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Update: Outbreak of Severe Acute Respiratory Syndrome — Worldwide, 2003

CDC continues to support the World Health Organization (WHO) in the investigation of a multicountry outbreak of unexplained atypical pneumonia referred to as severe acute respiratory syndrome (SARS) (*1*). This report includes summaries of the epidemiologic investigations and public health responses in several affected locations where CDC is collaborating with international and national health authorities. This report also describes an unusual cluster of cases associated with a hotel in Hong Kong and identifies the potential etiologic agent of SARS. Epidemiologic and laboratory investigations of SARS are ongoing.

As of March 26, a total of 1,323 suspected and/or probable SARS cases have been reported to WHO from 14 locations (*2*), using the WHO case definition or country-specific variations* (*3*). These reported SARS cases include 49 deaths (case-fatality proportion: 4%). The Chinese authorities have reported 792 suspected/probable cases, including 31 deaths, which occurred in Guangdong province during November 16, 2002–February 28, 2003.

CDC is assisting in epidemiologic investigations of cases in Hong Kong, Vietnam, Taiwan, and Thailand. CDC also is conducting surveillance and prevention activities in the United States.

Hong Kong. As of March 25, the Hong Kong Department of Health (DH) reported 290 suspected and probable SARS cases. Beginning on March 11, an increase in acute pneumonia cases among health-care workers (HCWs) at hospital 1 in Hong Kong was reported to DH. Epidemiologic investigation has linked these cases to an index patient (Patient J) who visited a friend in hotel M in late February, became ill a few days later, and was admitted to hospital 1 on March 4 (Figure 1). Patient J visited hotel M while patient A, an ill visitor from Guangdong province, was staying there.

As of March 25, a cluster of 13 persons with suspected/probable SARS are known to have stayed at hotel M (Figure 1). The index patient (patient A) had onset of symptoms on February 15. He traveled from Guangdong province to Hong Kong to visit family and stayed on the ninth floor of the hotel on February 21. He was admitted to hospital 2 on February 22 and died the next day. Four HCWs and two of his family members subsequently became ill; one family member died. Of the 12 other patients linked to hotel M, 10 were in the hotel the same day as the index patient; the other two patients (patients L and M) stayed in the hotel during the time that three other symptomatic patients were guests in the hotel. Nine of the 13 patients, including patient A, stayed on the ninth floor; one stayed on the 14th floor; one stayed on the 11th floor; and two stayed on both the ninth and 14th floors. Epidemiologic investigations have identified patients from this cluster as index patients in subsequent clusters in Hong Kong and other areas. Patient B is the index patient for

* WHO defines (*3*) a suspected case as an illness that occurs in a person presenting after February 1, 2003, with a history of high fever (>100.4 oF [>38 oC]); one or more respiratory symptoms, including cough, shortness of breath, and difficulty breathing; and close contact within 10 days of symptoms onset with a person in whom SARS has been diagnosed and/or a history of travel within 10 days of onset of symptoms to an area with reported foci of SARS transmission. WHO defines a probable case as a suspected case of illness that occurs in a person with either 1) chest radiograph findings of pneumonia or respiratory distress syndrome (RDS) or 2) unexplained respiratory illness resulting in death, with autopsy examination demonstrating pathology of RDS but no identifiable cause.

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the outbreak in Hanoi involving 59 HCWs and close contacts and also is linked to one case in Thailand. Patients C, D, and E are associated with 70 cases in Singapore and three cases in Germany. Patient F is linked with a cluster of 16 other cases in Toronto (*4*). Patients H and J are linked with outbreaks among HCWs in other hospitals in Hong Kong. Patient L appears to have become infected during his stay at hotel M, with subsequent transmission to his wife, patient M.

As of March 25, six hospitals and one clinic in Hong Kong have reported nosocomial transmission to HCWs following admission of persons with SARS. The suspected index patients of three of the seven nosocomial clusters reported in Hong Kong have been associated with hotel M (Figure 1).

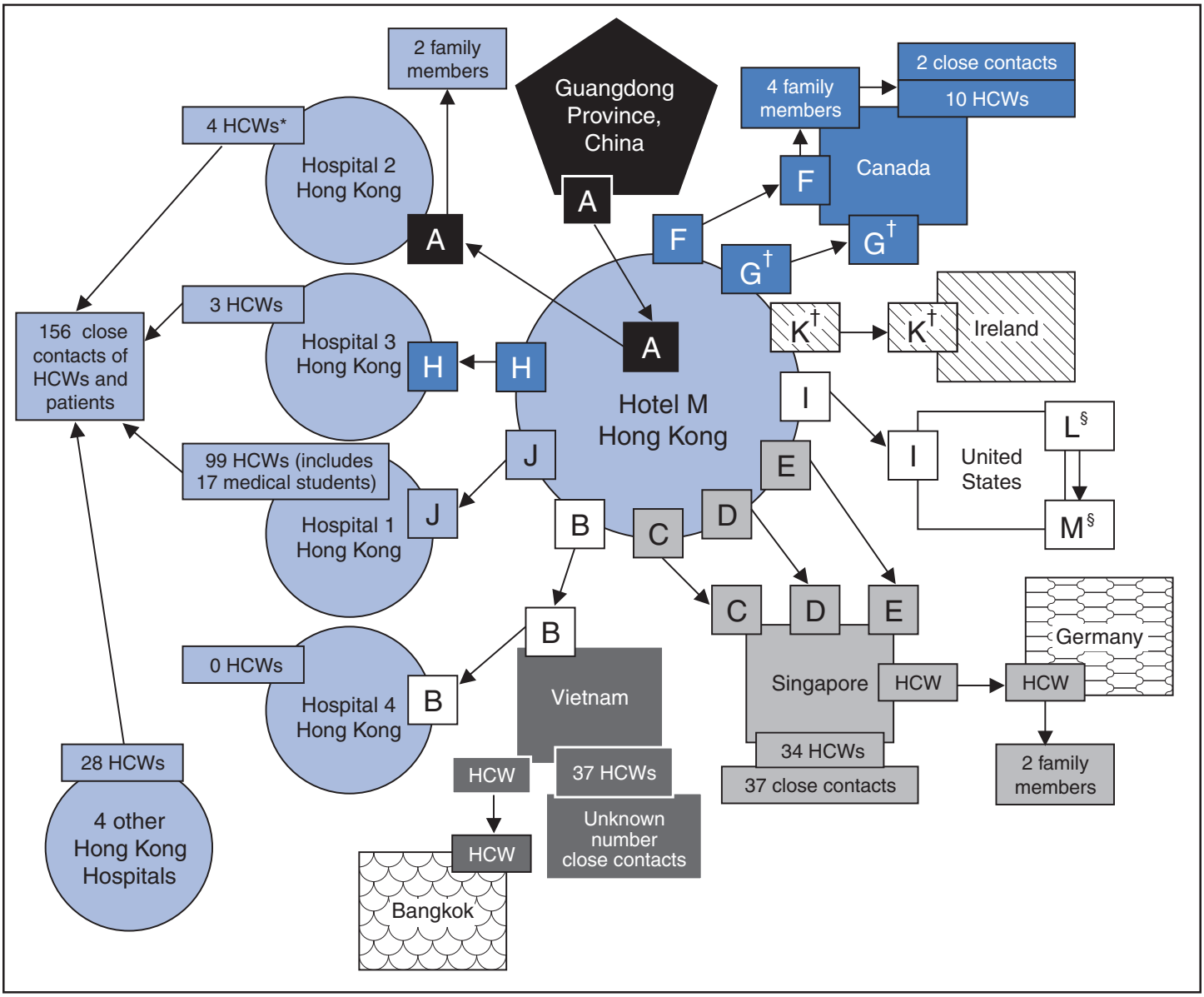
Hong Kong health authorities have implemented enhanced infection-control procedures in all hospitals in Hong Kong, including more stringent barrier and respiratory protection for HCWs, at least daily environmental disinfection of affected wards, and cohorting of SARS patients. New cases among HCWs have declined following implementation of these new guidelines. However, new cases continue to be reported, predominantly among close contacts[†] of known patients.

Vietnam. As of March 24, the Vietnamese Ministry of Health in Hanoi has reported 59 probable SARS cases (Table). The probable index patient (patient B) (Figure 1) was an Asian-American businessman aged 47 years who had visited Hong Kong before traveling to Hanoi. During his visit to Hong Kong, he had stayed at hotel M on the same floor, and during the same time, as patient A. Patient B became ill after arrival in Hanoi on February 23 and was hospitalized with lower respiratory symptoms on February 26. On March 2, he was placed on mechanical ventilation. On March 5, he was medically evacuated to a hospital in Hong Kong and died on March 12. By March 5, secondary probable SARS cases were identified among HCWs in Hanoi. All probable SARS cases reported as of March 24 in Hanoi have been linked through primary or secondary exposure to the same hospital. Two patients who were exposed to hospitalized SARS patients traveled subsequently to Thailand and France and are not included in these numbers.

The government of Vietnam has implemented control activities in Hanoi and throughout the country, including daily follow-up of contacts of probable SARS cases and community surveillance for suspected SARS cases. Infection-control practices to prevent nosocomial transmission have been implemented at Hanoi hospitals with probable SARS cases.

[†] Persons who have cared for, lived with, or had direct contact with respiratory secretions and body fluids of a person with SARS.

FIGURE 1. Chain of transmission among guests at Hotel M — Hong Kong, 2003



*Health-care workers.
†All guests except G and K stayed on the 9th floor of the hotel. Guest G stayed on the 14th floor, and Guest K stayed on the 11th floor.
§Guests L and M (spouses) were not at Hotel M during the same time as index Guest A but were at the hotel during the same times as Guests G, H, and I, who were ill during this period.

Nosocomial cases have decreased since the initial peak of cases linked to exposure to the index patient.

Thailand. As of March 23, the Ministry of Public Health in Thailand has reported four suspected/probable cases (Table). Dates of illness onset ranged from March 11 to March 18. Of these four ill persons, three reported travel to Hong Kong during the week before illness onset; the other person is a physician who cared for SARS patients in Hanoi. Thailand has begun to implement hospital infection control procedures on the presumption of airborne spread. Gowns, gloves, and N-95 masks are widely available in Thailand. As of March 26, surveillance has not documented spread of infection to HCWs. However, one HCW from Thailand became infected while investigating the outbreak in Hanoi.

