taplitz, MD, M Post, MS, A Ashby, T Soden, T Clover, Oregon Health and Sciences Univ, Portland; K Segnitz, Multnomah County Health Dept; H Gillette, MPH, Oregon Health Svcs. T Tiwari, MD, FB Pascual, MPH, TV Murphy, MD, KM Bisgard, DVM, JS Moran, MD, Epidemiology and Surveillance Div, National Immunization Program; A Calugar, MD, EIS Officer, CDC.*

Editorial Note: Despite high childhood coverage for pertussis vaccination (*4*), reported pertussis incidence in the United States has increased from a low of 1,248 cases (0.54 per 100,000 population) in 1981 to an annual average of 9,431 cases during 1996–2003 (average annual rate: 3.3 per 100,000 population) (*5*). During 1996–2004, the majority of pertussis patients were either aged <6 months (35.1%) (i.e., too young to have received the 3-dose primary series) or aged ≥7 years (60.7%) (i.e., too old to receive a pertussis vaccination)

(*6*). Adolescents and adults, including HCWs, might become susceptible to pertussis because of waning immunity. No pertussis vaccine is approved in the United States for persons aged ≥7 years; however, in 2004, two pharmaceutical companies submitted biologics license applications to the Food and Drug Administration (FDA) for two tetanus toxoid and reduced diphtheria toxoid and acellular pertussis vaccine adsorbed (Tdap) products, one for persons aged 10–18 years and the other for persons aged 11–64 years.[§]

This report highlights two primary difficulties in the diagnosis of pertussis. First, diagnosis might be delayed or missed because symptoms are atypical. In adolescents and adults, symptoms during the catarrhal stage are most often nonspecific, but the disease is already highly communicable (*2*). In infants, diagnosis might be delayed when the presentation is respiratory distress with apnea without the typical cough. Second, sensitive and specific diagnostic tests for pertussis are not readily available in many settings; culture, the standard test, has diminishing sensitivity with progression of the classic symptoms of the infection. PCR for pertussis is not standardized, and false-positive and false-negative results can occur (*2*). In addition, no serologic test for pertussis has yet been validated and made available nationally, although CDC and FDA are developing such a test (*7*).

Because droplet transmission of pertussis can occur at the first contact with an ill patient, HCWs and hospital infection-control services should take measures to prevent hospital transmission (Box). Many nosocomial outbreaks might be prevented by HCWs' observing droplet precautions (i.e., wearing procedural or surgical masks and hand washing) (*8*). Delay in recognizing pertussis can result in spread of disease to HCWs, patients, and other contacts. HCWs should suspect pertussis in unvaccinated or partially vaccinated infants with respiratory distress (e.g., apnea or cough) and obtain NP secretions for culture. Isolation precautions are recommended for confirmed and suspected cases of pertussis (*2*).

Erythromycin is recommended for treatment and prophylaxis of pertussis (*1*). However, because erythromycin frequently causes gastrointestinal disturbance, many patients do not complete the recommended 2-week course. Azithromycin was used during all the outbreaks described in this report because it causes fewer and milder side effects than erythromycin and its longer half-life means that fewer daily doses are required, thereby increasing the potential for patient compliance. A recent study that compared azithromycin administered as 10 mg/kg (maximum: 500 mg) on day 1 followed by

[§] Additional information is available at http://www.gsk.com/press_archive/press2004/press_07072004.pdf and http://www.us.aventispasteur.com/news/20040811_ADACEL.pdf.

BOX. Epidemiology, diagnosis, treatment, and prevention of transmission of pertussis among health-care workers (HCWs) and close contacts

Epidemiology
- Pertussis is endemic and can be severe in nonimmunized infants.
- Transmitted from patients to close contacts by aerosolized respiratory droplets.
- Highly communicable during the catarrhal stage and the first 3 weeks after cough onset.

Laboratory Diagnosis/Testing
- Isolation of *Bordetella pertussis* by culture is the standard test. Success in isolating the organism declines with antibiotic therapy, delay in specimen collection beyond the first 3 weeks of illness, and immunity.
- Polymerase chain reaction (PCR) testing of specimens is rapid but is not yet nationally validated or standardized; once validated, PCR could be used in addition to culture.
- Standardized and validated enzyme-linked immunosorbent assay for anti–pertussis-toxin IgG is under development.

Clinical Findings
- Incubation period: 7–10 days (range: 4 –21 days).
- Catarrhal stage: 1–2 weeks; coryza, low-grade fever, and mild cough.
- Paroxysmal stage: 1–6 weeks; paroxysmal cough, posttussive vomiting, and inspiratory "whoop."
- Convalescent stage: >3 weeks; cough lessens and disappears.

Treatment/Prophylaxis
- Macrolides (erythromycin, azithromycin, or clarithromycin) are preferred.
- Trimethoprim-sulfamethoxazole is an alternate antibiotic for use in persons with allergy or intolerance to macrolides.

Prevention
- Vaccination of children is available as a 5-dose series administered at ages 2, 4, 6, and 15–18 months and age 4–6 years.
- HCWs or patients with pertussis-like cough illness (i.e., highly suspected for pertussis) should be tested and treated.
- HCWs with pertussis should be excluded from work for 5 days from the start of antibiotic use; if no antibiotic is taken, HCWs should be excluded from work for 21 days from onset of symptoms.
- HCWs should keep coughing patients >3 feet from other persons and implement droplet precautions, including wearing of procedural or surgical masks.
- Isolation precautions are recommended for confirmed and suspected pertussis cases.

5 mg/kg (maximum: 250 mg) on days 2–5 with a 7-day treatment of erythromycin demonstrated equivalence between the two treatments (*9*).

Nosocomial pertussis outbreaks can result in substantial public health and economic costs (*10*). Public health professionals and hospital decision-makers should consider potential savings and benefits from implementing effective infection-control strategies and from selective pertussis vaccination of HCWs when adult vaccines become available in the United States.

References

1. Wright SW, Decker MD, Edwards KM. Incidence of pertussis infection in healthcare workers. Infect Control Hosp Epidemiol 1999;20:120–3.
2. CDC. Guidelines for control of pertussis outbreaks. Atlanta, GA: US Department of Health and Human Services, CDC; 2000. Available at http://www.cdc.gov/nip/publications/pertussis/guide.htm.
3. Marchant CD, Loughlin AM, Lett SM, et al. Pertussis in Massachusetts, 1981–1991: incidence, serologic diagnosis, and vaccine effectiveness. J Infect Dis 1994;169:1297–305.
4. CDC. Recommended childhood and adolescent immunization schedule—United States, January–June 2004. MMWR 2004;53:Q1–4.
5. CDC. Notifiable diseases/deaths in selected cities weekly information (week 51). MMWR 2005;53:1204–12.
6. CDC. Summary of notifiable diseases, United States, 1996–2002. Atlanta, GA: US Department of Health and Human Services, CDC; 2004. Available at http://www.cdc.gov/mmwr/summary.html.
7. Baughman AL, Bisgard KM, Edwards KM, et al. Establishment of diagnostic cutoff points for levels of serum antibodies to pertussis toxin, filamentous hemagglutinin, and fimbriae in adolescents and adults in the United States. Clin Diagn Lab Immunol 2004;11:1045–53.
8. CDC. Respiratory hygiene/cough etiquette in healthcare settings. Atlanta, GA: US Department of Health and Human Services, CDC; 2004. Available at http://www.cdc.gov/flu/professionals/pdf/resphygiene.pdf.
9. Langley JM, Halperin SA, Boucher FD, Smith B. Azithromycin is as effective as and better tolerated than erythromycin estolate for the treatment of pertussis. Pediatrics 2004;114:e96–101.
10. Calugar A, Ortega-Sanchez I, Oakes L, Jahre J, Tiwari T, Murphy TV. Economic impact of nosocomial pertussis among health-care workers—Pennsylvania, 2003. 53rd Annual Epidemic Intelligence Service (EIS) Conference; April 19–23, 2004; Atlanta, GA.

Brief Report

Fatal Case of Pertussis in an Infant — West Virginia, 2004

In December 2004, an infant aged 29 days in West Virginia died from pertussis after exposure to adult family members with probable undiagnosed pertussis. Pertussis (i.e., whooping cough) is a prolonged respiratory illness caused by the bacterium *Bordetella pertussis* and characterized by a violent cough, inspiratory whoop, and posttussive vomiting. The cough often lasts from several weeks to up to 3 months. However, adolescents and adults, even those previously vaccinated as children, often have disease not recognized as pertussis, leading to intrafamilial and nosocomial transmission (*1*). In the United States, children aged <6 months are at the highest risk for severe illness or death from pertussis because most infants do not complete their primary vaccination series until age 6 months (*1*). This report summarizes results of the West Virginia Department of Health and Human Resources (WVDHHR) case investigation, which underscore the critical need to prevent pertussis transmission to infants from adolescents and adults with undiagnosed disease.

On December 11, the infant was taken by her parents to a local emergency department (ED) with difficulty breathing. The infant had been coughing for approximately 5 days with increasing severity, resulting in posttussive vomiting and several choking episodes. At presentation, the infant was lethargic, and examination revealed tachycardia and mild fever (99.5°F [37.5°C]). Before intubation and oxygen supplementation, the infant had thick, foamy mucus coming from her mouth, appeared cyanotic, and had an O_2 saturation of 70% by pulse oximetry. Seizure activity was noted during intubation. Laboratory results revealed severe leukocytosis (white blood cell count: 104,100/μL; normal: 5,000–19,500/μL), severe lymphocytosis (26,600/μL; normal: 2,500–16,500/μL), and a nasopharyngeal swab was positive for respiratory syncytial virus (RSV) by rapid immunoassay alone. A chest radiograph revealed right upper lobe and perihilar infiltrates, and an electrocardiogram indicated supraventricular tachycardia. Three hours after arrival at the ED, the infant was transferred to a pediatric intensive care unit (PICU) with diagnoses of pneumonia and respiratory failure.

