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50 Years of the Epidemic Intelligence Service

This issue of *MMWR* commemorates the 50th anniversary of the Epidemic Intelligence Service (EIS). In 1951, EIS was established by CDC following the start of the Korean War as an early-warning system against biologic warfare and man-made epidemics. EIS officers selected for 2-year field assignments were primarily medical doctors and other health professionals, such as sanitarians, dentists, and veterinarians, who focused on infectious disease outbreaks. EIS has expanded to include a range of public health professionals, such as postdoctoral scientists in statistics, epidemiology, microbiology, anthropology, sociology, and behavioral sciences. The scope of work also has expanded to include chronic disease, environmental health, unintentional injury, violence prevention, and workplace health and safety. Since 1951, approximately 2500 EIS officers have responded to requests for epidemiologic assistance within the United States and throughout the world. Each year, EIS officers are involved in several hundred investigations of disease and injury problems, enabling CDC and its public health partners to make recommendations to improve the public's health and safety. Additional information about EIS and its 50th anniversary is available at http://www.cdc.gov/eis.

Mortality During a Famine — Gode District, Ethiopia, July 2000

Recurrent famine has been a major cause of mortality in the Horn of Africa (*1,2*). In Ethiopia, three consecutive years of drought led to widespread loss of livestock, population displacement, and malnutrition, placing an estimated 10 million persons at risk for starvation in 2000 (*3*). A large proportion of the population of the Gode district in Somali region was displaced in a search for food and food aid (CDC, unpublished data, 2000). From April through July 2000, nongovernmental organizations (NGOs) opened feeding centers in the Gode district. Because no vital statistics or public health surveillance system existed in the district, and no representative mortality or morbidity data were available, during July 2000, CDC, in collaboration with Save the Children U.S., the Office of Foreign Disaster Assistance of the U.S. Agency for International Development, and the United Nations Children's Fund (UNICEF), conducted a mortality survey. This report summarizes the results of this survey, which found persistently high levels of mortality, with measles representing an important cause of mortality in children aged

Mortality During a Famine — Continued

<5 years and 5–14 years. Mass measles vaccination with vitamin A distribution is an important intervention during the acute phase of famines in sub-Saharan Africa.

During a two-stage cluster survey in Gode district, the collaborating agencies collected retrospective mortality data from December 9, 1999, through July 31, 2000. A sample size of 3832 persons was required to achieve a 95% confidence interval (CI) with 2% precision around an estimated cumulative incidence of mortality of 10%. The design effect is the factor by which the sample size calculated for a simple random sample needs to be multiplied to account for the dependence of a given variable within a cluster. Although a design effect of two generally is assumed for nutrition surveys, deaths were expected to be more clustered than malnutrition, and a design effect of four was used in this survey. After adjusting for more recent estimates by NGOs involved in food distribution and by the Ethiopian army conducting comprehensive headcounts, the 1994 census (*4*) was used as the basis for the sampling frame. In the first stage of the survey, 30 clusters were assigned proportionally to village population size. In the second stage, households were selected using Expanded Program on Immunization methods (*5*). A household was defined as a group of persons who normally lived together and shared meals. Age at death and month of death were identified. Cause of death was assigned using standard case definitions for easily recognized causes of death. Analysis was performed using EpiInfo version 6.04b (*6*).

A total of 595 households comprising 4032 persons was surveyed. In stable, developing countries, the crude mortality rate (CMR) is generally ≤0.5 deaths per 10,000 persons per day and the mortality rate for children aged <5 years (<5MR) is ≤1 per 10,000 persons per day (*7*). During the study period, the CMR was 3.2 (95% CI=2.4–3.8), three times the cut-off level of one per 10,000 per day used to define an emergency (*7*). The CMR peaked in January 2000 at 6.3 but during July was still 2.0. During the study period, the <5MR was 6.8 (95% CI=5.3–8.0). The <5MR was highest in December 1999 at 12.5 but during July 2000, was 5.5, above the emergency threshold for <5MR of 2–4 (*7*). Of the 293 deaths that occurred during the study period, 158 (54%) were in children aged <5 years, and 73 (25%) were in children aged 5–14 years. Measles and malnutrition (without an accompanying major communicable disease) each contributed to approximately one fourth of the 159 deaths among children aged <5 years; diarrhea was reported as the cause of death for approximately one third of deaths in this age group (Figure 1). Measles also contributed to 12 (17%) of 72 deaths among children aged 5–14 years.

As a result of these findings, the following emergency measures were recommended: 1) accelerating plans for a mass measles vaccination campaign and vitamin A distribution targeting children aged 9 months–5 years; 2) extending coverage of the campaign to include children aged 6 months–14 years; 3) implementing water and sanitation programs to prevent diarrheal disease; 4) continuing treatment for severely malnourished children in therapeutic feeding centers and moderately malnourished children in supplementary feeding programs; and 5) ongoing monitoring of malnutrition (Figure 2) and mortality using cross-sectional surveys in the absence of a regular mortality surveillance system.

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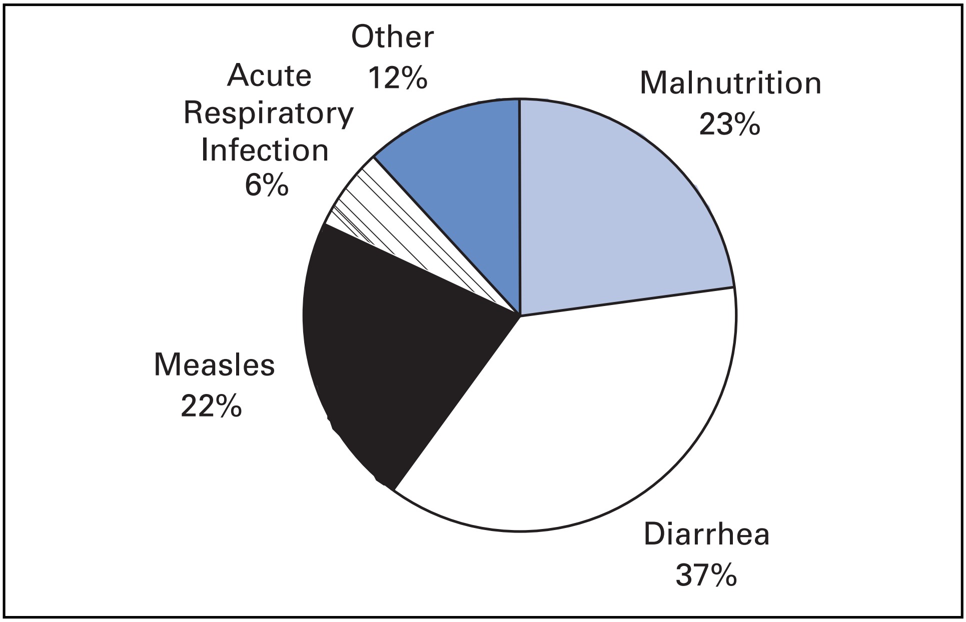
Mortality During a Famine — Continued

FIGURE 1. Major reported causes of death among children aged <5 years — Gode district, Ethiopia, July 2000



Editorial Note: The age distribution for mortality during the famine in Ethiopia is similar to other famine- and emergency-affected populations. Children, particularly those aged <5 years, usually account for most deaths in such situations (*8*). Malnutrition, diarrheal diseases, acute respiratory infection, malaria, and measles account for 60%–95% of reported deaths in famines and complex emergencies (*7*). For children aged <5 years, measles is a leading cause of mortality during these emergencies. Most famines occur in areas of rural sub-Saharan Africa, where measles vaccination coverage is rarely adequate to prevent measles outbreaks during periods of mass displacement and malnutrition. Mass measles vaccination campaigns targeting children aged 6 months–5 years are likely to be cost-effective in such situations (*9*) and may prevent many more deaths than more high-profile interventions (e.g., feeding centers). The large proportion of measles-related deaths among children aged 5–14 years identified in this survey highlights the importance of extending coverage to children aged >5 years when measles-related mortality is high in this age group (*9*).

The findings in this report are subject to at least three limitations. First, data are subject to recall bias; as a result, the study period was limited to 8 months, and the beginning of the study period was defined by a religious date known to the entire population. Second, only households present on the day of the survey were sampled, possibly resulting in an underestimation of mortality because households in which all members had died during the famine could not have been selected. Finally, because no surveillance system and no birth and death registration existed in the district, comparing verbal reports of mothers with case definitions was used to determine causes of death. Inadequate sensitivity and specificity of case definitions could have resulted in some misclassification of causes of death.