Taiwan. As of March 25, the Taiwan Department of Health has reported six probable cases (Table). Dates of illness onset ranged from February 25 to March 17. Of these six ill persons, four reported travel to Guangdong province and Hong Kong during the week before illness onset; none of them had stayed at hotel M. The other two cases occurred in family

TABLE. Exposure category, clinical features, and demographics of reported severe acute respiratory syndrome (SARS) cases* — selected locations, 2003

Category	Hong Kong No.	Hong Kong (%)	Vietnam No.	Vietnam (%)	Thailand No.	Thailand (%)	Taiwan No.	Taiwan (%)	United States No.	United States (%)
Total cases†	**290§** (As of 3/25/03–S/P)	**(100)**	**59** (As of 3/24/03–P)	**(100)**	**4** (As of 3/23/03–S/P)	**(100)**	**6** (As of 3/25/03–P)	**(100)**	**51§** (As of 3/26/03–S)	**(100)**
Exposure										
Health-care worker	134	(46)	37	(63)	1	(25)	0		2	(4)
Close contact¶	156	**	NA††		0		2	(33)	5	(10)
Clinical features										
Ever hospitalized	290	(100)§	59	(100)	4	(100)	6	(100)	20§	(39)
Pneumonia	286	(99)	NA		3	(75)	6	(100)	14	(27)
Ever ventilated	NA		5	(9)	1	(25)	2	(33)	1	(2)
Dead	10	(4)§	2	(3)	0		0		0§	
Demographics										
Age	NA		Median: 38 yrs (range: 18–66 yrs)		Median: 38 yrs (range: 1–49 yrs)		Median: 53 yrs (range: 25–64 yrs)		Median: 42 yrs (range: 8 mos–78 yrs)	
	NA									
Sex§§										
Female	Approximately 50%		37	(63)	1	(25)	3	(50)	26	(51)
Male	Approximately 50%		22	(37)	3	(75)	3	(50)	25	(49)

* Locations used different SARS case definitions.
† S = Suspected case; P = Probable case; U = Unknown.
§ One U.S. resident (Patient B) was hospitalized in Vietnam and died in Hong Kong before he could return to the United States. He is counted as a Hong Kong case.
¶ Person having cared for, lived with, or had direct contact with respiratory secretions and body fluids of a person with SARS.
** Of the 290 SARS patients in Hong Kong, most of the remaining 156 patients are believed to be close contacts.
†† Not Available.
§§ Only percentages were reported for sex data.

members of the first patient. Two patients required mechanical ventilation but have improved clinically.

On the basis of presumed airborne spread of SARS, Taiwan has aggressively implemented and monitored strict infection-control procedures. Negative pressure rooms and N-95 respirators are uniformly available for hospitalized patients. Active surveillance has not identified nosocomial transmission. Epidemiologic studies are under way to determine specific risk factors for transmission.

United States. As of March 26, CDC has received 51 reports of suspected SARS cases from 21 states (Table), identified using the CDC updated interim case definition (Box) (Figure 2). The first suspected case was identified on March 15, in a man aged 53 years who traveled to Singapore and became ill on March 10. Four clusters of suspected cases have been identified, three of which involved a traveler who had visited Southeast Asia (including Guangdong province, Hong Kong, or Vietnam) and a single family contact. One of these clusters involved suspected cases in patients L and M (Figure 1), who had stayed together at hotel M during March 1–6, when other hotel guests were symptomatic. Patient L became sick on March 13 after returning to the United States. His wife, patient M, became ill several days after the onset of her husband's symptoms, suggesting secondary transmission. Three patients in the United States with suspected SARS (patients I, L, and M) reported staying at hotel M when other persons staying in the hotel were symptomatic. The fourth cluster began with a suspected case in a person who traveled in Guangdong province and Hong Kong. Two HCWs subsequently became ill at the U.S. hospital where this patient was admitted.

Laboratory investigations. On March 24, CDC announced that laboratory analysis had identified a previously unrecognized coronavirus in patients with suspected or probable SARS. The new coronavirus was isolated in Vero E6 cells from clinical specimens of two patients in Thailand and Hong Kong with suspected SARS. The isolate was identified initially as a coronavirus by electron microscopy (EM) (Figure 3). The identity was corroborated by results of immunostaining, indirect immunofluorescence antibody (IFA) assays, and reverse transcriptase-polymerase chain reaction (RT-PCR) with sequencing of a segment of the polymerase gene. IFA testing of sera and RT-PCR analysis of clinical specimens from six other SARS cases were positive for the new coronavirus. Coronavirus particles also were identified by EM in cells obtained by bronchial lavage from a patient with SARS. Sequence analysis suggests that this new agent is distinct from other known coronaviruses. Other laboratories collaborating in the WHO-led investigation have found similar results and also have isolated a different virus, human metapneumovirus,

BOX. CDC updated interim case definition for severe acute respiratory syndrome (SARS)*

Suspected case†

Respiratory illness of unknown etiology with onset since February 1, 2003, and the following criteria:

- Measured temperature >100.4°F (>38.0°C)
- One or more clinical findings of respiratory illness (e.g., cough, shortness of breath, difficulty breathing, hypoxia, or radiographic findings of either pneumonia or acute respiratory distress syndrome)
- Travel within 10 days of onset of symptoms to an area with suspected or documented community transmission of SARS,§ (excluding areas with secondary cases limited to health-care workers or direct household contacts)

  OR
- Close contact¶ within 10 days of onset of symptoms with either a person with a respiratory illness and travel to a SARS area or a person under investigation or suspected of having SARS

* As of March 22, 2003.
† Suspected cases with either radiographic evidence of pneumonia or respiratory distress syndrome, or evidence of unexplained respiratory distress syndrome by autopsy, are designated "probable" cases by the World Health Organization case definition.
§ Hong Kong Special Administrative Region and Guangdong province, China; Hanoi, Vietnam; and Singapore.
¶ Close contact is defined as having cared for, having lived with, or having had direct contact with respiratory secretions and/or body fluids of a patient suspected of having SARS.

from some patients with suspected SARS. Information is insufficient to determine what roles these two viruses might play in the etiology of SARS.

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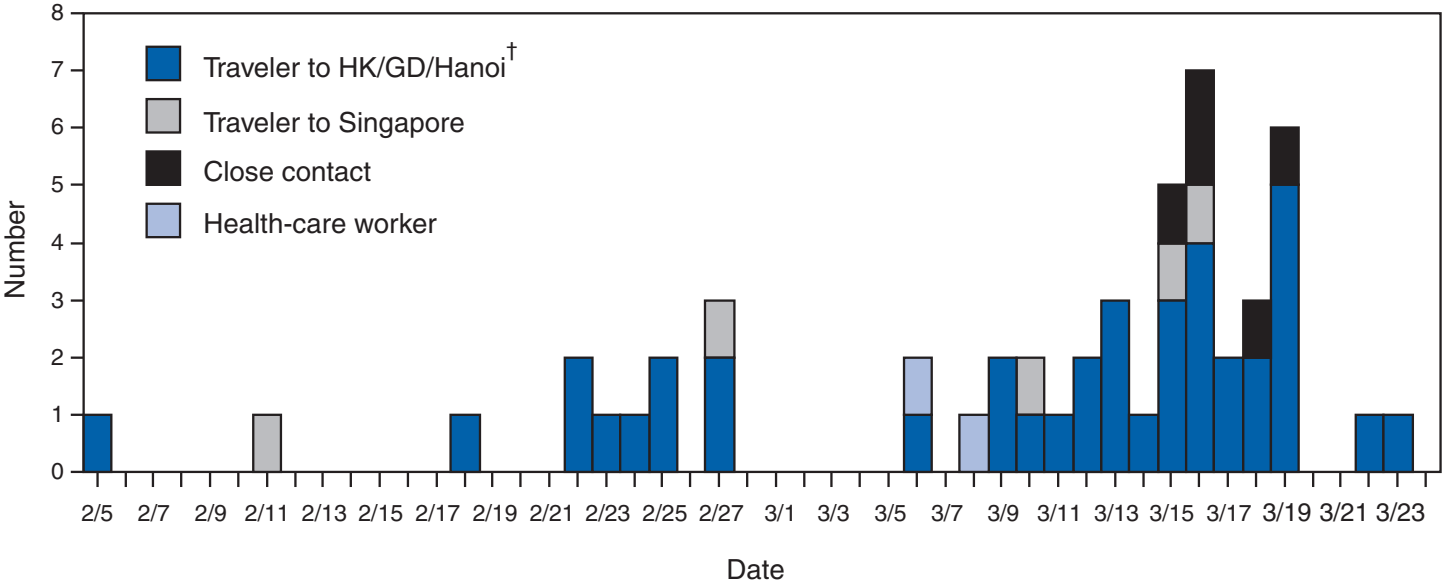
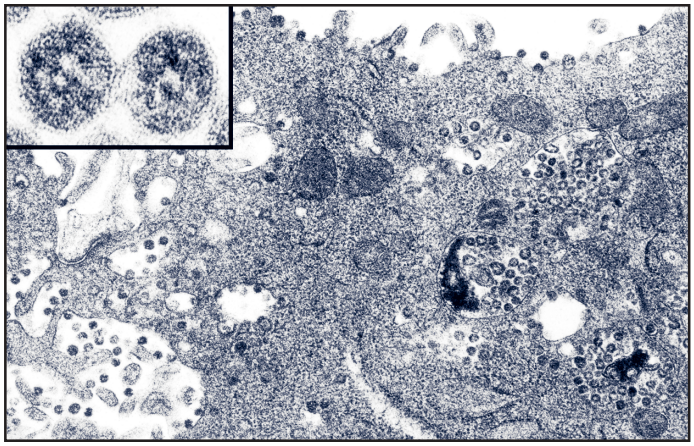
Editorial Note: Cases of SARS continue to be reported from around the world. These cases are linked primarily to areas with ongoing transmission, with some reports of secondary local transmission. Transmission has been reported in Guangdong Province, Hong Kong, Singapore, and Hanoi. In Canada, transmission appears to be limited to a well-defined population of HCWs and close contacts. In Taiwan, limited transmission has occurred to family members but not to HCWs. Chinese authorities have updated the number of cases in Guangdong province and confirmed ongoing disease activity. The numbers of reported cases in Canada, Singapore, and the United States also continue to increase (*2*). Transmission in hospitals and households continues to occur. In addition, reports have been received of possible transmission on ships and planes and in offices. On the basis of available information, country-specific efforts to limit and halt

FIGURE 2. Number of suspected cases* of severe acute respiratory syndrome, by exposure category and date of illness onset — United States, 2003



*N = 51.
†HK = Hong Kong Special Administrative Region, China; GD = Guangdong province, China; Hanoi = Hanoi, Vietnam.

FIGURE 3. Thin section electron micrograph of infected Vero E6 cell, showing coronavirus particles within cytoplasmic membrane-bound vacuoles and the cisternae of the rough endoplasmic reticulum. Extracellular particles accumulate in large clusters, and are frequently seen lining the surface of the plasma membrane. Inset, higher magnification of coronavirus particles.



Photo/CDC.

transmission have included enhancing surveillance, improving infection-control measures in hospitals and homes, selectively closing hospitals and schools, furloughing hospital staff, issuing travel advisories, restricting movement of patients with suspected SARS, and establishing quarantines of exposed persons. In the United States, CDC has issued travel advisories and developed infection-control guidelines; efforts have been focused on rapid identification and early isolation of symptomatic persons whose illnesses meet the CDC case definition.

The summary of the demographic, clinical, and transmission patterns from the reported areas documents some disparities in case-fatality proportion with pneumonia, and ease of transmission. The data also highlight gaps in knowledge about the epidemiology of this new syndrome. Some differences probably reflect concomitant differences in case definition and surveillance methodologies. However, because of the nonspecific case definition, all reported cases might not represent a single clinical entity. Confirmation of the etiology and development of a diagnostic test should help to resolve these discrepancies.

Although the mechanism of SARS transmission remains unclear, on the basis of the reported exposures for the majority of cases (i.e., household contacts and HCWs), droplet and contact transmission appear to be the predominant modes. The cases in the hotel M cluster and certain hospital clusters involving seriously ill patients suggest airborne or fomite transmission. Therefore, infection-control recommendations should include precautions to prevent airborne, droplet, and contact transmission. With the introduction of these control measures, decreases in the reported incidence of SARS have been reported in Hong Kong.