On transfer to the PICU, the infant was placed on droplet precautions and contact isolation, treated for suspected sepsis, and started on azithromycin for presumed *B. pertussis* infection on the basis of clinical signs. The infant's ventilator course was characterized by hypoxemia (admission PaO_2/FiO_2 ratio: 172) and increasing hypercarbia. Sequential cardiac ultrasounds demonstrated increasing pulmonary hypertension (right ventricular pressure: 2/3 systemic). Nineteen hours after admission, oxygenation worsened precipitously (PaO_2/FiO_2 ratio: 52–60) and failed to improve with nitric oxide administration or high-frequency ventilation. A double-volume exchange transfusion was performed (*2*), but the infant failed to improve and died approximately 30 hours after admission to the PICU.

A specimen obtained from the infant's nasopharynx after admission to the PICU was reported at the time of the infant's death to be positive for *B. pertussis* DNA and negative for *B. parapertussis* DNA by polymerase chain reaction (PCR); however, no specimen was submitted for culture. Results were negative by both rapid immunoassay and culture for RSV, influenza A and B, and parainfluenza viruses 1, 2, and 3, and

negative by culture for adenovirus. The diagnosis of confirmed pertussis was based on history, clinical findings, and a positive PCR test (*3*). The infant might have had a coinfection with RSV based on the positive RSV rapid immunoassay at the ED; this result was not confirmed by a repeat RSV rapid immunoassay or by culture at the PICU.

The infant was born at 36 weeks' gestation (birth weight: 2,665 g) by normal, uncomplicated, vaginal delivery. The infant's mother, aged 20 years, had a prolonged paroxysmal cough with posttussive vomiting and whoop that began approximately 3 weeks before the infant's delivery. The cough was still present at the time of the infant's death. The mother received guaifenesin/dextromethorphan cough syrup after delivery. The infant's maternal grandmother, aged 58 years, had a prolonged paroxysmal cough illness (onset date: approximately 2 weeks before the infant's mother's illness) with posttussive vomiting; she had received azithromycin after a diagnosis of sinusitis. Two weeks before the infant's illness, the infant's father, aged 22 years, had onset of a paroxysmal cough illness of >3 weeks' duration.

A day after the infant's death, a case investigation identified four additional close contacts (two cousins, a paternal grandmother, and a great-grandmother) of the infant with cough illness (duration: 3–8 days) at the time of the infant's death. The birth hospital and the ED had no droplet precautions in place while the infant and the infant's symptomatic family members were in the facilities; 30 birth hospital and 11 ED employees were identified as potential contacts. The local health department and the ED provided erythromycin to 24 recent (i.e., during the preceding 3 weeks) contacts of the infant and symptomatic family members. Of nine nasopharyngeal swabs submitted for culture, all were negative for pertussis (all household members swabbed had been symptomatic for >3 weeks); no PCR testing for pertussis was performed. Pertussis alerts were issued to the public, health-care providers, schools, and a large retail store where the infant's father worked.

This case underscores the need to protect infants from pertussis transmission. The health-care community can limit the spread of pertussis by 1) educating caretakers and the public about preventing exposure of infants to any person with a cough illness, 2) educating health-care providers to consider pertussis in adolescents and adults with a cough illness and to ask these patients to wear a mask or isolate themselves from other patients, and 3) encouraging confirmation of pertussis by culture of nasopharyngeal secretions. Health-care providers must be encouraged to observe droplet precautions while attending to patients with respiratory illnesses. No U.S.-licensed pertussis vaccine for persons aged ≥7 years is available; however, in 2004, two pharmaceutical companies submitted biologics license applications to the Food and Drug Administration for two tetanus toxoid and reduced diphtheria toxoid and acellular pertussis vaccine adsorbed (Tdap) products, one for persons aged 10–18 years and the other for persons aged 11–64 years.

Reported by: *M Romano, MD, West Virginia Univ School of Medicine, Morgantown; J Welch, Preston County Health Dept, Kingwood; D Bixler, MD, T Shwe, MBBS, MPH, MS, Div of Surveillance and Disease Control, Bur for Public Health, West Virginia Dept of Health and Human Resources. T Tiwari, MD, National Immunization Program; J Sinclair, DVM, EIS Officer, CDC.*

Acknowledgments

This report is based on data provided by Fairmont General Hospital, Fairmont; Davis Memorial Hospital, Elkins; Tucker County Health Dept, Parsons; West Virginia Univ Hospital, Morgantown; Vital Registration, West Virginia Health Statistics Center, Bur for Public Health, West Virginia Dept of Health and Human Resources.

References

1. Vitek CR, Pascual FB, Baughman AL, Murphy TV. Increase in deaths from pertussis among young infants in the United States in the 1990's. Pediatr Infect Dis J 2003;22:628–34.
2. Romano MJ, Weber MD, Weisse ME, Siu BL. Pertussis pneumonia, hypoxemia, hyperleukocytosis, and pulmonary hypertension: improvement in oxygenation after a double volume exchange transfusion. Pediatrics 2004;114:e264–6.
3. CDC. Summary of notifiable diseases, United States, 1996–2002. Atlanta, GA: US Department of Health and Human Services, CDC; 2004. Available at http://www.cdc.gov/mmwr/summary.html.

Outbreak of Invasive Pneumococcal Disease — Alaska, 2003–2004

In Alaska, statewide laboratory-based surveillance revealed an increase in invasive pneumococcal disease (IPD) in a rural region during 2003–2004. This report summarizes the outbreak, regional trends in serotype-specific pneumococcal carriage, and an assessment of use of standing orders for vaccination. The results of this analysis underscore the preventability of IPD and the importance of vaccination.

Since 1986, the Arctic Investigations Program (AIP) at CDC has conducted laboratory-based surveillance for IPD in Alaska. Laboratories throughout Alaska are requested to send to AIP any isolate of *Streptococccus pneumoniae* recovered from a normally sterile site. AIP confirms the identity, determines the serotype and antimicrobial susceptibility of each isolate, and collects epidemiologic information for each case.

Outbreak

During January 2003–March 2004, a total of 14 cases of IPD (compared with a mean of 2.8 cases per year [range: zero to six cases] during 1986–2002) were reported in region A, a remote area of Alaska. The estimated population of region A is 10,000, and 80% of the residents in that region are Alaska Natives. Among the 14 patients, median age was 38 years (range: 1–72 years). Illnesses included cellulitis, septic arthritis, pneumonia with bacteremia, empyema, bacteremia, and meningitis; two patients died (Table 1).

Serotype 12F (a serotype contained in the 23-valent pneumococcal polysaccharide vaccine [PPV-23]) was identified as the causative agent in nine (64%) of the 14 IPD cases. Pulsed-field gel electrophoresis (PFGE) patterns of the invasive 12F isolates were indistinguishable. All 12F isolates from region A had reduced susceptibility to trimethoprim/sulfamethoxazole but were susceptible to all other antibiotics tested. During 1986–2002, only two (2%) of 105 invasive 12F isolates collected throughout Alaska demonstrated reduced susceptibility to trimethoprim/sulfamethoxazole. The PFGE pattern of the 12F isolates in region A was unique, compared with a random sample of 23 12F isolates collected throughout Alaska since 1986. No cases of serotype 12F disease were reported in region A during 1996–2002; three cases of invasive serotype 12F disease were reported during 1986–1995. PFGE analysis revealed that these historic region A cases were not related to the 2003–2004 outbreak strain.

Among the nine patients for whom PPV-23 was indicated, the indications included alcoholism (seven patients), generalized malignancy (one), and age >55 years (three). One of these nine patients had been vaccinated with PPV-23 during the preceding 5 years and contracted disease caused by serotype 7C, a serotype not included in the PPV-23 vaccine. Among the eight patients who had not been vaccinated during the preceding 5 years, seven (88%) had disease caused by serotypes contained in PPV-23: 12F (five), 7F (one), and 22F (one). Four (50%) of the eight had received influenza vaccination at least once during the 2 years preceding their pneumococcal infection, indicating that they had accessed the health-care system and an opportunity for pneumococcal vaccination potentially had been missed. The two deaths occurred in adults who had indications for, but had not received, pneumococcal vaccine.

TABLE 1. Number* and percentage of persons with invasive pneumococcal disease, by selected characteristics — region A, Alaska, 2003–2004

Characteristics	No.	(%)
Female	10	(71)
Alaska Native	13	(93)
Aged <10 yrs	3	(21)
Aged 30–54 yrs	8	(57)
Aged 55–74 yrs	3	(21)
Pneumococcal polysaccharide vaccine indicated†	9	(65)
Vaccinated during preceding 5 yrs	*1*	(*11*)
Deaths	2	(14)

*N = 14.
†Based on state of Alaska guidelines.

Carriage

Nasopharyngeal (NP) carriage of *S. pneumoniae* precedes the development of invasive disease. As part of an ongoing project to follow trends in pneumococcal carriage and antimicrobial resistance, AIP conducted voluntary community-wide NP swab surveys in four region A villages annually during 1998–2003 (*1*). NP carriage of *S. pneumoniae* in region A ranged from 32% to 43% of persons swabbed. NP carriage of serotype 12F increased substantially in 2003 (Table 2). PFGE patterns of colonizing 12F isolates collected during 2003 were identical to those of the outbreak strain.

Pneumococcal Vaccination

In this outbreak, six (67%) of nine patients had indications for PPV-23 based on medical conditions independent of age. Because of this, region A health-care providers sought to improve PPV-23 vaccination rates among younger adults with risk factors through use of a vaccine standing orders program. In response to the region A outbreak, pharmacists and immunization coordinators from 16 inpatient and outpatient facilities (including two region A facilities) were surveyed in Alaska to evaluate use of vaccine standing orders programs. Eight sites reported using standing orders; all eight reported improved rates of vaccination after implementation of standing orders programs. Reported challenges with existing standing orders programs included increased nursing workload and difficulty accessing immunization records. Of the remaining eight facilities not using standing orders, 75% of those surveyed believed such programs would be beneficial but reported

TABLE 2. Number and percentage of persons with *Streptococcus pneumoniae* (SP) colonization, by year — region A, Alaska, 1998–2003

	No. colonized with SP		No. carrying serotype 12F	
Year	No.	(%)	No.	(%)
1998	285	(32)	0	
1999	284	(32)	0	
2000	364	(32)	0	
2001	550	(31)	5	(0.3)
2002	584	(32)	0	
2003	774	(42)	46	(2.4)

barriers to implementation (e.g., difficulty accessing immunization records and insufficient staffing).