Mortality During a Famine — Continued

FIGURE 2. Ethiopian child being weighed with a Salter scale, 2000

Guidelines for humanitarian interventions prioritize interventions to be implemented: rapid assessment, measles vaccination with vitamin A distribution, water and sanitation programs, and food aid (*10*). In refugee camps, mass measles vaccination campaigns accompanied by vitamin A distribution and water and sanitation programs have become standard practice. This report underscores the importance of these programs in the acute phase of famines in sub-Saharan Africa. Such programs are more difficult to implement in widely dispersed famine-affected populations than in refugee or internally displaced camps, particularly in remote areas, such as the Somali region of Ethiopia, that have no cold chain and poor health infrastructure. Even though food aid and feeding centers also are a priority during famine, attracting a large concentration of susceptible persons to feeding centers may increase transmission of infectious diseases such as measles and diarrhea. Public health programs targeting major causes of mortality should be integrated with feeding programs during famine from the outset of the humanitarian response.

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Fatal and Severe Hepatitis Associated With Rifampin and Pyrazinamide for the Treatment of Latent Tuberculosis Infection — New York and Georgia, 2000

One of the recommended treatments for latent tuberculosis infection (LTBI) is a 9-month regimen of isoniazid (INH); a 2-month regimen of rifampin (RIF) and pyrazinamide (PZA) is an alternative in some instances. In September 2000, a man in New York died of hepatitis after 5 weeks of RIF-PZA, and in December, a woman in Georgia was admitted to a hospital because of hepatitis after 7 weeks of this regimen. This report summarizes the findings of the investigations of these incidents, which underscore the need for clinical monitoring for adverse effects in all patients receiving treatment for LTBI.

Case 1

A 53-year-old incarcerated man received 600 mg (6.7 mg/Kg) RIF and 1750 mg (19 mg/Kg) PZA daily after screening revealed a tuberculin skin test (TST) with 20 mm induration and no radiologic or clinical findings of active tuberculosis (TB). His risk factors for TB included previous work as a medical orderly, homelessness, and multiple incarcerations. He had a history of hypertensive heart disease and alcoholism without evidence of chronic liver disease. He was not known to inject drugs.

RIF-PZA was standard treatment for LTBI at the jail. Baseline and 1-month serum aminotransferase and bilirubin levels were measured routinely. The patient's baseline aminotransferase levels were slightly higher than the upper-normal limits. He was instructed to stop taking RIF-PZA if he developed symptoms suggestive of hepatitis. He also received 325 mg enteric-coated aspirin daily, 90 mg extended-release nifedipine, and 50 mg hydrochlorothiazide. Nurses supervised the administration of all medication to assure compliance.

Blood specimens tested on day 33 of treatment revealed alanine aminotransferase (ALT) 1734 U/L (normal range: 0–41 U/L), aspartate aminotransferase (AST) 1449 U/L (normal range: 0–38 U/L), and total bilirubin 4.2 mg/dL (normal range: 0–1.0 mg/dL). Blood cell counts showed leukocytosis. On day 35, RIF-PZA was discontinued when the test results were received. On the same day, a correctional officer urged the patient to visit the infirmary because of poor appetite and lassitude that had developed over several days; he declined. Five days after the cessation of RIF-PZA, the patient was evaluated in the infirmary for jaundice and altered mental status and was admitted to a hospital. Serum total bilirubin peaked at 17.8 mg/dL and blood ammonia at 378 μmol/L (normal range: 17–47 μmol/L). He died 3 days after admission.

On postmortem histology, the liver had bridging necrosis, lymphocytic infiltration, focal cholestasis, increased fibrosis, and micronodular cirrhosis. Results were negative for serum anti-A IgM, antibody to hepatitis B core antigen (anti-HBc), antibody to hepatitis B surface antigen (anti-HBs), and antibody to hepatitis C virus (anti-HCV). Antinuclear antibody (ANA) was undetectable. Hepatitis B and C were undetectable by polymerase chain reaction assays. The reported cause of death was liver necrosis and failure as a result of hepatitis following LTBI treatment.

Case 2

A 59-year-old woman received 600 mg (7.2 mg/Kg) RIF and 2000 mg (24 mg/Kg) PZA daily after testing revealed a TST with 27 mm induration and no findings for active TB. She chose this regimen because of suspected exposure to drug-resistant TB and concern about liver injury from INH. In addition to RIF-PZA, she received beclomethasone dipropionate nasal spray, budesonide inhalation powder, and albuterol inhalation aerosol for nasal allergies and asthma. She had no history of liver disease, rarely drank alcohol, and did not inject drugs. She was vaccinated against hepatitis A but not B. She had a history of anaphylactic reactions to penicillin and an estrogen sulfates blend. Baseline ALT and AST, bilirubin levels, and blood cell counts were normal. She was instructed to contact her health-care provider about adverse effects during treatment. On day 2 of treatment, she reported queasiness. On day 17, her blood tests were repeated: serum aminotransferase and bilirubin levels were normal, and her eosinophil count, which had been 157 cells/μL, was 510 cells/μL (normal range: 50–550 cells/μL).

She subsequently experienced malaise, anorexia, and feverishness, and she occasionally took one bismuth subsalicylate chewable tablet. On the 49th and last day of treatment, she returned to her health-care provider and was admitted to a hospital because of jaundice and altered mental status. AST was 986 U/L (normal range: 7–40 U/L), ALT 1735 U/L (normal range: 17–63 U/L), and total bilirubin 11.4 mg/dL (normal range: 0.1–1.1 mg/dL). The bilirubin peaked at 27.5 mg/dL after 14 days. Peak eosinophil count was 2580 cells/μL. No ova or protozoa were detected by stool examinations. Serum ANA was 1:640 (speckled pattern). Antibody (not IgM) to hepatitis A virus was detected. Test results were negative for hepatitis B surface antigen (HBsAg), anti-HBs, and anti-HCV. After receiving 40 mg prednisone daily, the symptoms and laboratory abnormalities slowly abated, and she was released after 25 days in the hospital.

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Editorial Note: Case 1 is the first report to CDC of fatal hepatitis associated with the RIF-PZA regimen for LTBI, although sporadic cases of liver injury have been attributed to PZA used in treatment regimens for TB disease (*1*). Both cases illustrate that the usually well-tolerated regimens for LTBI occasionally can result in severe adverse effects and that clinical monitoring is crucial during treatment. In these cases, biochemical monitoring did not help to avoid severe liver injury and does not substitute for clinical monitoring (*2*). Idiosyncratic liver injury can be caused by hypersensitivity, as suspected for case 2, or by toxic drug metabolites. Other cases have implicated various medicines and alcohol as potential co-factors for INH liver injury (*3,4*). A similar association has not been assessed for RIF and PZA because of small case numbers.

Patients with LTBI and risk factors for active TB should be offered treatment (*1,5*). Health-care providers should instruct and frequently remind patients about the initial symptoms of hepatitis (e.g., fatigue, nausea, abdominal pain, and anorexia) and the importance of stopping medication if symptoms develop (*2*). In this report, both patients continued taking their medicines while symptoms were developing, a phenomenon also reported for INH-associated hepatitis (*4*).

CDC's Division of Tuberculosis Elimination is interested in receiving reports of severe hepatitis in patients being treated for LTBI. To report possible cases, telephone (404) 639-8125.

Treatment of Latent Tuberculosis Infection — Continued

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Cluster of Tuberculosis Cases Among Exotic Dancers and Their Close Contacts — Kansas, 1994–2000

During January 2001, the Wichita-Sedgwick County Department of Community Health (WSCDCH), the Kansas Department of Health and Environment (KDHE), and CDC investigated a cluster of tuberculosis (TB) cases that occurred from 1994 to 2000 among women with a history of working as dancers in adult entertainment clubs (i.e., exotic dancers) and persons who were close contacts of exotic dancers. This report describes the results of the investigation and illustrates the need for early identification of TB clusters through ongoing surveillance and resources for health departments to respond rapidly to TB outbreaks.