Although the etiologic agent has not been confirmed, laboratory data indicate that a metapneumovirus or a coronavirus are possible agents. Infection with a metapneumovirus, (i.e., enveloped, single-stranded RNA virus) has been associated previously with respiratory disease with much less frequent occurrence of severe disease than SARS. Coronaviruses are enveloped, single-stranded RNA viruses that infect both humans and animals (*5*). The known human coronaviruses can cause serious infections of the lower respiratory tract in children and adults and necrotizing enterocolitis in newborns (*5,6*). Coronaviruses are able to survive on environmental surfaces for up to 3 hours (*6*). Coronaviruses might be transmitted person-to-person by droplets, hand contamination, fomites, and small particle aerosols (*7*).

Clinicians evaluating suspected cases should use standard precautions (e.g., hand hygiene) together with airborne (e.g., N-95 respirator) and contact (e.g., gowns and gloves) precautions (*8*). Until the mode of transmission has been defined more precisely, eye protection also should be worn for all patient contact. As more clinical and epidemiologic information becomes available, interim recommendations will be updated.

The international spread of disease underscores the need for strong global public health systems, robust health service infrastructures, and expertise that can be mobilized quickly across national boundaries to mirror disease movements. The Institute of Medicine has recently issued recommendations for invigorating the response to emerging infectious diseases that reflect these needs, including the development of a comprehensive system of surveillance for global infectious diseases, the enhancement of disease reporting, the development of diagnostic tests, and the formulation and distribution of guidelines on diagnosis (*9*).

References

1. CDC. Outbreak of severe acute respiratory syndrome–worldwide, 2003. MMWR 2003;52:226–8.
2. World Health Organization. Cumulative number of reported cases (SARS). Available at http://www.who.int/csr/sarscountry/2003_03_26/en.
3. World Health Organization. Case definitions for surveillance of severe acute respiratory syndrome (SARS). Available at http://www.who.int/csr/sars/casedefinition/en.
4. Health Canada. Epidemiology, clinical presentation and laboratory investigation of severe acute respiratory syndrome (SARS) in Canada, March 2003. Available at http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/ccdr-rmtc/03vol29/prev/dr-sars0325.html.
5. McIntosh K. Coronaviruses. In: Mandell GL, Bennett JE, Dolin R, eds. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 5th ed. Philadelphia: Churchill Livingstone, Inc., 2000.
6. Sizun J, Yu MWN, Talbot PJ. Survival of human coronaviruses 229E and OC43 in suspension after drying on surfaces: a possible source of hospital-acquired infections. J Hosp Infect 2000;46:55–60.

dis•patch: *n*

(dis-'pach) 1 : A written message, particularly an official communication, sent with speed; see also *MMWR*.

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7. Ijaz MK, Brunner AH, Sattar SA, Nair RC, Johnson-Lussenburg CM. Survival characteristics of airborne human coronavirus 229E. J Gen Virol 1985;66:2743–8.
8. CDC. Updated interim domestic infection control guidance in the health care and community setting for patients with suspected SARS. Available at http://www.cdc.gov/ncidod/sars/infectioncontrol.htm.
9. Institute of Medicine. Microbial Threats to Health: Emergence, Detection, and Response. Smolinski MS, Hamburg MA, Lederberg J, eds. Washington DC: The National Academies Press, 2003. Available at http://www.nap.edu/books/030908864X/html.

Cardiac Adverse Events Following Smallpox Vaccination — United States, 2003

During January 24–March 21, smallpox vaccine was administered to 25,645 civilian health-care and public health workers in 53 jurisdictions as part of an effort to prepare the United States in the event of a terrorist attack using smallpox. Seven cases of cardiac adverse events have been reported among civilian vaccinees since the beginning of the smallpox vaccination program. In addition, 10 cases of myopericarditis have been reported among military vaccinees. This report summarizes data on the seven cases reported among civilians and provides background information on recent military vaccinees. Although a causal association between vaccination and adverse cardiac events in the civilian population is unproven, as a precautionary measure, CDC recommends that persons with physician-diagnosed cardiac disease with or without symptoms (e.g., previous myocardial infarction, angina, congestive heart failure, or cardiomyopathy) be excluded from vaccination during this smallpox preparedness program.

CDC, the Food and Drug Administration, and state health departments are conducting surveillance for vaccine-associated adverse events among civilian vaccinees; the Department of Defense (DoD) is conducting surveillance for vaccine-associated adverse events among military vaccinees.

In the first stage of the civilian program, active surveillance is being conducted for any adverse events after vaccination that require medical care. Cardiac adverse events among civilians and myopericarditis cases among military vaccinees were reported to CDC from the Vaccine Adverse Event Reporting System (VAERS) as of March 23. Four of the civilian cases were previously reported in *MMWR*. Reported adverse events are not necessarily associated causally with vaccination, and some or all of these events might be coincidental.

The seven adverse events of cardiac origin among civilian vaccinees include three myocardial infarctions, two cases of angina, and two cases of myopericarditis. The median age of patients was 50 years (range: 43–60 years), and five were women. Two of the three patients who had a myocardial infarction died. Two had previous illnesses consistent with coronary artery disease (CAD); the other had a history of hypertension, a known risk factor for CAD. Of the two patients with angina, one had a history of CAD, and the other had no history of CAD but at cardiac catheterization was discovered to have a tortuous coronary artery. Both patients with myopericarditis had a history of hypertension but no history of CAD. The five patients with myocardial infarction and angina had illness onset from 4 to 17 days after vaccination; the two patients with myopericarditis were both aged 45 years and had onset of illness at 2 and 17 days after vaccination.

Case Reports

Case 1. A woman aged 50 years with a history of hypertension, hypercholesterolemia, and smoking was vaccinated on March 18, 2003. On March 22, she had chest tightness, dizziness, nausea, and vomiting; approximately 24 hours after onset of these symptoms, she was found unresponsive and pronounced dead. A preliminary autopsy report indicated that a myocardial infarction with thrombus of the right coronary artery had occurred with extensive underlying atherosclerotic disease.

Case 2. On March 4, a woman aged 57 years with a history of smoking and hypertension reported to an emergency department (ED) and was diagnosed with an exacerbation of chronic obstructive pulmonary disease and dehydration 6 days after smallpox vaccination (*1*). The patient had a previous cardiac catheterization that was complicated by a transient ischemic attack during the procedure. In the ED, she was treated with oxygen, antibiotics, and intravenous fluids and was released. On March 16, the patient was hospitalized again following a sudden cardiopulmonary arrest at home. Approximately 10–20 minutes elapsed between the time of the arrest and the arrival of emergency medical personnel. The patient was admitted to a cardiac intensive care unit with a diagnosis of myocardial infarction. The patient died on March 26.

Case 3. A woman aged 54 years with a history of poorly controlled diabetes mellitus, hypertension, obesity, untreated hyperlipidemia, and a recent history of exertional chest pain was vaccinated on March 3. On March 12, she had onset of chest discomfort and irregular heartbeat. She was hospitalized with atrial fibrillation and had electrocardiographic changes and elevated cardiac enzymes consistent with subendocardial myocardial infarction. Cardiac catheterization indicated severe CAD. Echocardiography showed no evidence suggestive of myocarditis.

Case 4. On March 14, a woman aged 43 years with no history of heart disease and no known cardiac risk factors had dizziness and lightheadedness 2 days after vaccination (*1*). On March 16, she had chest pain and dyspnea. Subsequent cardiac catheterization identified a tortuous coronary artery thought to be the cause of her anginal symptoms.

Case 5. A man aged 60 years with a history of hypertension, hyperlipidemia, exertional chest pain, and a family history of CAD had onset of chest pain while playing tennis 4 days after smallpox vaccination and reported to an ED (*2*). Right coronary artery occlusion was diagnosed, and an angioplasty was performed. He was discharged after a 2-day hospitalization.

Case 6. A male civilian federal employee aged 45 years, who had a history of hypertension and who was vaccinated once as a child, was vaccinated on January 23. On February 9, he had fever, chills, malaise, and chest pain. He was hospitalized for 1 day and treated with nonsteroidal anti-inflammatory drugs and prednisone. Electrocardiogram indicated ST segment changes and global J point elevation. His creatinine phosphokinase was reported as mildly elevated at 223 IU (normal range: 55–170 IU), and echocardiography and thallium studies were normal. Myopericarditis was diagnosed. After discharge, the patient was continued on prednisone.

Case 7. On March 14, a woman aged 45 years who was revaccinated on February 26 had myocarditis; the patient had a history of hypertension treated with an angiotensin converting enzyme (ACE) inhibitor (*1*). Approximately 2 weeks before vaccination, she had onset of influenza-like illness (ILI) with fever, chills, myalgia, malaise, cough, and pleuritic chest pain and missed 1 week of work. On February 28, she had sharp left shoulder pain followed by nonexertional chest pain that improved but did not resolve completely with nonsteroidal anti-inflammatory drugs. On March 3, she complained again of dyspnea and exertional chest pain and was hospitalized the next day. On March 5, an echocardiogram demonstrated decreased left ventricular function, left ventricular wall motion abnormality, and a small pericardial effusion. Cardiac catheterization found no evidence of coronary artery disease. Myocarditis was diagnosed. On March 6, the patient was discharged, and her symptoms improved after treatment with an increased dose of ACE inhibitor, addition of a low-dose beta blocker, and NSAIDS. The antecedent ILI and chest pain before vaccination suggests a nonvaccinia infectious etiology.

As of March 23, a total of 10 cases of myocarditis and/or pericarditis have been identified among approximately 225,000 primary vaccinees in the military smallpox vaccination program. All had onset of chest pain 6–12 days following vaccination and all had clinical, laboratory, electrocardiographic, and/or echocardiographic evidence of myocardial and/or pericardial inflammation. None of the cases was clinically severe, and all patients recovered fully and returned to active duty. No cases of myocarditis or pericarditis were detected among approximately 100,000 persons in the military program who were revaccinated.

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Editorial Note: Myocarditis and pericarditis following smallpox vaccination have been reported (*3,4*). The majority of reports were from Europe and Australia, where a more virulent vaccine strain was used, but myopericarditis is not a well-recognized complication following vaccination with the strain of vaccinia being used in the United States (i.e., the New York City Board of Health vaccinia strain, DryVax® [Wyeth Laboratories Inc., Marietta, Pennsylvania]). Data from the military smallpox vaccination program are consistent with a causal association between vaccination and myopericarditis, although this association is not proven.

Other coronary events, including angina and myocardial infarction, have not been previously associated with smallpox vaccination (*5,6*). The relation between smallpox vaccine and the coronary events observed in the civilian vaccination program is unclear.

The frequency of coronary heart disease in the general population makes it difficult to determine if a serious coronary event following vaccination is coincidental or associated with vaccination. The civilian smallpox vaccination program might differ from historical experience because more older patients with underlying heart disease and cardiac risk factors (e.g., hypertension and diabetes mellitus) might be receiving vaccinations. In addition, because current diagnostic tests, including cardiac enzymes and echocardiography, are more sensitive for diagnosing myocardial infarction than previous methods, more events might be detected than were previously observed.

Cardiac-associated death following smallpox vaccination, although extremely rare, has been reported in Europe and Australia and has been thought to be associated with myocarditis (*7,8*). However, in the United States, a death-certificate study of vaccinia-associated deaths conducted during 1959–1966 and 1968 did not identify any deaths associated with cardiac complications (*9*).