Reported by: *G Jorgenson, PharmD, R Singleton, MD, Alaska Native Medical Center, Anchorage, Alaska. J Butler, MD, T Cottle, T Hennessy, MD, D Hurlburt, K Rudolph, PhD, D Parks, Arctic Investigations Program, National Center for Infectious Diseases; L Hammitt, MD, EIS Officer, CDC.*

Editorial Note: During 2003–2004, region A experienced an outbreak of IPD in which seven (50%) of 14 patients had indications for vaccination and had disease caused by a vaccine-preventable serotype. Pneumococcal carriage is a dynamic process, and carriage of specific serotypes in a population fluctuates over time. On a statewide level, during 1986–1990, 12F was the most common pneumococcal serotype isolated in Alaska Natives aged ≥2 years, accounting for 20.1% of IPD (*2*). However, during 1991–2000, the frequency of IPD caused by serotype 12F in this same population subset decreased to 2.2%. In the 2003–2004 region A outbreak, an increase in carriage of serotype 12F was temporally associated with an increase in serotype 12F IPD.

The Advisory Committee on Immunization Practices (ACIP) recommends a one-time vaccination with PPV-23 for all persons aged ≥65 years on the basis of its effectiveness against pneumococcal bacteremia. One revaccination after ≥5 years is recommended for persons aged ≥65 years if the first vaccine was administered before age 65 years. Revaccination ≥5 years years after the first dose is also recommended for persons aged ≥2 years who are at high risk for invasive pneumococcal infection and who are likely to have rapid declines in pneumococcal antibody levels (*3*).

Surveillance for IPD in Alaska has documented that Alaska Natives have one of the highest rates of IPD in the world (*2,4*). In addition, age-related increases in rates of IPD occur at a younger age among Alaska Native adults compared with non–Alaska Native adults. Because of these findings, the Alaska Division of Health and Human Services recommends that all Alaska residents receive PPV-23 beginning at age 55 years and be revaccinated every 6 years (*5*). In the region A outbreak, adequate vaccination might have averted 50% of IPD cases.

A national health objective for 2010 is to achieve pneumococcal vaccination in 90% of adults aged ≥65 years (*6*). The national self-reported prevalence of pneumococcal vaccination among persons aged ≥65 years was 61.8% (95% confidence interval [CI] = 61.0–62.6) in 2002 (*7*). The corresponding rate for residents of Alaska was 59.8% (CI = 50.3–69.1) (*7*).

On the basis of evidence that standing orders programs improve vaccination rates, ACIP strongly recommends standing orders for pneumococcal and influenza vaccinations in inpatient and outpatient settings, long-term–care facilities, managed-care organizations, assisted-living facilities, and home health-care agencies (*7–9*). Standing orders programs allow clinical staff to administer vaccinations according to an institution- or physician-approved protocol without the need for a physician's examination or direct order. Survey results suggest that successful standing orders programs depend on convenient access to reliable immunization records and adequate clinical staff support. When resources are available, computer-based standing orders effectively increase vaccination rates (*10*). In the case of missing immunization records, providers should follow the 1997 ACIP recommendations to vaccinate patients who are uncertain about their vaccination histories or have incomplete records (*3*).

The 2003–2004 region A outbreak emphasizes the need to take every opportunity for vaccination in both inpatient and outpatient settings. Many patients with risk factors indicating vaccination might not have a regular primary-care provider but instead might seek medical attention in an emergency department or urgent-care clinic. Screening and subsequent immunization of persons with indications for vaccination in both primary-care and urgent-care settings could substantially reduce complications and death associated with pneumococcal disease. Region A initiated provider education and a standing orders program in response to the outbreak; surveillance for IPD continues. Other health-care providers, both in Alaska and nationally, should identify and address barriers to vaccination. Implementation of ACIP recommendations for standing orders programs is strongly recommended to take advantage of opportunities for vaccination and reduce pneumococcal morbidity and mortality.

References

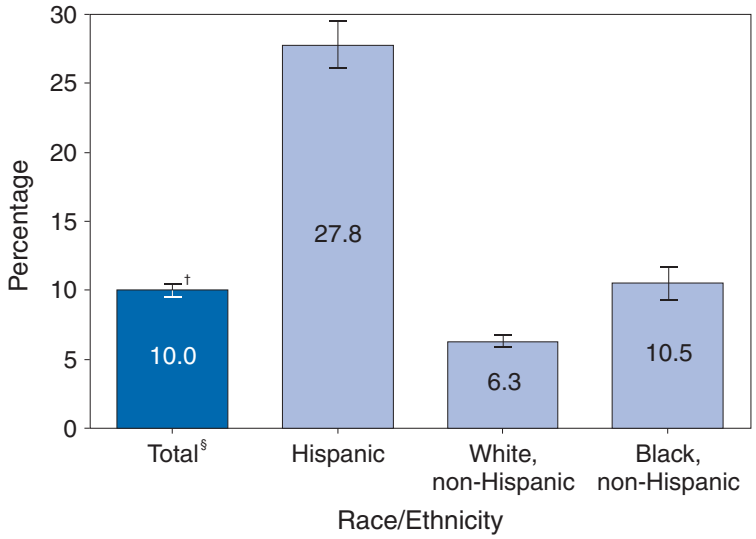
1. Hennessy TW, Petersen KM, Bruden D, et al. Changes in antibiotic-prescribing practices and carriage of penicillin-resistant *Streptococcus pneumoniae*: a controlled intervention trial in rural Alaska. Clin Infect Dis 2002;34:1543–50.
2. Parkinson AJ, Davidson M, Fitzgerald MA, Bulkow LR, Parks DJ. Serotype distribution and antimicrobial resistance patterns of invasive isolates of *Streptococcus pneumoniae*: Alaska 1986–1990. J Infect Dis 1994;170:461–4.
3. CDC. Prevention of pneumococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1997;46(No. RR-8):1–24.
4. Rudolph KM, Parkinson AJ, Reasonover AL, Bulkow LR, Parks DJ, Butler JC. Serotype distribution and antimicrobial resistance patterns of invasive isolates of *Streptococcus pneumoniae*: Alaska, 1991–1998. J Infect Dis 2000;182:490–6.
5. State of Alaska Section of Epidemiology. Pneumococcal vaccine program expanded—routine booster added in Alaska. State of Alaska Epidemiology Bulletin 1994;10.
6. US Department of Health and Human Services. Healthy people 2010 (conference ed, in 2 vols). Washington, DC: US Department of Health and Human Services; 2000.

7. CDC. Influenza vaccination coverage among adults aged ≥50 years and pneumococcal vaccination coverage among adults aged ≥65 years—United States, 2002. MMWR 2003;52:987–92.
8. CDC. Use of standing orders programs to increase adult vaccination rates: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2000;49(No. RR-1):15–26.
9. CDC. Facilitating influenza and pneumococcal vaccination through standing orders programs. MMWR 2003;52:68–9.
10. Dexter PR, Perkins SM, Maharry KS, Jones K, McDonald CJ. Inpatient computer-based standing orders vs. physician reminders to increase influenza and pneumococcal vaccination rates: a randomized trial. JAMA 2004;292:2366–71.

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Percentage of Persons Who Lacked Health Insurance Coverage for More Than 1 Year*, by Race/Ethnicity — United States, January–June 2004



* A year is defined here as the 12 months preceding interview.
† 95% confidence interval.
§ Total includes non-Hispanics of other races/multiple races (not shown).

During January–June 2004, 10% of persons of all ages and approximately 28% of Hispanics had been without health insurance coverage for more than 1 year. Hispanics were more than four times as likely as non-Hispanic whites and approximately 2.5 times as likely as non-Hispanic blacks to have been uninsured for more than 1 year.

SOURCE: Cohen RA, Hao C, Coriaty Nelson Z. Health insurance coverage: estimates from the National Health Interview Survey, January–June 2004. Available at http://www.cdc.gov/nchs/data/nhis/earlyrelease/insur200412.pdf.

Notice to Readers

Satellite Broadcast on the Role of Public Health in a Nuclear or Radiological Terrorist Incident

CDC and the Public Health Training Network will present a satellite broadcast and webcast, "The Role of Public Health in a Nuclear or Radiological Terrorist Incident," on Thursday, February 3, 2005, beginning at 1 p.m. EST. This 1-hour broadcast will cover basic information about radiation and the roles and responsibilities of federal, state, local, and tribal public health workers in a nuclear or radiological terrorist attack. A panel of experts will answer viewers' questions, which can be telephoned in or sent via fax during the broadcast or by e-mail before the broadcast to rsb@cdc.gov. Additional information and instructions for continuing education are available at http://www.phppo.cdc.gov/phtn/nuclear05/default.asp and through the CDC Fax Information System, telephone 888-232-3299, by entering document number 130025 and a return fax number.

Organizations are responsible for setting up their own viewing sites and are encouraged to register their sites as soon as possible so that persons who wish to view the broadcast can access information online. Directions for establishing and registering a viewing site are available on the broadcast website. The broadcast also can be viewed live or later on computers with Internet and RealPlayer® capability at http://www.phppo.cdc.gov/phtn/webcast/nuclear05/default.asp. Complimentary videotapes and CD-ROMs of the broadcast can be ordered by email at rsb@cdc.gov.

Erratum: Vol. 54, No. 2

In the report, "Elevated Blood Lead Levels in Refugee Children—New Hampshire, 2003–2004," an error occurred on page 45 in the first bullet point. The text should read, "• pediatric multivitamins with iron for refugee children aged 6–59 months immediately on arrival in the United States."

