CDC

MMWR

Morbidity and Mortality Weekly Report

Weekly April 15, 2005 / Vol. 54 / No. 14

Health Concerns Associated with Disaster Victim Identification After a Tsunami — Thailand, December 26, 2004–March 31, 2005

The number of persons confirmed dead from the Indian Ocean tsunami that struck on December 26, 2004, had exceeded 174,000 as of March 31, 2005; the majority of decedents were buried or cremated without being identified. In contrast, in Thailand, disaster victim identification (DVI) continues, with approximately 1,800 persons identified among the 5,395 persons confirmed dead; of the dead, approximately 50% were not citizens of Thailand (*1*). This large-scale, multinational effort faced immediate challenges, including establishment of four temporary morgues, implementation of safeguards against environmental and occupational health hazards, and coordination of forensic procedures and safety protocols among Thai and international forensic teams. Public health and other agencies performing large-scale DVI in temporary morgues might consider implementing the recommendations and procedures described in this report.

Temporary Morgue Operations

After the tsunami struck, DVI teams totaling at least 600 persons, from Thailand and approximately 30 other countries, converted temples and other buildings in the provinces of Phangna, Phuket, and Krabi into four temporary morgues by modifying buildings and procuring DVI equipment and supplemental electricity. To store and preserve bodies, which were initially cooled with dry ice, refrigerated containers were procured. Bodies were stored in these containers until identified and released.

Approximately 30 DVI teams at the four morgue sites initially used different forensic protocols, including various numbering systems and methods for obtaining DNA specimens. These factors and the long travel times between the morgue sites (i.e., up to 6 hours by road) delayed data sharing between morgues and, consequently, victim identification. As a result, the multinational Thailand Tsunami Victim Identification committee (TTVI) was formed on January 12, 2005, to create specific, standardized protocols and procedures for DVI, based on the *Interpol Disaster Victim Identification Guide* (*2*) and subsidiary procedures for pathology, odontology, photography, fingerprinting, reexamination, moving of bodies, chain of custody, and DNA testing of antemortem and postmortem samples (targeting 16 genetic loci). TTVI also recommended appointment of an infection-control officer. Postmortem data were recorded on Interpol forms and matched with antemortem data (e.g., primary data such as dental, fingerprint, or DNA data and secondary data such as age, race, sex, hair color, and jewelry) compiled regarding missing persons at an information center (IMC) in Phuket. Antemortem data often were provided by relatives or friends directly to IMC or through the Royal Thai Police, embassies, or consulates. The Plass System (Plass Data Software, Holbaek, Denmark) and DNA-matching software were used to generate preliminary matches. If these matches were confirmed by a review board of Thai medical and police authorities, identification was confirmed, a death certificate issued, and the body released.

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An estimated 700 bodies were identified and released by using varying protocols in place at the temporary morgues before establishment of the TTVI process. Since January 12, a total of 4,082 postmortem, and 2,164 antemortem data files had been created for matching as of March 31, 2005. From these data files, 1,112 bodies were identified, including 1,046 on the basis of one type of data (962 dental, 71 fingerprint, 10 physical, and three DNA); 66 others were identified by combinations of data types. Approximately 95% of identifications were of persons aged ≥18 years. Because little antemortem dental or fingerprint data are available for children, their identification will rely more heavily on DNA matching.

Site Safety and Health Assessment

Until TTVI decided in late March to centralize DVI operations at a newly built morgue, Wat Yan Yao in northern Phang Na Province was the largest temporary morgue, handling approximately 3,000 bodies during the first 3 months after the tsunami. To ensure optimal worker safety, health, and environmental protections, on January 8, the Thai Ministry of Public Health (MOPH) requested an assessment of this morgue by occupational and environmental health teams from MOPH and CDC. They were joined by staff from the Armed Forces Research Institute for Medical Science, Bangkok.

At Wat Yan Yao, the temple grounds were separated into a front semipublic area and a rear area restricted to DVI procedures. By mid-January, an estimated 300 persons per day were working at the temple. Interviews were conducted with a convenience sample of 20 DVI workers and four administrators. Tasks included lifting bodies out of trucks or refrigerated containers, performing autopsies, collecting other victim information and property, entering data regarding the deceased, disposing of waste, communicating with the public and media, and issuing death certificates. DVI procedures were conducted in the open, in converted open enclosures, or in air-conditioned closed enclosures; these procedures included general observation of the body, photography, fingerprinting, dental examination and radiographs, and extraction of teeth and sampling of bone (e.g., clavicle, rib, or femur) for DNA testing. Equipment for DVI procedures included scalpels, knives, scissors, probes, hand and oscillating saws, dental pliers, and dental radiograph equipment.

Investigators learned that no overall site safety and health plan was in effect and that certain site staff members and nearby residents had expressed concerns regarding the risk for infection from bodies and proper disposal of liquid autopsy waste. Investigators observed that multiple procedures to ensure occupational and site safety were already in place, including restricted access to DVI processing areas and refrigerated containers, collection of solid and sharps waste in labeled biohazard bags or containers, and transportation of solid waste to a local hospital for incineration. Liquid waste was stored in large holding tanks and then transported by truck to a local hospital sanitary drain for municipal wastewater treatment. Personal protective equipment (PPE) was available, including disposable gowns, aprons and coveralls, nitrile and latex gloves, rubber boots, various types of respirators, and surgical masks. However, use of PPE was left to the personal preference of workers, often resulting in overuse and increased risk for heat stress and dehydration. Moreover, many workers did not remove PPE when exiting DVI areas and returning to public areas. Eye protection was available but infrequently used, except by dentists. Hand-washing facilities were insufficient; rest, food, and refreshment areas were inappropriately located within DVI work areas adjacent to forensic procedure areas, generating risk for contamination of food and refreshments; and limited worker training on bio- or physical safety was provided. Multiple trip hazards were noted, including electrical wires and open drains.

Basic first-aid was provided at a temporary occupational health clinic in the morgue. Immunization status of workers was not assessed, but the clinic provided tetanus vaccinations. Review of a single day of activity at the clinic in mid-January logged the following: 60 wound dressings, 50 persons with vertigo, 45 persons with headache, 28 persons needing eye washes, 26 persons receiving tetanus vaccination, and one person with a head injury. In addition, interviews with staff members at a nearby hospital determined that workers from the morgue had sought care during the previous 2 weeks for dry-ice burns, abrasions, sharps and construction injuries, and mucosal splashes with body fluids.

Odors and flies at the morgue were controlled by using a commercial bacterial inhibitory solution (EM-1, EMRO, Okinawa, Japan). Several types of disinfectants were available, including chlorine solutions, glutaraldehyde, benzalkonim chloride, isopropyl alcohol, and Virkon® S (Antec International, Suffolk, United Kingdom). EM-1 and Virkon S are frequently used in animal husbandry and veterinary settings and have not formally been assessed for efficacy against odor and fly control (EM-1) and disinfection (Virkon S) in DVI settings. Formalin solution was used only during the first few days.

Recommendations for Temporary Morgues

To address gaps in worker and environmental safety, the investigative teams provided recommendations to MOPH to improve site and environmental safety at Wat Yan Yao and other temporary morgues (Box). The teams also developed fact sheets in Thai and English regarding 1) the low risk for infection from working with bodies or breathing air in the morgue, 2) what PPE to use when working at the morgue, and 3) what steps to take if splashed with liquid waste from a body or cut with a sharp object. In addition, CDC staff developed guidelines for appropriate disposal of liquid waste from morgue procedures (*4*). In late January, follow-up interviews with TTVI officials determined that many of the recommendations were implemented at Wat Yan Yao, including distribution of fact sheets to workers, appropriate disposal of

BOX. Public health and safety recommendations after assessment of operation of a temporary morgue — Thailand, 2005

- Develop a site safety plan that has a clear chain of command.
- Develop an emergency-care plan for splash, sharps, and other injuries.
- Configure and construct space for optimal worker and environmental safety (e.g., control access between public and disaster victim identification [DVI] areas, separate food and beverage areas from DVI, and ensure an adequate number of hand-washing stations and the ability to flush eyes or other mucosal surfaces).
- Ensure appropriate use and disposal of personal protective equipment (PPE).
- Avoid inappropriate use of PPE and ensure adequate supply of refreshments to prevent dehydration.
- Limit use of sharps, avoid generation of infectious aerosols, and minimize use of oscillating bone saws. Use face shields and surgical masks as needed.
- Reduce trip hazards (e.g., electrical wires and open drains).
- Prevent musculoskeletal injuries (e.g., avoid overhead lifting, use wheeled carts to transport bodies, and reduce pinch hazards).
- Vaccinate workers appropriately (*3*).
- Ensure appropriate handling and decontamination of autopsy-related waste (e.g., use appropriate containers for sharps and biohazardous waste, then autoclave or incinerate; dispose of liquid waste in municipal waste treatment plants or other approved disposal location).
- Develop a worker registry for site security and follow-up.
- Provide social and psychological counseling.
- Educate and train staff members regarding personal safety and site safety (e.g., correct use of PPE and procedures to follow in case of injury). Designate training staff and monitors and maintain training records.
- Develop and distribute fact sheets to staff members and the public regarding the low risk for infection from bodies, air, or properly handled waste in temporary morgues.

liquid waste, movement of food and refreshment areas away from work areas, and installation of hand-washing stations.

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Editorial Note: The DVI effort in Thailand is likely the largest multinational DVI operation ever conducted. Complex public health and logistical challenges arose related to identifying disaster victims from approximately 30 countries and working in temporary morgues; these challenges resulted in formation of the TTVI committee and institution of standardized protocols among DVI teams.

However, even with standardized protocols, DVI in Thailand and parallel efforts in Sri Lanka and the Maldives are likely to take as long as 1 year. For comparison, after the destruction of the World Trade Center on September 11, 2001 (*5*), identification of 50%–60% of the 3,025 persons who died took 18 months. Identification of the 202 persons who died from the bombing of a nightclub in Bali, Indonesia, on October 12, 2002 (*6*), took approximately 6 months. In both events, DVI depended heavily on DNA test results because bodies were so badly damaged. To date, identification of most tsunami victims in Thailand has relied on traditional forensic data (i.e., fingerprints and dental records) rather than DNA results. Centralization of DVI in the new temporary morgue likely will speed the rate of examinations, reduce the number of occupational health and environmental health hazards, and facilitate implementation of site safety recommendations.

The experiences described in this report indicate a need for national and international public health agencies to better prepare for the public, occupational, and environmental health challenges of DVI in multinational situations. Development of an internationally accepted plan for DVI operations might be coordinated through international agencies (e.g., United Nations) and modeled after the international Sphere Project, which provides a humanitarian charter and minimum standards for disaster relief to survivors (*7*). The protocols and safety and health recommendations developed as part of the Thai tsunami DVI efforts and the existing plans and guidelines of other agencies (e.g., Disaster Mortuary Operational Response Team) (*2,8–10*) might form the basis for such an international effort.

References

1. CDC. Rapid health response, assessment, and surveillance after a tsunami—Thailand, 2004–2005. MMWR 2005;54:61–4.
2. Interpol. Disaster victim identification guide. Lyon, France: Interpol; 2005. Available at http://www.interpol.com/public/disastervictim/default.asp.
3. CDC. Immunization of health-care workers: recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Control Practices Advisory Committee (HICPAC). MMWR 1997;46(No. RR-18).
4. CDC. Disposing liquid waste from autopsies in tsunami affected areas. Available at http://www.bt.cdc.gov/disasters/tsunamis/pdf/tsunamiautopsyliquidwaste.pdf.
5. CDC. Deaths in World Trade Center terrorist attacks—New York City, 2001. MMWR 2002;51(Special Issue):16–18.
6. Lain R, Griffiths C, Hilton JM. Forensic dental and medical response to the Bali bombing: a personal perspective. Med J Aust 2003;179:362–625.
7. The Sphere Project. Humanitarian charter and minimum standards in disaster response. Revised ed. Geneva, Switzerland: The Sphere Project; 2004. Available at http://www.sphereproject.org.
8. Pan American Health Organization. Management of dead bodies in disaster situations. Washington, DC: Pan American Health Organization; 2004. Available at http://www.paho.org/english/dd/ped/manejocadaveres.htm.
9. CDC. Interim recommendations for workers who handle human remains. Atlanta, GA: US Department of Health and Human Services, CDC; 2005. Available at http://www.bt.cdc.gov/disasters/tsunamis/handleremains.asp.
10. National Medical Disaster System. What is a disaster mortuary operational response team (DMORT)? Washington, DC: US Department of Homeland Security, National Disaster Medical System Section; 2005. Available at http://oep-ndms.dhhs.gov/dmort.html.

Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted Commonly Through Food — 10 Sites, United States, 2004

Foodborne illnesses are a substantial health burden in the United States (*1*). The Foodborne Diseases Active Surveillance Network (FoodNet) of CDC's Emerging Infections Program collects data from 10 U.S. sites* on diseases caused by enteric pathogens transmitted commonly through food. FoodNet quantifies and monitors the incidence of these infections by conducting active, population-based surveillance for laboratory-diagnosed illness (*2*). This report describes preliminary surveillance data for 2004 and compares them with baseline data from the period 1996–1998. The 2004 data indicate declines in the incidence of infections caused by *Campylobacter*, *Cryptosporidium*, Shiga toxin–producing *Escherichia coli* (STEC) O157, *Listeria*, *Salmonella*, and *Yersinia*. Declines in *Campylobacter* and *Listeria* incidence are approaching national health objectives (objectives 10-1a through 1d); for the first

* Connecticut, Georgia, Maryland, Minnesota, New Mexico, Oregon, Tennessee, and selected counties in California, Colorado, and New York.

time, the incidence of STEC O157 infections in FoodNet is below the 2010 target (*3,4*) (Table). However, further efforts are needed to sustain these declines and to improve prevention of foodborne infections; efforts should be enhanced to reduce pathogens in food animal reservoirs and to prevent contamination of produce.