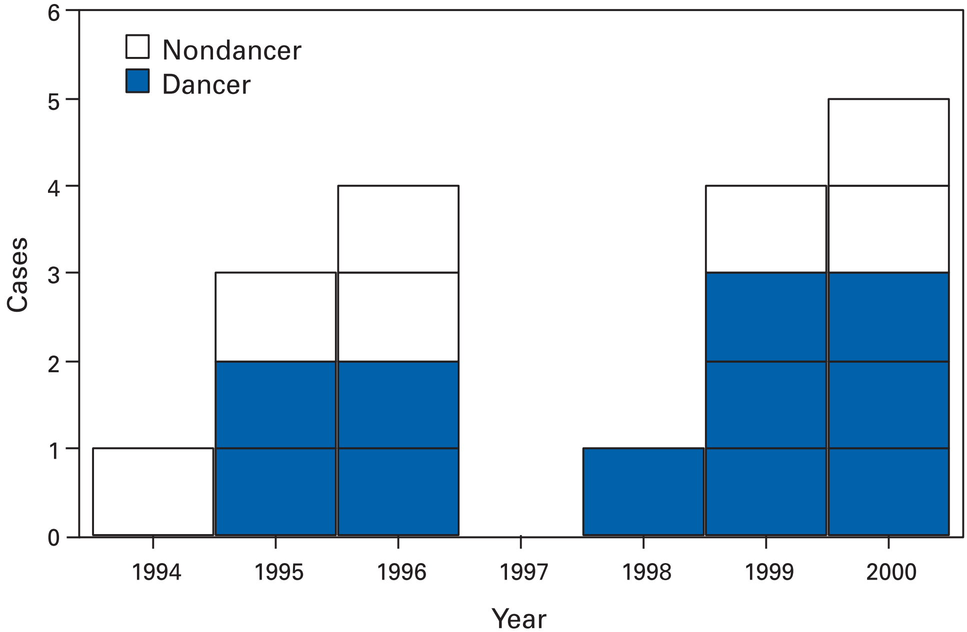
As of April 2001, the TB control staff of WSCDCH and KDHE had identified 18 TB cases in this cluster that had been diagnosed from 1994 to 2000 (Figure 1). Of these, 14 (78%) were culture confirmed; all *Mycobacterium tuberculosis* isolates were susceptible to first-line anti-TB drugs. Eight patients were women (seven exotic dancers), seven were men, and three were children. Of the 15 adult patients, 14 were aged <45 years at the time of diagnosis. All dancers had cavitary pulmonary disease, an indication of increased infectiousness. All adult patients were voluntarily tested for human immunodeficiency virus infection and one was seropositive. Twelve (80%) of the 15 adult patients reported using cocaine, crack cocaine, or amphetamines, and 10 (67%) had been incarcerated at some time during 1994–2000. All 18 patients were started on directly observed therapy (DOT), and 17 completed treatment.

Evidence linking these cases included common occupation or known exposure to exotic dancers. Of the 11 nondancer patients, six were exposed to dancers outside of the clubs exclusively. Although dancer patients identified six clubs in which they worked during their potential infectious periods, no single club could be confirmed as the site of transmission to all other dancers. Shared drug-related activities may have linked the adult patients; however, no specific location of drug use was identified (*1*). Of the nine *M. tuberculosis* isolates tested, all had matching *IS6110* fingerprints, including isolates from six dancers (*2*).

Contact investigations of the nine infectious TB patients identified 344 contacts. Of 302 contacts with a tuberculin skin test (TST) placed and read, 76 (25%) were TST positive. Among 243 contacts eligible for 10-to-12 week postexposure TST, 32 (13%) had follow-up TST placed and read. Of these, 14 (44%) had TST conversion indicating recent *M. tuberculosis* infection. Among 72 contacts eligible for latent TB infection (LTBI) therapy, 54 (75%) initiated therapy. Of the 54 contacts who should have completed therapy by January 2001, six (11%) had documented completion.

Tuberculosis Cases Among Exotic Dancers — Continued

FIGURE 1. Cluster of tuberculosis cases among exotic dancers and close contacts of exotic dancers, by year of diagnosis — Sedgwick County, Kansas, 1994–2000*



* n=18.

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Editorial Note: The findings in this report indicate the need for local health departments to have sufficient resources for ongoing surveillance for TB and capacity to rapidly respond during a time of increased demand. The cluster in Kansas occurred over a 7-year period and encompassed 18 patients.

The WSCDCH TB control staff consists of a full-time TB control nurse, a part-time physician consultant, and a full-time assistant. The nurse is primarily responsible for TB case management including DOT. In addition, in collaboration with the WSCDCH Health Surveillance Unit, the nurse is responsible for contact investigations and screening high-risk persons for TB with TST. Health departments in low incidence states such as Kansas (2.9* per 100,000 population during 2000) may have limited resources to respond to outbreaks while maintaining the essential components of TB control, thus hampering efforts to eliminate TB (*3*).

*Provisional 2000 data.

Tuberculosis Cases Among Exotic Dancers — Continued

Outbreaks of TB among persons who use illegal drugs and/or have been incarcerated can be difficult to investigate. Illegal drug users often belong to complex social networks, and members of these networks may be reluctant or unable to provide the names of their contacts to public health officials (*4*). Special techniques for exploring chains of transmission among members of complex social networks have been developed (*5,6*).

In this cluster investigation, follow-up rates of 10-to-12 week postexposure TST and completion rates of LTBI therapy were low. New approaches beyond traditional methods of TB contact investigations are necessary to follow-up contacts discovered through social network analysis. These approaches must assure that all contacts are assessed for LTBI and that those with LTBI complete therapy. This may require DOT for LTBI in an outbreak to prevent further *M. tuberculosis* transmission. The findings in this report underscore that all states, including those with very low TB incidence, should maintain TB control capacity and have outbreak response plans that include methods to augment this capacity during unexpected increases in *M. tuberculosis* transmission (*7*).

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Outbreaks of *Escherichia coli* O157:H7 Infections Among Children Associated With Farm Visits — Pennsylvania and Washington, 2000

During the spring and fall of 2000, outbreaks of *Escherichia coli* O157:H7 infections among school children in Pennsylvania and Washington resulted in 56 illnesses and 19 hospitalizations. Illness was associated with school and family visits to farms where children came into direct contact with farm animals. This report summarizes the findings of investigations of these outbreaks (Figure 1) and includes strategies to reduce the transmission of enteric pathogens from farm animals to children.

Pennsylvania

During September–November 2000, the Montgomery County Health Department (MCHD) identified 51 persons who had diarrhea within 10 days of visiting a dairy farm (farm A) in Montgomery County. Fifteen (29%) persons had either *E. coli* O157 isolated from stool specimens or hemolytic-uremic syndrome (HUS); patients ranged in age from 1–52 years (median: 4 years), 26 (51%) were male, and dates of illness onset ranged from September 4 to November 8. Symptoms reported by the 51 patients included

FIGURE 1. CDC investigator examines a calf at farm A — Pennsylvania, 2000

bloody diarrhea (37%), fever (45%), and vomiting (45%); 16 (31%) patients were hospitalized and eight (16%) developed HUS. *E. coli* O157 isolates were indistinguishable by pulsed-field gel electrophoresis (PFGE) and produced both Shiga toxins 1 and 2.

To identify risk factors, CDC, the Pennsylvania Department of Health, and MCHD conducted a case-control study among farm visitors during November 12–19. A confirmed case was defined as diarrhea in a person within 10 days of visiting farm A on or after September 1, with either *E. coli* O157 isolated from stool or HUS. A probable case was defined as diarrhea in a person within 10 days of visiting farm A on or after September 1. Controls also had visited farm A after September 1 but did not develop diarrhea within 10 days of the visit. Two controls per case were sought by sequential digit dialing and frequency matched by age group (i.e., <1 year, 1–4 years, 5–8 years, 9–12 years, 13–20 years, and ≥21 years). Fifty-one case-patients, or a parent or guardian for young children, and 92 controls were interviewed in the case-control study.

Case-patients were more likely than controls to have had contact with cattle (summary odds ratio [OR]=10.9; 95% confidence interval [CI]=1.7–70.7), an important farm animal reservoir for *E. coli* O157. Activities that promoted hand-mouth contact, such as nailbiting (summary OR=2.5; 95% CI=1.1–5.7) and purchasing food from an outdoor concession (summary OR=2.5; 95% CI=1.1–5.7), were more common among patients. Handwashing before eating was protective (summary OR=0.2; 95% CI=0.1–0.7). All 216 cattle on farm A were sampled by rectal swab, and 28 (13%) yielded *E. coli* O157 with a PFGE pattern indistinguishable from that isolated from patients. The same strain also was isolated from a railing surface. *E. coli* O157 was not isolated from 43 of the other animal species on the farm.

Among the 75,600 persons who visited farm A during the outbreak, most were preschool-aged or school-aged, groups at risk for serious *E. coli* O157 infection (*1*). No separate area was designated for interaction between visitors and farm animals.

Visitors could touch cattle, calves, sheep, goats, llamas, chickens, and a pig and could eat and drink while interacting with animals. Handwashing facilities lacked soap and disposable towels, were out of children's reach, were few in number, and were unsupervised.

A total of 19,698 telephone calls were made to identify controls; 3497 household members were available. Household members were asked whether they had visited farm A since September 1 and whether they developed diarrhea within 10 days of the visit; 134 visited the farm during the outbreak, and 22 (16.4%) reported onset of diarrhea within 10 days of the visit. The expected rate of diarrhea from any cause in the general population during a 10-day period is approximately 7% (FoodNet Population Survey, unpublished data, 1998–1999). Because approximately 75,600 persons visited the farm during the outbreak, an estimated 7000 (9.4%) may have developed diarrhea associated with their visit. No further illness was reported after public access to animals was discontinued at farm A.

Washington

During May–June 2000, five persons with culture-confirmed *E. coli* O157 infection were reported to the Snohomish Health District (SHD). Isolates from these persons were indistinguishable by PFGE. Dates of illness onset were May 21–31, and patients ranged in age from 2 to 14 years (median: 7 years); three were male. All five patients reported abdominal cramping and diarrhea, and four reported bloody diarrhea. Three patients, aged 2–6 years, were hospitalized, and one developed HUS. Four patients attending three elementary schools had visited a dairy farm (farm B) on May 18 or 24. The fifth patient had not visited farm B but had developed diarrhea after a sibling became ill following a farm B visit. Approximately 300 persons visited farm B during the outbreak, primarily preschool- and kindergarten-aged children accompanied by adults.