Because of the substantial numbers of persons vaccinated in the civilian program, a small number of deaths following vaccination are expected to occur. Of the 25,645 persons vaccinated in the civilian program, age data are available for

14,438. By using the age distribution for these persons, using year 2000 age-specific death rates from all causes (*10*), and assuming that the age distribution is the same for persons whose age is unknown, 2–3 deaths are expected to occur within 3 weeks of vaccination among persons aged 45–54 years and an additional 2–3 deaths among vaccinees aged 55–64 years. Among vaccinees aged 45–64 years, 1–2 cardiac-associated deaths are expected to occur within 3 weeks of vaccination.

Because of the reports of myopericarditis and other cardiac adverse events, CDC and DoD are issuing a supplement to the smallpox vaccine information statement, disseminating information to partners and clinicians, and developing strategies to assess prospectively the incidence and potential causal association of cardiac events among vaccine recipients.

Because a causal relation between smallpox vaccination and serious cardiac events cannot be excluded, CDC recommends as a precautionary measure that persons with known cardiac disease with or without symptoms be excluded from vaccination. As more information becomes available, this recommendation might be revised.

Persons receiving smallpox vaccine should be informed that myopericarditis might be associated with smallpox vaccination and that they should seek medical attention if they develop chest pain, shortness of breath, or other symptoms of cardiac disease after smallpox vaccination. For suspected adverse cardiac events among smallpox vaccine recipients, providers should consult with a cardiologist to ensure appropriate diagnostic studies are conducted to facilitate diagnosis and treatment.

Health-care providers needing assistance evaluating a smallpox vaccinee with a serious adverse event should contact their state health department or CDC's Clinician Information Line, telephone 877-554-4625. This information line, staffed by nurses 24 hours a day, 7 days a week, is a source for general smallpox clinical adverse event information and for assistance with adverse event reporting.

References

1. CDC. Smallpox vaccine adverse events among civilians—United States, March 4–10, 2003. MMWR 2003;52:201–3.
2. Smallpox vaccine adverse events among civilians—United States, February 18–24, 2003. MMWR 2003;52:156–7.
3. Karjalainen J, Heikkila J, Nieminen MS, et al. Etiology of mild acute infectious myocarditis. Acta Medica Scandinavica 1983;213:65–73.
4. Helle EJ, Koskenvuo K, Heikkila J, Pikkarainen J, Weckstrom P. Myocardial complications of immunisations. Ann Clin Res 1978;10:280–7.
5. Lane JM, Ruben FL, Neff JM, Millar JD. Complications of smallpox vaccination: national surveillance in the United States, 1968. N Engl J Med 1969;281:1201–7.
6. Lane JM, Ruben FL, Neff JM, Millar JD. Complications of smallpox vaccination, 1968: results of ten statewide surveys. J Infect Dis 1970;122:303–9.
7. Finlay-Jones LR. Fatal myocarditis after vaccination against smallpox: report of a case. N Engl J Med 1964;270.
8. Feery BJ. Adverse reactions after smallpox vaccination. Med J Aust 1997;2:180–3.
9. Lane JM, Ruben FL, Abrutyn E, Millar JD. Deaths attributable to smallpox vaccination, 1959 to 1966, and 1968. JAMA 1970;212:441–4.
10. Minino AM, Smith BL. Deaths: preliminary data for 2000. Natl Vital Stat Rep 2001;49.

Rapid Assessment of Tuberculosis in a Large Prison System — Botswana, 2002

Prisons are settings in which tuberculosis (TB) transmission occurs, and TB rates in prisons are often five to 10 times higher than national rates (*1*). Data on the prevalence of TB in prisons in Africa are limited; however, studies from Malawi, Ivory Coast, and Tanzania that used active screening found TB rates ≥10 times higher than national rates (*2–4*). During 1989–2001, TB rates in Botswana increased threefold, from 199 cases per 100,000 population to 620 (Botswana National TB Program, unpublished data, 2002). This increase has been associated with the human immunodeficiency virus (HIV) epidemic (*5*). In Botswana, prisoners are not screened routinely for TB. To determine the prevalence of TB and drug-resistant TB in the Botswana prison system and to improve future screening for TB among prisoners and guards, CDC, in collaboration with the Botswana Ministry of Health and the Division of Prisons and Rehabilitation, screened prisoners and guards at four prisons during April–May 2002. This report summarizes the results of the survey, which indicate a high point prevalence of TB among prisoners in Botswana of 3,797 cases per 100,000 population and support the need for improved screening.

New and existing pulmonary TB cases among prisoners aged ≥16 years and all guards at the four locations in the capital city (Gaborone) prison system were asked to complete an active case-finding questionnaire-based survey. Persons who consented to screening were interviewed privately to ascertain demographic characteristics, prison incarceration or work history, previous medical history, and whether symptoms consistent with pulmonary TB were present. Persons who reported a current cough were asked to provide three separate expectorated sputum samples, which were sent to the national TB laboratory for sputum smear microscopy (all specimens) and mycobacterial culture (the first two specimens). Drug susceptibility testing (DST) for first-line drugs (isoniazid, rifampin, ethambutol, and streptomycin) was performed on one isolate per patient. Sputum was not obtained from those without cough. Persons who reported a cough but were unable to produce sputum were scheduled for chest radiographs, which were

obtained within 1 month from persons with cough persistent at the time of examination. Cases were classified as smear-positive, smear-negative and culture-positive, or smear–not done with chest radiograph consistent with pulmonary TB (i.e., clinical). Prisoners and guards who had TB diagnosed were started on short-course, directly observed therapy according to the Botswana National TB Program protocol (*6*). TB patients also were offered voluntary counseling and testing (VCT) for HIV.

During April–May 2002, a total of 1,027 (88%) of 1,173 prisoners and 263 (91%) of 288 guards were interviewed. Acceptance of screening by prisoners and guards was similar by prison location. The majority of prisoners were men (96%), from Botswana (87%), and incarcerated for the first time (83%). The median age was 26 years (range: 16–78 years), and the median duration of incarceration was 15 months (range: 1 day–22 years). A total of 509 (50%) prisoners reported cough; 371 (73%) provided sputum samples, and 33 (6%) who were unable to produce sputum had chest radiographs; 17 (52%) of the 33 radiographs showed abnormalities (15 infiltrates and two with hilar adenopathy). However, because the majority of these patients improved (by resolution of cough) without TB therapy (11 [79%] of 14 with follow-up) and were not started on TB treatment on the basis of the chest radiograph results, none was counted as a TB patient. A total of 39 (4%) prisoners had TB; 20 (51%) were receiving treatment at the time of screening, and 19 (49%) had TB detected by screening. Of the 19, eight (42%) were smear-positive, and 11 (58%) were smear-negative and culture-positive. *Mycobacterium tuberculosis* isolates from 13 prisoners underwent DST; two (15%) were resistant to isoniazid only. Of the 39 patients with TB who were offered VCT, 14 (36%) declined, including three who reported previously testing HIV-positive. Among 20 prisoners with results available, six (30%) were HIV-positive. HIV test results were unknown for five prisoners. Although prisoners moved into and out of the prison system frequently, the size of the overall prison population remained stable during the survey period. The minimum point prevalence of TB among prisoners was 3,797 cases per 100,000 (39 cases among 1,027 prisoners). Independent risk factors for TB among prisoners reporting cough or those on TB treatment at screening initiation (with or without cough) included incarceration for >6 months and residence in prison A (Table).

Of the 263 guards who were screened, 45 (17%) reported cough; of these, sputum was obtained from 25 (56%). Five (2%) guards were being treated for TB at the time of screening. Two cases (both sputum smear-negative and culture-positive) were identified through screening. Among guards who reported a cough but were unable to produce sputum, six underwent chest radiography, of which five (83%) were abnormal (all infiltrates). However, none was classified as having TB. The isolates from two guards were available for DST; one was fully susceptible, and one was resistant to isoniazid, ethambutol, and streptomycin. The minimum point prevalence of TB among guards was 2,662 cases per 100,000 (seven cases among 263 guards).

TABLE. Independent risk factors for tuberculosis (TB) among prisoners with TB or reporting cough — Botswana, 2002*

Factor	Relative Risk	(95% CI†)	p value
Male	0.6	(0.1–5.8)	0.64
Aged ≥30 years	1.4	(0.6–3.4)	0.44
Smoker	0.4	(0.2–1.0)	0.06
Incarcerated >6 months	9.4	(1.2–71.7)	0.03
Prison A resident	5.2	(1.7–16.0)	0.004
Previous incarceration	1.9	(0.8–4.7)	0.17
Previous history of TB	3.2	(0.8–12.7)	0.09
Previous history of TB in any prison	0.6	(0.1–3.4)	0.52
Close contact with a TB patient	2.1	(0.7–6.2)	0.20

*N = 529.
†Confidence interval.

Observation in the prison documented crowded cells (a minimum of one prisoner/m^2 of space with only natural ventilation through small windows); the one prison sick ward (<15m^2) had four beds and no ceiling fans. The kitchen and other work sites in which prisoners congregated frequently had no mechanical ventilation.

On the basis of the high prevalence of TB identified, CDC recommended several interventions, including 1) screening for TB at prison entry or transfer and periodically thereafter (e.g., annually) using a symptom-based questionnaire, 2) contact investigations of newly identified smear-positive cases, 3) assessment of administrative and environmental measures to reduce ongoing transmission within the prison (*7*), and 4) implementation of isoniazid preventive therapy among HIV-infected prisoners and guards according to existing Ministry of Health guidelines.

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Editorial Note: TB is a major health problem for prisoners and guards in Botswana, and TB point prevalence was four to six times higher than annual TB incidence of 620 per 100,000 population for the civilian population. Although DST was performed on only 15 isolates, drug resistance was infrequent, probably reflecting the relatively low level of drug resistance in Botswana (*8*). Longer duration of incarceration and residence in prison A were the strongest risk factors for TB.

Symptom screening of prisoners and guards helped to identify 21 new cases of TB in prisons. Only 40% of TB cases were sputum smear-positive at diagnosis, and chest radiography did not identify additional cases. However, in settings in which mycobacterial cultures are difficult to obtain, chest radiography might be a useful screening tool in persons who are sputum smear-negative but have persistent symptoms (*9*).

The findings in this report are subject to at least three limitations. First, sputum was obtained only from persons who reported cough; as a result, TB cases might have been missed. Second, some patients with abnormal chest radiographs might have been misclassified as non-TB cases, causing the prevalence of TB to be underestimated. Finally, this survey did not compare different screening approaches; therefore, direct comparisons cannot be made among different screening modalities.

Because the risk for TB was greater with a longer duration of incarceration and within one facility, screening at entry alone would be insufficient to control transmission, and ongoing screening would be useful. Because TB also occurred among guards, this population also could benefit from periodic screening and inclusion in contact tracing. Enclosed spaces, such as those observed in this prison system, and inadequate ventilation are associated with a higher risk for transmission (*10*). To further characterize these risks, a detailed environmental assessment of prison facilities in Botswana and a subsequent infection-control plan are warranted.