In 1996, FoodNet began active, population-based surveillance for laboratory-diagnosed cases of *Campylobacter*, STEC O157, *Listeria*, *Salmonella*, *Shigella*, *Vibrio*, and *Yersinia*. In 1997, FoodNet added surveillance for cases of *Cryptosporidium*, *Cyclospora*, and hemolytic uremic syndrome (HUS). In 2000, FoodNet began collecting information on non-O157 STEC. In 2004, FoodNet began determining whether a case was part of a national foodborne disease outbreak reported to CDC via the electronic Foodborne Outbreak Reporting System (eFORS).

FoodNet personnel ascertain cases through contact with all clinical laboratories in their surveillance areas. HUS surveillance is conducted through a network of pediatric nephrologists and infection-control practitioners, and the review of records of hospitalized patients. Because of the time required for review of hospital records, this report contains preliminary 2003 HUS data.

During 1996–2004, the FoodNet surveillance population increased from 14.2 million persons in five sites to 44.1 million persons (15.2% of the U.S. population) in 10 sites. Preliminary incidence for 2004 was calculated by using the number of laboratory-confirmed infections and dividing by 2003 population estimates. Final incidence for 2004 will be reported (at http://www.cdc.gov/foodnet) when 2004 population estimates are available from the U.S. Census Bureau.

2004 Surveillance

In 2004, a total of 15,806 laboratory-diagnosed cases of infections in FoodNet surveillance areas were identified, as follows: *Salmonella*, 6,464; *Campylobacter*, 5,665; *Shigella*, 2,231; *Cryptosporidium*, 613; STEC O157, 401; *Yersinia*, 173; *Vibrio*, 124; *Listeria*, 120; and *Cyclospora,* 15. Overall incidence per 100,000 persons was 14.7 for *Salmonella,* 12.9 for *Campylobacter,* 5.1 for *Shigella,* and 0.9 for STEC O157. The overall incidence per 1 million persons was 13.2 for *Cryptosporidium,* 3.9 for *Yersinia,* 2.8 for *Vibrio,* 2.7 for *Listeria,* and 0.3 for *Cyclospora.* However, substantial variation occurred across surveillance sites (Table).

Of the 5,942 (92%) *Salmonella* isolates serotyped, five serotypes accounted for 56% of infections, as follows: Typhimurium, 1,170 (20%); Enteritidis, 865 (15%); Newport, 585 (10%); Javiana, 406 (7%); and Heidelberg, 304 (5%). Among 112 (90%) *Vibrio* isolates identified to species, 58 (52%) were *V. parahaemolyticus,* and 16 (14%) were *V. vulnificus*. FoodNet also collected data on 106 non-O157 STEC infections. An O antigen was determined for 80 (75%) of the non-O157 STEC isolates, including O111, 40 (50%); O103, 14 (18%); and O26, 10 (13%). In 2003, FoodNet

TABLE. Incidence of cases of bacterial and parasitic infection under surveillance in the Foodborne Diseases Active Surveillance Network, by site, compared with national health objectives for 2010 — United States, 2004

Pathogen	California	Colorado	Connecticut	Georgia	Maryland	Minnesota	New Mexico	New York	Oregon	Tennessee	Overall	National health objective for 2010*
Bacteria												
Campylobacter†	28.6	19.6	16.7	6.6	5.3	17.7	18.9	11.4	18.0	7.1	**12.9**	12.3
Escherichia coli O157†	0.8	0.8	0.9	0.3	0.4	2.2	0.5	1.3	1.7	0.8	**0.9**	1.0
Listeria§	4.7	3.6	5.2	1.7	3.3	1.0	1.1	3.9	1.4	2.7	**2.7**	2.5
Salmonella†	14.8	12.9	13.3	21.9	14.3	12.7	14.9	10.5	10.4	13.0	**14.7**	6.8
Shigella†	7.0	3.8	2.0	7.4	2.6	1.3	7.2	5.0	2.2	9.5	**5.1**	NA¶
Vibrio§	8.1	4.4	2.9	2.8	5.1	0.6	1.6	0.2	2.5	1.5	**2.8**	NA
Yersinia§	7.8	2.8	5.5	4.7	1.5	4.3	0.5	2.3	4.2	4.3	**3.9**	NA
Parasites												
Cryptosporidium§	6.1	9.5	8.3	19.7	4.4	27.7	6.9	22.5	8.1	8.9	**13.2**	NA
Cyclospora§	NR**	1.2	2.0	0.2	0.4	NR	NR	0.2	NR	NR	**0.3**	NA
Population in surveillance (millions)††	3.2	2.5	3.5	8.7	5.5	5.1	1.9	4.3	3.6	5.8	**44.1**	—

* Objectives are for year 2010 incidence for *Campylobacter*, *E. coli* O157:H7, and *Salmonella* and for year 2005 incidence for *Listeria*.
† Per 100,000 persons.
§ Per 1 million persons.
¶ Not applicable.
** None reported.
†† Population for some sites is entire state, for other sites, selected counties. For some sites, the catchment area for *Cryptosporidium* and *Cyclospora* is larger than for bacterial pathogens.

collected data on 52 HUS cases in persons aged <15 years (rate: 0.6 per 100,000 persons aged <15 years); 36 (69%) of the 52 HUS cases occurred in children aged <5 years (rate: 1.3 per 100,000 children aged <5 years).

In 2004, FoodNet cases were part of 239 nationally reported foodborne disease outbreaks (defined as two or more illnesses from a common source); 138 (58%) of these outbreaks were associated with restaurants. An etiology was reported in 152 (64%) outbreaks. The most common etiologies were norovirus (57%) and *Salmonella* (18%). Cases associated with outbreaks influenced the incidence of laboratory-diagnosed infections. For example, the incidence of *S*. Javiana cases increased substantially in 2004, in part because of a multistate outbreak associated with Roma tomatoes (*5*) that included 42 laboratory-diagnosed cases in Maryland (CDC, unpublished data, 2005).

Comparison of 2004 Data with 1996–1998

To account for the increase in the number of FoodNet sites and populations under surveillance since 1996 and for variation in the incidence of infections among sites, a main-effects, log-linear Poisson regression model (negative binomial) was used to estimate statistically significant changes in the incidence of pathogens (*2*). To create a baseline period, an average annual incidence for the first 3 years (2 years for *Cryptosporidium*) of FoodNet surveillance, 1996–1998, was calculated. Next, the estimated change in incidence (relative rate) between the baseline period and 2004 was calculated, along with a 95% confidence interval (CI). The 3-year baseline, which differs from the 1996 baseline used in previous reports, resulted in more stable and precise relative rate estimates.

Comparing 1996–1998 with 2004, the estimated incidence of several infections declined significantly, as illustrated by the relative rates (Figure 1). The estimated incidence of infection with *Campylobacter* decreased 31% (95% CI = 25%–36%), *Cryptosporidium* decreased 40% (CI = 26%–52%), STEC O157 decreased 42% (CI = 28%–54%), *Listeria* decreased 40% (CI = 25%–52%), *Yersinia* decreased 45% (CI = 32%–55%), and overall *Salmonella* infections decreased 8% (CI = 1%–15%). The estimated incidence of *Shigella* infections did not change significantly in 2004 compared with the baseline period. Overall *Vibrio* infections increased 47% (CI = 7%–102%) (Figure 1); this increase was less than that reported previously because of the increased stability of the baseline rate estimate.

Although *Salmonella* incidence decreased overall, of the five most common *Salmonella* serotypes, only the incidence of *S*. Typhimurium decreased significantly (41% [CI = 34%–48%]), as illustrated by the relative rates comparing 2004 with the 1996–1998 baseline period (Figure 2). Estimated incidence of *S*. Enteritidis and *S*. Heidelberg did not change significantly; incidence of *S*. Newport and *S*. Javiana increased 41% (CI = 5%–89%) and 167% (CI = 75%–306%), respectively.

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FIGURE 1. Relative rates compared with 1996–1998 baseline period of laboratory-diagnosed cases of infection with *Campylobacter*, *Escherichia coli* O157, *Listeria*, *Salmonella*, and *Vibrio*, by year — Foodborne Diseases Active Surveillance Network, United States, 1996–2004

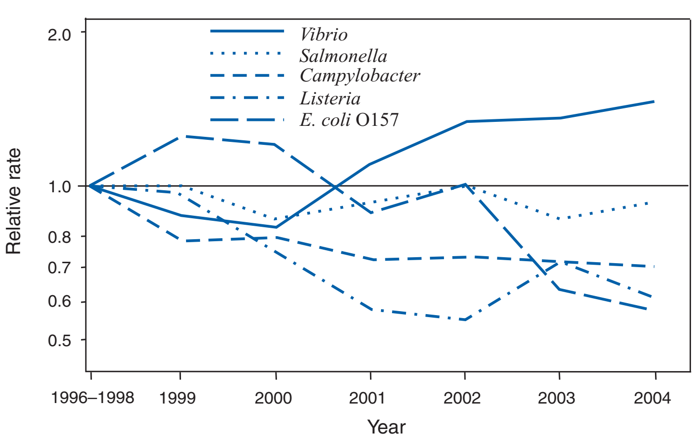
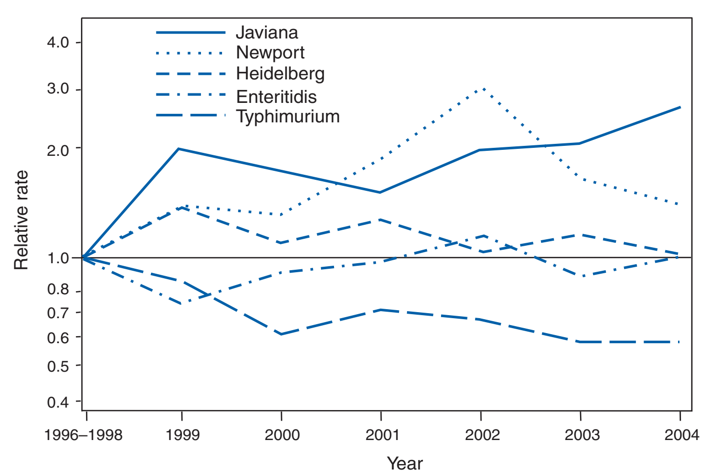


FIGURE 2. Relative rates compared with 1996–1998 baseline period of laboratory-diagnosed cases of infection with the five most commonly isolated *Salmonella* serotypes, by year — Foodborne Diseases Active Surveillance Network, United States, 1996–2004



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Editorial Note: During 1996–2004, substantial declines occurred in the estimated incidence of infections with *Campylobacter*, *Cryptosporidium,* STEC O157, *Listeria*, *S.* Typhimurium, and *Yersinia*. The 2004 incidence of STEC O157 infections declined below the 2010 national target of 1.0 case per 100,000 persons in FoodNet overall and in seven of the 10 surveillance sites. In addition, the decline in *Campylobacter* incidence represents progress toward the national health objective of 12.3 cases per 100,000 persons (*3*); the renewed decline in *Listeria* incidence, to 2.7 cases per 1 million population in 2004, suggests that the revised national objective to reduce foodborne listeriosis to 2.5 cases per 1 million population by 2005 might be achievable with continued efforts (*4*).

The declines described in this report have occurred concurrently with several important food safety initiatives and education efforts (*1*). The substantial decline of STEC O157 infections first noted in 2003 and sustained in 2004 is consistent with declines in STEC O157 contamination of ground beef reported by the U.S. Department of Agriculture Food Safety and Inspection Service (FSIS) for 2003 (*6*) and 2004 (http://www.fsis.usda.gov/news_&_events/NR_022805_01/index.asp). Multiple interventions might have contributed to this decline, including industry response to the FSIS 2002 notice to manufacturers to reassess control strategies for STEC O157 in the production of ground beef and enhanced strategies for reduction of pathogens in live cattle and during slaughter (*6*). The overall decline in *Campylobacter* incidence from the baseline period to 2004, the majority of which occurred before 2001, might reflect efforts to reduce contamination of poultry and educate consumers about safe food-handling practices. Although the incidence of *Listeria* infections decreased from the period 1996–1998 through 2004, the incidence in 2004 was comparable to 2002, after an increase in 2003 (Figure 1); efforts must continue to prevent foodborne listeriosis.

The decline in *Salmonella* incidence was modest compared with those of other foodborne bacterial pathogens. Only one of the five most common *Salmonella* serotypes, *S.* Typhimurium, declined significantly. To achieve the national health objective of reducing the number of cases to 6.8 per 100,000 persons, greater efforts are needed to understand the complex epidemiology of *Salmonella* and to identify effective pathogen-reduction strategies. The multistate tomato-associated *S.* Javiana outbreak that occurred in the summer of 2004 emphasizes the need to better understand *Salmonella* reservoirs and contamination of produce during production and harvest (*5*). The Food and Drug Administration recently developed a plan to decrease foodborne illness associated with fresh produce (*7*). Moreover, multidrug resistance is an emerging problem among *Salmonella* serotypes, particularly *S.* Newport; large multistate outbreaks associated with ground beef are cause for increased concern (*8*).