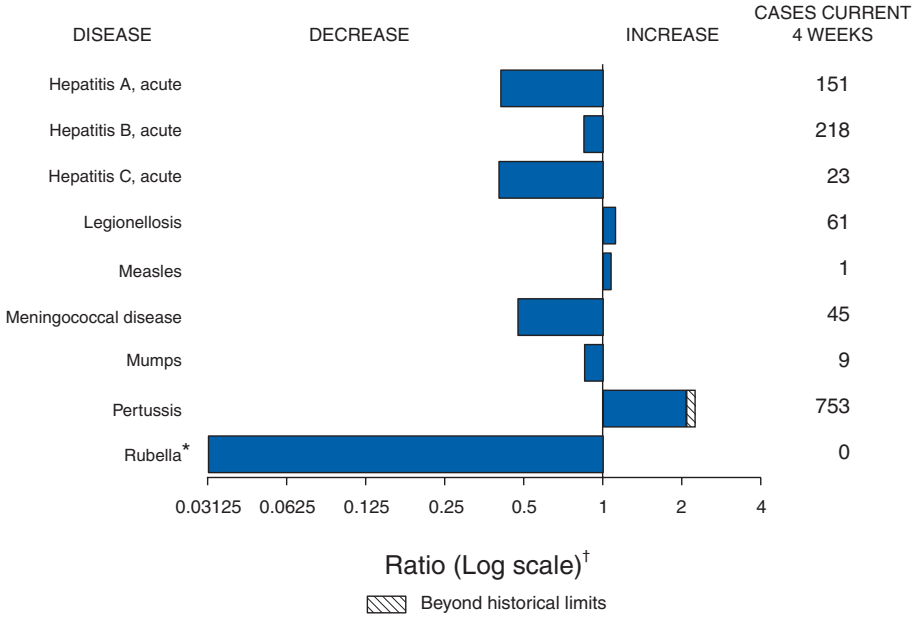
In addition, on page 43, paragraph five should read:

"Mean age at the time of follow-up testing was 4.9 years (range: 14 months–13 years). Mean initial screening BLL was 8.1 μg/dL (range: 2–28 μg/dL), performed 7–77 days (median: 22 days) after arrival. Mean follow-up BLL was 18.6 μg/dL (range: 10–63 μg/dL), performed 35–188 days (median: 89 days) after arrival. Follow-up BLLs increased for 35 of 37 children; the average increase was 11 μg/dL (range: 1–59 μg/dL), and 26 (70.2%) became elevated after the initial testing. Three children received chelation therapy for BLLs >45 μg/dL."

Also on page 43, paragraph seven should read:

"Blood lead testing identified five additional refugee children with elevated BLLs, but data for these children were not included in this study because the children did not have both an initial and a follow-up blood lead test. For these five children, mean age at time of blood lead test was 2.4 years (range: 11 months–4 years), and tests were performed 117–190 days after arrival in New Hampshire. Mean BLL was 33.8 μg/dL (range: 17–72 μg/dL). One child, who had a BLL of 72 μg/dL, received chelation therapy immediately."

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals January 22, 2005, with historical data



* No rubella cases were reported for the current 4-week period yielding a ratio for week 3 of zero (0).
† Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary of provisional cases of selected notifiable diseases, United States, cumulative, week ending January 22, 2005 (3rd Week)*

Disease	Cum. 2005	Cum. 2004	Disease	Cum. 2005	Cum. 2004
Anthrax	—	—	Hemolytic uremic syndrome, postdiarrheal†	2	1
Botulism:			HIV infection, pediatric†¶	—	—
foodborne	—	—	Influenza-associated pediatric mortality†**	3	—
infant	—	3	Measles	1††	1§§
other (wound & unspecified))	—	—	Mumps	9	11
Brucellosis	3	5	Plague	—	—
Chancroid	3	3	Poliomyelitis, paralytic	—	—
Cholera	—	1	Psittacosis†	—	—
Cyclosporiasis†	—	3	Q fever†	3	3
Diphtheria	—	—	Rabies, human	—	—
Domestic arboviral diseases			Rubella	—	1
(neuroinvasive & non-neuroinvasive):	—	—	Rubella, congenital syndrome	—	—
California serogroup†§	—	—	SARS†**	—	—
eastern equine†§	—	—	Smallpox†	—	—
Powassan†§	—	—	*Staphylococcus aureus*:		
St. Louis†§	—	—	Vancomycin-intermediate (VISA)†	—	—
western equine†§	—	—	Vancomycin-resistant (VRSA)†	—	—
Ehrlichiosis:	—	—	Streptococcal toxic-shock syndrome†	1	17
human granulocytic (HGE)†	1	5	Tetanus	—	1
human monocytic (HME)†	2	3	Toxic-shock syndrome	7	5
human, other and unspecified †	2	—	Trichinellosis¶¶	—	—
Hansen disease†	2	4	Tularemia†	—	—
Hantavirus pulmonary syndrome†	—	—	Yellow fever	—	—

—: No reported cases.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).
† Not notifiable in all states.
§ Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases (ArboNet Surveillance).
¶ Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention. Last update November 28, 2004.
** Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases.
†† The one case reported was indigenous.
§§ The one case reported was imported from another country.
¶¶ Formerly Trichinosis.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	AIDS		Chlamydia†		Coccidioidomycosis		Cryptosporidiosis	
	Cum. 2005§	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	—	22	31,116	45,997	131	90	64	141
NEW ENGLAND	—	—	1,806	1,890	—	—	1	10
Maine	—	—	147	103	N	N	—	4
N.H.	—	—	96	89	—	—	—	1
Vt.¶	—	—	50	53	—	—	1	2
Mass.	—	—	873	967	—	—	—	3
R.I.	—	—	212	271	—	—	—	—
Conn.	—	—	428	407	N	N	—	—
MID. ATLANTIC	—	14	4,042	4,970	—	—	11	17
Upstate N.Y.	—	—	439	436	N	N	2	4
N.Y. City	—	14	1,370	1,818	—	—	1	5
N.J.	—	—	553	1,096	N	—	—	1
Pa.	—	—	1,680	1,620	N	N	8	7
E.N. CENTRAL	—	5	3,387	7,531	—	—	9	32
Ohio	—	—	48	1,948	N	N	9	10
Ind.	—	—	1,156	850	N	N	—	—
Ill.	—	—	1,583	2,286	—	—	—	10
Mich.	—	5	243	1,548	—	—	—	5
Wis.	—	—	357	899	N	—	—	7
W.N. CENTRAL	—	—	742	3,200	—	1	5	9
Minn.	—	—	—	719	N	N	—	2
Iowa	—	—	—	395	N	N	1	1
Mo.	—	—	244	1,154	—	—	2	2
N. Dak.	—	—	21	76	N	N	—	—
S. Dak.	—	—	163	124	—	—	1	2
Nebr.¶	—	—	—	291	—	1	—	—
Kans.	—	—	314	441	N	N	1	2
S. ATLANTIC	—	—	8,008	8,195	—	—	21	30
Del.	—	—	190	140	N	N	—	—
Md.	—	—	759	993	—	—	3	2
D.C.	—	—	165	178	—	—	—	—
Va.	—	—	1,614	1,288	—	—	—	—
W. Va.	—	—	130	154	N	N	—	—
N.C.	—	—	1,798	1,360	N	N	4	8
S.C.¶	—	—	878	578	—	—	—	1
Ga.	—	—	596	1,837	—	—	8	8
Fla.	—	—	1,878	1,667	N	N	6	11
E.S. CENTRAL	—	—	1,965	2,979	—	—	4	7
Ky.	—	—	559	324	N	N	1	1
Tenn.¶	—	—	842	1,281	N	N	1	2
Ala.¶	—	—	69	737	—	—	2	3
Miss.	—	—	495	637	—	—	—	1
W.S. CENTRAL	—	—	4,378	6,652	—	—	—	5
Ark.	—	—	451	412	—	—	—	2
La.	—	—	572	2,083	—	—	—	—
Okla.	—	—	392	557	N	N	—	—
Tex.¶	—	—	2,963	3,600	N	N	—	3
MOUNTAIN	—	—	2,137	2,832	87	7	2	7
Mont.	—	—	7	—	N	N	—	—
Idaho	—	—	90	99	N	N	—	—
Wyo.	—	—	40	51	—	—	—	1
Colo.	—	—	439	658	N	N	1	5
N. Mex.	—	—	56	403	—	1	—	—
Ariz.	—	—	1,132	1,065	84	—	1	—
Utah	—	—	143	183	—	1	—	—
Nev.¶	—	—	230	373	3	5	—	1
PACIFIC	—	3	4,651	7,748	44	82	11	24
Wash.	—	—	976	786	N	N	—	—
Oreg.¶	—	—	379	348	—	—	1	1
Calif.	—	3	3,121	6,114	44	82	10	23
Alaska	—	—	132	127	—	—	—	—
Hawaii	—	—	43	373	—	—	—	—
Guam	—	—	—	64	—	—	—	—
P.R.	—	—	100	81	N	N	N	N
V.I.	—	—	—	35	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.

* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

† Chlamydia refers to genital infections caused by *C. trachomatis*.

§ Updated monthly from reports to the Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention. Last update November 28, 2004.