Acknowledgments

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References

1. World Health Organization. Guidelines for the control of tuberculosis in prisons. Geneva, Switzerland: World Health Organization, 1998; document no. WHO/TB/98.250.
2. Nyangulu DS, Harries AD, Kang'ombe C, et al. Tuberculosis in a prison population in Malawi. Lancet 1997;350:1284–7.
3. Koffi N, Ngom AK, Aka-Danguy E, Seka A, Akoto A, Fadiga D. Smear positive pulmonary tuberculosis in a prison setting: experience in the penal camp of Bouake, Ivory Coast. Int J Tuberc Lung Dis 1997;1:250–3.
4. Rutta E, Mutasingwa D, Ngallaba S, Mwansasu A. Tuberculosis in a prison population in Mwanza, Tanzania. Int J Tuberc Lung Dis 2001;5:703–6.
5. World Health Organization. Botswana: Epidemiologic fact sheets on HIV/AIDS and sexually transmitted infections, 2002 update. Geneva, Switzerland: World Health Organization, 2002.
6. Botswana National Tuberculosis Programme. National Tuberculosis Programme Manual. Gaborone: Republic of Botswana—Ministry of Health, 1995. Gaborone, Botswana: Botswana National Tuberculosis Programme, 1995.
7. World Health Organization. Guidelines for the prevention of tuberculosis in health care facilities in resource-limited settings. Geneva, Switzerland: World Health Organization, 1999.
8. Kenyon TA, Mwasekaga MJ, Huebner R, et al. Low levels of drug resistance amidst rapidly increasing tuberculosis and human immunodeficiency virus co-epidemics in Botswana. Int J Tuberc Lung Dis 1999;3:4–11.
9. Layton MC, Henning KJ, Alexander TA, et al. Universal radiographic screening for tuberculosis among inmates upon admission to jail. Am J Public Health 1997;87:1335–7.
10. Ikeda RM, Birkhead GS, DiFerdinando GT, Jr., et al. Nosocomial tuberculosis: an outbreak of a strain resistant to seven drugs. Infect Control Hosp Epidemiol 1995;16:152–9.

Progress Toward Poliomyelitis Eradication — Egypt, 2002

Since the World Health Assembly resolved in 1988 to eradicate poliomyelitis globally, the number of countries in which polio is endemic has declined 94% from 125 countries to seven. The estimated number of wild poliovirus-positive cases worldwide has decreased >99%, and three World Health Organization (WHO) regions (Americas, European, and Western Pacific) are now certified as polio-free (*1–3*). Substantial progress has been made in the Eastern Mediterranean Region, where poliovirus is endemic in four (Afghanistan, Egypt, Pakistan, and Somalia) of 23 countries(*4–6*). This report summarizes progress during 2002 toward polio eradication in Egypt, where several independent chains of wild poliovirus type 1 (P1) transmission continue to circulate despite a long history of eradication efforts. The findings indicate that surveillance and vaccination activities have improved substantially and highlight the need for further improvements to interrupt poliovirus transmission.

Routine Vaccination

Since 1994 reported routine vaccination coverage of infants with ≥3 doses of oral poliovirus vaccine (OPV) has remained >90%. During 2002, reported routine coverage was >95% nationwide; six (2%) of 247 districts reported levels <90%*.

Supplementary Immunization Activities (SIAs)

Egypt began implementing national immunization days (NIDs)† in 1989. During 2000–2002, the number of NID

* Coverage calculated by dividing the number of OPV doses administered by the number of registered infants. This might result in an overestimation of coverage.
† Mass campaigns over a short period (days) in which 2 doses of OPV are administered to all children in the target group (usually those aged <5 years) regardless of previous vaccination history.

rounds increased from two to three. Systematic house-to-house vaccinations were conducted, and the number of vaccination teams and supervisors increased. The high quality of these NID rounds was documented by independent monitors (WHO Eastern Mediterranean Regional Office, unpublished data, 2002). The number of children aged <5 years who were vaccinated increased from approximately 8.6 million during December 2001 to 9.8 million during December 2002. In addition, during March and April 2002, subnational immunization days[§] (SNIDs) were held in Upper Egypt.

Surveillance for Acute Flaccid Paralysis

Surveillance for acute flaccid paralysis (AFP) was initiated in Egypt during August 1990. During 2002, surveillance performance improved substantially compared with 1998–2001 (Table). The national target level for AFP surveillance (i.e., ≥1 nonpolio AFP case per 100,000 children aged <15 years) has been reached each year since 1998. During 2002, AFP surveillance improved twofold; standardized operating procedures were established, polio officers designated at all administrative levels, and active surveillance conducted in all districts.

Stool samples collected from persons with AFP were tested at the national polio laboratory, which is accredited by WHO as a regional reference laboratory in the global poliovirus laboratory network. Since 1996, genetic sequence analyses have been performed routinely on all wild polioviruses detected in Egypt. Results indicate that all are related closely to poliovirus lineages that have been indigenous to Egypt for ≥7 years. The genetic sequence data also indicate decreasing genetic diversity of polioviruses and fewer lineages surviving in each successive low transmission season.

Environmental Surveillance

In July 2000, the Ministry of Health and Population (MOHP) began to supplement AFP surveillance with environmental surveillance (i.e., collecting and testing wastewater samples) for the presence of wild poliovirus. During 2001, samples were collected from 10 sites in seven governorates of Upper Egypt (Aswan, Asyut, Beni Suef, Fayoum, Minya, Qena, and Sohag) and from one site in Gharbia governorate in Lower Egypt. In 2002, environmental surveillance was expanded to include additional sites in Lower Egypt (Alexandria, Behera, Menofia, and Sharkia) and greater Cairo (Cairo, Giza, and Kalioubia). All environmental surveillance isolates underwent partial genomic sequencing, which indicated that the viruses

[§] Campaigns similar to NIDs but confined to part of the country.

TABLE. Number of reported cases of acute flaccid paralysis (AFP), number of confirmed poliovirus cases, and key surveillance indicators, by year — Egypt, 1998–2002*

Year	No. AFP cases	No. laboratory-confirmed poliovirus cases	Nonpolio AFP rate†	% of persons with AFP with adequate stool specimens§	% AFP cases detected within 1 week of onset	% stool samples with nonpolio enterovirus isolates
1998	290	35	1.2	85	68	22
1999	277	9	1.2	79	65	16
2000	280	4	1.2	92	82	9
2001	257	5	1.1	93	83	16
2002	576	7	2.4	91	78	19

* As of March 3, 2003.
† Number of persons with AFP per 100,000 population aged <15 years; minimum expected rate is one case of nonpolio AFP per 100,000 per year.
§ Two stool samples collected at an interval of ≥24 hours apart within 14 days of paralysis onset and shipped properly to the laboratory.

were related closely to P1 detected through AFP surveillance. Genetic data indicated that a single genotype of P1 with multiple lineages has persisted in Egypt for ≥7 years. Poliovirus types 2 (P2) and 3 (P3) have not been detected by environmental surveillance.

During 2002, a total of 26 (16%) of 162 samples from 11 (73%) of 15 governorates tested were positive for P1, compared with 64 (57%) samples from all eight governorates tested in 2001 (Figure). During 2002, four (10%) of 41 samples from Lower Egypt, seven (70%) of 10 from greater Cairo governorates (except Kalioubia), and 15 (14%) of 107 from Upper Egypt tested positive for P1. No wild type poliovirus was isolated from the 13 samples from Minya in upper Egypt, an area that has sustained circulation for >10 years.

Wild Poliovirus Incidence

Since late 1999, AFP surveillance has detected wild poliovirus in several districts of Upper Egypt. P2 was last detected in Egypt in 1994, and P3 was last detected in December 2000. During 2001–2002, only P1 was isolated. During July–December 2002, seven wild poliovirus cases were detected, compared with 35 cases in 1998; six (86%) of these seven virologically confirmed wild poliovirus cases were detected in Lower Egypt and greater Cairo (Figure). All seven cases were reported after AFP surveillance was enhanced; six (86%) of the seven cases occurred in children aged <5 years who had received ≥2 doses of OPV during SIAs.

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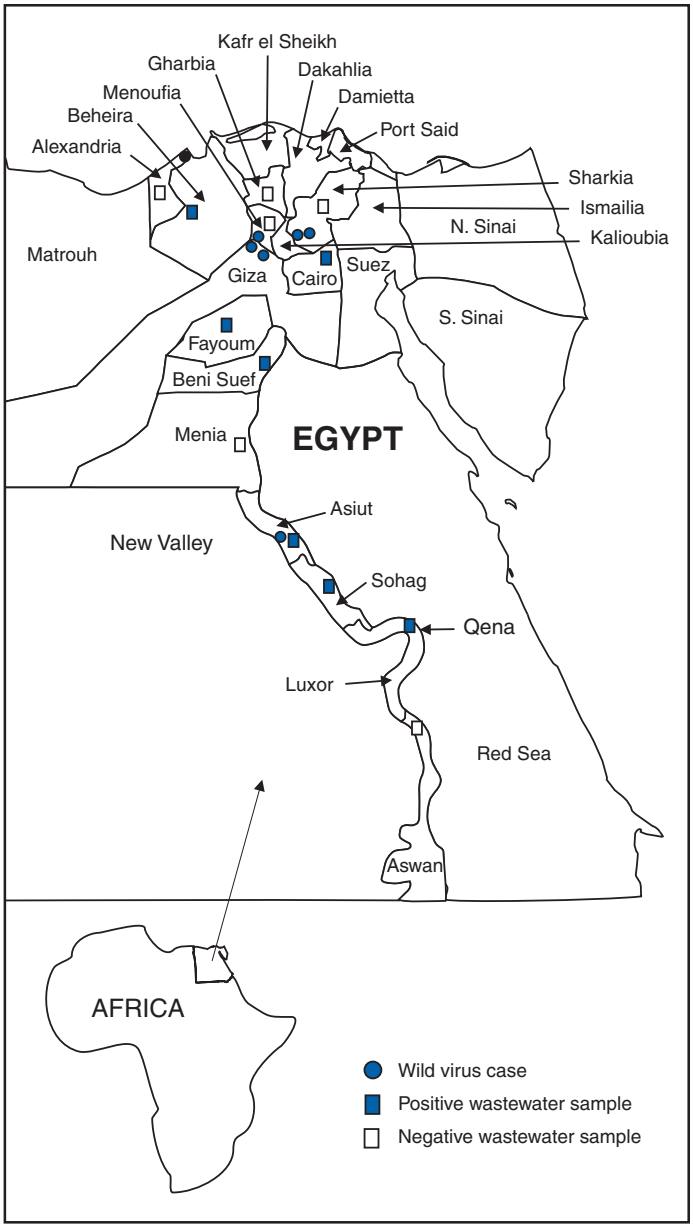
Editorial Note: Although interruption of wild poliovirus transmission in Egypt has been delayed, surveillance and mass immunization campaigns have improved considerably since 2000. During 2002, the sensitivity and efficiency of AFP

FIGURE. Locations of confirmed acute flaccid paralysis cases and positive environmental samples — Egypt, 2002



surveillance improved, and the nonpolio AFP rate increased approximately twofold. Immunization campaigns also have improved, resulting in more children aged <5 years receiving vaccine. Genetic data from isolated polioviruses indicate reduced genetic diversity and fewer lineages, both signs of progress.

During October–December 2002, three rounds of NIDs were conducted, covering the entire country for the first time in a house-to-house campaign, with intensified supervision and a substantial increase in the number of vaccination teams. The success of these NIDs reflects increased participation by government and nongovernment sectors and the implementation of a comprehensive communication and social mobilization plan. Approximately 1.2 million children aged <5 years who apparently were missed previously were vaccinated in these NIDs, highlighting the effectiveness of this strategy.