The findings in this report are subject to at least five limitations. First, FoodNet relies on laboratory diagnoses, and many foodborne illnesses are not laboratory diagnosed. For example, infections such as norovirus are not identified routinely in clinical laboratories. Second, protocols for isolation of enteric pathogens (e.g., non-O157 STEC) in clinical laboratories vary and are not implemented uniformly within FoodNet sites (*9*). Third, reported illnesses might have been acquired through nonfoodborne sources; reported incidence rates do not represent foodborne sources exclusively. Fourth, although the FoodNet population is similar to the U.S. population (*2*), the findings might not be generalizable to the entire population of the United States. Finally, year-to-year changes in incidence might reflect either annual variations or sustained trends.

Enhanced efforts are needed across the farm-to-table continuum to understand and control pathogens in animals and plants, to reduce or prevent contamination during processing, and to educate consumers about risks and prevention measures. Such efforts can be particularly focused when an animal reservoir species and transmission route for a pathogen are known. For example, many *Vibrio* infections are related to consumption of raw molluscan shellfish harvested from waters where *Vibrio* are present; ultra-high hydrostatic pressure treatment of oysters will likely prevent *Vibrio* infections. Other effective prevention measures, such as pasteurization of in-shell eggs and irradiation of ground meat and raw poultry, should be used more widely, particularly for foods eaten by persons at high risk. Consumers should follow safe food-handling recommendations and not consume raw or undercooked shellfish, eggs, ground beef, or poultry. In addition, efforts are needed to prevent transmission by nonfoodborne routes (e.g., via water, person-to-person, and exposure to animals or their environments). Guidelines to prevent disease associated with direct contact with animals or their environments in public settings (e.g., fairs and petting zoos) have recently been published (*10*).

References

1. Allos BM, Moore MR, Griffin PM, Tauxe RV. Surveillance for sporadic foodborne disease in the 21st century: the FoodNet perspective. Clin Infect Dis 2004;38(Suppl 3):S115–20.
2. Hardnett FP, Hoekstra RM, Kennedy M, Charles L, Angulo FJ; Emerging Infections Program FoodNet Working Group. Epidemiologic issues in study design and data analysis related to FoodNet activities. Clin Infect Dis 2004;38(Suppl 3):S121–6.
3. 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.
4. US Department of Agriculture, Food Safety and Inspection Service. 9 CFR Part 430. Control of *Listeria monocytogenes* in ready-to-eat meat and poultry products; final rule. Federal Register 2003;68:34,208–54.
5. CDC. Outbreaks of *Salmonella* infections associated with eating Roma tomatoes—United States and Canada, 2004. MMWR 2005;54:325–8.
6. Naugle AL, Holt KG, Levine P, Eckel R. 2005. Food Safety and Inspection Service regulatory testing program for *Escherichia coli* O157:H7 in raw ground beef. J Food Prot 2005;68:462–8.
7. Food and Drug Administration. Produce safety from production to consumption: 2004 action plan to minimize foodborne illness associated with fresh produce consumption. Rockville, MD: US Department of Health and Human Services, Food and Drug Administration; 2004. Available at http://www.cfsan.fda.gov/~dms/prodpla2.html.
8. CDC. Outbreak of multidrug-resistant *Salmonella* Newport—United States, January–April 2002. MMWR 2002;51:545–8.
9. Voetsch AC, Angulo FJ, Rabatsky-Ehr T, et al. 2004. Laboratory practices for stool-specimen culture for bacterial pathogens, including *Escherichia coli* O157:H7, in the FoodNet sites, 1995–2000. Clin Infect Dis 2004;38(Suppl 3):S190–7.
10. CDC. Compendium of measures to prevent disease associated with animals in public settings, 2005: National Association of State Public Health Veterinarians, Inc. (NASPHV). MMWR 2005;54(No. RR-4).

Acute Public Health Consequences of Methamphetamine Laboratories — 16 States, January 2000–June 2004

Methamphetamine (meth), a powerfully addictive stimulant, can be easily produced in illicit, makeshift laboratories and generally is considered the fastest-growing illicit drug in the United States (*1*). Aside from the inherent physical and physiological dangers of the drug itself, persons in and around meth laboratories can be acutely exposed to hazardous substances used in meth production. Exposure to these substances can occur from volatile air emissions, spills, fires, and explosions. This report describes examples of meth-associated events, summarizes the events reported to the Agency for Toxic Substances and Disease Registry (ATSDR), and suggests injury prevention recommendations, such as how to recognize and properly respond to meth laboratories.

ATSDR maintains the Hazardous Substances Emergency Events Surveillance (HSEES) system to collect and analyze data about the public health consequences (e.g., morbidity, mortality, and evacuations) of acute hazardous substance–release events*. The data in this report are based on events reported to HSEES from 16 state health departments† during January 1, 2000–June 30, 2004§.

Case Reports

Minnesota. In June 2004, two men, aged 31 and 41 years, were manufacturing meth in a camper when a flash fire and explosion occurred. Chemicals being used included acetone, propane, solvent not otherwise specified (NOS), and meth chemicals NOS. Both men received thermal burns and transported themselves to the hospital without assistance from emergency medical services. The older man was treated at the hospital and admitted with burns on his hands, arms, and knees. The man aged 31 years received burns on 80% of his body and died at the hospital. The fire had burned out by the time authorities responded.

New York. In January 2003, a police officer noted an odor of ammonia on a stranded motorist he was aiding. The motorist, aged 35 years, complained of respiratory and eye irritation but was not treated. Federal drug agents were notified and searched the homes of the motorist and his neighbor. Substances used to make meth, including ammonia, sulfuric acid, lithium, sodium hydroxide, and ether, were found at the two homes. Access was restricted to the homes while cleanup and environmental sampling were conducted.

Iowa. In November 2002, three occupants (aged 18, 19, and 20 years) of an apartment were making meth in a bathroom using ether, muriatic acid, and other meth chemicals NOS. A flash fire occurred; two men received thermal burns, and a woman received nonchemical-related trauma injuries when she jumped through a window. Both men were admitted to a hospital; the woman was treated at a hospital but not admitted. Twenty-four apartment building residents were evacuated for 3 hours while police, firefighters, and emergency medical technicians responded and initiated clean-up.

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* An HSEES event is the release or threatened release of a hazardous substance into the environment in an amount that requires (or would have required) removal, cleanup, or neutralization according to federal, state, or local law (*2*). A hazardous substance is one that can reasonably be expected to cause an adverse health effect.

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

§ An earlier HSEES analysis examined data for 1996–1999 because 1996 was the first year in which several meth events appeared in the system (*3*). Data as of June 30, 2004, were the most recent data available when the analysis was conducted; data for 2004 are still considered preliminary.

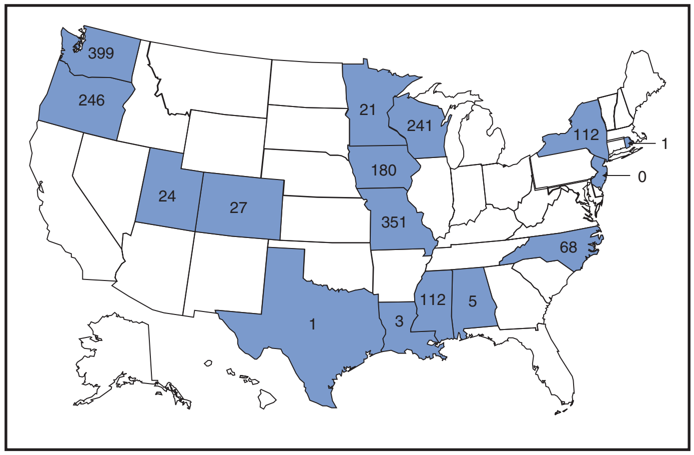
Summary of HSEES System Data

Of the 40,349 events reported to the HSEES system during January 1, 2000–June 30, 2004, a total of 1,791 (4%) were associated with illicit meth production. Meth events were reported in 15 of the 16 HSEES states, with Washington (399 events [22%]) and Missouri (351 [20%]) reporting the most events (Figure). The number of meth events increased during the analysis period, from 184 during all of 2000 to 320 during January–June 2004. Of the known meth-event locations (1,544 [86%]), releases occurred most frequently in private households (842 [55%]) and agricultural settings (e.g., farms and farm supply stores) (117 [8%]). The most common substances associated with meth events were ammonia (16%), meth chemicals NOS (13%), and hydrochloric acid (8%). Of the 1,791 meth events, 186 (10%) involved fires or explosions.

Meth events consistently had a higher percentage of persons with injuries (i.e., victims) than did nonmeth events (Table). Of the 1,791 meth events, 558 (31%) resulted in a total of 947 injured persons. Persons most frequently injured were police officers (531 [56%]) and members of the general public (314 [33%]). Median age of victims was 32 years (range: <1–72 years). The 947 victims had a total of 1,371 reported injuries, most frequently respiratory irritation (531 [39%]), headache (348 [26%]), eye irritation (109 [8%]), and burns (104 [8%]). A total of 274 (29%) victims were treated at hospitals but not admitted, 68 (7%) were treated at hospitals and admitted, and 62 (7%) were treated at the scene; nine (1%) died.

A total of 255 (13%) meth events involved ordered evacuations. The number of evacuees was known for 203 (80%) of these events. A total of 2,732 persons were known to have evacuated, ranging from one to 300 persons per event (median: five persons). Median length of evacuation was 3 hours (range: <1–96 hours). Decontamination of potentially exposed persons was necessary in 288 (16%) events. A total of 1,154 persons underwent decontamination; 698 (60%) were emergency responders, and 396 (34%) were members of the general public.

FIGURE. Number of methamphetamine-associated events, by state* — Hazardous Substances Emergency Events Surveillance, 16 states,† January 2000–June 2004



* Alabama, Colorado, Iowa, Louisiana, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Oregon, Rhode Island, Texas, Utah, Washington, and Wisconsin. No methamphetamine-associated events were documented in New Jersey.

† Data for 2004 are preliminary.

Reported by: *D Cooper, Iowa Dept of Public Health. N Rice, Minnesota Dept of Health. R Wilburn, MPH, New York State Dept of Health. DK Horton, MSPH, S Rossiter, MPH, Div of Health Studies, Agency for Toxic Substances and Disease Registry.*

Editorial Note: This report illustrates the dangers associated with illicit meth laboratories. Substances used in these laboratories are corrosive, explosive, flammable, and toxic and can cause fires, explosions, and other uncontrolled reactions (*4,5*).

TABLE. Comparison of methamphetamine- and nonmethamphetamine-associated events with victims, by year — Hazardous Substances Emergency Events Surveillance, 16 states,* January 2000–June 2004

		Methamphetamine events				Nonmethamphetamine events			
Year	No. of participating states	No. of events	% of total	No. of events with victims	% of events with victims†	No. of events	% of total	No. of events with victims	% of events with victims†
2000	15	184	10.3	105	57.1	7,364	19.1	647	8.8
2001	16	293	16.4	107	36.5	8,685	22.5	603	6.9
2002	15	451	25.2	133	29.5	8,563	22.2	608	7.1
2003	15	543	30.3	128	23.6	8,562	22.2	598	7.0
2004§	15	320	17.9	85	26.6	5,384	14.0	364	6.8
Total	**—**	**1,791**	**100.0¶**	**558**	**31.2**	**38,558**	**100.0¶**	**2,818**	**7.3**

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

† Number of events with victims divided by the number of events.

§ Data for 2004 are preliminary. Rhode Island ceased data collection in 2002, and Mississippi and Alabama ceased data collection in mid-2004.

¶ Percentages might not total 100.0% because of rounding.

An estimated 20%–30% of known meth laboratories are discovered because of fires and explosions (*6*). These laboratories are located in various environments, including private residences, motel rooms, rental storage facilities, campgrounds, and motor vehicles (*4,7*). Historical data from the Drug Enforcement Administration (DEA) demonstrate a substantial increase in the numbers of meth laboratories seized by law enforcement officials, from 263 in 1994 to 1,815 in 2000, representing a 590% increase (*8*). Relative ease of production, short production time, and profit potential are possible reasons contributing to the likely increase in the numbers of laboratories discovered.

Similar to DEA data, the overall numbers of meth events in the HSEES system appear to be increasing. Although this trend might be attributed to an actual increase in the number of laboratories, the addition of a new state during the analysis period and better reporting might have also contributed to an increase in meth events. Meth events accounted for a limited number of HSEES events; however, they resulted in a greater overall percentage of victims than nonmeth events (31% and 7%, respectively). The majority of victims were emergency responders who usually arrive first on the scene to secure the area or provide rapid onsite emergency care to victims. A previous analysis suggests that many responders might not have sufficient information to alert them that they are responding to a meth event (*3*). In addition, many responders do not wear personal protective equipment appropriate for entering meth laboratories. Another group vulnerable to meth laboratory toxicity is children; an estimated 20% of meth laboratories have children present (*1*). A recent HSEES analysis indicated that at least eight known meth events involved 13 children who were injured after being exposed to lethal substances such as anhydrous ammonia and acid (*9*).

The findings in this report are subject to at least two limitations. First, reporting of any event to HSEES is not mandatory; therefore, participating state health departments might not be informed about every event. In addition, because meth laboratories are illicit, sources (e.g., primarily law enforcement officials) might hesitate to report events that could jeopardize criminal investigations. Second, HSEES is not conducted in all states; therefore, HSEES data might not be representative of populations in other areas.

To prevent chemical exposures and injuries, emergency responders and the public should be educated to recognize meth laboratories (*10*) (Box 1), particularly in areas where they are prevalent. In addition, certain interventions can reduce the risk for injury among emergency responders at meth events (*3*) (Box 2).