¶ Contains data reported through National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	*Escherichia coli*, Enterohemorrhagic (EHEC)						Giardiasis		Gonorrhea	
	O157:H7		Shiga toxin positive, serogroup non-O157		Shiga toxin positive, not serogrouped					
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	35	55	2	9	9	2	482	750	11,180	17,606
NEW ENGLAND	1	1	—	2	—	—	31	58	369	433
Maine	—	—	—	—	—	—	4	8	4	16
N.H.	—	—	—	—	—	—	—	2	6	5
Vt.	—	—	—	—	—	—	4	3	3	1
Mass.	1	—	—	2	—	—	23	45	164	198
R.I.	—	—	—	—	—	—	—	—	26	60
Conn.	—	1	—	—	—	—	—	—	166	153
MID. ATLANTIC	3	8	—	—	—	—	85	157	1,314	1,686
Upstate N.Y.	1	1	—	—	—	—	20	17	204	149
N.Y. City	—	3	—	—	—	—	19	67	407	639
N.J.	—	—	—	—	—	—	15	22	196	364
Pa.	2	4	—	—	—	—	31	51	507	534
E.N. CENTRAL	8	15	—	4	3	1	39	138	1,343	3,207
Ohio	6	7	—	—	2	1	28	54	26	1,199
Ind.	—	—	—	—	—	—	N	—	500	332
Ill.	—	2	—	—	—	—	—	37	596	918
Mich.	2	5	—	—	1	—	10	33	97	525
Wis.	—	1	—	4	—	—	1	14	124	233
W.N. CENTRAL	4	7	—	2	—	—	39	53	279	1,144
Minn.	—	3	—	—	—	—	—	8	—	301
Iowa	2	—	—	—	—	—	15	11	—	67
Mo.	1	3	—	2	—	—	8	20	138	492
N. Dak.	—	—	—	—	—	—	—	—	1	5
S. Dak.	1	—	—	—	—	—	1	2	20	14
Nebr.	—	—	—	—	—	—	8	3	—	95
Kans.	—	1	—	—	—	—	7	9	120	170
S. ATLANTIC	8	4	—	—	6	1	105	116	3,498	4,297
Del.	—	—	N	N	N	N	—	—	51	58
Md.	3	1	—	—	—	—	8	4	341	470
D.C.	—	—	—	—	—	—	—	1	107	137
Va.	—	—	—	—	1	—	15	6	561	574
W. Va.	—	—	—	—	—	—	—	—	47	48
N.C.	—	—	—	—	4	1	N	N	863	1,082
S.C.	—	—	—	—	—	—	3	—	427	292
Ga.	2	1	—	—	—	—	41	51	228	862
Fla.	3	2	—	—	1	—	38	54	873	774
E.S. CENTRAL	1	—	—	—	—	—	7	19	805	1,477
Ky.	—	—	—	—	—	—	N	N	223	143
Tenn.	1	—	—	—	—	—	2	6	317	547
Ala.	—	—	—	—	—	—	5	13	53	458
Miss.	—	—	—	—	—	—	—	—	212	329
W.S. CENTRAL	1	3	—	—	—	—	5	13	1,921	2,718
Ark.	1	—	—	—	—	—	3	5	259	190
La.	—	—	—	—	—	—	—	5	350	972
Okla.	—	—	—	—	—	—	2	3	140	252
Tex.	—	3	—	—	—	—	N	N	1,172	1,304
MOUNTAIN	1	6	2	—	—	—	52	72	551	792
Mont.	—	1	—	—	—	—	4	1	1	—
Idaho	1	1	—	—	—	—	10	15	5	3
Wyo.	—	—	1	—	—	—	1	—	1	3
Colo.	—	1	1	—	—	—	22	38	162	212
N. Mex.	—	—	—	—	—	—	1	2	12	50
Ariz.	—	—	N	N	N	N	6	—	251	338
Utah	—	1	—	—	—	—	6	13	23	21
Nev.	—	2	—	—	—	—	2	3	96	165
PACIFIC	8	11	—	1	—	—	119	124	1,100	1,852
Wash.	2	—	—	—	—	—	4	2	161	160
Oreg.	—	2	—	1	—	—	6	26	60	48
Calif.	4	6	—	—	—	—	100	92	845	1,539
Alaska	1	—	—	—	—	—	3	2	24	18
Hawaii	1	3	—	—	—	—	6	2	10	87
Guam	N	N	—	—	—	—	—	—	—	14
P.R.	—	—	—	—	—	—	—	—	17	6
V.I.	—	—	—	—	—	—	—	—	—	11
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	*Haemophilus influenzae*, invasive							
	All ages		Age <5 years					
	All serotypes		Serotype b		Non-serotype b		Unknown serotype	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	89	138	—	1	3	3	7	19
NEW ENGLAND	5	12	—	—	—	—	2	—
Maine	—	—	—	—	—	—	—	—
N.H.	—	1	—	—	—	—	—	—
Vt.	4	1	—	—	—	—	2	—
Mass.	1	6	—	—	—	—	—	—
R.I.	—	—	—	—	—	—	—	—
Conn.	—	4	—	—	—	—	—	—
MID. ATLANTIC	24	32	—	—	—	—	2	3
Upstate N.Y.	6	5	—	—	—	—	—	—
N.Y. City	3	6	—	—	—	—	—	1
N.J.	4	8	—	—	—	—	—	1
Pa.	11	13	—	—	—	—	2	1
E.N. CENTRAL	17	30	—	—	—	1	1	10
Ohio	14	9	—	—	—	—	1	3
Ind.	1	1	—	—	—	—	—	1
Ill.	—	11	—	—	—	—	—	4
Mich.	2	4	—	—	—	1	—	1
Wis.	—	5	—	—	—	—	—	1
W.N. CENTRAL	4	6	—	—	—	—	—	1
Minn.	—	—	—	—	—	—	—	—
Iowa	—	—	—	—	—	—	—	—
Mo.	4	2	—	—	—	—	—	1
N. Dak.	—	—	—	—	—	—	—	—
S. Dak.	—	—	—	—	—	—	—	—
Nebr.	—	4	—	—	—	—	—	—
Kans.	—	—	—	—	—	—	—	—
S. ATLANTIC	25	29	—	—	1	—	1	2
Del.	—	—	—	—	—	—	—	—
Md.	6	11	—	—	1	—	1	—
D.C.	—	—	—	—	—	—	—	—
Va.	—	3	—	—	—	—	—	—
W. Va.	—	—	—	—	—	—	—	—
N.C.	2	1	—	—	—	—	—	—
S.C.	1	—	—	—	—	—	—	—
Ga.	8	8	—	—	—	—	—	2
Fla.	8	6	—	—	—	—	—	—
E.S. CENTRAL	3	7	—	—	—	—	—	1
Ky.	—	—	—	—	—	—	—	—
Tenn.	3	2	—	—	—	—	—	—
Ala.	—	5	—	—	—	—	—	1
Miss.	—	—	—	—	—	—	—	—
W.S. CENTRAL	2	4	—	—	—	—	1	—
Ark.	—	—	—	—	—	—	—	—
La.	1	3	—	—	—	—	1	—
Okla.	1	1	—	—	—	—	—	—
Tex.	—	—	—	—	—	—	—	—
MOUNTAIN	7	16	—	1	2	2	—	1
Mont.	—	—	—	—	—	—	—	—
Idaho	1	—	—	—	—	—	—	—
Wyo.	1	—	—	—	—	—	—	—
Colo.	—	7	—	—	—	—	—	—
N. Mex.	—	5	—	—	—	1	—	1
Ariz.	2	—	—	—	1	—	—	—
Utah	1	1	—	1	—	—	—	—
Nev.	2	3	—	—	1	1	—	—
PACIFIC	2	2	—	—	—	—	—	1
Wash.	—	1	—	—	—	—	—	1
Oreg.	1	1	—	—	—	—	—	—
Calif.	—	—	—	—	—	—	—	—
Alaska	1	—	—	—	—	—	—	—
Hawaii	—	—	—	—	—	—	—	—
Guam	—	—	—	—	—	—	—	—
P.R.	—	—	—	—	—	—	—	—
V.I.	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	Hepatitis (viral, acute), by type					
	A		B		C	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	140	323	188	260	17	45
NEW ENGLAND	22	43	7	16	—	—
Maine	—	—	—	—	—	—
N.H.	—	—	—	—	—	—
Vt.	—	1	—	1	—	—
Mass.	18	38	7	7	—	—
R.I.	—	—	—	—	—	—
Conn.	4	4	—	8	—	—
MID. ATLANTIC	9	46	33	35	—	6
Upstate N.Y.	2	2	2	—	—	—
N.Y. City	2	13	—	7	—	—
N.J.	—	12	24	14	—	—
Pa.	5	19	7	14	—	6
E.N. CENTRAL	11	31	11	14	4	2
Ohio	3	2	7	6	1	—
Ind.	—	—	—	—	—	—
Ill.	2	16	—	—	—	—
Mich.	5	10	4	6	3	2
Wis.	1	3	—	2	—	—
W.N. CENTRAL	4	11	7	16	3	5
Minn.	—	—	—	—	—	—
Iowa	1	2	—	1	—	—
Mo.	1	1	4	12	3	5
N. Dak.	—	—	—	—	—	—
S. Dak.	—	—	—	—	—	—
Nebr.	2	5	2	1	—	—
Kans.	—	3	1	2	—	—
S. ATLANTIC	27	57	88	91	7	8
Del.	—	—	—	—	—	—
Md.	1	6	8	8	3	2
D.C.	—	—	—	—	—	—
Va.	—	2	6	—	—	—
W. Va.	—	—	—	—	—	—
N.C.	1	—	12	11	1	—
S.C.	—	—	—	1	—	—
Ga.	12	33	35	41	—	2
Fla.	13	16	27	30	3	4
E.S. CENTRAL	1	10	5	15	1	2
Ky.	—	—	—	1	—	1
Tenn.	1	6	2	—	—	—
Ala.	—	2	2	3	1	—
Miss.	—	2	1	11	—	1
W.S. CENTRAL	1	53	1	13	—	17
Ark.	—	2	—	3	—	—
La.	—	1	1	10	—	14
Okla.	—	2	—	—	—	—
Tex.	1	48	—	—	—	3
MOUNTAIN	20	5	17	10	2	2
Mont.	2	—	—	—	—	—
Idaho	1	1	1	1	—	—
Wyo.	—	—	—	1	—	—
Colo.	2	2	1	1	—	—
N. Mex.	—	—	—	—	—	—
Ariz.	14	—	10	—	—	1
Utah	1	2	4	2	2	—
Nev.	—	—	1	5	—	1
PACIFIC	45	67	19	50	—	3
Wash.	1	—	1	—	—	—
Oreg.	2	7	1	15	—	1
Calif.	42	59	17	35	—	1
Alaska	—	—	—	—	—	—
Hawaii	—	1	—	—	—	1
Guam	—	—	—	—	—	—
P.R.	—	—	—	1	—	—
V.I.	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	Legionellosis		Listeriosis		Lyme disease		Malaria	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	47	83	22	26	134	446	35	76
NEW ENGLAND	—	—	—	—	—	29	1	5
Maine	—	—	—	—	—	—	—	—
N.H.	—	—	—	—	—	—	—	—
Vt.	—	—	—	—	—	—	—	—
Mass.	—	—	—	—	—	29	1	5
R.I.	—	—	—	—	—	—	—	—
Conn.	—	—	—	—	—	—	—	—
MID. ATLANTIC	13	21	4	6	98	357	6	18
Upstate N.Y.	3	3	—	1	5	89	1	—
N.Y. City	—	—	—	—	—	—	3	11
N.J.	4	8	2	4	45	77	1	2
Pa.	6	10	2	1	48	191	1	5
E.N. CENTRAL	9	28	5	3	7	10	1	4
Ohio	7	16	2	2	6	1	1	—
Ind.	1	—	—	—	—	—	—	—
Ill.	—	6	—	—	—	—	—	1
Mich.	1	5	1	—	1	—	—	1
Wis.	—	1	2	1	U	9	—	2
W.N. CENTRAL	—	1	2	—	—	5	—	6
Minn.	—	—	—	—	—	—	—	3
Iowa	—	—	1	—	—	2	—	—
Mo.	—	—	—	—	—	3	—	2
N. Dak.	—	—	1	—	—	—	—	—
S. Dak.	—	1	—	—	—	—	—	—
Nebr.	—	—	—	—	—	—	—	—
Kans.	—	—	—	—	—	—	—	1
S. ATLANTIC	11	13	4	6	25	35	6	21
Del.	—	—	N	N	—	2	—	—
Md.	4	3	1	2	15	25	2	6
D.C.	—	—	—	—	—	—	—	—
Va.	—	—	—	—	—	—	—	—
W. Va.	—	—	—	—	—	—	—	—
N.C.	2	3	2	2	4	5	—	—
S.C.	—	1	—	—	—	—	—	1
Ga.	1	—	—	1	—	1	3	6
Fla.	4	6	1	1	6	2	1	8
E.S. CENTRAL	—	2	—	2	2	—	3	2
Ky.	—	—	—	1	—	—	—	—
Tenn.	—	—	—	1	2	—	2	—
Ala.	—	2	—	—	—	—	1	1
Miss.	—	—	—	—	—	—	—	1
W.S. CENTRAL	—	8	—	—	—	6	—	11
Ark.	—	—	—	—	—	—	—	—
La.	—	1	—	—	—	—	—	2
Okla.	—	—	—	—	—	—	—	—
Tex.	—	7	—	—	—	6	—	9
MOUNTAIN	5	4	—	2	—	—	5	2
Mont.	—	—	—	—	—	—	—	—
Idaho	—	1	—	—	—	—	—	—
Wyo.	2	2	—	—	—	—	1	—
Colo.	—	1	—	1	—	—	1	—
N. Mex.	—	—	—	—	—	—	—	1
Ariz.	3	—	—	—	—	—	2	—
Utah	—	—	—	—	—	—	1	—
Nev.	—	—	—	1	—	—	—	1
PACIFIC	9	6	7	7	2	4	13	7
Wash.	—	1	1	1	—	—	—	—
Oreg.	N	N	—	2	—	1	1	—
Calif.	9	5	6	4	2	3	12	7
Alaska	—	—	—	—	—	—	—	—
Hawaii	—	—	—	—	N	N	—	—
Guam	—	—	—	—	—	—	—	—
P.R.	—	—	—	—	N	N	—	—
V.I.	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	Meningococcal disease									
	All serogroups		Serogroup A, C, Y, and W-135		Serogroup B		Other serogroup		Serogroup unknown	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	46	116	3	8	2	1	—	—	41	107
NEW ENGLAND	6	3	—	—	—	—	—	—	6	3
Maine	—	—	—	—	—	—	—	—	—	—
N.H.	—	—	—	—	—	—	—	—	—	—
Vt.	3	—	—	—	—	—	—	—	3	—
Mass.	3	3	—	—	—	—	—	—	3	3
R.I.	—	—	—	—	—	—	—	—	—	—
Conn.	—	—	—	—	—	—	—	—	—	—
MID. ATLANTIC	6	13	—	2	1	—	—	—	5	11
Upstate N.Y.	3	6	—	2	1	—	—	—	2	4
N.Y. City	1	2	—	—	—	—	—	—	1	2
N.J.	2	3	—	—	—	—	—	—	2	3
Pa.	—	2	—	—	—	—	—	—	—	2
E.N. CENTRAL	5	12	2	5	1	—	—	—	2	7
Ohio	2	10	—	3	1	—	—	—	1	7
Ind.	1	—	—	—	—	—	—	—	1	—
Ill.	—	—	—	—	—	—	—	—	—	—
Mich.	2	2	2	2	—	—	—	—	—	—
Wis.	—	—	—	—	—	—	—	—	—	—
W.N. CENTRAL	4	5	—	—	—	—	—	—	4	5
Minn.	—	—	—	—	—	—	—	—	—	—
Iowa	1	—	—	—	—	—	—	—	1	—
Mo.	2	2	—	—	—	—	—	—	2	2
N. Dak.	—	—	—	—	—	—	—	—	—	—
S. Dak.	—	1	—	—	—	—	—	—	—	1
Nebr.	—	1	—	—	—	—	—	—	—	1
Kans.	1	1	—	—	—	—	—	—	1	1
S. ATLANTIC	7	21	1	—	—	—	—	—	6	21
Del.	—	—	—	—	—	—	—	—	—	—
Md.	1	3	—	—	—	—	—	—	1	3
D.C.	—	—	—	—	—	—	—	—	—	—
Va.	—	2	—	—	—	—	—	—	—	2
W. Va.	—	1	—	—	—	—	—	—	—	1
N.C.	1	1	1	—	—	—	—	—	—	1
S.C.	1	—	—	—	—	—	—	—	1	—
Ga.	2	4	—	—	—	—	—	—	2	4
Fla.	2	10	—	—	—	—	—	—	2	10
E.S. CENTRAL	1	5	—	—	—	—	—	—	1	5
Ky.	—	—	—	—	—	—	—	—	—	—
Tenn.	1	4	—	—	—	—	—	—	1	4
Ala.	—	1	—	—	—	—	—	—	—	1
Miss.	—	—	—	—	—	—	—	—	—	—
W.S. CENTRAL	2	19	—	1	—	—	—	—	2	18
Ark.	1	1	—	—	—	—	—	—	1	1
La.	1	8	—	1	—	—	—	—	1	7
Okla.	—	1	—	—	—	—	—	—	—	1
Tex.	—	9	—	—	—	—	—	—	—	9
MOUNTAIN	3	4	—	—	—	1	—	—	3	3
Mont.	—	—	—	—	—	—	—	—	—	—
Idaho	—	1	—	—	—	—	—	—	—	1
Wyo.	—	1	—	—	—	—	—	—	—	1
Colo.	2	1	—	—	—	—	—	—	2	1
N. Mex.	—	—	—	—	—	—	—	—	—	—
Ariz.	1	—	—	—	—	—	—	—	1	—
Utah	—	—	—	—	—	—	—	—	—	—
Nev.	—	1	—	—	—	1	—	—	—	—
PACIFIC	12	34	—	—	—	—	—	—	12	34
Wash.	—	—	—	—	—	—	—	—	—	—
Oreg.	5	8	—	—	—	—	—	—	5	8
Calif.	7	25	—	—	—	—	—	—	7	25
Alaska	—	—	—	—	—	—	—	—	—	—
Hawaii	—	1	—	—	—	—	—	—	—	1
Guam	—	—	—	—	—	—	—	—	—	—
P.R.	—	—	—	—	—	—	—	—	—	—
V.I.	—	—	—	—	—	—	—	—	—	—
Amer. Samoa	—	—	—	—	—	—	—	—	—	—
C.N.M.I.	—	—	—	—	—	—	—	—	—	—