On May 31 and June 1, an investigation of farm B by SHD and the Washington Department of Health revealed that children were allowed to handle young poultry, rabbits, and goats. Goats, chickens, and a calf were kept in pens and could be touched through a fence. Children brought their own lunches and ate approximately 50 feet from the penned animals. Five animal stool samples collected from the farm were tested for *E. coli* O157; all were negative.

Farm B recommended that visitors bring antibacterial wipes to wash their hands; the farm also provided a communal rinse basin. No signs were posted instructing visitors to wash their hands after touching the animals. No further illness was reported after prevention measures were instituted, including distribution of instructional material and installation of handwashing stations with soap and running water.

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Editorial Note: The outbreaks described in this report were the first reported in the United States to be associated with direct transmission of *E. coli* O157 from farm animals to humans. An estimated 73,500 cases of illness, 2000 hospitalizations, and 60 deaths occur in the United States each year as the result of *E. coli* O157 infection (*2*); many *E. coli* O157 illnesses are associated with ingesting contaminated food or drink. However, during 1996 and 1997, visiting a farm with cows was identified as an important risk factor for *E. coli* O157 infection; 8% of persons aged $\geq$6 years with *E. coli* O157 infection reported visiting a farm with cows during the preceding 7 days compared with 1% of controls (*3*).

Two random-digit–dial telephone surveys of 9000 persons were conducted during 1996–1997 and 1998–1999; 2% reported having visited a petting zoo during the preceding 5–7 days (*4,5*). In 1999 in Ontario, Canada, an *E. coli* O157 outbreak among visitors to a petting zoo resulted in 159 illnesses (*6*). In the United Kingdom, farm visit-related outbreaks of *E. coli* O157 infections have been reported among children (*7*). Such outbreak have led to the development of guidelines to prevent *E. coli*-related illnesses in these countries (*6,8*).

Of the 44 state and territorial public health departments responding to a national CDC survey in June 2000, none had laws to control exposure of humans to enteric pathogens at venues where the public has access to farm animals, and no federal laws exist that address this public health issue. Following these U.S. farm-associated outbreaks, CDC, in collaboration with the Zoonoses Working Group, National Association of State Public Health Veterinarians, U.S. Department of Agriculture, Animal and Plant Health Inspection Services, and other groups, drafted measures to reduce the risk for farm animal-human transmission of enteric infections (see box).

Before July 1, 2001, comments about prevention measures can be mailed to Strategies, Foodborne and Diarrheal Diseases Branch, Division of Bacterial and Mycotic Diseases, CDC, 1600 Clifton Road, MS A-38, Atlanta, Georgia 30333, or e-mailed to zcn0@cdc.gov.

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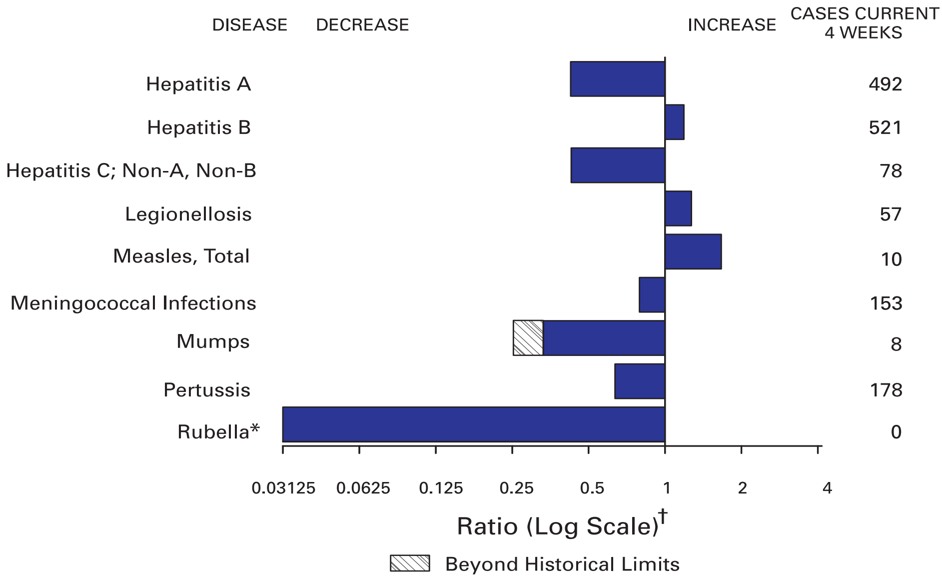
Reducing the Risk for Transmission of Enteric Pathogens at Petting Zoos, Open Farms, Animal Exhibits, and Other Venues Where the Public Has Contact With Farm Animals

- Information should be provided. Persons providing public access to farm animals should inform visitors about the risk for transmission of enteric pathogens from farm animals to humans, and strategies for prevention of such transmission. This should include public information and training of facility staff. Visitors should be made aware that certain farm animals pose greater risk for transmitting enteric infections to humans than others. Such animals include calves and other young ruminant animals, young poultry, and ill animals. When possible, information should be provided before the visit.
- Venues should be designed to minimize risk. Farm animal contact is not appropriate at food service establishments and infant care settings, and special care should be taken with school-aged children. At venues where farm animal contact is desired, layout should provide a separate area where humans and animals interact and an area where animals are not allowed. Food and beverages should be prepared, served, and consumed only in animal-free areas. Animal petting should occur only in the interaction area to facilitate close supervision and coaching of visitors. Clear separation methods such as double barriers should be present to prevent contact with animals and their environment other than in the interaction area.
- Handwashing facilities should be adequate. Handwashing stations should be available to both the animal-free area and the interaction area. Running water, soap, and disposable towels should be available so that visitors can wash their hands immediately after contact with the animals. Handwashing facilities should be accessible, sufficient for the maximum anticipated attendance, and configured for use by children and adults. Children aged <5 years should wash their hands with adult supervision. Staff training and posted signs should emphasize the need to wash hands after touching animals or their environment, before eating, and on leaving the interaction area. Communal basins do not constitute adequate handwashing facilities. Where running water is not available, hand sanitizers may be better than using nothing. However, CDC makes no recommendations about the use of hand sanitizers because of a lack of independently verified studies of efficacy in this setting.
- Hand-mouth activities (e.g., eating and drinking, smoking, and carrying toys and pacifiers) should not be permitted in interaction areas.
- Persons at high risk for serious infections should observe heightened precaution. Farm animals should be handled by everyone as if the animals are colonized with human enteric pathogens. However, children aged <5 years, the elderly, pregnant women, and immunocompromised persons (e.g., those with HIV/AIDS) are at higher risk for serious infections. Such persons should weigh the risks for contact with farm animals. If allowed to have contact, children aged <5 years should be supervised closely by adults, with precautions strictly enforced.
- Raw milk should not be served.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending April 14, 2001, with historical data



* No rubella cases were reported for the current 4-week period yielding a ratio for week 15 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 14, 2001 (15th Week)

	Cum. 2001		Cum. 2001
Anthrax	-	Poliomyelitis, paralytic	-
Brucellosis*	16	Psittacosis*	3
Cholera	-	Q fever*	4
Cyclosporiasis*	31	Rabies, human	-
Diphtheria	-	Rocky Mountain spotted fever (RMSF)	29
Ehrlichiosis: human granulocytic (HGE)*	11	Rubella, congenital syndrome	-
human monocytic (HME)*	3	Streptococcal disease, invasive, group A	1,076
Encephalitis: California serogroup viral*	-	Streptococcal toxic-shock syndrome*	17
eastern equine*	-	Syphilis, congenital§	17
St. Louis*	-	Tetanus	3
western equine*	-	Toxic-shock syndrome	42
Hansen disease (leprosy)*	16	Trichinosis	5
Hantavirus pulmonary syndrome*	3	Tularemia*	8
Hemolytic uremic syndrome, postdiarrheal*	15	Typhoid fever	46
HIV infection, pediatric*†	37	Yellow fever	-
Plague	-		

-: No reported cases.
*Not notifiable in all states.
† Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP). Last update February 27, 2001.
§ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending April 14, 2001, and April 15, 2000 (15th Week)