BOX 1. Indicators of a methamphetamine laboratory

- Unusual chemical odors (e.g., ether, ammonia [smells similar to cat urine], and acetone);
- Excessive amounts of trash, particularly chemical containers, coffee filters, duct tape rolls, or pieces of red-stained cloth;
- Curtains always drawn or windows blackened or covered with aluminum foil on residences, garages, sheds, or other structures;
- Evidence of chemical waste or dumping;
- Frequent visitors, particularly at unusual times;
- Extensive security measures or attempts to ensure privacy (e.g., "no trespassing" or "beware of dog" signs, fences, and large trees or shrubs); and
- Secretive or unfriendly occupants.

BOX 2. Interventions for reducing the risk for injury among emergency responders to methamphetamine events

- Increase awareness of the risks associated with illicit drug laboratories;
- Encourage training in situations involving hazardous material;
- Identify the nature of the event before entering the contaminated area;
- Wear appropriate personal protective equipment; and
- Follow a proper decontamination process after exposure to hazardous substances.

HSEES data have been used by ATSDR and participating states for conducting hazardous substances injury-prevention outreach activities (e.g., presentations, fact sheets, and articles) for emergency responders, employers, and the general public. Additional information on HSEES is available at http://www.atsdr.cdc.gov/HS/HSEES.

Acknowledgments

The findings in this report are based, in part, on contributions by T Arant, Alabama Dept of Public Health. C Kelley, Colorado Dept of Health. D Dugas, MPH, Louisiana Dept of Health and Hospitals. R Mozingo, Mississippi State Dept of Health. C Henry, Missouri Dept of Health and Senior Svcs. J Savrin, New Jersey Dept of Health and Senior Svcs. S Giles, North Carolina Dept of Health and Human Svcs. T Tsongas, PhD, Oregon Public Health Svcs. L Phillips, Rhode Island Dept of Health. R Harris, Texas Dept of Health. W Ball, PhD, Utah Dept of Health. W Clifford, Washington Dept of Health. J Drew, Wisconsin Dept of Health and Family Svcs.

References

1. Drug Enforcement Administration. Fast facts about meth. Available at http://www.dea.gov/pubs/pressrel/methfact03.html.
2. 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.
3. CDC. Public health consequences among first responders to emergency events associated with illicit methamphetamine laboratories—selected states, 1996–1999. MMWR 2000;49:1021–4.
4. Irvin GD, Chin L. Environmental impact and adverse health effects of the clandestine manufacture of methamphetamine. NIDA Res Monogr 1991;115:33–44.
5. Burgess J, Barnhardt S, Checkoway H. Investigating clandestine drug laboratories: adverse medical effects in law enforcement personnel. Am J Ind Med 1996;30:488–94.
6. Skeers VM. Illegal methamphetamine drug laboratories: a new challenge for environmental health professionals. J Environ Health 1992;55:6–10.
7. Washington State Office of Environmental Health and Safety. Is there a meth lab in my neighborhood? Available at http://www.doh.wa.gov/ehp/ts/pubs.htm.
8. Drug Enforcement Administration. Drug trafficking in the United States. Available at http://www.dea.gov/pubs/intel/01020/index.html#m3.
9. Horton DK, Berkowitz Z, Kaye WE. The acute health consequences to children exposed to hazardous substances used in illicit methamphetamine production, 1996–2001. J Child Health 2003;1:99–108.
10. Drug Enforcement Administration. Methamphetamine laboratory identification and hazards fast facts. Available at http://www.usdoj.gov/ndic/pubs7/7341/index.htm.

Anhydrous Ammonia Thefts and Releases Associated with Illicit Methamphetamine Production — 16 States, January 2000–June 2004

Anhydrous ammonia, a colorless gas with a pungent, suffocating fumes, is used primarily as an agricultural fertilizer and industrial refrigerant (*1*). Anhydrous ammonia is also a key ingredient for illicit methamphetamine (meth) production in makeshift laboratories. Exposure to anhydrous ammonia can be immediately dangerous to life or health (*1,2*). Anhydrous ammonia generally is not available for sale to the public; states require a license for purchase. Because of this, many illicit meth producers (i.e., "cookers") resort to stealing anhydrous ammonia. If released into the environment, anhydrous ammonia can cause acute injuries to emergency responders, the public, and the cookers themselves. In addition, when handled improperly, anhydrous ammonia can be explosive and deadly. This report describes examples of anhydrous ammonia thefts associated with illicit meth production, summarizes ammonia theft events reported to the Agency for Toxic Substances and Disease Registry (ATSDR), and suggests injury prevention recommendations, such as installing valve locks or fencing on unattended tanks and donning appropriate personal protective equipment (PPE) when responding to releases.

ATSDR maintains the Hazardous Substances Emergency Events Surveillance (HSEES) system to collect and analyze data about the public health consequences (i.e., morbidity, mortality, and evacuations) of hazardous substance–release events*. The information in this report is based on events reported to HSEES from 16 state health departments† during January 1, 2000–June 30, 2004§.

Case Reports

Washington. In April 2004, at approximately 5:50 a.m., nearly 1,500 pounds of anhydrous ammonia were released during an attempted theft at a cold-storage facility. The release occurred as perpetrators broke off the valve of a 6,100-gallon tank. The suspected perpetrator, who sustained chemical burns on his torso, was taken to an emergency department. A responding firefighter sustained respiratory irritation because of a breach in his Level A hazardous materials (HazMat)¶ suit. Several roads were closed, businesses were evacuated, and a train was delayed while company employees, a HazMat team, and local police and fire departments responded. Approximately 12 persons were evacuated for 8 hours, and nearby residents were told to shelter in place. Eight uninjured responders were decontaminated on the scene after the event.

Missouri. In October 2003, at approximately 7:45 p.m., anhydrous ammonia was released during an attempted theft at an agricultural facility. A firefighter and a police officer responding to the release both experienced respiratory irritation. The police officer was not wearing PPE at the time of injury; the firefighter became symptomatic before donning his firefighter turn-out gear** with respiratory protection. The police officer was transported to a hospital for treatment but not admitted; the firefighter was administered oxygen on the

* An HSEES event is the release or threatened release of a hazardous substance into the environment in an amount that requires (or would have required) removal, cleanup, or neutralization according to federal, state, or local law (*3*). A hazardous substance is one that can reasonably be expected to cause an adverse health effect.

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

§ An earlier HSEES analysis examined data for 1996–1999 because 1996 was the first year several meth events began appearing in the system (*4*). Data as of June 30, 2004, were the most recent data available when the analysis was conducted; data for 2004 are still considered preliminary.

¶ Includes self-contained breathing apparatus plus totally encapsulating chemical-resistant clothing (i.e., permeation resistant) (*5*).

** Includes a helmet and face piece, coat, pants, boots, gloves, hood, and a self-contained breathing apparatus (*5*).

scene. The fire department declared the scene safe for reentry 3 hours after the event.

Alabama. In February 2002, at approximately 3:00 a.m., nearly 150 gallons of anhydrous ammonia were released during an attempted theft at a food-processing plant. The perpetrator tried unsuccessfully to siphon the ammonia into an oxygen cylinder. No victims or injuries were reported. The local fire department responded and declared the scene safe for reentry 4 hours after the event.

Summary of Surveillance Data

Of the 40,349 events reported to the HSEES system during January 1, 2000–June 30, 2004, a total of 1,791 (4%) were associated with illicit meth production. Of the 1,791 meth events, at least 164 (9%) were known to have been caused by anhydrous ammonia theft with the intention of meth production (*6*). These ammonia theft events were reported in 10 of the 16 HSEES states, with Iowa (64 [39%]) and Missouri (57 [35%]) reporting the most events. The most common locations of ammonia theft events were commercial (88 [52%]) and agricultural areas (51 [31%]). Nearly half (74 [45%]) of these events occurred during May–August. Sundays had the highest frequency of events (31 [19%]). Of the 157 (96%) events for which time of occurrence was known, more events occurred during midnight through 5:59 a.m. (59 [38%]) than during any other time.

Of the 164 ammonia theft events, 36 (22%) resulted in a total of 85 injured persons. Persons most frequently injured were members of the general public (38 [45%]) and police officers (27 [32%]). The 85 persons injured (victims) had 110 reported injuries, most frequently respiratory irritation (68 [62%]) and eye irritation (19 [17%]). Most (48 [56%]) victims were treated at a hospital but not admitted, and 18 (21%) were treated on the scene. No deaths occurred.

A total of 27 (16%) of the 164 ammonia theft events involved ordered evacuations, of which 17 had a known number of evacuees. A total of 2,146 persons were known to have evacuated, ranging from two to 300 persons per event (median: 20 persons). The median duration of these evacuations was 2.8 hours (range: <1–8 hours). Decontamination of potentially exposed persons was necessary in 13 events. A total of 57 persons underwent decontamination; 48 (84%) were emergency responders, and nine (16%) were employees (e.g., farmers or agricultural workers).

Reported by: *T Arant, Alabama Dept of Public Health. C Henry, Missouri Dept of Health and Senior Svcs. W Clifford, Washington Dept of Health. DK Horton, MSPH, S Rossiter, MPH, Div of Health Studies, Agency for Toxic Substances and Disease Registry.*

Editorial Note: Meth, a powerfully addictive stimulant, is produced in illicit, makeshift laboratories (*7*). Anhydrous ammonia is a key ingredient used in illicit meth production. Although most anhydrous ammonia is used for legitimate purposes, a small percentage is diverted to meth manufacturing. Those involved in illicit production of meth often resort to stealing anhydrous ammonia from areas where it is stored and used (e.g., farms, industrial refrigeration systems, and railroad tanker cars) (*8*). These thefts often lead to releases when valves are left open as ammonia is being siphoned; ammonia is transferred inappropriately into makeshift containers, such as propane tanks used on barbeque grills; plugs are removed from ammonia lines at refrigeration facilities; or the wrong hoses or fittings are attached to storage containers (*8*).

As liquid anhydrous ammonia is released into ambient air, it expands substantially, forming large vapor clouds that behave as a dense gas. This dense gas can travel along the ground instead of immediately rising into the air and dispersing, thereby increasing the potential for exposure to humans (*8*). Symptoms of anhydrous ammonia exposure include eye, nose, and throat irritation; dyspnea; wheezing; chest pain; pulmonary edema; pink frothy sputum; skin burns; vesiculation; and frostbite. Exposure can be fatal at high concentrations (*2*).

Farmers and merchants often are unaware of an anhydrous ammonia theft unless a large-scale release occurs (*9*). Nearly half of these HSEES events occurred during agricultural season. In addition, 38% occurred during early morning hours, and 19% occurred on Sundays, when commercial establishments usually are closed. Furthermore, the amount of anhydrous ammonia stolen in each event was small compared with the total volume of the tank.

The findings in this report are subject to at least two limitations. First, reporting of any event to HSEES is not mandatory; therefore, participating state health departments might not be informed about every event. In addition, because meth laboratories are illicit, sources (primarily law enforcement officials) might hesitate to report events that could jeopardize criminal investigations. Second, HSEES is not conducted in all states; therefore, HSEES data might not represent populations in other areas.

Several additives are being developed and used to help curb anhydrous ammonia thefts and releases. For example, researchers are studying an additive that could be mixed into the ammonia, rendering it useless for meth production (Iowa State University, unpublished data, 2005). In addition, Glotell™ (Royster Clark, Inc.; Norfolk, Virginia), a new, commercially available additive is being used as a marking agent, leak detector, and theft deterrent; this additive causes objects that contact the released anhydrous ammonia to turn fluorescent pink, thus helping farmers to easily detect which tanks have been subject to ammonia leaks or thefts. In addition, this additive reportedly turns meth pink and decreases its potency, causing the meth cooker more difficulty in selling the final product. Several additional measures can help farms and industries deter anhydrous ammonia theft and prevent accidental releases (*8*) (Box).

Emergency responders to an anhydrous ammonia release should select the proper PPE before entering a release zone. Positive-pressure, self-contained breathing apparatus is recommended in response situations that involve exposure to potentially unsafe levels of ammonia (*1*). In addition, chemical-protective clothing is recommended because ammonia can cause skin irritation and burns (*1*).

Acknowledgments

The findings in this report are based, in part, on contributions by C Kelley, Colorado Dept of Health. D Cooper, Iowa Dept of Public Health. D Dugas, MPH, Louisiana Dept of Health and Hospitals. N Rice, Minnesota Dept of Health. R Mozingo, Mississippi State Dept of Health. J Savrin, New Jersey Dept of Health and Senior Svcs. R Wilburn, MPH, New York State Dept of Health. S Giles, North Carolina Dept of Health and Human Svcs. T Tsongas, PhD, Oregon Public Health Svcs. L Phillips, Rhode Island Dept of Health. R Harris, Texas Dept of Health. W Ball, PhD, Utah Dept of Health. J Drew, Wisconsin Dept of Health and Family Svcs.

BOX. Measures to help deter anhydrous ammonia theft and prevent accidental releases

- Educate employees about the potential for theft;
- Store tanks in well-lit areas;
- Provide detailed information about inventory to identify missing chemicals quickly;
- Visually inspect tanks each morning, especially after weekends or other periods when the facility is not occupied;
- Create a valve-protection plan for critical valves that could cause substantial releases if left open;
- Install valve locks or fencing, especially for unattended tanks;
- Report thefts, signs of tampering, leaks, or any unusual activity to local law enforcement officials;
- Install other theft-deterrent measures (e.g., motion-detector lights and alarms, security patrols, and/or video surveillance); and
- Consider theft-deterrent additives for ammonia.