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	Pertussis		Rabies, animal		Rocky Mountain spotted fever		Salmonellosis		Shigellosis	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	584	397	130	464	30	37	874	1,397	305	575
NEW ENGLAND	20	127	29	10	—	4	43	72	9	19
Maine	—	—	2	—	N	—	3	3	—	—
N.H.	—	—	2	1	—	—	1	2	1	1
Vt.	8	3	—	—	—	—	5	2	—	—
Mass.	12	121	18	5	—	4	24	53	8	14
R.I.	—	—	—	—	—	—	—	—	—	—
Conn.	—	3	7	4	—	—	10	12	—	4
MID. ATLANTIC	86	102	11	26	—	5	62	181	18	67
Upstate N.Y.	22	35	9	6	—	—	6	18	1	23
N.Y. City	—	9	2	1	—	2	18	63	10	21
N.J.	—	21	N	3	—	—	10	48	6	12
Pa.	64	37	—	19	—	3	28	52	1	11
E.N. CENTRAL	199	68	3	1	—	—	61	222	18	67
Ohio	164	27	1	1	—	—	40	61	6	15
Ind.	—	—	1	—	—	—	2	—	1	—
Ill.	—	1	1	—	—	—	—	89	—	34
Mich.	6	4	—	—	—	—	15	31	11	7
Wis.	29	36	—	—	—	—	4	41	—	11
W.N. CENTRAL	45	36	3	23	2	—	50	78	24	29
Minn.	—	—	—	5	—	—	1	13	1	4
Iowa	—	8	1	2	—	—	19	12	6	2
Mo.	9	24	2	1	2	—	16	24	10	6
N. Dak.	9	—	—	3	—	—	2	1	1	1
S. Dak.	1	—	—	5	—	—	1	5	—	1
Nebr.	19	—	—	—	—	—	7	6	5	1
Kans.	7	4	—	7	—	—	4	17	1	14
S. ATLANTIC	24	11	43	304	27	22	360	298	75	144
Del.	—	—	—	—	—	—	—	—	—	1
Md.	9	7	11	18	1	—	27	22	6	10
D.C.	—	—	—	—	—	—	—	—	—	2
Va.	—	3	6	13	—	—	10	18	1	2
W. Va.	—	—	1	5	—	—	—	—	—	—
N.C.	—	—	20	37	21	20	97	33	3	14
S.C.	7	—	—	4	—	2	11	4	—	2
Ga.	2	—	—	20	3	—	79	64	34	43
Fla.	6	1	5	207	2	—	136	157	31	70
E.S. CENTRAL	7	6	1	40	1	6	30	84	15	13
Ky.	3	—	—	1	—	—	5	2	2	—
Tenn.	1	4	—	36	1	2	12	23	8	3
Ala.	3	1	1	3	—	1	13	30	5	7
Miss.	—	1	—	—	—	3	—	29	—	3
W.S. CENTRAL	2	3	33	49	—	—	27	153	23	127
Ark.	1	2	6	2	—	—	11	8	5	2
La.	—	1	—	—	—	—	8	15	4	10
Okla.	—	—	2	3	—	—	3	15	6	14
Tex.	1	—	25	44	—	—	5	115	8	101
MOUNTAIN	185	26	4	6	—	—	76	89	29	32
Mont.	30	3	—	—	—	—	3	3	—	1
Idaho	11	3	—	—	—	—	4	17	—	—
Wyo.	4	1	—	—	—	—	4	2	—	1
Colo.	121	13	—	—	—	—	24	37	7	14
N. Mex.	1	5	—	—	—	—	—	13	2	13
Ariz.	7	—	4	6	—	—	34	—	16	—
Utah	11	1	—	—	—	—	3	8	—	—
Nev.	—	—	—	—	—	—	4	9	4	3
PACIFIC	16	18	3	5	—	—	165	220	94	77
Wash.	3	—	—	—	—	—	2	2	1	3
Oreg.	12	16	—	—	—	—	3	28	1	6
Calif.	—	2	3	5	—	—	144	164	90	61
Alaska	1	—	—	—	—	—	4	11	1	—
Hawaii	—	—	—	—	—	—	12	15	1	7
Guam	—	—	—	—	—	—	—	—	—	1
P.R.	—	—	4	1	N	N	2	5	—	—
V.I.	—	—	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	Streptococcal disease, invasive, group A		*Streptococcus pneumoniae*, invasive disease				Syphilis			
			Drug resistant, all ages		Age <5 years		Primary & secondary		Congenital	
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	206	335	109	210	28	36	193	373	4	28
NEW ENGLAND	11	17	—	—	1	5	16	6	—	—
Maine	1	1	N	—	—	—	—	—	—	—
N.H.	1	3	—	—	—	N	—	1	—	—
Vt.	1	—	—	—	—	—	—	—	—	—
Mass.	8	13	—	—	1	5	16	2	—	—
R.I.	—	—	—	—	—	—	—	—	—	—
Conn.	—	—	—	—	U	U	—	3	—	—
MID. ATLANTIC	31	52	10	13	4	3	14	48	1	4
Upstate N.Y.	15	13	2	3	1	1	1	—	1	1
N.Y. City	1	17	U	U	U	U	2	32	—	1
N.J.	3	9	N	—	1	—	9	8	—	1
Pa.	12	13	8	10	2	2	2	8	—	1
E.N. CENTRAL	18	90	22	70	9	14	6	35	—	4
Ohio	9	26	20	65	7	11	3	7	—	—
Ind.	1	—	2	5	2	1	3	4	—	—
Ill.	—	28	—	—	—	—	—	14	—	—
Mich.	8	28	—	N	—	N	—	7	—	4
Wis.	—	8	N	N	—	2	—	3	—	—
W.N. CENTRAL	11	17	3	1	3	1	3	9	—	—
Minn.	—	—	—	—	—	—	—	1	—	—
Iowa	N	N	N	N	—	N	—	1	—	—
Mo.	4	5	3	1	—	—	3	7	—	—
N. Dak.	1	—	—	—	1	—	—	—	—	—
S. Dak.	3	2	—	—	—	—	—	—	—	—
Nebr.	3	2	—	—	1	1	—	—	—	—
Kans.	—	8	N	N	1	—	—	—	—	—
S. ATLANTIC	58	57	58	93	7	3	75	88	—	6
Del.	—	—	—	—	—	—	—	1	—	—
Md.	25	12	—	—	7	3	11	21	—	2
D.C.	—	—	—	—	—	—	7	2	—	—
Va.	2	2	N	N	—	N	3	3	—	1
W. Va.	—	—	—	2	—	—	—	—	—	—
N.C.	5	2	N	N	U	U	13	5	—	—
S.C.	—	1	—	4	—	N	1	4	—	1
Ga.	12	21	15	33	—	N	—	8	—	—
Fla.	14	19	43	54	—	N	40	44	—	2
E.S. CENTRAL	5	15	6	7	—	—	15	16	2	2
Ky.	1	2	—	1	N	N	—	4	—	—
Tenn.	4	13	6	6	—	N	7	8	1	1
Ala.	—	—	—	—	—	N	8	2	1	1
Miss.	—	—	—	—	—	—	—	2	—	—
W.S. CENTRAL	2	30	6	7	1	3	34	64	—	9
Ark.	—	—	3	1	—	—	1	4	—	—
La.	—	1	3	6	—	1	6	11	—	—
Okla.	2	1	N	N	1	—	2	1	—	2
Tex.	—	28	N	N	—	2	25	48	—	7
MOUNTAIN	50	21	3	5	3	7	11	17	1	—
Mont.	—	—	—	—	—	—	—	—	—	—
Idaho	—	1	N	N	—	N	—	3	—	—
Wyo.	—	2	—	2	—	—	—	—	—	—
Colo.	22	8	N	—	3	7	—	3	—	—
N. Mex.	2	10	—	2	—	—	—	5	—	—
Ariz.	25	—	N	N	—	N	9	5	1	—
Utah	1	—	3	1	—	—	—	—	—	—
Nev.	—	—	—	—	—	—	2	1	—	—
PACIFIC	20	36	1	14	—	—	19	90	—	3
Wash.	N	—	N	—	N	N	2	—	—	—
Oreg.	N	N	N	N	—	N	—	—	—	—
Calif.	12	24	N	N	—	N	17	90	—	3
Alaska	—	—	—	—	—	N	—	—	—	—
Hawaii	8	12	1	14	—	—	—	—	—	—
Guam	—	—	—	—	—	—	—	—	—	—
P.R.	N	N	N	N	—	—	3	2	—	—
V.I.	—	—	—	—	—	—	—	2	—	—
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U	—	U