Reporting Area	AIDS Cum. 2001§	AIDS Cum. 2000	Chlamydia† Cum. 2001	Chlamydia† Cum. 2000	Cryptosporidiosis Cum. 2001	Cryptosporidiosis Cum. 2000	*Escherichia coli* O157:H7* NETSS Cum. 2001	*Escherichia coli* O157:H7* NETSS Cum. 2000	*Escherichia coli* O157:H7* PHLIS Cum. 2001	*Escherichia coli* O157:H7* PHLIS Cum. 2000
UNITED STATES	5,820	9,320	171,244	195,384	368	401	274	409	179	329
NEW ENGLAND	200	653	5,749	6,723	13	26	31	39	26	38
Maine	3	11	316	376	-	3	4	3	3	3
N.H.	12	9	327	319	-	1	5	4	3	4
Vt.	9	-	169	161	5	8	1	1	-	2
Mass.	118	439	2,532	2,846	4	7	16	18	14	14
R.I.	24	20	800	686	2	2	-	-	2	-
Conn.	34	174	1,605	2,335	2	5	5	13	4	15
MID. ATLANTIC	1,180	2,343	14,795	18,692	44	84	25	52	15	51
Upstate N.Y.	29	102	N	N	21	21	20	47	10	38
N.Y. City	740	1,428	7,432	7,947	21	58	-	4	1	1
N.J.	241	481	1,287	3,857	1	1	5	1	4	6
Pa.	170	332	6,076	6,888	1	4	N	N	-	6
E.N. CENTRAL	463	850	22,284	33,152	110	86	57	79	26	26
Ohio	77	112	498	8,875	31	14	19	15	10	8
Ind.	45	75	4,212	3,906	14	4	9	9	2	10
Ill.	226	535	6,355	9,429	-	13	9	27	7	-
Mich.	97	99	8,475	6,215	30	11	13	12	-	4
Wis.	18	29	2,744	4,727	35	44	7	16	7	4
W.N. CENTRAL	110	164	9,102	10,906	15	24	27	61	21	65
Minn.	29	36	1,683	2,360	-	4	8	10	11	29
Iowa	15	13	999	1,160	7	5	3	12	2	7
Mo.	38	72	3,195	3,722	4	6	11	25	5	15
N. Dak.	1	-	240	274	-	1	-	2	-	4
S. Dak.	-	2	539	527	1	3	1	1	1	2
Nebr.	9	9	778	1,061	3	2	-	7	-	5
Kans.	18	32	1,668	1,802	-	3	4	4	2	3
S. ATLANTIC	1,673	2,492	37,275	36,515	82	55	34	33	14	26
Del.	37	44	875	860	1	1	-	-	-	-
Md.	131	267	3,786	3,484	19	5	1	5	-	1
D.C.	166	186	966	871	3	-	-	-	U	U
Va.	137	158	5,147	4,336	6	2	7	6	5	7
W. Va.	12	13	647	618	-	-	1	2	-	1
N.C.	101	101	5,908	5,788	11	6	16	8	5	2
S.C.	171	174	3,605	4,250	-	-	1	2	-	1
Ga.	187	293	7,485	6,909	25	32	2	3	2	7
Fla.	731	1,256	8,856	9,399	17	9	6	7	2	7
E.S. CENTRAL	360	343	13,708	14,847	11	13	11	22	8	19
Ky.	51	56	2,352	2,295	1	-	1	8	2	7
Tenn.	132	133	4,238	4,221	2	2	6	7	5	10
Ala.	95	100	3,818	4,916	4	7	4	1	-	-
Miss.	82	54	3,300	3,415	4	4	-	6	1	2
W.S. CENTRAL	629	757	28,649	29,006	7	18	18	24	21	38
Ark.	45	30	2,383	1,526	2	1	-	4	-	3
La.	188	124	4,938	5,321	3	2	-	-	8	8
Okla.	36	31	2,884	2,474	2	1	6	4	5	3
Tex.	360	572	18,444	19,685	-	14	12	16	8	24
MOUNTAIN	241	289	8,637	11,288	37	27	32	34	17	18
Mont.	5	5	471	348	3	1	3	8	-	-
Idaho	5	4	529	556	5	3	5	4	-	1
Wyo.	-	1	219	217	-	2	-	3	-	2
Colo.	40	62	805	3,254	12	8	15	12	9	6
N. Mex.	15	40	1,520	1,365	8	1	1	-	-	-
Ariz.	93	92	3,607	3,712	1	3	5	5	4	6
Utah	23	30	279	746	8	7	2	1	3	1
Nev.	60	55	1,207	1,090	-	2	1	1	1	2
PACIFIC	964	1,429	31,045	34,255	49	68	39	65	31	48
Wash.	117	141	4,001	3,850	N	U	9	10	8	21
Oreg.	38	35	268	1,851	2	2	5	9	5	9
Calif.	798	1,215	25,202	27,037	47	66	25	40	16	13
Alaska	2	5	688	705	-	-	-	1	-	1
Hawaii	9	33	886	812	-	-	-	5	2	4
Guam	5	13	-	-	-	-	N	N	U	U
P.R.	158	184	1,451	U	-	-	-	1	U	U
V.I.	1	11	U	U	U	U	U	U	U	U
Amer. Samoa	-	-	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	U	U	U	U	U	U	U	U

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

* Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

† Chlamydia refers to genital infections caused by *C. trachomatis*. Totals reported to the Division of STD Prevention, NCHSTP.

§ Updated monthly from reports to the Division of HIV/AIDS Prevention — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention. Last update February 27, 2001.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 14, 2001, and April 15, 2000 (15th Week)

Reporting Area	Gonorrhea		Hepatitis C; Non-A, Non-B		Legionellosis		Listeriosis	Lyme Disease	
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2001	Cum. 2000
UNITED STATES	81,486	99,721	521	946	190	204	82	567	1,184
NEW ENGLAND	1,572	1,842	5	6	8	16	10	141	171
Maine	37	22	-	-	-	2	-	-	-
N.H.	35	26	-	-	2	2	-	42	18
Vt.	26	15	3	3	3	-	-	1	-
Mass.	762	728	2	3	2	9	6	19	63
R.I.	201	169	-	-	-	-	-	-	-
Conn.	511	882	-	-	1	3	4	79	90
MID. ATLANTIC	9,030	10,387	23	198	17	45	9	272	806
Upstate N.Y.	2,017	1,686	14	13	11	16	3	216	322
N.Y. City	3,210	3,371	-	-	3	5	2	-	29
N.J.	797	2,202	-	176	2	2	1	-	98
Pa.	3,006	3,128	9	9	1	22	3	56	357
E.N. CENTRAL	11,797	19,974	60	76	58	59	8	13	28
Ohio	341	4,927	4	-	32	26	1	13	4
Ind.	1,764	1,721	-	-	6	9	1	-	-
Ill.	3,922	6,668	3	9	-	6	-	-	1
Mich.	4,886	4,606	53	67	14	10	5	-	-
Wis.	884	2,052	-	-	6	8	1	U	23
W.N. CENTRAL	3,866	4,600	141	139	15	11	2	20	18
Minn.	504	893	-	-	1	1	-	13	6
Iowa	307	272	-	-	4	3	-	1	-
Mo.	2,008	2,260	136	132	7	5	1	4	6
N. Dak.	9	14	-	-	-	-	-	-	-
S. Dak.	58	75	-	-	-	1	-	-	-
Nebr.	248	351	2	2	2	-	-	1	1
Kans.	732	735	3	5	1	1	1	1	5
S. ATLANTIC	22,754	27,488	31	23	28	38	16	99	128
Del.	453	464	-	2	-	3	-	-	16
Md.	2,310	2,399	10	4	7	11	2	83	93
D.C.	913	636	-	-	1	-	-	6	-
Va.	2,633	2,893	-	1	4	3	2	6	8
W. Va.	139	167	3	2	N	N	1	1	4
N.C.	4,801	5,136	7	8	2	5	-	2	4
S.C.	2,592	4,936	2	-	-	2	-	-	-
Ga.	3,933	4,334	-	-	2	2	4	-	-
Fla.	4,980	6,523	9	6	12	12	7	1	3
E.S. CENTRAL	8,922	10,398	65	140	17	6	7	2	1
Ky.	932	945	3	15	6	4	1	2	-
Tenn.	2,796	3,202	18	26	7	1	3	-	1
Ala.	3,153	3,654	1	4	2	1	3	-	-
Miss.	2,041	2,597	43	95	2	-	-	-	-
W.S. CENTRAL	13,925	14,965	142	281	3	5	2	-	9
Ark.	1,511	767	3	3	-	-	1	-	-
La.	3,353	3,790	56	171	2	2	-	-	2
Okla.	1,366	1,093	2	-	1	1	-	-	-
Tex.	7,695	9,315	81	107	-	2	1	-	7
MOUNTAIN	2,712	3,064	23	30	15	13	7	1	-
Mont.	26	8	-	1	-	-	-	-	-
Idaho	26	26	1	-	-	1	-	-	-
Wyo.	16	20	3	1	1	-	-	-	-
Colo.	958	990	8	12	4	6	1	-	-
N. Mex.	272	296	7	4	1	1	2	-	-
Ariz.	956	1,249	1	9	6	2	1	-	-
Utah	26	89	-	-	1	3	1	-	-
Nev.	432	386	3	3	2	-	2	1	-
PACIFIC	6,908	7,003	31	53	29	11	21	19	23
Wash.	898	706	9	6	5	5	2	2	-
Oreg.	45	241	1	12	N	N	-	1	2
Calif.	5,715	5,864	21	35	24	6	19	16	21
Alaska	87	81	-	-	-	-	-	-	-
Hawaii	163	111	-	-	-	-	-	N	N
Guam	-	-	-	-	-	-	-	-	-
P.R.	364	140	-	1	2	-	-	N	N
V.I.	U	U	U	U	U	U	-	U	U
Amer. Samoa	U	U	U	U	U	U	-	U	U
C.N.M.I.	U	U	U	U	U	U	-	U	U

N: Not notifiable. U: Unavailable. - : No reported cases.