References

1. ATSDR. ToxFAQs™ for ammonia. Available at http://www.atsdr.cdc.gov/tfacts126.html.
2. National Institute for Occupational Safety and Health. NIOSH pocket guide to chemical hazards. Cincinnati, OH: US Department of Health and Human Services, CDC, National Institute for Occupational Safety and Health; 2004. Available at http://www.cdc.gov/niosh/npg/npg.html.
3. ATSDR. Hazardous Substances Emergency Events Surveillance System report, 2001. Atlanta, GA: US Department of Health and Human Services, ATSDR; 2004. Available at http://www.atsdr.cdc.gov/HS/HSEES.
4. CDC. Public health consequences among first responders to emergency events associated with illicit methamphetamine laboratories—selected states, 1996–1999. MMWR 2000;49:1021–4.
5. US Department of Transportation. 2004 North American emergency response guidebook: a guidebook for first responders during the initial phase of a dangerous goods/hazardous materials incident. Washington, DC: US Department of Transportation, Transport Canada, Secretariat of Communications and Transportation of Mexico; 2004. Available at http://hazmat.dot.gov/gydebook.htm.
6. CDC. Acute public health consequences of methamphetamine laboratories—16 states, January 2000–June 2004. MMWR 2005;14:356–9.
7. Drug Enforcement Administration. Fast facts about meth. Available at http://www.dea.gov/pubs/pressrel/methfact03.html.
8. US Environmental Protection Agency. Anhydrous ammonia theft chemical safety alert. Washington, DC: US Environmental Protection Agency; 2000. Available at http://yosemite.epa.gov/oswer/ceppoweb.nsf/vwResourcesByFilename/csalert.pdf.
9. King B. Reducing the risk of anhydrous ammonia theft. Cornell Cooperative Extension. Available at http://www.cce.cornell.edu/monroe/ag/Preventing%20AA%20theft%202.htm.

Notice to Readers

National Infant Immunization Week — April 24–30, 2005

National Infant Immunization Week (NIIW) is April 24–30, 2005. The theme this year is "Vaccination: an Act of Love. Love Them. Protect Them. Immunize Them." This annual event emphasizes the importance of timely infant and childhood vaccination, one of the most effective ways to protect infants and children from potentially serious diseases.

Because of increased emphasis on vaccination, the majority of vaccine-preventable diseases have decreased in incidence by approximately 99% from peak prevaccine levels in the United States (*1*). In 2004, a total of 37 cases of measles, no cases of diphtheria, and no cases of wild poliovirus were reported in the United States (*2*). Approximately 11,000 infants are born each day in the United States; according to the recommended childhood immunization schedule, they require approximately 23 doses of vaccine before age 2 years to protect them from 12 vaccine-preventable diseases (*3*). Although vaccination coverage levels are high for children of preschool age, an estimated 27.5% of children aged 19–35 months were missing 1 or more recommended vaccine doses in 2003 (*4*).

During NIIW, states and hundreds of communities throughout the United States will sponsor activities highlighting the need to achieve and maintain high childhood vaccination coverage rates. Special kick-off events, including provider education activities, media events, and immunization clinics are planned in Louisiana, New Mexico, and along the United States–Mexico border in collaboration with state and local health departments, the United States–Mexico Border Health Commission, and the Pan American Health Organization (PAHO). In addition, CDC and its partners will introduce a new public education campaign, including a 30-second public service announcement, posters, and print advertisements in English and Spanish. NIIW is being held in conjunction with Vaccination Week in the Americas, scheduled for April 23–30. That event, sponsored by PAHO, promotes childhood immunization and access to health services concurrently in all countries in the Western Hemisphere. Additional information about NIIW and childhood vaccination is available from CDC's National Immunization Program at http://www.cdc.gov/nip. Information on Vaccination Week in the Americas is available at http://www.paho.org/english/dd/pin/pr050211.htm.

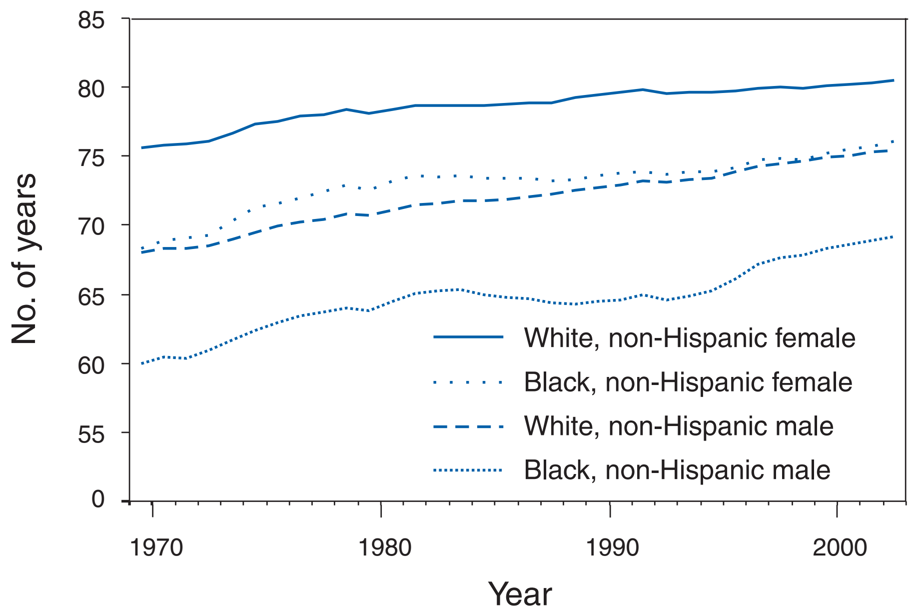
References

1. CDC. Achievements in public health, 1900–1999 impact of vaccines universally recommended for children—United States, 1990–1998. MMWR 1999;48:243–8.
2. CDC. Table I. Summary of provisional cases of selected notifiable diseases, United States, cumulative, week ending January 1, 2005 (52nd week). MMWR 2005;53(52):1213.
3. CDC. Recommended childhood and adolescent immunization schedule—United States, 2005. MMWR 2005;53(51):Q1–Q3.
4. CDC. National, state, and urban area vaccination coverage among children aged 19–35 months—United States, 2003. MMWR 2004;53:658–61.

QuickStats

FROM THE NATIONAL CENTER FOR HEALTH STATISTICS

Life Expectancy at Birth, by Year — United States, 1970–2003

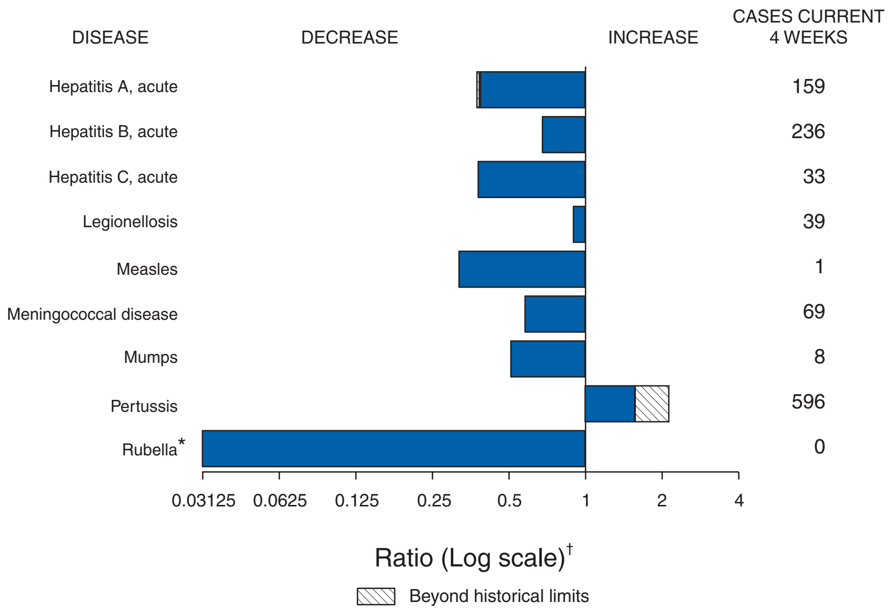


Preliminary data indicate that life expectancy at birth in the United States reached a record high in 2003. Disparities in life expectancy at birth between non-Hispanic black and non-Hispanic white persons and males and females have narrowed in recent years. Additional information about life expectancy is available at http://www.cdc.gov/nchs/about/major/dvs/mortdata.htm.

SOURCES: Hoyert, DL, Kung HC, Smith BL. Deaths: preliminary data for 2003. Natl Vital Stat Rep 2005;53(15).

Kochanek KD, Murphy SL, Anderson RN. Deaths: final data for 2002. Natl Vital Stat Rep 2004;53(5).

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals April 9, 2005, with historical data



* No rubella cases were reported for the current 4-week period yielding a ratio for week 14 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 April 9, 2005 (14th Week)*

Disease	Cum. 2005	Cum. 2004	Disease	Cum. 2005	Cum. 2004
Anthrax	—	—	Hemolytic uremic syndrome, postdiarrheal†	26	15
Botulism:			HIV infection, pediatric†¶	104	72
foodborne	4	2	Influenza-associated pediatric mortality†**	28	—
infant	10	22	Measles	7††	13§§
other (wound & unspecified)	5	1	Mumps	62	53
Brucellosis	15	27	Plague	—	—
Chancroid	7	11	Poliomyelitis, paralytic	—	—
Cholera	—	2	Psittacosis†	2	2
Cyclosporiasis†	6	89	Q fever†	12	11
Diphtheria	—	—	Rabies, human	1	—
Domestic arboviral diseases			Rubella	4	7
(neuroinvasive & non-neuroinvasive):	—	—	Rubella, congenital syndrome	1	—
California serogroup†§	—	2	SARS†**	—	—
eastern equine†§	—	—	Smallpox†	—	—
Powassan†§	—	—	*Staphylococcus aureus*:		
St. Louis†§	—	—	Vancomycin-intermediate (VISA)†	—	—
western equine†§	—	—	Vancomycin-resistant (VRSA)†	—	—
Ehrlichiosis:	—	—	Streptococcal toxic-shock syndrome†	33	47
human granulocytic (HGE)†	19	14	Tetanus	2	2
human monocytic (HME)†	20	14	Toxic-shock syndrome	24	30
human, other and unspecified †	6	1	Trichinellosis¶¶	6	—
Hansen disease†	9	24	Tularemia†	3	5
Hantavirus pulmonary syndrome†	3	3	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 March 27, 2005.
** Updated weekly from reports to the Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases.
†† Of seven cases reported, five were indigenous and two were imported from another country.
§§ Of 13 cases reported, five were indigenous and eight were imported from another country.
¶¶ Formerly Trichinosis.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 9, 2005, and April 10, 2004 (14th 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	10,042	8,762	218,724	249,022	1,058	1,452	400	685
NEW ENGLAND	406	311	6,834	8,144	—	—	25	35
Maine	3	5	620	519	N	N	1	5
N.H.	2	10	499	467	—	—	4	9
Vt.¶	1	8	281	328	—	—	8	5
Mass.	211	84	3,890	3,694	—	—	7	10
R.I.	34	33	908	949	—	—	1	1
Conn.	155	171	636	2,187	N	N	4	5
MID. ATLANTIC	1,995	1,292	25,699	30,770	—	—	59	118
Upstate N.Y.	188	132	5,421	5,659	N	N	17	22
N.Y. City	1,137	381	7,752	10,070	—	—	13	36
N.J.	357	386	2,720	4,987	N	N	3	9
Pa.	313	393	9,806	10,054	N	N	26	51
E.N. CENTRAL	915	804	34,397	48,818	2	4	62	172
Ohio	136	227	3,868	11,108	N	N	29	42
Ind.	119	116	10,097	9,744	N	N	4	23
Ill.	482	281	9,863	12,917	—	—	—	25
Mich.	135	131	5,866	10,177	2	4	12	37
Wis.	43	49	4,703	4,872	N	N	17	45
W.N. CENTRAL	227	218	12,511	15,165	—	3	56	72
Minn.	69	45	2,155	3,099	N	N	15	30
Iowa	18	9	1,443	1,849	N	N	12	10
Mo.	99	100	5,952	5,696	—	2	21	15
N. Dak.	5	11	254	473	N	N	—	—
S. Dak.	5	—	756	676	—	—	2	7
Nebr.¶	2	8	404	1,425	—	1	—	1
Kans.	29	45	1,547	1,947	N	N	6	9
S. ATLANTIC	3,395	3,420	43,135	46,975	—	—	95	135
Del.	51	41	868	811	N	N	—	—
Md.	406	340	4,546	5,237	—	—	5	7
D.C.	176	148	1,019	1,005	—	—	1	2
Va.¶	177	135	6,096	6,290	—	—	10	15
W. Va.	19	29	640	773	N	N	4	2
N.C.	298	236	9,095	7,510	N	N	12	27
S.C.¶	133	203	5,794	5,209	—	—	2	5
Ga.	503	509	3,573	9,135	—	—	29	44
Fla.	1,632	1,779	11,504	11,005	N	N	32	33
E.S. CENTRAL	581	442	15,532	14,121	—	3	8	34
Ky.	70	41	3,290	1,555	N	N	1	7
Tenn.¶	232	187	5,651	5,955	N	N	2	12
Ala.¶	168	124	881	3,548	—	—	4	9
Miss.	111	90	5,710	3,063	—	3	1	6
W.S. CENTRAL	1,021	1,290	29,753	31,087	—	2	12	24
Ark.	69	44	2,337	2,144	—	1	—	7
La.	170	279	4,838	6,884	—	1	2	—
Okla.	72	36	2,829	2,772	N	N	6	7
Tex.¶	710	931	19,749	19,287	N	N	4	10
MOUNTAIN	398	253	13,984	13,269	704	950	25	29
Mont.	3	—	568	420	N	N	—	2
Idaho¶	3	2	391	870	N	N	1	2
Wyo.	—	3	306	284	—	—	2	2
Colo.	83	47	3,269	3,324	N	N	9	15
N. Mex.	42	20	748	1,630	2	7	1	1
Ariz.	166	104	5,979	4,567	677	920	3	5
Utah	20	19	1,083	838	2	5	4	1
Nev.¶	81	58	1,640	1,336	23	18	5	1
PACIFIC	1,104	732	36,879	40,673	352	490	58	66
Wash.	106	127	5,267	4,619	N	N	5	—
Oreg.¶	66	50	2,403	2,142	—	—	6	6
Calif.	897	517	27,123	31,272	352	490	47	59
Alaska	7	7	1,001	1,032	—	—	—	—
Hawaii	28	31	1,085	1,608	—	—	—	1
Guam	1	—	—	245	—	—	—	—
P.R.	259	142	1,114	537	N	N	N	N
V.I.	7	2	32	114	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	2	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 March 27, 2005.
¶ Contains data reported through National Electronic Disease Surveillance System (NEDSS).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 9, 2005, and April 10, 2004 (14th Week)*