Improved surveillance has yielded a better overview of polio epidemiology in Egypt. The genomic data provided by the seven polio cases that were reported from Upper and Lower Egypt during July–December 2002 after approximately 1 year of no reported cases, and the increased number of AFP cases investigated, suggest that some polio cases had been missed previously.

Improved surveillance and vaccination reflect implementation of the recommendations of a technical advisory group (TAG) comprising international and national experts that was established in 2001. In 2002, TAG reviewed the available epidemiologic and programmatic information and recommended four actions: 1) establishing a system to give a financial reward to persons identifying AFP cases, 2) encouraging MOHP's call for transparency in reporting, 3) implementing active surveillance, and 4) targeting high-risk urban areas for improved house-to-house vaccination campaigns. In February 2003, TAG recommended that the two NID rounds planned for March and May 2003 proceed and that additional rounds be conducted in fall 2003. TAG will meet again later in 2003 to decide whether additional SIAs are needed.

For poliovirus transmission in Egypt to be interrupted, the partners involved in the polio eradication effort should sustain and extend the progress made to date. Improving the program further should be an ongoing part of Egypt's eradication program. Environmental surveillance suggests that polio cases are being missed in areas of Upper Egypt where polio is endemic. Sustained support from the Egyptian government and the commitment of financial and technical resources from MOHP and its partners are required to implement a comprehensive work plan developed by MOHP to carry out the TAG recommendations.

References

1. CDC. Certification of poliomyelitis eradication—the Americas, 1994. MMWR 1994;43:720–2.
2. CDC. Certification of poliomyelitis eradication—European region, June 2002. MMWR 2002;51:572–4.
3. CDC. Certification of poliomyelitis eradication—Western Pacific Region, October 2000. MMWR 2001;50:1–3.
4. CDC. Progress toward poliomyelitis eradication—Pakistan and Afghanistan, January 2000–April 2002. MMWR 2002;51:521–4.
5. CDC. Progress toward poliomyelitis eradication—Egypt, 2001. MMWR 2002;51:305–7.
6. CDC. Progress toward poliomyelitis eradication—Ethiopia, Somalia, and Sudan, January 2000–October 2002. MMWR 2002;51:1070–2.

Preliminary Clinical Description of Severe Acute Respiratory Syndrome

On March 21, 2003, this report was posted on the MMWR *website (http://www.cdc.gov/mmwr).*

Severe acute respiratory syndrome (SARS) is a condition of unknown etiology that has been described in patients in Asia, North America, and Europe. This report summarizes the clinical description of patients with SARS based on information collected since mid-February 2003 by the World Health Organization (WHO), Health Canada, and CDC in collaboration with health authorities and clinicians in Hong Kong, Taiwan, Bangkok, Singapore, the United Kingdom, Slovenia, Canada, and the United States. This information is preliminary and limited by the broad and necessarily nonspecific case definition.

As of March 21, 2003, the majority of patients identified as having SARS have been adults aged 25–70 years who were previously healthy. Few suspected cases of SARS have been reported among children aged ≤15 years.

The incubation period for SARS is typically 2–7 days; however, isolated reports have suggested an incubation period as long as 10 days. The illness begins generally with a prodrome of fever (>100.4°F [>38.0°C]). Fever often is high, sometimes is associated with chills and rigors, and might be accompanied by other symptoms, including headache, malaise, and myalgia. At the onset of illness, some persons have mild respiratory symptoms. Typically, rash and neurologic or gastrointestinal findings are absent; however, some patients have reported diarrhea during the febrile prodrome.

After 3–7 days, a lower respiratory phase begins with the onset of a dry, nonproductive cough or dyspnea, which might be accompanied by or progress to hypoxemia. In 10%–20% of cases, the respiratory illness is severe enough to require intubation and mechanical ventilation. The case-fatality rate

among persons with illness meeting the current WHO case definition of SARS is approximately 3%.

Chest radiographs might be normal during the febrile prodrome and throughout the course of illness. However, in a substantial proportion of patients, the respiratory phase is characterized by early focal interstitial infiltrates progressing to more generalized, patchy, interstitial infiltrates. Some chest radiographs from patients in the late stages of SARS also have shown areas of consolidation.

Early in the course of disease, the absolute lymphocyte count is often decreased. Overall white blood cell counts have generally been normal or decreased. At the peak of the respiratory illness, approximately 50% of patients have leukopenia and thrombocytopenia or low-normal platelet counts (50,000–150,000/µL). Early in the respiratory phase, elevated creatine phosphokinase levels (as high as 3,000 IU/L) and hepatic transaminases (two to six times the upper limits of normal) have been noted. In the majority of patients, renal function has remained normal.

The severity of illness might be highly variable, ranging from mild illness to death. Although a few close contacts of patients with SARS have developed a similar illness, the majority have remained well. Some close contacts have reported a mild, febrile illness without respiratory signs or symptoms, suggesting the illness might not always progress to the respiratory phase.

Treatment regimens have included several antibiotics to presumptively treat known bacterial agents of atypical pneumonia. In several locations, therapy also has included antiviral agents such as oseltamivir or ribavirin. Steroids have also been administered orally or intravenously to patients in combination with ribavirin and other antimicrobials. At present, the most efficacious treatment regimen, if any, is unknown.

In the United States, clinicians who suspect cases of SARS are requested to report such cases to their state health departments. CDC requests that reports of suspected cases from state health departments, international airlines, cruise ships, or cargo carriers be directed to the SARS Investigative Team at the CDC Emergency Operations Center, telephone 770-488-7100. Outside the United States, clinicians who suspect cases of SARS are requested to report such cases to their local public health authorities. Additional information about SARS (e.g., infection control guidance and procedures for reporting suspected cases) is available at http://www.cdc.gov/ncidod/sars. Global case counts are available at http://www.who.int.

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Notice to Readers

National Smallpox Vaccine in Pregnancy Registry

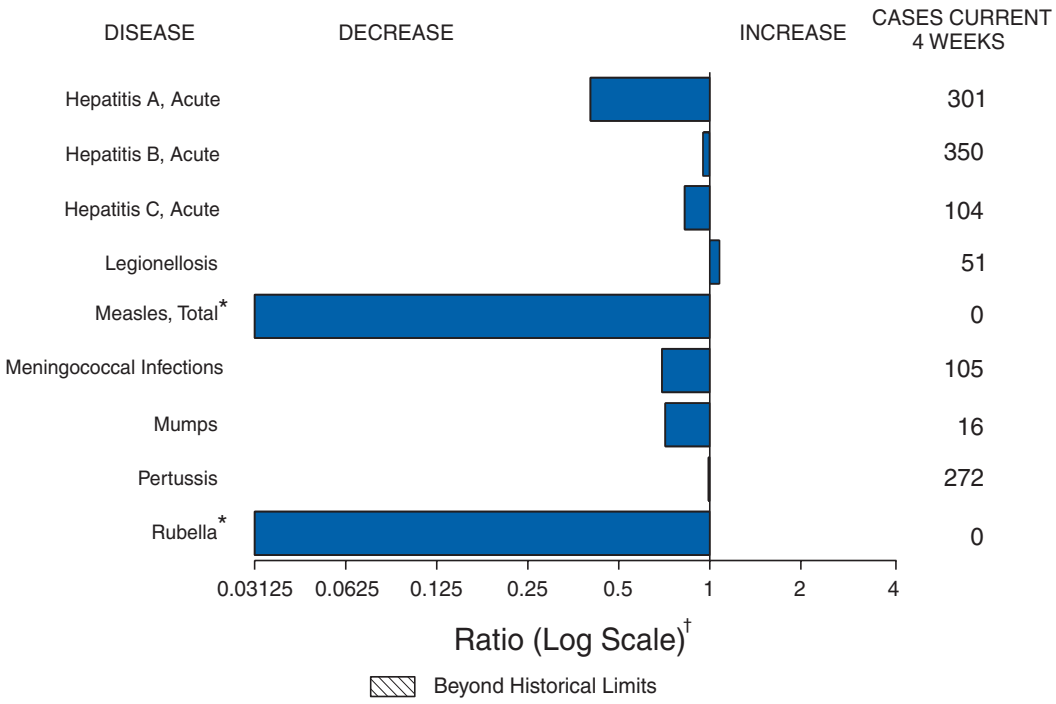
Smallpox vaccine is known to cause fetal vaccinia, a very rare but serious complication of exposure to smallpox vaccine during pregnancy. Fewer than 50 cases have been reported (*1*–*3*), three of which occurred in the United States in 1924, 1959, and 1968. Affected pregnancies have been reported in women vaccinated in all three trimesters, in primary vaccinees, and in those being revaccinated, and in nonvaccinated contacts of vaccinees. Because a risk for infection to the fetus is possible in the pre-event setting, smallpox vaccination is not recommended for pregnant women or anyone with close physical contact to a pregnant woman (e.g., a household member or sex partner).

CDC has established the National Smallpox Vaccine in Pregnancy Registry, a surveillance system to monitor the outcomes in women who inadvertently received smallpox vaccine during pregnancy, became pregnant within 28 days after vaccination, were a close contact with a vaccinee within 28 days. Exposed pregnant women should contact their health-care providers or their state health department for assistance in enrolling in the registry. Health-care providers and staff from state health departments are encouraged to report all exposed pregnant women to the registry. Reports should be routed through CDC, telephone 877-554-4625 or 404-639-8253.

References

1. Lane JM, Millar JD, Neff JM. Smallpox and smallpox vaccination policy. Annu Rev Med 1971;22:251–72.
2. CDC. Smallpox vaccine: recommendations of the Public Health Service Immunization Practices Advisory Committee. MMWR 1978;27:156–8,163–4.
3. CDC. Adverse reactions to smallpox vaccination—1978. MMWR 1979;28:265–7.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending March 22, 2003, with historical data



* No measles and rubella cases were reported for the current 4-week period yielding a ratio for week 12 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 March 22, 2003 (12th Week)*

	Cum. 2003	Cum. 2002		Cum. 2003	Cum. 2002
Anthrax	-	1	Hansen disease (leprosy)†	14	14
Botulism:	-	-	Hantavirus pulmonary syndrome†	4	-
foodborne	3	4	Hemolytic uremic syndrome, postdiarrheal†	24	24
infant	12	18	HIV infection, pediatric†§	49	28
other (wound & unspecified)	7	6	Measles, total	3¶	5**
Brucellosis†	11	18	Mumps	51	70
Chancroid	8	16	Plague	-	-
Cholera	-	1	Poliomyelitis, paralytic	-	-
Cyclosporiasis†	9	21	Psittacosis†	2	11
Diphtheria	-	-	Q fever†	9	7
Ehrlichiosis:	-	-	Rabies, human	-	-
human granulocytic (HGE)†	7	11	Rubella	-	1
human monocytic (HME)†	7	2	Rubella, congenital	-	1
other and unspecified	-	-	Streptococcal toxic-shock syndrome†	30	30
Encephalitis/Meningitis:	-	-	Tetanus	1	4
California serogroup viral†	-	-	Toxic-shock syndrome	20	34
eastern equine†	-	-	Trichinosis	1	4
Powassan†	-	-	Tularemia†	4	4
St. Louis†	-	-	Yellow fever	-	1
western equine†	-	-			