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 14, 2001, and April 15, 2000 (15th Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis* NETSS		Salmonellosis* PHLIS	
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
UNITED STATES	209	258	1,240	1,590	5,496	6,922	4,564	6,454
NEW ENGLAND	17	10	137	182	443	438	424	469
Maine	1	1	20	47	38	32	17	22
N.H.	1	-	5	3	37	25	33	29
Vt.	-	1	26	11	20	34	22	40
Mass.	5	6	38	55	263	258	232	254
R.I.	-	-	16	12	23	9	35	31
Conn.	10	2	32	54	62	80	85	93
MID. ATLANTIC	35	49	196	254	496	1,029	661	1,184
Upstate N.Y.	9	15	161	188	190	221	122	307
N.Y. City	17	24	1	3	195	308	266	312
N.J.	6	5	33	39	69	281	143	222
Pa.	3	5	1	24	42	219	130	343
E.N. CENTRAL	26	35	7	14	857	1,060	703	580
Ohio	5	3	-	2	332	234	274	203
Ind.	8	2	1	-	65	106	65	123
Ill.	-	19	-	-	219	374	179	1
Mich.	13	9	6	6	160	164	119	181
Wis.	-	2	-	6	81	182	66	72
W.N. CENTRAL	7	14	90	130	365	329	375	442
Minn.	1	4	15	23	71	37	136	130
Iowa	1	-	16	17	60	43	53	49
Mo.	2	1	5	4	125	108	127	135
N. Dak.	-	-	14	24	1	4	9	18
S. Dak.	-	-	13	35	24	18	12	25
Nebr.	1	3	-	-	31	53	-	38
Kans.	2	6	27	27	53	66	38	47
S. ATLANTIC	60	59	555	550	1,398	1,171	929	984
Del.	1	-	10	10	24	17	23	26
Md.	25	24	88	120	157	184	159	181
D.C.	4	-	-	-	18	-	U	U
Va.	12	16	104	131	182	135	161	138
W. Va.	-	-	40	34	10	31	18	25
N.C.	1	7	154	138	258	200	160	147
S.C.	2	-	27	37	149	100	174	84
Ga.	3	1	68	47	215	191	188	298
Fla.	12	11	64	33	385	313	46	85
E.S. CENTRAL	8	10	35	56	345	352	174	273
Ky.	2	2	5	9	61	72	33	48
Tenn.	3	1	25	33	93	85	98	121
Ala.	3	6	5	14	138	114	31	88
Miss.	-	1	-	-	53	81	12	16
W.S. CENTRAL	3	3	80	291	400	657	382	425
Ark.	-	-	-	-	58	63	29	36
La.	1	3	-	-	60	70	125	82
Okla.	1	-	21	20	31	62	30	56
Tex.	1	-	59	271	251	462	198	251
MOUNTAIN	18	15	46	48	432	613	351	572
Mont.	2	1	7	10	16	21	-	-
Idaho	1	-	-	-	19	37	4	35
Wyo.	-	-	10	22	13	9	13	11
Colo.	9	8	-	-	127	186	109	177
N. Mex.	1	-	1	3	56	56	47	50
Ariz.	1	2	28	13	127	162	108	158
Utah	2	2	-	-	48	95	47	92
Nev.	2	2	-	-	26	47	23	49
PACIFIC	35	63	94	65	760	1,273	565	1,525
Wash.	1	4	-	-	94	83	144	156
Oreg.	1	17	-	-	15	88	61	109
Calif.	32	40	66	57	642	1,032	284	1,194
Alaska	1	-	28	8	9	16	-	18
Hawaii	-	2	-	-	-	54	76	48
Guam	-	-	-	-	-	-	U	U
P.R.	-	2	42	18	75	92	U	U
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U

N: Not notifiable. U: Unavailable. -: No reported cases.

* Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending April 14, 2001, and April 15, 2000 (15th Week)

Reporting Area	Shigellosis* NETSS Cum. 2001	Shigellosis* NETSS Cum. 2000	Shigellosis* PHLIS Cum. 2001	Shigellosis* PHLIS Cum. 2000	Syphilis (Primary & Secondary) Cum. 2001	Syphilis (Primary & Secondary) Cum. 2000	Tuberculosis Cum. 2001	Tuberculosis Cum. 2000
UNITED STATES	2,820	4,433	1,466	2,830	1,400	1,871	2,387	3,192
NEW ENGLAND	41	90	50	76	10	23	96	96
Maine	1	2	1	-	-	-	5	2
N.H.	1	1	1	2	-	-	6	2
Vt.	1	1	1	-	-	-	1	-
Mass.	29	66	31	50	7	19	53	58
R.I.	2	7	5	8	-	1	9	7
Conn.	7	13	11	16	3	3	22	27
MID. ATLANTIC	282	655	223	484	84	91	512	536
Upstate N.Y.	121	203	6	134	4	4	67	51
N.Y. City	93	351	124	222	61	41	255	309
N.J.	40	62	49	62	9	17	124	140
Pa.	28	39	44	66	10	29	66	36
E.N. CENTRAL	452	737	235	267	207	398	267	335
Ohio	137	45	73	39	24	22	47	65
Ind.	74	96	14	20	47	134	22	27
Ill.	124	279	84	2	36	134	137	190
Mich.	92	233	57	197	92	88	39	30
Wis.	25	84	7	9	8	20	22	23
W.N. CENTRAL	333	263	277	224	15	30	110	132
Minn.	105	43	148	70	7	3	54	51
Iowa	69	44	61	54	-	8	9	11
Mo.	80	136	52	81	6	15	30	52
N. Dak.	9	1	1	1	-	-	-	-
S. Dak.	18	1	1	-	-	-	4	3
Nebr.	23	22	-	11	-	2	13	3
Kans.	29	16	14	7	2	2	-	12
S. ATLANTIC	459	502	135	156	569	604	523	547
Del.	3	3	2	3	2	2	-	-
Md.	36	30	11	10	72	98	49	64
D.C.	16	-	U	U	12	19	13	-
Va.	34	16	19	25	48	39	47	60
W. Va.	4	2	6	2	-	1	8	10
N.C.	102	33	51	16	143	159	77	89
S.C.	29	5	17	4	79	63	19	18
Ga.	58	60	25	60	68	104	121	142
Fla.	177	353	4	36	145	119	189	164
E.S. CENTRAL	248	198	71	149	161	281	169	227
Ky.	88	39	25	22	12	27	15	24
Tenn.	27	99	23	117	92	177	43	84
Ala.	67	9	17	7	27	40	78	77
Miss.	66	51	6	3	30	37	33	42
W.S. CENTRAL	400	683	252	226	203	266	175	519
Ark.	156	60	65	20	15	24	38	39
La.	19	80	53	38	42	67	-	25
Okla.	6	8	2	8	23	57	28	23
Tex.	219	535	132	160	123	118	109	432
MOUNTAIN	187	276	123	160	54	50	78	125
Mont.	-	1	-	-	-	-	-	4
Idaho	5	24	-	17	-	-	4	2
Wyo.	-	1	-	1	-	-	-	-
Colo.	41	47	31	22	4	2	26	15
N. Mex.	38	27	27	17	4	6	5	17
Ariz.	79	107	46	44	37	40	23	42
Utah	10	16	11	21	6	-	5	8
Nev.	14	53	8	38	3	2	15	37
PACIFIC	418	1,029	100	1,088	97	128	457	675
Wash.	51	192	62	228	19	16	54	57
Oreg.	4	85	27	49	-	3	-	22
Calif.	361	734	-	800	75	109	393	546
Alaska	2	6	-	3	-	-	10	20
Hawaii	-	12	11	8	3	-	-	30
Guam	-	-	U	U	-	-	-	-
P.R.	7	14	U	U	96	52	38	21
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U

N: Not notifiable. U: Unavailable. -: No reported cases.
*Individual cases can be reported through both the National Electronic Telecommunications System for Surveillance (NETSS) and the Public Health Laboratory Information System (PHLIS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 14, 2001, and April 15, 2000 (15th Week)