	Escherichia coli, Enterohemorrhagic (EHEC)									
	O157:H7		Shiga toxin positive, serogroup non-O157		Shiga toxin positive, not serogrouped		Giardiasis		Gonorrhea	
Reporting area	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	242	234	31	46	43	32	3,632	4,203	73,262	87,525
NEW ENGLAND	16	10	7	12	8	2	341	363	1,259	1,896
Maine	—	—	1	—	—	—	32	32	42	75
N.H.	1	2	1	—	—	—	13	16	35	33
Vt.	1	—	—	—	—	—	40	21	10	21
Mass.	4	2	1	4	8	2	149	190	787	841
R.I.	1	1	—	—	—	—	21	23	144	258
Conn.	9	5	4	8	—	—	86	81	241	668
MID. ATLANTIC	29	20	2	3	2	10	660	922	7,456	9,873
Upstate N.Y.	14	6	2	1	—	3	219	230	1,669	1,876
N.Y. City	1	5	—	—	—	—	170	318	1,874	3,156
N.J.	7	1	—	1	1	4	82	117	1,014	1,828
Pa.	7	8	—	1	1	3	189	257	2,899	3,013
E.N. CENTRAL	53	56	4	10	3	4	476	646	13,025	19,741
Ohio	23	14	1	—	2	4	151	199	1,978	5,751
Ind.	6	13	—	—	—	—	N	N	3,890	3,466
Ill.	6	10	1	—	—	—	92	216	3,967	5,306
Mich.	9	8	—	1	1	—	149	145	1,911	4,020
Wis.	9	11	2	9	—	—	84	86	1,279	1,198
W.N. CENTRAL	32	40	4	7	5	6	465	450	4,131	4,879
Minn.	3	20	1	3	2	—	223	151	626	1,157
Iowa	8	4	—	—	—	—	59	54	309	334
Mo.	11	3	2	4	1	1	97	137	2,480	2,304
N. Dak.	—	2	—	—	—	3	1	7	15	45
S. Dak.	2	—	—	—	—	—	20	18	92	71
Nebr.	4	5	1	—	1	—	28	41	106	298
Kans.	4	6	—	—	1	2	37	42	503	670
S. ATLANTIC	48	22	6	6	19	7	666	669	18,557	20,937
Del.	—	—	N	N	N	N	8	14	199	278
Md.	5	3	2	—	—	2	45	26	1,778	2,247
D.C.	—	—	—	—	—	—	12	26	553	643
Va.	2	—	2	5	4	—	141	90	2,252	2,521
W. Va.	—	1	—	—	—	—	7	9	193	220
N.C.	—	—	—	—	9	4	N	N	4,612	4,083
S.C.	—	1	—	—	—	—	25	19	2,500	2,582
Ga.	7	6	1	—	—	—	205	194	1,511	3,833
Fla.	34	11	1	1	6	1	223	291	4,959	4,530
E.S. CENTRAL	9	11	—	—	4	2	86	84	5,372	6,475
Ky.	—	4	—	—	3	2	N	N	1,015	663
Tenn.	6	2	—	—	1	—	37	33	2,018	2,198
Ala.	3	1	—	—	—	—	49	51	631	1,990
Miss.	—	4	—	—	—	—	—	—	1,708	1,624
W.S. CENTRAL	5	18	1	3	1	1	59	72	11,661	11,622
Ark.	1	1	—	1	—	—	20	36	1,186	985
La.	—	1	1	—	1	—	8	11	2,578	3,224
Okla.	1	3	—	—	—	—	31	25	1,267	1,184
Tex.	3	13	—	2	—	1	N	N	6,630	6,229
MOUNTAIN	23	26	7	4	1	—	293	319	3,022	3,036
Mont.	1	2	—	—	—	—	9	7	32	13
Idaho	3	5	4	1	—	—	25	47	19	19
Wyo.	—	—	1	—	—	—	3	3	16	14
Colo.	3	4	1	1	—	—	102	97	742	795
N. Mex.	—	5	1	1	—	—	9	18	141	200
Ariz.	5	3	N	N	N	N	52	65	1,249	1,323
Utah	4	4	—	—	—	—	74	61	189	99
Nev.	7	3	—	1	1	—	19	21	634	573
PACIFIC	27	31	—	1	—	—	586	678	8,779	9,066
Wash.	5	4	—	—	—	—	42	52	911	693
Oreg.	1	4	—	1	—	—	54	97	435	264
Calif.	15	19	—	—	—	—	455	490	7,094	7,518
Alaska	2	1	—	—	—	—	15	16	128	187
Hawaii	4	3	—	—	—	—	20	23	211	404
Guam	N	N	—	—	—	—	—	—	—	51
P.R.	—	—	—	—	—	—	10	8	116	50
V.I.	—	—	—	—	—	—	—	—	2	40
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 April 9, 2005, and April 10, 2004 (14th Week)*

	Haemophilus influenzae, invasive							
	All ages		Age <5 years					
	All serotypes		Serotype b		Non-serotype b		Unknown serotype	
Reporting area	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	612	602	1	4	33	26	57	61
NEW ENGLAND	46	58	—	1	3	4	2	—
Maine	2	5	—	—	—	—	—	—
N.H.	—	9	—	—	—	1	—	—
Vt.	6	4	—	—	—	—	2	—
Mass.	17	29	—	1	—	2	—	—
R.I.	6	1	—	—	2	—	—	—
Conn.	15	10	—	—	1	1	—	—
MID. ATLANTIC	113	120	—	—	—	1	13	14
Upstate N.Y.	32	40	—	—	—	1	2	2
N.Y. City	18	21	—	—	—	—	3	4
N.J.	22	25	—	—	—	—	4	2
Pa.	41	34	—	—	—	—	4	6
E.N. CENTRAL	81	110	—	—	1	6	2	16
Ohio	45	39	—	—	—	2	2	5
Ind.	19	14	—	—	1	3	—	1
Ill.	4	27	—	—	—	—	—	6
Mich.	8	9	—	—	—	1	—	3
Wis.	5	21	—	—	—	—	—	1
W.N. CENTRAL	31	25	—	1	2	1	5	4
Minn.	13	9	—	—	2	1	—	—
Iowa	—	1	—	1	—	—	—	—
Mo.	14	10	—	—	—	—	3	3
N. Dak.	1	—	—	—	—	—	1	—
S. Dak.	—	—	—	—	—	—	—	—
Nebr.	2	4	—	—	—	—	1	—
Kans.	1	1	—	—	—	—	—	1
S. ATLANTIC	179	143	—	—	7	2	12	10
Del.	—	—	—	—	—	—	—	—
Md.	27	29	—	—	2	1	2	—
D.C.	—	—	—	—	—	—	—	—
Va.	15	11	—	—	—	—	—	—
W. Va.	13	8	—	—	1	1	3	2
N.C.	24	14	—	—	2	—	—	—
S.C.	5	2	—	—	—	—	1	—
Ga.	49	41	—	—	—	—	4	8
Fla.	46	38	—	—	2	—	2	—
E.S. CENTRAL	28	22	—	—	—	—	6	5
Ky.	—	—	—	—	—	—	—	—
Tenn.	22	14	—	—	—	—	4	4
Ala.	6	8	—	—	—	—	2	1
Miss.	—	—	—	—	—	—	—	—
W.S. CENTRAL	31	23	1	—	2	3	5	—
Ark.	—	—	—	—	—	—	—	—
La.	11	8	1	—	—	—	5	—
Okla.	20	15	—	—	2	3	—	—
Tex.	—	—	—	—	—	—	—	—
MOUNTAIN	78	75	—	2	12	8	9	10
Mont.	—	—	—	—	—	—	—	—
Idaho	2	2	—	—	—	—	1	1
Wyo.	1	—	—	—	—	—	—	—
Colo.	15	16	—	—	—	—	2	2
N. Mex.	7	19	—	—	3	3	—	4
Ariz.	36	32	—	—	7	5	1	1
Utah	7	4	—	2	—	—	3	1
Nev.	10	2	—	—	2	—	2	1
PACIFIC	25	26	—	—	6	1	3	2
Wash.	—	1	—	—	—	—	—	1
Oreg.	13	13	—	—	—	—	3	—
Calif.	9	7	—	—	6	1	—	1
Alaska	1	1	—	—	—	—	—	—
Hawaii	2	4	—	—	—	—	—	—
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 April 9, 2005, and April 10, 2004 (14th Week)*