-: No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).
† 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 23, 2003.
¶ Of three cases reported, two were indigenous and one was imported from another country.
** Of five cases reported, four were indigenous and one was imported from another country.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending March 22, 2003, and March 23, 2002 (12th Week)*

Reporting area	AIDS		Chlamydia†		Coccidiodomycosis		Cryptosporidiosis		Encephalitis/Meningitis West Nile	
	Cum. 2003§	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	6,085	6,339	163,183	178,814	871	941	331	490	-	-
NEW ENGLAND	209	205	5,935	6,102	-	-	21	15	-	-
Maine	-	1	198	299	N	N	2	-	-	-
N.H.	3	4	297	380	-	-	-	3	-	-
Vt.	5	4	254	166	-	-	4	1	-	-
Mass.	49	132	2,437	2,410	-	-	10	5	-	-
R.I.	21	21	694	628	-	-	3	3	-	-
Conn.	131	43	2,055	2,219	N	N	2	3	-	-
MID. ATLANTIC	1,622	1,364	12,692	19,955	-	-	31	62	-	-
Upstate N.Y.	73	70	3,696	2,823	N	N	11	10	-	-
N.Y. City	962	857	1,231	6,802	-	-	9	24	-	-
N.J.	179	257	2,451	3,198	-	-	2	5	-	-
Pa.	408	180	5,314	7,132	N	N	9	23	-	-
E.N. CENTRAL	617	664	27,460	32,095	2	5	62	141	-	-
Ohio	99	152	6,803	8,326	-	-	12	37	-	-
Ind.	95	84	3,394	3,981	N	N	6	13	-	-
Ill.	239	333	7,524	8,994	-	1	5	26	-	-
Mich.	156	66	6,573	6,967	2	4	16	25	-	-
Wis.	28	29	3,166	3,827	-	-	23	40	-	-
W.N. CENTRAL	115	105	9,790	10,011	-	-	37	41	-	-
Minn.	14	19	1,862	2,427	N	N	22	11	-	-
Iowa	18	22	953	981	N	N	5	4	-	-
Mo.	71	34	3,521	3,287	-	-	2	9	-	-
N. Dak.	-	-	168	264	N	N	-	2	-	-
S. Dak.	3	1	570	485	-	-	6	3	-	-
Nebr.	1	13	1,025	833	-	-	2	9	-	-
Kans.	8	16	1,691	1,734	N	N	-	3	-	-
S. ATLANTIC	1,157	1,963	34,099	32,755	1	-	60	95	-	-
Del.	27	45	693	619	N	N	1	1	-	-
Md.	47	250	3,711	3,495	1	-	7	3	-	-
D.C.	164	87	741	808	-	-	-	1	-	-
Va.	197	155	3,735	3,596	-	-	6	1	-	-
W. Va.	3	11	562	536	N	N	-	1	-	-
N.C.	75	134	5,312	4,199	N	N	7	13	-	-
S.C.	132	136	3,030	3,233	-	-	1	1	-	-
Ga.	218	472	7,556	6,963	-	-	25	46	-	-
Fla.	294	673	8,759	9,306	N	N	13	28	-	-
E.S. CENTRAL	237	258	11,951	12,282	-	-	21	20	-	-
Ky.	8	31	1,944	2,049	N	N	5	1	-	-
Tenn.	119	115	4,055	3,906	N	N	6	6	-	-
Ala.	45	57	3,039	3,892	-	-	8	12	-	-
Miss.	65	55	2,913	2,435	N	N	2	1	-	-
W.S. CENTRAL	804	726	21,650	24,393	-	-	2	9	-	-
Ark.	23	35	1,410	1,670	-	-	1	2	-	-
La.	49	182	3,712	4,263	N	N	-	2	-	-
Okla.	40	33	1,562	2,068	N	N	1	1	-	-
Tex.	692	476	14,966	16,392	-	-	-	4	-	-
MOUNTAIN	293	194	9,499	11,134	656	624	20	27	-	-
Mont.	6	4	410	518	N	N	2	-	-	-
Idaho	-	4	631	555	N	N	4	9	-	-
Wyo.	1	2	249	199	-	-	-	2	-	-
Colo.	56	34	1,805	3,188	N	N	4	6	-	-
N. Mex.	21	7	818	1,883	-	4	-	2	-	-
Ariz.	145	78	3,563	3,085	648	609	3	4	-	-
Utah	38	13	831	332	1	3	5	2	-	-
Nev.	26	52	1,192	1,374	7	8	2	2	-	-
PACIFIC	1,031	860	30,107	30,087	212	312	77	80	-	-
Wash.	68	82	3,445	3,173	N	N	-	15	-	-
Oreg.	46	90	1,657	1,458	-	-	5	8	-	-
Calif.	908	675	23,393	23,707	212	312	72	57	-	-
Alaska	6	2	561	791	-	-	-	-	-	-
Hawaii	3	11	1,051	958	-	-	-	-	-	-
Guam	1	-	-	-	-	-	-	-	-	-
P.R.	58	165	243	10	N	N	N	N	-	-
V.I.	1	45	-	48	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	2	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 2002 and 2003 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 — Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention. Last update February 23, 2003.

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 22, 2003, and March 23, 2002 (12th Week)*

Reporting area	*Escherichia coli*, Enterohemorrhagic (EHEC)						Giardiasis		Gonorrhea	
	O157:H7		Shiga toxin positive, serogroup non-O157		Shiga toxin positive, not serogrouped					
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	197	263	21	11	7	1	2,855	3,663	64,413	77,733
NEW ENGLAND	12	20	2	1	-	-	162	357	1,569	1,876
Maine	-	-	-	-	-	-	18	35	9	16
N.H.	3	2	-	-	-	-	12	14	23	32
Vt.	-	-	-	-	-	-	16	24	21	25
Mass.	4	10	-	1	-	-	94	201	625	832
R.I.	1	2	-	-	-	-	21	18	223	209
Conn.	4	6	2	-	-	-	1	65	668	762
MID. ATLANTIC	10	19	1	-	2	-	446	710	5,344	9,071
Upstate N.Y.	5	13	1	-	2	-	150	201	1,467	1,503
N.Y. City	2	1	-	-	-	-	214	210	586	2,760
N.J.	3	5	-	-	-	-	35	113	1,300	1,772
Pa.	N	N	-	-	-	-	47	186	1,991	3,036
E.N. CENTRAL	45	87	6	-	2	-	455	681	13,465	16,168
Ohio	14	14	6	-	2	-	185	193	4,180	4,579
Ind.	6	7	-	-	-	-	-	-	1,329	1,767
Ill.	7	24	-	-	-	-	93	200	3,678	5,076
Mich.	9	20	-	-	-	-	141	178	3,153	3,453
Wis.	9	22	-	-	-	-	36	110	1,125	1,293
W.N. CENTRAL	32	39	3	3	2	-	303	298	3,375	4,080
Minn.	12	9	3	3	-	-	92	81	464	728
Iowa	3	8	-	-	-	-	48	58	180	251
Mo.	9	11	N	N	N	N	81	80	1,730	1,950
N. Dak.	1	-	-	-	1	-	8	3	5	17
S. Dak.	2	1	-	-	-	-	12	13	31	60
Nebr.	4	7	-	-	-	-	37	31	323	317
Kans.	1	3	-	-	1	-	25	32	642	757
S. ATLANTIC	26	34	4	5	-	-	525	541	17,366	19,328
Del.	-	1	-	-	-	-	11	10	310	389
Md.	-	-	-	-	-	-	26	21	1,866	1,953
D.C.	-	-	-	-	-	-	5	11	551	647
Va.	2	3	-	-	-	-	46	31	1,880	2,294
W. Va.	-	-	-	-	-	-	5	4	193	208
N.C.	6	6	-	-	-	-	N	N	3,041	3,271
S.C.	-	-	-	-	-	-	14	3	1,729	1,828
Ga.	8	19	1	4	-	-	217	119	3,740	3,735
Fla.	10	5	3	1	-	-	201	342	4,056	5,003
E.S. CENTRAL	10	5	-	-	-	-	62	67	6,017	6,944
Ky.	1	1	-	-	-	-	N	N	806	811
Tenn.	5	3	-	-	-	-	25	26	1,839	2,208
Ala.	3	-	-	-	-	-	37	41	1,875	2,470
Miss.	1	1	-	-	-	-	-	-	1,497	1,455
W.S. CENTRAL	1	5	-	-	-	1	45	22	9,095	11,029
Ark.	1	-	-	-	-	-	27	22	820	1,006
La.	-	-	-	-	-	-	3	-	2,375	2,664
Okla.	-	-	-	-	-	-	15	-	628	924
Tex.	-	5	-	-	-	1	-	-	5,272	6,435
MOUNTAIN	25	20	4	1	1	-	271	276	2,172	2,564
Mont.	1	4	-	-	-	-	6	14	29	32
Idaho	6	1	2	-	-	-	33	8	18	24
Wyo.	-	-	-	1	-	-	3	2	11	16
Colo.	7	2	1	-	1	-	76	103	545	908
N. Mex.	-	2	1	-	-	-	11	27	164	347
Ariz.	8	4	N	N	N	N	57	45	990	789
Utah	3	4	-	-	-	-	59	45	77	27
Nev.	-	3	-	-	-	-	26	32	338	421
PACIFIC	36	34	1	1	-	-	586	711	6,010	6,673
Wash.	11	5	-	-	-	-	36	50	648	688
Oreg.	4	7	1	1	-	-	74	106	211	208
Calif.	21	21	-	-	-	-	441	508	4,859	5,503
Alaska	-	-	-	-	-	-	16	18	87	148
Hawaii	-	1	-	-	-	-	19	29	205	126
Guam	N	N	-	-	-	-	-	-	-	-
P.R.	-	-	-	-	-	-	2	-	22	3
V.I.	-	-	-	-	-	-	-	-	-	18
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.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 22, 2003, and March 23, 2002 (12th Week)*