Reporting Area	*H. influenzae,* Invasive		Hepatitis (Viral), By Type A		Hepatitis (Viral), By Type B		Measles (Rubeola) Indigenous		Measles (Rubeola) Imported*		Measles (Rubeola) Total	
	Cum. 2001[†]	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	2001	Cum. 2001	2001	Cum. 2001	Cum. 2001	Cum. 2000
UNITED STATES	389	413	2,367	3,650	1,609	1,689	2	15	-	15	30	19
NEW ENGLAND	14	33	98	94	16	29	-	3	-	1	4	-
Maine	1	1	1	5	2	1	-	-	-	-	-	-
N.H.	-	6	5	8	6	6	-	-	-	-	-	-
Vt.	-	3	2	3	1	3	-	1	-	-	1	-
Mass.	13	19	35	39	1	1	-	2	-	1	3	-
R.I.	-	-	5	5	6	6	-	-	-	-	-	-
Conn.	-	4	50	34	-	12	-	-	-	-	-	-
MID. ATLANTIC	47	64	207	246	212	289	1	2	-	4	6	8
Upstate N.Y.	17	26	61	70	38	29	-	-	-	4	4	-
N.Y. City	18	21	85	132	115	161	-	-	-	-	-	8
N.J.	11	13	46	-	44	14	1	1	-	-	1	-
Pa.	1	4	15	44	15	85	-	1	-	-	1	-
E.N. CENTRAL	49	64	264	507	192	166	-	-	-	7	7	3
Ohio	26	20	80	111	35	32	-	-	-	2	2	2
Ind.	13	5	22	13	5	11	-	-	-	2	2	-
Ill.	4	25	59	217	14	2	-	-	-	3	3	-
Mich.	3	3	103	153	138	120	-	-	-	-	-	1
Wis.	3	11	-	13	-	1	-	-	-	-	-	-
W.N. CENTRAL	18	12	135	320	58	87	-	4	-	-	4	-
Minn.	8	7	8	36	5	6	-	1	-	-	1	-
Iowa	1	-	12	32	5	12	-	-	-	-	-	-
Mo.	8	4	41	199	37	56	-	3	-	-	3	-
N. Dak.	-	1	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	1	-	1	-	-	-	-	-	-	-
Nebr.	1	-	18	12	5	9	-	-	-	-	-	-
Kans.	-	-	55	41	5	4	-	-	-	-	-	-
S. ATLANTIC	145	103	510	375	370	289	-	3	-	1	4	-
Del.	-	-	-	6	-	4	-	-	-	-	-	-
Md.	38	28	70	47	44	47	-	2	-	1	3	-
D.C.	-	-	14	-	3	-	-	-	-	-	-	-
Va.	9	20	42	46	39	39	-	-	-	-	-	-
W. Va.	4	3	2	33	6	2	-	-	-	-	-	-
N.C.	20	8	34	65	80	81	-	-	-	-	-	-
S.C.	2	5	17	12	1	2	-	-	-	-	-	-
Ga.	31	26	167	48	94	45	-	1	-	-	1	-
Fla.	41	13	164	118	103	69	-	-	-	-	-	-
E.S. CENTRAL	25	18	80	164	99	120	-	-	-	-	-	-
Ky.	1	9	8	16	11	19	-	-	-	-	-	-
Tenn.	12	6	38	57	39	54	-	-	-	-	-	-
Ala.	11	3	30	23	28	9	-	-	-	-	-	-
Miss.	1	-	4	68	21	38	-	-	-	-	-	-
W.S. CENTRAL	9	23	326	692	212	192	-	1	-	-	1	-
Ark.	-	-	17	53	26	25	-	-	-	-	-	-
La.	2	7	20	28	14	48	-	-	-	-	-	-
Okla.	7	16	53	106	25	23	-	-	-	-	-	-
Tex.	-	-	236	505	147	96	-	1	-	-	1	-
MOUNTAIN	73	48	239	255	160	132	-	-	-	1	1	2
Mont.	-	-	4	1	1	3	-	-	-	-	-	-
Idaho	1	2	26	11	4	4	-	-	-	1	1	-
Wyo.	-	-	1	3	-	-	-	-	-	-	-	-
Colo.	15	11	28	55	34	28	-	-	-	-	-	-
N. Mex.	10	11	7	30	43	43	-	-	-	-	-	-
Ariz.	38	19	118	121	59	40	-	-	-	-	-	-
Utah	2	3	22	17	6	3	-	-	-	-	-	-
Nev.	7	2	33	17	13	11	-	-	-	-	-	2
PACIFIC	9	48	508	997	290	385	1	2	-	1	3	6
Wash.	1	2	22	62	27	17	-	-	-	-	-	3
Oreg.	2	16	10	74	5	33	1	1	-	-	1	-
Calif.	5	16	466	850	254	328	U	1	U	1	2	3
Alaska	1	1	10	4	4	2	-	-	-	-	-	-
Hawaii	-	13	-	7	-	5	-	-	-	-	-	-
Guam	-	-	-	-	-	-	U	-	U	-	-	-
P.R.	-	2	28	106	15	74	U	-	U	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U	U	U	U	U

N: Not notifiable. U: Unavailable. - : No reported cases.

*For imported measles, cases include only those resulting from importation from other countries.

[†] Of 74 cases among children aged <5 years, serotype was reported for 35, and of those, 7 were type b.

TABLE III. (Cont'd) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending April 14, 2001, and April 15, 2000 (15th Week)

	Meningococcal Disease		Mumps			Pertussis			Rubella		
Reporting Area	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000
UNITED STATES	819	801	4	38	137	20	1,322	1,441	-	3	22
NEW ENGLAND	52	47	-	-	2	-	215	390	-	-	5
Maine	-	3	-	-	-	-	-	9	-	-	-
N.H.	5	3	-	-	-	-	16	49	-	-	1
Vt.	4	2	-	-	-	-	22	71	-	-	-
Mass.	30	29	-	-	-	-	171	244	-	-	3
R.I.	1	3	-	-	1	-	-	5	-	-	-
Conn.	12	7	-	-	1	-	6	12	-	-	1
MID. ATLANTIC	67	76	-	1	10	2	85	135	-	1	5
Upstate N.Y.	29	15	-	-	5	2	69	67	-	1	2
N.Y. City	16	23	-	1	3	-	6	26	-	-	3
N.J.	21	17	-	-	-	-	2	-	-	-	-
Pa.	1	21	-	-	2	-	8	42	-	-	-
E.N. CENTRAL	102	140	-	4	17	8	162	210	-	1	-
Ohio	38	24	-	1	6	7	113	131	-	-	-
Ind.	17	17	-	-	-	-	5	9	-	-	-
Ill.	18	38	-	3	4	1	12	18	-	1	-
Mich.	20	45	-	-	6	-	15	12	-	-	-
Wis.	9	16	-	-	1	-	17	40	-	-	-
W.N. CENTRAL	56	49	2	4	6	-	40	39	-	-	1
Minn.	6	3	-	-	-	-	-	15	-	-	-
Iowa	15	12	-	-	3	-	4	7	-	-	-
Mo.	21	24	-	-	1	-	23	7	-	-	-
N. Dak.	2	1	-	-	-	-	-	1	-	-	-
S. Dak.	2	4	-	-	-	-	2	1	-	-	-
Nebr.	2	3	-	-	1	-	1	2	-	-	1
Kans.	8	2	2	4	1	-	10	6	-	-	-
S. ATLANTIC	164	117	1	5	16	1	60	104	-	1	3
Del.	-	-	-	-	-	-	-	1	-	-	-
Md.	22	12	-	2	5	-	10	32	-	-	-
D.C.	-	-	-	-	-	1	1	-	-	-	-
Va.	18	19	1	2	3	-	8	10	-	-	-
W. Va.	4	3	-	-	-	-	1	-	-	-	-
N.C.	39	22	-	-	2	-	23	28	-	-	-
S.C.	14	7	-	1	5	-	8	14	-	-	2
Ga.	22	22	-	-	-	-	2	9	-	1	-
Fla.	45	32	-	-	1	-	7	10	-	-	1
E.S. CENTRAL	60	54	-	-	2	-	29	35	-	-	1
Ky.	10	11	-	-	-	-	6	23	-	-	1
Tenn.	22	23	-	-	-	-	16	3	-	-	-
Ala.	24	15	-	-	1	-	4	8	-	-	-
Miss.	4	5	-	-	1	-	3	1	-	-	-
W.S. CENTRAL	123	91	-	5	14	-	21	29	-	-	3
Ark.	9	5	-	1	1	-	2	5	-	-	-
La.	41	26	-	2	3	-	1	3	-	-	-
Okla.	14	16	-	-	-	-	1	-	-	-	-
Tex.	59	44	-	2	10	-	17	21	-	-	3
MOUNTAIN	47	49	1	5	7	7	625	243	-	-	-
Mont.	-	1	-	-	1	2	5	1	-	-	-
Idaho	3	6	-	-	-	2	157	35	-	-	-
Wyo.	-	-	-	1	-	-	-	-	-	-	-
Colo.	18	12	1	2	1	2	134	151	-	-	-
N. Mex.	8	7	-	2	1	-	40	37	-	-	-
Ariz.	9	16	-	-	-	1	279	11	-	-	-
Utah	5	5	-	-	2	-	9	5	-	-	-
Nev.	4	2	-	-	2	-	1	3	-	-	-
PACIFIC	148	178	-	14	63	2	85	256	-	-	4
Wash.	30	16	-	-	2	2	29	60	-	-	3
Oreg.	3	22	N	N	N	-	-	25	-	-	-
Calif.	114	135	U	13	55	U	56	158	U	-	1
Alaska	1	1	-	1	1	-	-	4	-	-	-
Hawaii	-	4	-	-	5	-	-	9	-	-	-
Guam	-	-	U	-	-	U	-	-	U	-	-
P.R.	1	4	U	-	-	U	-	-	U	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U	U	U	U

N: Not notifiable. U: Unavailable. - : No reported cases.