	Hepatitis (viral, acute), by type					
	A		B		C	
Reporting area	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	950	1,630	1,468	1,586	150	216
NEW ENGLAND	152	251	84	105	3	4
Maine	—	7	2	1	—	—
N.H.	15	7	4	13	—	—
Vt.	—	5	1	1	3	1
Mass.	113	202	66	52	—	3
R.I.	5	6	—	—	—	—
Conn.	19	24	11	38	—	—
MID. ATLANTIC	155	202	360	240	28	35
Upstate N.Y.	27	22	32	16	7	1
N.Y. City	68	73	18	56	—	—
N.J.	25	46	247	72	—	—
Pa.	35	61	63	96	21	34
E.N. CENTRAL	87	142	99	122	33	14
Ohio	23	15	44	45	—	2
Ind.	6	9	5	3	5	—
Ill.	18	60	7	—	—	3
Mich.	33	40	43	61	28	9
Wis.	7	18	—	13	—	—
W.N. CENTRAL	35	32	67	98	11	1
Minn.	3	1	—	8	—	1
Iowa	5	8	10	3	—	—
Mo.	21	8	42	73	11	—
N. Dak.	—	—	—	1	—	—
S. Dak.	—	2	—	—	—	—
Nebr.	2	10	8	8	—	—
Kans.	4	3	7	5	—	—
S. ATLANTIC	164	292	442	488	41	57
Del.	2	3	4	9	—	2
Md.	12	49	49	44	10	4
D.C.	2	3	—	5	—	1
Va.	23	22	62	55	7	9
W. Va.	1	1	7	3	2	3
N.C.	24	19	42	44	7	3
S.C.	4	11	30	25	—	4
Ga.	36	117	95	154	—	6
Fla.	60	67	153	149	15	25
E.S. CENTRAL	35	50	81	136	15	25
Ky.	3	5	20	15	—	9
Tenn.	20	28	32	55	5	5
Ala.	5	5	18	21	5	1
Miss.	7	12	11	45	5	10
W.S. CENTRAL	26	226	58	69	2	58
Ark.	1	34	13	32	—	—
La.	13	7	10	23	2	34
Okla.	1	12	4	13	—	—
Tex.	11	173	31	1	—	24
MOUNTAIN	109	131	139	109	6	8
Mont.	6	3	—	—	—	2
Idaho	8	6	3	3	—	—
Wyo.	—	—	—	1	—	—
Colo.	9	12	7	14	—	—
N. Mex.	5	5	4	4	—	2
Ariz.	64	85	102	56	—	2
Utah	12	19	15	16	4	—
Nev.	5	1	8	15	2	2
PACIFIC	187	304	138	219	11	14
Wash.	15	13	13	21	2	1
Oreg.	10	23	25	32	4	4
Calif.	154	259	98	162	5	7
Alaska	3	2	1	2	—	—
Hawaii	5	7	1	2	—	2
Guam	—	1	—	2	—	—
P.R.	1	8	3	11	—	—
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 April 9, 2005, and April 10, 2004 (14th 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	266	295	111	112	1,265	1,975	247	298
NEW ENGLAND	11	6	2	5	41	195	6	25
Maine	—	—	—	1	2	18	—	—
N.H.	2	—	1	1	14	9	2	—
Vt.	—	—	—	—	1	7	—	1
Mass.	5	3	—	1	18	107	3	17
R.I.	1	1	—	—	1	18	1	2
Conn.	3	2	1	2	5	36	—	5
MID. ATLANTIC	80	59	23	29	926	1,467	64	67
Upstate N.Y.	20	11	7	6	144	476	14	10
N.Y. City	4	5	4	3	—	—	29	29
N.J.	16	9	5	11	381	281	14	14
Pa.	40	34	7	9	401	710	7	14
E.N. CENTRAL	55	73	17	15	33	49	15	20
Ohio	28	32	6	7	20	11	3	4
Ind.	1	7	1	2	2	—	—	3
Ill.	7	14	—	—	—	—	3	4
Mich.	15	18	5	4	3	—	7	4
Wis.	4	2	5	2	8	38	2	5
W.N. CENTRAL	10	6	9	3	37	20	9	20
Minn.	1	—	2	2	33	6	1	8
Iowa	—	1	3	—	1	5	2	1
Mo.	7	4	2	1	2	9	5	4
N. Dak.	1	—	1	—	—	—	—	1
S. Dak.	—	1	—	—	—	—	—	1
Nebr.	—	—	—	—	—	—	—	1
Kans.	1	—	1	—	1	—	1	4
S. ATLANTIC	59	67	25	16	203	197	61	90
Del.	—	1	N	N	25	26	—	2
Md.	16	10	3	3	116	108	18	23
D.C.	1	2	—	—	1	4	1	4
Va.	4	5	1	—	22	6	7	6
W. Va.	3	2	—	1	2	1	1	—
N.C.	7	7	6	4	14	31	8	5
S.C.	—	2	—	—	5	1	1	4
Ga.	6	5	4	3	—	5	12	13
Fla.	22	33	11	5	18	15	13	33
E.S. CENTRAL	3	13	5	5	4	8	9	8
Ky.	1	3	—	1	—	1	2	1
Tenn.	—	5	2	4	4	2	5	1
Ala.	2	5	3	—	—	—	2	5
Miss.	—	—	—	—	—	5	—	1
W.S. CENTRAL	4	30	2	13	6	16	19	24
Ark.	1	—	—	1	—	—	1	1
La.	3	2	1	1	—	1	—	2
Okla.	—	2	—	—	—	—	2	1
Tex.	—	26	1	11	6	15	16	20
MOUNTAIN	24	21	—	2	1	4	14	12
Mont.	1	—	—	—	—	—	—	—
Idaho	1	1	—	1	—	1	—	—
Wyo.	2	4	—	—	—	1	1	—
Colo.	5	3	—	1	—	—	8	5
N. Mex.	1	—	—	—	—	—	—	1
Ariz.	6	5	—	—	—	1	2	1
Utah	3	7	—	—	1	1	3	3
Nev.	5	1	—	—	—	—	—	2
PACIFIC	20	20	28	24	14	19	50	32
Wash.	1	2	2	5	—	2	2	1
Oreg.	N	N	2	4	1	7	1	4
Calif.	19	18	24	15	12	10	42	27
Alaska	—	—	—	—	1	—	2	—
Hawaii	—	—	—	—	N	N	3	—
Guam	—	—	—	—	—	—	—	—
P.R.	—	1	—	—	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 April 9, 2005, and April 10, 2004 (14th 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	362	479	27	30	23	17	—	—	312	432
NEW ENGLAND	27	24	1	3	—	—	—	—	26	21
Maine	1	7	—	—	—	—	—	—	1	7
N.H.	2	2	—	—	—	—	—	—	2	2
Vt.	3	1	—	—	—	—	—	—	3	1
Mass.	11	14	—	3	—	—	—	—	11	11
R.I.	2	—	—	—	—	—	—	—	2	—
Conn.	8	—	1	—	—	—	—	—	7	—
MID. ATLANTIC	48	67	12	17	3	5	—	—	33	45
Upstate N.Y.	13	23	1	3	2	3	—	—	10	17
N.Y. City	5	14	—	—	—	—	—	—	5	14
N.J.	14	8	—	—	—	—	—	—	14	8
Pa.	16	22	11	14	1	2	—	—	4	6
E.N. CENTRAL	31	47	9	8	4	3	—	—	18	36
Ohio	12	25	—	3	3	3	—	—	9	19
Ind.	5	9	—	—	1	—	—	—	4	9
Ill.	—	1	—	—	—	—	—	—	—	1
Mich.	9	5	9	5	—	—	—	—	—	—
Wis.	5	7	—	—	—	—	—	—	5	7
W.N. CENTRAL	25	22	1	—	1	2	—	—	23	20
Minn.	5	7	1	—	—	—	—	—	4	7
Iowa	9	4	—	—	1	1	—	—	8	3
Mo.	6	7	—	—	—	1	—	—	6	6
N. Dak.	—	—	—	—	—	—	—	—	—	—
S. Dak.	1	1	—	—	—	—	—	—	1	1
Nebr.	1	1	—	—	—	—	—	—	1	1
Kans.	3	2	—	—	—	—	—	—	3	2
S. ATLANTIC	66	90	2	1	4	2	—	—	60	87
Del.	—	1	—	—	—	—	—	—	—	1
Md.	7	5	1	—	2	—	—	—	4	5
D.C.	—	4	—	1	—	—	—	—	—	3
Va.	7	3	—	—	—	—	—	—	7	3
W. Va.	1	3	—	—	—	—	—	—	1	3
N.C.	6	12	1	—	2	2	—	—	3	10
S.C.	9	7	—	—	—	—	—	—	9	7
Ga.	8	6	—	—	—	—	—	—	8	6
Fla.	28	49	—	—	—	—	—	—	28	49
E.S. CENTRAL	19	23	—	—	1	—	—	—	18	23
Ky.	7	3	—	—	1	—	—	—	6	3
Tenn.	8	8	—	—	—	—	—	—	8	8
Ala.	—	6	—	—	—	—	—	—	—	6
Miss.	4	6	—	—	—	—	—	—	4	6
W.S. CENTRAL	31	54	1	1	3	1	—	—	27	52
Ark.	7	9	—	—	—	—	—	—	7	9
La.	11	16	—	1	2	—	—	—	9	15
Okla.	5	3	1	—	1	1	—	—	3	2
Tex.	8	26	—	—	—	—	—	—	8	26
MOUNTAIN	24	25	—	—	3	3	—	—	21	22
Mont.	—	1	—	—	—	—	—	—	—	1
Idaho	1	2	—	—	—	—	—	—	1	2
Wyo.	—	2	—	—	—	—	—	—	—	2
Colo.	7	9	—	—	—	—	—	—	7	9
N. Mex.	—	4	—	—	—	2	—	—	—	2
Ariz.	12	4	—	—	2	—	—	—	10	4
Utah	2	1	—	—	1	—	—	—	1	1
Nev.	2	2	—	—	—	1	—	—	2	1
PACIFIC	91	127	1	—	4	1	—	—	86	126
Wash.	18	6	1	—	3	1	—	—	14	5
Oreg.	19	28	—	—	—	—	—	—	19	28
Calif.	47	87	—	—	—	—	—	—	47	87
Alaska	2	2	—	—	—	—	—	—	2	2
Hawaii	5	4	—	—	1	—	—	—	4	4
Guam	—	—	—	—	—	—	—	—	—	—
P.R.	—	3	—	—	—	—	—	—	—	3
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 April 9, 2005, and April 10, 2004 (14th 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	4,090	2,419	1,137	1,531	157	130	5,601	6,665	2,246	2,973
NEW ENGLAND	200	415	188	108	1	4	347	313	50	60
Maine	7	—	11	11	N	N	15	17	—	1
N.H.	—	12	2	6	—	—	22	21	4	3
Vt.	41	20	12	5	—	—	23	14	3	1
Mass.	147	362	132	41	—	4	189	189	29	40
R.I.	5	9	3	6	1	—	15	12	2	1
Conn.	—	12	28	39	—	—	83	60	12	14
MID. ATLANTIC	460	615	135	161	9	12	663	878	257	337
Upstate N.Y.	158	432	84	71	—	—	178	180	77	138
N.Y. City	18	50	8	1	1	3	182	288	99	98
N.J.	66	35	N	N	2	—	94	155	68	63
Pa.	218	98	43	89	6	9	209	255	13	38
E.N. CENTRAL	1,092	363	9	3	2	2	527	1,090	130	264
Ohio	535	120	4	2	1	2	180	239	15	46
Ind.	86	14	1	1	—	—	39	82	25	43
Ill.	65	13	2	—	—	—	30	387	4	116
Mich.	48	28	2	—	1	—	152	176	71	31
Wis.	358	188	—	—	—	—	126	206	15	28
W.N. CENTRAL	529	126	61	132	8	3	416	410	174	90
Minn.	94	14	12	14	—	—	105	101	11	12
Iowa	154	26	18	12	—	—	76	75	34	26
Mo.	122	72	7	3	8	3	121	115	95	23
N. Dak.	14	3	1	13	—	—	6	11	2	1
S. Dak.	1	1	5	23	—	—	31	18	8	4
Nebr.	60	—	—	41	—	—	34	37	19	5
Kans.	84	10	18	26	—	—	43	53	5	19
S. ATLANTIC	278	132	398	700	112	89	1,702	1,429	422	827
Del.	1	—	—	9	—	2	1	12	—	2
Md.	52	34	72	82	5	2	138	108	20	30
D.C.	—	4	—	—	—	—	11	9	4	14
Va.	53	31	150	111	3	—	173	150	21	29
W. Va.	17	2	5	17	1	—	19	29	—	—
N.C.	21	26	117	157	80	70	313	205	50	116
S.C.	81	13	5	40	5	4	108	91	26	130
Ga.	10	7	44	77	11	9	289	212	127	156
Fla.	43	15	5	207	7	2	650	613	174	350
E.S. CENTRAL	104	26	26	60	2	14	284	362	237	156
Ky.	25	3	2	5	—	—	38	62	25	23
Tenn.	45	15	5	36	1	3	102	107	121	59
Ala.	24	4	19	15	1	2	108	121	72	53
Miss.	10	4	—	4	—	9	36	72	19	21
W.S. CENTRAL	79	65	246	310	1	3	355	624	450	676
Ark.	26	8	10	15	—	—	65	62	14	13
La.	3	2	—	—	1	3	77	78	29	67
Okla.	—	6	28	28	—	—	56	53	135	95
Tex.	50	49	208	267	—	—	157	431	272	501
MOUNTAIN	929	281	50	20	20	—	402	497	141	203
Mont.	225	4	—	3	1	—	19	25	1	3
Idaho	36	14	—	—	—	—	15	41	—	1
Wyo.	7	3	6	—	1	—	8	14	—	1
Colo.	420	140	—	—	—	—	103	117	23	32
N. Mex.	33	45	—	—	—	—	21	53	15	41
Ariz.	93	53	44	17	15	—	152	166	68	98
Utah	102	21	—	—	3	—	43	55	11	11
Nev.	13	1	—	—	—	—	41	26	23	16
PACIFIC	419	396	24	37	2	3	905	1,062	385	360
Wash.	97	94	—	—	—	—	80	55	12	18
Oreg.	192	81	—	—	—	2	59	80	19	17
Calif.	93	210	23	28	2	1	697	829	344	308
Alaska	12	7	1	9	—	—	12	23	3	3
Hawaii	25	4	—	—	—	—	57	75	7	14
Guam	—	—	—	—	—	—	—	9	—	15
P.R.	—	1	23	16	N	N	27	43	—	1
V.I.	—	—	—	—	—	—	—	—	—	—
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U	—	U

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* 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 April 9, 2005, and April 10, 2004 (14th Week)*

	Streptococcal disease, invasive, group A		*Streptococcus pneumoniae*, invasive disease				Syphilis			
			Drug resistant, all ages		Age <5 years		Primary & secondary		Congenital	
Reporting area	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004
UNITED STATES	1,381	1,609	863	835	220	243	1,686	1,984	61	112
NEW ENGLAND	50	78	9	10	21	32	50	44	—	—
Maine	2	3	N	N	—	—	1	—	—	—
N.H.	3	9	—	—	1	N	4	1	—	—
Vt.	6	2	3	3	1	1	—	—	—	—
Mass.	33	62	—	3	19	29	43	27	—	—
R.I.	6	2	6	4	—	2	1	2	—	—
Conn.	—	—	—	—	U	U	1	14	—	—
MID. ATLANTIC	285	261	88	54	41	34	203	256	12	15
Upstate N.Y.	110	83	33	20	24	19	18	14	8	1
N.Y. City	32	48	U	U	U	U	132	158	3	7
N.J.	58	54	N	N	6	5	32	49	1	6
Pa.	85	76	55	34	11	10	21	35	—	1
E.N. CENTRAL	209	342	206	192	51	62	152	230	5	23
Ohio	75	84	139	150	27	29	59	60	1	1
Ind.	28	33	67	42	9	11	25	22	—	2
Ill.	2	96	—	—	11	—	42	90	1	4
Mich.	96	101	—	N	—	N	20	49	2	16
Wis.	8	28	N	N	4	22	6	9	1	—
W.N. CENTRAL	90	123	14	5	25	20	45	43	—	—
Minn.	31	57	—	—	14	9	2	6	—	—
Iowa	N	N	N	N	—	N	1	2	—	—
Mo.	31	24	13	4	1	6	37	25	—	—
N. Dak.	1	4	—	—	1	—	—	—	—	—
S. Dak.	7	7	1	1	—	—	—	—	—	—
Nebr.	8	8	—	—	2	3	1	5	—	—
Kans.	12	23	N	N	7	2	4	5	—	—
S. ATLANTIC	291	291	384	430	33	16	444	498	11	18
Del.	—	1	—	3	—	N	4	2	—	—
Md.	90	53	—	—	25	12	86	75	5	3
D.C.	2	2	11	5	2	4	31	23	—	1
Va.	18	16	N	N	—	N	25	11	3	1
W. Va.	4	9	25	43	6	—	2	3	—	—
N.C.	35	37	N	N	U	U	64	43	1	1
S.C.	7	23	—	44	—	N	20	34	—	4
Ga.	59	81	152	116	—	N	27	94	—	1
Fla.	76	69	196	219	—	N	185	213	2	7
E.S. CENTRAL	54	74	48	55	1	—	97	103	9	4
Ky.	15	26	7	12	N	N	6	14	—	—
Tenn.	39	48	41	43	—	N	39	45	7	1
Ala.	—	—	—	—	—	N	43	32	2	2
Miss.	—	—	—	—	1	—	9	12	—	1
W.S. CENTRAL	65	117	52	26	27	57	320	300	16	25
Ark.	6	3	6	3	3	4	12	14	—	3
La.	4	1	46	23	7	15	50	63	2	—
Okla.	46	19	N	N	11	15	13	7	1	2
Tex.	9	94	N	N	6	23	245	216	13	20
MOUNTAIN	233	181	36	15	21	22	85	99	8	4
Mont.	—	—	—	—	—	—	5	—	—	—
Idaho	1	3	N	N	—	N	6	8	—	—
Wyo.	1	4	12	4	—	—	—	1	—	—
Colo.	105	28	N	N	20	20	8	17	—	—
N. Mex.	14	39	—	5	—	—	7	25	1	1
Ariz.	86	94	N	N	—	N	39	42	7	3
Utah	26	13	23	4	1	2	1	2	—	—
Nev.	—	—	1	2	—	—	19	4	—	—
PACIFIC	104	142	26	48	—	—	290	411	—	23
Wash.	N	N	N	N	N	N	44	21	—	—
Oreg.	N	N	N	N	—	N	8	11	—	—
Calif.	75	112	N	N	N	N	235	375	—	23
Alaska	—	—	—	—	—	N	1	—	—	—
Hawaii	29	30	26	48	—	—	2	4	—	—
Guam	—	—	—	—	—	—	—	—	—	—
P.R.	N	N	N	N	—	N	35	36	3	2
V.I.	—	—	—	—	—	—	—	4	—	—
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	—	U	—	U	—	U	—	U	—	U