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.
* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending January 22, 2005, and January 24, 2004 (3rd Week)*

Reporting area	Tuberculosis		Typhoid fever		Varicella (chickenpox)		West Nile virus disease†		
							Neuroinvasive		Non-neuroinvasive§
	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005
UNITED STATES	131	417	4	14	737	820	—	1	—
NEW ENGLAND	—	10	—	1	31	63	—	—	—
Maine	—	—	—	—	30	3	—	—	—
N.H.	—	—	—	—	—	—	—	—	—
Vt.	—	—	—	—	1	60	—	—	—
Mass.	—	3	—	1	—	—	—	—	—
R.I.	—	3	—	—	—	—	—	—	—
Conn.	—	4	—	—	—	—	—	—	—
MID. ATLANTIC	49	71	1	3	8	3	—	—	—
Upstate N.Y.	2	1	—	—	—	—	—	—	—
N.Y. City	36	63	—	1	—	—	—	—	—
N.J.	—	7	—	2	—	—	—	—	—
Pa.	11	—	1	—	8	3	—	—	—
E.N. CENTRAL	36	30	—	2	359	370	—	—	—
Ohio	7	2	—	1	96	64	—	—	—
Ind.	4	10	—	—	N	—	—	—	—
Ill.	20	16	—	—	—	—	—	—	—
Mich.	—	—	—	1	250	276	—	—	—
Wis.	5	2	—	—	13	30	—	—	—
W.N. CENTRAL	9	2	—	—	5	7	—	—	—
Minn.	—	2	—	—	—	—	—	—	—
Iowa	—	—	—	—	N	N	—	—	—
Mo.	8	—	—	—	—	—	—	—	—
N. Dak.	—	—	—	—	—	6	—	—	—
S. Dak.	—	—	—	—	5	1	—	—	—
Nebr.	1	—	—	—	—	—	—	—	—
Kans.	—	—	—	—	—	—	—	—	N
S. ATLANTIC	4	54	1	—	87	125	—	—	—
Del.	—	1	—	—	—	—	—	—	—
Md.	—	3	—	—	—	—	—	—	—
D.C.	—	—	—	—	—	—	—	—	—
Va.	—	—	—	—	—	—	—	—	—
W. Va.	4	1	—	—	84	117	—	—	N
N.C.	—	—	1	—	—	N	—	—	—
S.C.	—	1	—	—	3	8	—	—	—
Ga.	—	48	—	—	—	—	—	—	—
Fla.	—	—	—	—	—	—	—	—	—
E.S. CENTRAL	—	7	—	—	—	—	—	—	—
Ky.	—	—	—	—	N	—	—	—	—
Tenn.	—	2	—	—	—	—	—	—	—
Ala.	—	5	—	—	—	—	—	—	—
Miss.	—	—	—	—	—	—	—	—	—
W.S. CENTRAL	5	118	—	4	52	215	—	1	—
Ark.	5	2	—	—	—	—	—	1	—
La.	—	—	—	—	1	2	—	—	—
Okla.	—	4	—	—	—	—	—	—	—
Tex.	—	112	—	4	51	213	—	—	—
MOUNTAIN	2	6	—	1	195	37	—	—	—
Mont.	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—	—
Wyo.	—	—	—	—	5	8	—	—	—
Colo.	—	3	—	—	160	—	—	—	—
N. Mex.	—	1	—	—	2	4	—	—	—
Ariz.	2	1	—	—	—	—	—	—	—
Utah	—	1	—	1	28	25	—	—	—
Nev.	—	—	—	—	—	—	—	—	—
PACIFIC	26	119	2	3	—	—	—	—	—
Wash.	13	10	—	—	—	—	—	—	—
Oreg.	3	4	—	—	—	—	—	—	—
Calif.	—	101	2	2	—	—	—	—	—
Alaska	—	—	—	—	—	—	—	—	—
Hawaii	10	4	—	1	—	—	—	—	—
Guam	—	4	—	—	—	13	—	—	—
P.R.	—	—	—	—	1	20	—	—	—
V.I.	—	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U	—
C.N.M.I.	—	U	—	U	—	U	—	U	—

N: Not notifiable. U: Unavailable. —: No reported cases. C.N.M.I.: Commonwealth of Northern Mariana Islands.