TABLE IV. Deaths in 122 U.S. cities,* week ending April 14, 2001 (15th Week)

Reporting Area	All Causes, By Age (Years): All Ages	≥65	45-64	25-44	1-24	<1	P&I[†] Total
NEW ENGLAND	577	405	113	27	23	9	86
Boston, Mass.	152	84	36	10	17	5	16
Bridgeport, Conn.	25	20	4	-	1	-	5
Cambridge, Mass.	16	14	2	-	-	-	-
Fall River, Mass.	33	25	7	1	-	-	-
Hartford, Conn.	28	20	6	1	-	1	6
Lowell, Mass.	25	20	5	-	-	-	5
Lynn, Mass.	15	12	2	1	-	-	7
New Bedford, Mass.	17	13	3	1	-	-	3
New Haven, Conn.	28	21	3	4	-	-	4
Providence, R.I.	92	68	15	4	3	2	11
Somerville, Mass.	5	5	-	-	-	-	-
Springfield, Mass.	37	26	9	2	-	-	7
Waterbury, Conn.	33	26	7	-	-	-	5
Worcester, Mass.	71	51	14	3	2	1	17
MID. ATLANTIC	2,248	1,563	475	126	41	38	116
Albany, N.Y.	50	36	9	3	1	1	4
Allentown, Pa.	17	14	2	1	-	-	-
Buffalo, N.Y.	82	57	16	7	1	1	2
Camden, N.J.	23	15	3	2	2	1	1
Elizabeth, N.J.	6	3	-	3	-	-	-
Erie, Pa.§	42	33	7	1	-	1	3
Jersey City, N.J.	51	37	11	2	1	-	-
New York City, N.Y.	1,140	804	247	57	20	8	55
Newark, N.J.	53	25	18	3	-	6	1
Paterson, N.J.	25	17	4	2	1	1	2
Philadelphia, Pa.	407	254	104	31	9	9	12
Pittsburgh, Pa.§	33	21	6	3	3	-	7
Reading, Pa.	26	18	7	-	-	1	-
Rochester, N.Y.	130	103	20	3	2	2	12
Schenectady, N.Y.	18	16	2	-	-	-	2
Scranton, Pa.§	29	22	4	3	-	-	2
Syracuse, N.Y.	81	63	10	1	1	6	10
Trenton, N.J.	12	7	-	4	-	1	1
Utica, N.Y.	23	18	5	-	-	-	2
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,699	1,209	339	94	32	25	112
Akron, Ohio	66	56	7	2	1	-	5
Canton, Ohio	33	22	7	1	2	1	3
Chicago, Ill.	U	U	U	U	U	U	U
Cincinnati, Ohio	69	47	19	2	-	1	6
Cleveland, Ohio	113	75	27	9	2	-	4
Columbus, Ohio	288	190	69	20	3	6	17
Dayton, Ohio	128	96	23	6	-	3	7
Detroit, Mich.	182	102	50	16	8	6	12
Evansville, Ind.	31	19	5	5	-	2	5
Fort Wayne, Ind.	79	63	10	4	2	-	8
Gary, Ind.	20	14	6	-	-	-	-
Grand Rapids, Mich.	46	41	5	-	-	-	-
Indianapolis, Ind.	208	153	39	8	4	4	15
Lansing, Mich.	48	37	5	2	4	-	4
Milwaukee, Wis.	95	70	19	4	1	1	13
Peoria, Ill.	42	34	3	3	2	-	4
Rockford, Ill.	65	48	14	2	-	1	3
South Bend, Ind.	27	21	4	1	1	-	1
Toledo, Ohio	94	68	18	8	-	-	4
Youngstown, Ohio	65	53	9	1	2	-	1
W.N. CENTRAL	770	538	145	51	18	18	71
Des Moines, Iowa	64	45	11	4	1	3	9
Duluth, Minn.	22	19	2	1	-	-	2
Kansas City, Kans.	22	14	6	-	1	1	2
Kansas City, Mo.	111	70	21	9	6	5	10
Lincoln, Nebr.	48	35	10	3	-	-	3
Minneapolis, Minn.	175	131	30	8	2	4	23
Omaha, Nebr.	74	54	12	5	1	2	10
St. Louis, Mo.	105	53	26	17	7	2	3
St. Paul, Minn.	81	68	10	2	-	1	4
Wichita, Kans.	68	49	17	2	-	-	5

Reporting Area	All Causes, By Age (Years): All Ages	≥65	45-64	25-44	1-24	<1	P&I[†] Total
S. ATLANTIC	1,150	740	249	93	29	36	88
Atlanta, Ga.	125	72	37	11	2	3	2
Baltimore, Md.	220	141	53	20	3	3	31
Charlotte, N.C.	76	55	11	8	1	1	6
Jacksonville, Fla.	148	87	42	10	6	2	11
Miami, Fla.	65	42	16	4	1	2	6
Norfolk, Va.	48	34	8	2	3	1	5
Richmond, Va.	54	31	14	5	3	1	8
Savannah, Ga.	40	35	5	-	-	-	4
St. Petersburg, Fla.	60	48	3	3	5	1	3
Tampa, Fla.	179	126	29	16	3	5	8
Washington, D.C.	107	41	31	14	2	17	4
Wilmington, Del.	28	28	-	-	-	-	-
E.S. CENTRAL	869	576	174	75	19	22	89
Birmingham, Ala.	212	138	34	26	4	7	32
Chattanooga, Tenn.	48	39	7	1	-	1	3
Knoxville, Tenn.	94	62	21	7	2	2	4
Lexington, Ky.	59	42	6	7	-	4	7
Memphis, Tenn.	176	112	42	12	5	5	19
Mobile, Ala.	69	55	10	4	-	-	5
Montgomery, Ala.	75	53	17	4	-	1	7
Nashville, Tenn.	136	75	37	14	8	2	12
W.S. CENTRAL	1,516	1,001	328	117	47	23	112
Austin, Tex.	98	72	16	8	1	1	7
Baton Rouge, La.	53	38	8	6	1	-	1
Corpus Christi, Tex.	79	68	8	2	-	1	4
Dallas, Tex.	195	111	50	17	11	6	20
El Paso, Tex.	57	38	13	4	2	-	7
Ft. Worth, Tex.	138	90	34	9	3	2	6
Houston, Tex.	323	199	76	32	12	4	28
Little Rock, Ark.	73	42	20	6	3	2	6
New Orleans, La.	58	31	16	7	4	-	-
San Antonio, Tex.	270	189	53	17	9	2	13
Shreveport, La.	50	34	9	5	-	2	6
Tulsa, Okla.	122	89	25	4	1	3	14
MOUNTAIN	1,047	757	187	65	27	11	91
Albuquerque, N.M.	110	93	14	3	-	-	11
Boise, Idaho	46	29	12	4	-	1	4
Colo. Springs, Colo.	72	57	9	3	3	-	1
Denver, Colo.	113	63	26	15	7	2	8
Las Vegas, Nev.	207	148	45	12	2	-	18
Ogden, Utah	22	19	3	-	-	-	2
Phoenix, Ariz.	165	106	29	18	8	4	12
Pueblo, Colo.	32	29	3	-	-	-	3
Salt Lake City, Utah	118	87	19	4	5	3	17
Tucson, Ariz.	162	126	27	6	2	1	15
PACIFIC	1,252	924	207	73	26	20	95
Berkeley, Calif.	21	13	6	1	-	1	1
Fresno, Calif.	146	112	25	5	4	-	9
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	63	50	9	1	3	-	3
Long Beach, Calif.	60	39	14	5	-	2	10
Los Angeles, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	32	25	3	2	1	1	4
Portland, Oreg.	U	U	U	U	U	U	U
Sacramento, Calif.	191	139	29	14	4	5	8
San Diego, Calif.	162	112	31	10	6	3	12
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	248	186	35	16	5	6	22
Santa Cruz, Calif.	48	35	5	6	2	-	6
Seattle, Wash.	121	85	29	4	1	2	9
Spokane, Wash.	54	44	9	1	-	-	7
Tacoma, Wash.	106	84	12	8	-	-	4
TOTAL	11,128[¶]	7,713	2,217	721	262	202	860

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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