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TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending April 9, 2005, and April 10, 2004 (14th Week)*

	Tuberculosis		Typhoid fever		Varicella (chickenpox)		West Nile virus disease†		
							Neuroinvasive		Non-neuroinvasive§
Reporting area	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005	Cum. 2004	Cum. 2005
UNITED STATES	1,936	2,825	40	64	6,268	5,960	—	—	—
NEW ENGLAND	68	79	1	7	99	251	—	—	—
Maine	5	3	—	—	80	43	—	—	—
N.H.	3	1	—	—	—	—	—	—	—
Vt.	—	—	—	—	18	208	—	—	—
Mass.	46	43	—	6	1	—	—	—	—
R.I.	2	13	—	1	—	—	—	—	—
Conn.	12	19	1	—	—	—	—	—	—
MID. ATLANTIC	465	451	13	17	1,319	18	—	—	—
Upstate N.Y.	47	54	2	—	—	—	—	—	—
N.Y. City	238	233	1	7	—	—	—	—	—
N.J.	113	104	3	7	—	—	—	—	—
Pa.	67	60	7	3	1,319	18	—	—	—
E.N. CENTRAL	335	298	1	3	2,179	2,317	—	—	—
Ohio	59	47	—	1	501	604	—	—	—
Ind.	62	78	—	—	N	N	—	—	—
Ill.	155	118	—	—	7	—	—	—	—
Mich.	41	35	—	2	1,511	1,469	—	—	—
Wis.	18	20	1	—	160	244	—	—	—
W.N. CENTRAL	104	86	1	2	63	92	—	—	—
Minn.	41	31	1	1	—	—	—	—	—
Iowa	11	9	—	—	N	N	—	—	—
Mo.	33	27	—	1	2	2	—	—	—
N. Dak.	1	2	—	—	9	66	—	—	—
S. Dak.	4	2	—	—	52	24	—	—	—
Nebr.	3	6	—	—	—	—	—	—	—
Kans.	11	9	—	—	—	—	—	—	N
S. ATLANTIC	374	563	7	8	578	655	—	—	—
Del.	—	7	—	—	1	2	—	—	—
Md.	54	47	1	2	—	—	—	—	—
D.C.	21	6	—	—	5	9	—	—	—
Va.	59	31	—	2	67	147	—	—	—
W. Va.	8	6	—	—	419	383	—	—	N
N.C.	44	53	1	2	—	N	—	—	—
S.C.	44	35	—	—	86	114	—	—	—
Ga.	16	179	2	—	—	—	—	—	—
Fla.	128	199	3	2	—	—	—	—	—
E.S. CENTRAL	111	128	1	1	—	—	—	—	—
Ky.	27	15	1	—	N	N	—	—	—
Tenn.	62	42	—	1	—	—	—	—	—
Ala.	22	38	—	—	—	—	—	—	—
Miss.	—	33	—	—	—	—	—	—	—
W.S. CENTRAL	55	505	3	7	1,021	1,734	—	—	—
Ark.	22	36	—	—	—	—	—	—	—
La.	—	—	—	—	54	33	—	—	—
Okla.	33	37	—	—	—	—	—	—	—
Tex.	—	432	3	7	967	1,701	—	—	—
MOUNTAIN	46	117	2	2	1,009	893	—	—	—
Mont.	—	—	—	—	—	—	—	—	—
Idaho	—	—	—	—	—	—	—	—	—
Wyo.	—	—	—	—	38	14	—	—	—
Colo.	8	28	—	—	701	646	—	—	—
N. Mex.	1	9	—	—	48	27	—	—	—
Ariz.	34	45	1	1	—	—	—	—	—
Utah	3	14	1	1	222	206	—	—	—
Nev.	—	21	—	—	—	—	—	—	—
PACIFIC	378	598	11	17	—	—	—	—	—
Wash.	62	52	—	1	N	N	—	—	—
Oreg.	21	21	1	—	—	—	—	—	—
Calif.	254	489	6	11	—	—	—	—	—
Alaska	9	8	—	—	—	—	—	—	—
Hawaii	32	28	4	5	—	—	—	—	—
Guam	—	13	—	—	—	21	—	—	—
P.R.	—	14	—	—	65	93	—	—	—
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 April 9, 2005 (14th Week)

	All causes, by age (years)						
Reporting Area	All Ages	≥65	45–64	25–44	1–24	<1	P&I† Total
NEW ENGLAND	510	364	102	34	6	4	58
Boston, Mass.	134	93	29	10	—	2	13
Bridgeport, Conn.	33	25	5	3	—	—	4
Cambridge, Mass.	12	12	—	—	—	—	3
Fall River, Mass.	25	17	7	1	—	—	6
Hartford, Conn.	48	29	14	3	—	2	2
Lowell, Mass.	23	17	3	2	1	—	4
Lynn, Mass.	9	5	3	1	—	—	—
New Bedford, Mass.	26	19	3	3	1	—	2
New Haven, Conn.	31	25	5	1	—	—	5
Providence, R.I.	34	26	6	1	1	—	4
Somerville, Mass.	5	4	—	1	—	—	—
Springfield, Mass.	30	19	8	1	2	—	—
Waterbury, Conn.	29	22	6	—	1	—	6
Worcester, Mass.	71	51	13	7	—	—	9
MID. ATLANTIC	2,145	1,471	458	130	33	51	131
Albany, N.Y.	57	44	7	3	1	2	1
Allentown, Pa.	21	16	3	1	1	—	3
Buffalo, N.Y.	86	65	11	6	2	2	11
Camden, N.J.	32	17	10	4	—	1	3
Elizabeth, N.J.	22	15	5	1	1	—	3
Erie, Pa.	49	32	15	1	—	1	6
Jersey City, N.J.	41	27	12	1	1	—	—
New York City, N.Y.	1,093	748	256	64	15	9	57
Newark, N.J.	59	28	20	7	1	3	4
Paterson, N.J.	19	14	2	2	1	—	—
Philadelphia, Pa.	271	171	49	20	7	24	14
Pittsburgh, Pa.§	22	13	7	2	—	—	3
Reading, Pa.	28	18	4	4	2	—	1
Rochester, N.Y.	134	105	24	1	1	3	8
Schenectady, N.Y.	17	14	3	—	—	—	—
Scranton, Pa.	31	24	4	3	—	—	2
Syracuse, N.Y.	94	70	14	5	—	4	13
Trenton, N.J.	31	20	5	4	—	2	—
Utica, N.Y.	18	16	2	—	—	—	—
Yonkers, N.Y.	20	14	5	1	—	—	2
E.N. CENTRAL	2,405	1,686	479	148	42	50	200
Akron, Ohio	56	37	15	3	—	1	11
Canton, Ohio	35	24	8	1	1	1	3
Chicago, Ill.	358	233	83	30	8	4	33
Cincinnati, Ohio	100	51	30	10	3	6	9
Cleveland, Ohio	284	216	57	7	1	3	—
Columbus, Ohio	284	209	48	19	1	7	40
Dayton, Ohio	162	117	29	11	4	1	13
Detroit, Mich.	175	98	50	15	4	8	11
Evansville, Ind.	56	40	14	1	1	—	5
Fort Wayne, Ind.	78	56	12	6	3	1	11
Gary, Ind.	21	12	5	4	—	—	3
Grand Rapids, Mich.	75	60	11	1	—	3	5
Indianapolis, Ind.	207	144	34	14	9	6	14
Lansing, Mich.	48	34	6	4	1	3	4
Milwaukee, Wis.	119	91	16	7	1	4	7
Peoria, Ill.	53	42	7	3	—	1	7
Rockford, Ill.	54	38	14	1	—	1	4
South Bend, Ind.	58	46	10	2	—	—	7
Toledo, Ohio	110	73	25	7	5	—	8
Youngstown, Ohio	72	65	5	2	—	—	5
W.N. CENTRAL	674	454	147	34	25	14	66
Des Moines, Iowa	64	43	17	2	1	1	8
Duluth, Minn.	28	18	8	1	1	—	3
Kansas City, Kans.	29	20	7	1	1	—	6
Kansas City, Mo.	95	62	22	5	4	2	4
Lincoln, Nebr.	41	32	6	2	1	—	3
Minneapolis, Minn.	71	45	18	4	3	1	6
Omaha, Nebr.	62	48	10	—	2	2	9
St. Louis, Mo.	115	63	29	9	7	7	13
St. Paul, Minn.	77	54	13	8	2	—	6
Wichita, Kans.	92	69	17	2	3	1	8
S. ATLANTIC	1,303	841	304	88	31	37	101
Atlanta, Ga.	146	85	36	12	3	10	8
Baltimore, Md.	197	107	60	20	7	1	18
Charlotte, N.C.	112	80	18	7	3	4	14
Jacksonville, Fla.	122	83	26	10	—	3	5
Miami, Fla.	86	52	20	6	4	4	4
Norfolk, Va.	67	47	13	2	3	2	3
Richmond, Va.	73	45	19	6	1	2	4
Savannah, Ga.	54	30	17	—	—	7	3
St. Petersburg, Fla.	50	39	5	3	2	1	5
Tampa, Fla.	276	192	60	16	7	1	34
Washington, D.C.	100	65	27	6	1	1	2
Wilmington, Del.	20	16	3	—	—	1	1
E.S. CENTRAL	977	639	221	85	18	14	89
Birmingham, Ala.	182	116	45	12	5	4	24
Chattanooga, Tenn.	104	70	26	6	—	2	5
Knoxville, Tenn.	112	83	23	4	2	—	9
Lexington, Ky.	72	47	15	9	1	—	9
Memphis, Tenn.	229	141	49	28	7	4	16
Mobile, Ala.	87	53	19	14	1	—	1
Montgomery, Ala.	58	40	12	4	1	1	10
Nashville, Tenn.	133	89	32	8	1	3	15
W.S. CENTRAL	2,054	1,400	426	139	43	46	131
Austin, Tex.	107	75	25	6	—	1	7
Baton Rouge, La.	30	22	6	1	1	—	1
Corpus Christi, Tex.	56	39	10	2	5	—	7
Dallas, Tex.	193	105	48	25	3	12	8
El Paso, Tex.	108	78	19	6	2	3	5
Ft. Worth, Tex.	143	86	38	11	4	4	11
Houston, Tex.	377	230	89	35	8	15	24
Little Rock, Ark.	100	64	26	5	2	3	—
New Orleans, La.	464	354	80	17	8	5	32
San Antonio, Tex.	269	210	40	13	4	2	26
Shreveport, La.	45	28	10	5	2	—	2
Tulsa, Okla.	162	109	35	13	4	1	8
MOUNTAIN	1,006	657	206	65	27	23	96
Albuquerque, N.M.	128	87	32	8	1	—	17
Boise, Idaho	67	53	10	1	2	1	10
Colo. Springs, Colo.	68	52	7	6	1	2	4
Denver, Colo.	105	63	24	9	5	4	9
Las Vegas, Nev.	265	166	71	17	6	5	22
Ogden, Utah	35	25	5	5	—	—	4
Phoenix, Ariz.	174	111	35	9	7	8	19
Pueblo, Colo.	46	35	8	2	1	—	4
Salt Lake City, Utah	118	65	14	8	4	3	7
Tucson, Ariz.	U	U	U	U	U	U	U
PACIFIC	1,915	1,386	343	103	54	29	187
Berkeley, Calif.	13	8	2	2	1	—	—
Fresno, Calif.	128	94	25	5	4	—	8
Glendale, Calif.	24	21	3	—	—	—	6
Honolulu, Hawaii	92	71	15	4	1	1	9
Long Beach, Calif.	68	48	12	5	2	1	6
Los Angeles, Calif.	329	241	51	22	13	2	32
Pasadena, Calif.	35	26	7	1	1	—	4
Portland, Oreg.	177	130	27	15	2	3	13
Sacramento, Calif.	201	142	38	9	7	5	15
San Diego, Calif.	197	145	33	11	6	2	20
San Francisco, Calif.	125	78	32	8	2	5	19
San Jose, Calif.	220	173	27	10	8	2	25
Santa Cruz, Calif.	28	16	10	2	—	—	2
Seattle, Wash.	127	85	30	3	3	6	9
Spokane, Wash.	44	33	9	1	—	1	10
Tacoma, Wash.	107	75	22	5	4	1	9
TOTAL	12,989¶	8,898	2,686	826	279	268	1,059

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.

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☆U.S. Government Printing Office: 2005-733-116/00084 Region IV ISSN: 0149-2195