* Incidence data for reporting years 2004 and 2005 are provisional and cumulative (year-to-date).

† Updated weekly from reports to the Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases (ArboNet Surveillance).

§ Not previously notifiable.

TABLE III. Deaths in 122 U.S. cities,* week ending January 22, 2005 (3rd Week)

Reporting Area	All causes, by age (years)						P&I† Total
	All Ages	≥65	45–64	25–44	1–24	<1	
NEW ENGLAND	530	374	109	32	5	10	73
Boston, Mass.	154	96	36	13	2	7	18
Bridgeport, Conn.	51	38	9	4	—	—	11
Cambridge, Mass.	22	16	4	2	—	—	2
Fall River, Mass.	32	27	5	—	—	—	5
Hartford, Conn.	57	36	18	2	1	—	4
Lowell, Mass.	24	20	3	1	—	—	3
Lynn, Mass.	11	9	2	—	—	—	1
New Bedford, Mass.	U	U	U	U	U	U	U
New Haven, Conn.	U	U	U	U	U	U	U
Providence, R.I.	74	57	11	3	1	2	14
Somerville, Mass.	4	2	2	—	—	—	—
Springfield, Mass.	43	32	7	2	1	1	8
Waterbury, Conn.	U	U	U	U	U	U	U
Worcester, Mass.	58	41	12	5	—	—	7
MID. ATLANTIC	1,805	1,305	347	92	34	23	145
Albany, N.Y.	56	43	8	—	1	4	5
Allentown, Pa.	35	28	4	2	—	1	4
Buffalo, N.Y.	109	86	12	8	1	2	9
Camden, N.J.	41	31	6	2	2	—	—
Elizabeth, N.J.	18	14	4	—	—	—	3
Erie, Pa.	52	41	8	—	2	1	4
Jersey City, N.J.	51	36	9	3	3	—	—
New York City, N.Y.	974	686	198	57	21	12	67
Newark, N.J.	70	32	25	6	2	1	1
Paterson, N.J.	U	U	U	U	U	U	U
Philadelphia, Pa.	U	U	U	U	U	U	U
Pittsburgh, Pa.§	30	19	10	1	—	—	1
Reading, Pa.	31	27	2	2	—	—	1
Rochester, N.Y.	149	118	27	2	2	—	23
Schenectady, N.Y.	27	21	6	—	—	—	3
Scranton, Pa.	25	20	3	1	—	1	4
Syracuse, N.Y.	59	43	10	5	—	1	13
Trenton, N.J.	38	28	9	1	—	—	1
Utica, N.Y.	17	14	1	2	—	—	4
Yonkers, N.Y.	23	18	5	—	—	—	2
E.N. CENTRAL	2,082	1,464	421	125	39	33	151
Akron, Ohio	51	32	13	3	1	2	6
Canton, Ohio	38	31	5	2	—	—	3
Chicago, Ill.	275	190	59	15	7	4	22
Cincinnati, Ohio	75	50	17	4	3	1	9
Cleveland, Ohio	235	182	37	10	5	1	12
Columbus, Ohio	195	136	39	12	4	4	19
Dayton, Ohio	151	113	32	3	1	2	6
Detroit, Mich.	187	112	40	25	3	7	13
Evansville, Ind.	58	45	9	3	1	—	5
Fort Wayne, Ind.	66	53	10	3	—	—	3
Gary, Ind.	16	6	7	2	—	1	—
Grand Rapids, Mich.	57	42	11	—	2	2	9
Indianapolis, Ind.	211	136	54	11	5	5	13
Lansing, Mich.	43	29	10	3	1	—	3
Milwaukee, Wis.	113	77	26	7	2	1	7
Peoria, Ill.	73	52	8	10	1	2	4
Rockford, Ill.	69	50	15	3	—	1	5
South Bend, Ind.	29	24	4	—	1	—	3
Toledo, Ohio	87	62	16	7	2	—	6
Youngstown, Ohio	53	42	9	2	—	—	3
W.N. CENTRAL	578	403	114	35	13	11	39
Des Moines, Iowa	82	60	18	2	2	—	4
Duluth, Minn.	33	29	4	—	—	—	2
Kansas City, Kans.	11	5	5	1	—	—	1
Kansas City, Mo.	87	60	11	9	2	4	4
Lincoln, Nebr.	71	55	11	1	3	1	4
Minneapolis, Minn.	58	35	16	5	2	—	4
Omaha, Nebr.	84	61	18	3	1	1	8
St. Louis, Mo.	76	45	18	11	—	1	4
St. Paul, Minn.	57	41	11	1	2	2	8
Wichita, Kans.	19	12	2	2	1	2	—
S. ATLANTIC	1,111	735	240	60	28	24	73
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	139	75	45	9	6	4	10
Charlotte, N.C.	112	80	23	8	—	1	11
Jacksonville, Fla.	146	103	32	7	2	2	9
Miami, Fla.	154	107	30	10	5	2	8
Norfolk, Va.	47	27	11	3	3	3	6
Richmond, Va.	53	29	17	3	2	2	4
Savannah, Ga.	74	32	15	2	1	—	7
St. Petersburg, Fla.	78	54	15	2	4	3	2
Tampa, Fla.	187	142	28	8	3	6	9
Washington, D.C.	100	69	20	8	2	1	6
Wilmington, Del.	21	17	4	—	—	—	1
E.S. CENTRAL	1,036	698	230	72	17	19	75
Birmingham, Ala.	149	98	31	10	5	5	22
Chattanooga, Tenn.	94	68	22	1	1	2	5
Knoxville, Tenn.	110	69	27	9	2	3	5
Lexington, Ky.	81	55	21	—	3	2	7
Memphis, Tenn.	274	186	55	30	1	2	13
Mobile, Ala.	87	61	22	4	—	—	6
Montgomery, Ala.	49	41	6	1	1	—	5
Nashville, Tenn.	192	120	46	17	4	5	12
W.S. CENTRAL	1,539	992	365	115	29	37	92
Austin, Tex.	95	56	23	12	1	3	5
Baton Rouge, La.	12	7	2	3	—	—	—
Corpus Christi, Tex.	69	47	11	7	—	4	7
Dallas, Tex.	206	123	53	14	9	7	13
El Paso, Tex.	103	72	24	4	1	2	3
Ft. Worth, Tex.	129	87	28	6	2	6	7
Houston, Tex.	371	228	97	28	7	10	27
Little Rock, Ark.	85	60	19	2	1	3	1
New Orleans, La.	58	30	18	9	1	—	—
San Antonio, Tex.	175	119	34	17	4	1	9
Shreveport, La.	70	48	16	4	1	1	2
Tulsa, Okla.	166	115	40	9	2	—	18
MOUNTAIN	683	489	140	33	14	7	59
Albuquerque, N.M.	114	81	26	6	1	—	7
Boise, Idaho	62	47	12	1	—	2	3
Colo. Springs, Colo.	68	47	15	3	1	2	3
Denver, Colo.	U	U	U	U	U	U	U
Las Vegas, Nev.	244	168	55	13	6	2	24
Ogden, Utah	18	17	1	—	—	—	3
Phoenix, Ariz.	52	33	11	5	2	1	3
Pueblo, Colo.	32	29	3	—	—	—	5
Salt Lake City, Utah	93	67	17	5	4	—	11
Tucson, Ariz.	U	U	U	U	U	U	U
PACIFIC	1,420	1,031	261	87	22	19	123
Berkeley, Calif.	15	10	3	2	—	—	1
Fresno, Calif.	85	59	16	7	3	—	8
Glendale, Calif.	12	11	1	—	—	—	1
Honolulu, Hawaii	66	45	14	5	—	2	8
Long Beach, Calif.	59	44	9	4	—	2	9
Los Angeles, Calif.	198	146	33	12	6	1	16
Pasadena, Calif.	16	15	—	1	—	—	5
Portland, Oreg.	134	94	32	6	1	1	3
Sacramento, Calif.	199	142	38	14	3	2	30
San Diego, Calif.	184	125	31	19	2	7	11
San Francisco, Calif.	129	100	21	7	1	—	13
San Jose, Calif.	U	U	U	U	U	U	U
Santa Cruz, Calif.	U	U	U	U	U	U	U
Seattle, Wash.	128	88	31	4	2	3	10
Spokane, Wash.	67	53	10	2	1	1	2
Tacoma, Wash.	128	99	22	4	3	—	6
TOTAL	10,784¶	7,491	2,227	651	201	183	830

U: Unavailable. —: No reported cases.

* Mortality data in this table are voluntarily reported from 122 cities in the United States, most of which have populations of ≥100,000. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

† Pneumonia and influenza.

§ Because of changes in reporting methods in this Pennsylvania city, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶ Total includes unknown ages.

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available free of charge in electronic format and on a paid subscription basis for paper copy. To receive an electronic copy each week, send an e-mail message to *listserv@listserv.cdc.gov*. The body content should read *SUBscribe mmwr-toc*. Electronic copy also is available from CDC's World-Wide Web server at *http://www.cdc.gov/mmwr* or from CDC's file transfer protocol server at *ftp://ftp.cdc.gov/pub/publications/mmwr*. To subscribe for paper copy, contact Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone 202-512-1800.

Data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the following Friday. Address inquiries about the *MMWR* Series, including material to be considered for publication, to Editor, *MMWR* Series, Mailstop E-96, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333; telephone 888-232-3228.

All *MMWR* references are available on the Internet at http://www.cdc.gov/mmwr. Use the search function to find specific articles.

Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

References to non-CDC sites on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of these sites. URL addresses listed in *MMWR* were current as of the date of publication.

☆U.S. Government Printing Office: 2005-733-116/00068 Region IV ISSN: 0149-2195