Reporting area	*Haemophilus influenzae*, invasive								Hepatitis (viral, acute), by type	
	All ages		Age <5 years							
	All serotypes		Serotype B		Non-serotype B		Unknown serotype		A	
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	305	445	2	4	44	78	8	4	1,146	2,302
NEW ENGLAND	24	36	-	-	1	5	1	-	37	91
Maine	1	1	-	-	-	-	-	-	2	3
N.H.	4	4	-	-	-	-	-	-	3	5
Vt.	4	2	-	-	-	-	-	-	1	-
Mass.	9	19	-	-	1	3	1	-	23	48
R.I.	-	-	-	-	-	-	-	-	2	4
Conn.	6	10	-	-	-	2	-	-	6	31
MID. ATLANTIC	47	80	-	1	7	11	2	-	126	255
Upstate N.Y.	23	33	-	1	6	4	1	-	22	44
N.Y. City	6	17	-	-	1	4	-	-	72	114
N.J.	8	25	-	-	-	3	-	-	17	44
Pa.	10	5	-	-	-	-	1	-	15	53
E.N. CENTRAL	29	72	1	1	5	10	-	-	125	289
Ohio	16	31	-	-	4	3	-	-	32	73
Ind.	8	6	-	-	1	1	-	-	6	12
Ill.	1	31	-	-	-	6	-	-	34	109
Mich.	4	4	1	1	-	-	-	-	44	55
Wis.	-	-	-	-	-	-	-	-	9	40
W.N. CENTRAL	22	12	-	-	3	1	2	2	36	88
Minn.	9	9	-	-	3	1	-	1	4	8
Iowa	-	1	-	-	-	-	-	-	11	21
Mo.	8	2	-	-	-	-	2	1	7	17
N. Dak.	-	-	-	-	-	-	-	-	-	-
S. Dak.	1	-	-	-	-	-	-	-	-	2
Nebr.	-	-	-	-	-	-	-	-	4	6
Kans.	4	-	-	-	-	-	-	-	10	34
S. ATLANTIC	71	107	-	-	5	21	-	-	329	606
Del.	-	-	-	-	-	-	-	-	1	6
Md.	17	28	-	-	1	-	-	-	40	83
D.C.	-	-	-	-	-	-	-	-	4	22
Va.	4	8	-	-	1	2	-	-	11	13
W. Va.	2	1	-	-	-	-	-	-	4	5
N.C.	5	10	-	-	-	1	-	-	20	89
S.C.	1	3	-	-	-	1	-	-	12	12
Ga.	16	34	-	-	2	11	-	-	126	87
Fla.	26	23	-	-	1	6	-	-	111	289
E.S. CENTRAL	24	20	-	1	3	4	-	-	36	80
Ky.	2	2	-	-	-	-	-	-	7	16
Tenn.	10	9	-	-	2	2	-	-	17	35
Ala.	11	5	-	1	1	2	-	-	9	8
Miss.	1	4	-	-	-	-	-	-	3	21
W.S. CENTRAL	18	21	-	1	2	4	-	-	47	180
Ark.	3	1	-	-	-	-	-	-	-	13
La.	4	2	-	-	-	-	-	-	7	7
Okla.	11	17	-	-	2	4	-	-	4	10
Tex.	-	1	-	1	-	-	-	-	36	150
MOUNTAIN	51	51	1	-	12	10	2	1	88	167
Mont.	-	-	-	-	-	-	-	-	1	5
Idaho	-	1	-	-	-	-	-	-	-	10
Wyo.	-	1	-	-	-	-	-	-	-	2
Colo.	10	11	-	-	3	1	-	-	7	23
N. Mex.	5	11	-	-	2	4	1	-	5	4
Ariz.	29	17	1	-	5	3	-	-	59	88
Utah	5	7	-	-	2	1	-	-	5	14
Nev.	2	3	-	-	-	1	1	1	11	21
PACIFIC	19	46	-	-	6	12	1	1	322	546
Wash.	3	-	-	-	2	-	1	-	13	36
Oreg.	12	24	-	-	3	4	-	-	21	31
Calif.	1	12	-	-	1	7	-	1	283	463
Alaska	-	1	-	-	-	1	-	-	3	6
Hawaii	3	9	-	-	-	-	-	-	2	10
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	-	-	-	-	-	-	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 22, 2003, and March 23, 2002 (12th Week)*

Reporting area	Hepatitis (viral, acute), by type				Legionellosis		Listeriosis		Lyme disease	
	B		C							
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	1,298	1,398	337	423	189	162	78	87	854	1,113
NEW ENGLAND	42	49	-	10	8	6	5	10	30	111
Maine	-	1	-	-	-	-	-	2	-	-
N.H.	2	4	-	-	-	1	1	2	1	13
Vt.	1	2	-	4	1	-	-	-	3	1
Mass.	37	30	-	6	2	3	2	4	1	90
R.I.	-	-	-	-	1	-	-	-	8	3
Conn.	2	12	-	-	4	2	2	2	17	4
MID. ATLANTIC	211	316	19	19	22	37	8	11	665	826
Upstate N.Y.	17	26	8	12	12	7	2	4	409	506
N.Y. City	69	171	-	-	4	1	3	2	-	32
N.J.	115	73	-	3	2	10	2	1	82	162
Pa.	10	46	11	4	4	19	1	4	174	126
E.N. CENTRAL	99	121	28	27	48	60	7	15	10	31
Ohio	36	21	3	-	25	29	2	7	7	4
Ind.	-	4	1	-	3	4	1	-	3	2
Ill.	-	14	2	7	2	5	-	1	-	-
Mich.	51	74	22	20	18	15	4	4	-	-
Wis.	12	8	-	-	-	7	-	3	U	25
W.N. CENTRAL	59	55	60	186	6	8	2	2	17	9
Minn.	4	1	1	-	2	1	1	-	13	3
Iowa	4	6	-	1	2	-	-	-	2	3
Mo.	34	29	59	182	1	3	-	1	1	3
N. Dak.	-	-	-	-	-	-	-	1	-	-
S. Dak.	1	-	-	-	-	1	-	-	-	-
Nebr.	11	10	-	3	-	3	1	-	-	-
Kans.	5	9	-	-	1	-	-	-	1	-
S. ATLANTIC	430	381	57	27	64	19	21	11	99	92
Del.	2	4	-	3	-	3	-	-	21	17
Md.	26	37	4	3	13	6	4	1	53	59
D.C.	-	3	-	-	1	-	-	-	1	4
Va.	21	33	-	-	2	2	1	1	4	-
W. Va.	1	6	-	-	N	N	-	-	-	-
N.C.	39	44	3	4	5	3	5	1	12	9
S.C.	17	9	16	3	1	2	1	2	-	1
Ga.	174	139	3	2	7	3	4	3	2	-
Fla.	150	106	31	12	35	-	6	3	6	2
E.S. CENTRAL	72	81	21	56	4	5	4	5	3	3
Ky.	13	10	2	1	-	3	-	1	1	1
Tenn.	24	33	1	11	2	-	-	2	2	-
Ala.	18	21	4	2	1	2	3	2	-	-
Miss.	17	17	14	42	1	-	1	-	-	2
W.S. CENTRAL	39	108	82	72	8	4	1	8	2	15
Ark.	1	34	-	5	-	-	-	-	-	-
La.	18	12	12	4	-	1	-	-	2	1
Okla.	8	1	-	-	2	-	1	3	-	-
Tex.	12	61	70	63	6	3	-	5	-	14
MOUNTAIN	134	91	14	7	11	6	10	8	5	3
Mont.	4	2	1	-	-	1	1	-	-	-
Idaho	-	-	-	-	1	-	-	-	1	-
Wyo.	1	4	-	2	1	-	-	-	-	-
Colo.	18	17	9	1	2	2	5	2	1	-
N. Mex.	5	16	-	-	-	1	-	-	-	1
Ariz.	78	36	3	-	3	-	4	4	-	1
Utah	10	6	-	-	2	2	-	2	2	1
Nev.	18	10	1	4	2	-	-	-	1	-
PACIFIC	212	196	56	19	18	17	20	17	23	23
Wash.	12	11	1	2	1	-	1	1	-	-
Oreg.	34	35	3	7	N	N	1	1	6	1
Calif.	161	145	10	10	17	17	18	15	17	22
Alaska	4	3	41	-	-	-	-	-	-	-
Hawaii	1	2	1	-	-	-	-	-	N	N
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	1	-	-	-	-	-	-	-	N	N
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. -: No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 22, 2003, and March 23, 2002 (12th Week)*

Reporting area	Malaria		Meningococcal disease		Pertussis		Rabies, animal		Rocky Mountain spotted fever	
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	179	242	402	482	892	1,328	724	1,308	51	65
NEW ENGLAND	5	15	19	33	140	196	78	145	1	-
Maine	1	1	1	2	-	3	6	10	-	-
N.H.	1	4	1	4	9	1	3	3	-	-
Vt.	-	-	-	3	16	30	6	28	-	-
Mass.	3	6	15	19	115	157	31	43	1	-
R.I.	-	-	-	2	-	-	4	6	-	-
Conn.	-	4	2	3	-	5	28	55	-	-
MID. ATLANTIC	31	56	25	47	87	74	52	168	1	6
Upstate N.Y.	9	8	8	12	58	58	52	105	-	-
N.Y. City	15	29	7	7	-	5	-	5	-	-
N.J.	2	11	3	9	6	-	-	24	1	-
Pa.	5	8	7	19	23	11	-	34	-	6
E.N. CENTRAL	12	31	51	67	80	182	5	3	1	2
Ohio	5	7	20	24	59	109	-	1	1	2
Ind.	-	1	13	11	7	12	2	1	-	-
Ill.	1	10	-	9	-	24	1	1	-	-
Mich.	6	9	15	14	10	18	2	-	-	-
Wis.	-	4	3	9	4	19	-	-	-	-
W.N. CENTRAL	6	18	38	45	58	114	102	72	2	4
Minn.	4	7	8	7	27	32	6	7	-	-
Iowa	2	2	5	5	7	27	15	7	1	-
Mo.	-	4	20	20	10	33	-	1	1	4
N. Dak.	-	-	-	-	-	-	14	-	-	-
S. Dak.	-	-	-	2	1	5	6	18	-	-
Nebr.	-	2	2	7	1	2	17	-	-	-
Kans.	-	3	3	4	12	15	44	39	-	-
S. ATLANTIC	55	68	83	73	119	82	396	459	43	47
Del.	-	1	7	3	1	1	-	3	-	-
Md.	19	19	8	2	16	12	2	84	5	8
D.C.	1	2	-	-	-	-	-	-	-	-
Va.	6	4	4	10	28	22	112	123	1	1
W. Va.	2	-	1	-	1	1	15	31	-	-
N.C.	5	6	6	11	42	11	152	120	34	28
S.C.	1	2	3	10	2	18	28	17	2	5
Ga.	4	33	12	9	14	11	63	59	-	5
Fla.	17	1	42	28	15	6	24	22	1	-
E.S. CENTRAL	6	5	19	21	20	44	12	114	1	5
Ky.	1	1	-	3	3	9	7	6	-	-
Tenn.	3	1	3	5	7	25	-	108	1	3
Ala.	2	1	6	9	8	3	5	-	-	2
Miss.	-	2	10	4	2	7	-	-	-	-
W.S. CENTRAL	9	2	62	68	24	269	46	265	-	1
Ark.	1	-	4	9	-	157	17	-	-	-
La.	1	2	18	5	3	1	-	-	-	-
Okla.	-	-	4	6	2	10	29	23	-	-
Tex.	7	-	36	48	19	101	-	242	-	1
MOUNTAIN	9	7	15	33	184	149	15	31	1	-
Mont.	-	-	1	1	-	2	2	-	-	-
Idaho	1	-	-	-	6	21	-	-	-	-
Wyo.	-	-	-	-	16	4	-	1	-	-
Colo.	7	2	4	10	81	80	-	-	-	-
N. Mex.	-	-	2	1	13	20	-	-	-	-
Ariz.	1	2	6	10	44	12	13	30	1	-
Utah	-	2	-	1	18	7	-	-	-	-
Nev.	-	1	2	10	6	3	-	-	-	-
PACIFIC	46	40	90	95	180	218	18	51	1	-
Wash.	5	1	8	14	54	66	-	-	-	-
Oreg.	5	-	21	17	59	14	-	-	-	-
Calif.	36	36	58	60	67	133	17	32	1	-
Alaska	-	1	-	1	-	1	1	19	-	-
Hawaii	-	2	3	3	-	4	-	-	-	-
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	-	-	-	-	-	-	13	-	N	N
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 22, 2003, and March 23, 2002 (12th Week)*

Reporting area	Salmonellosis		Shigellosis		Streptococcal disease, invasive, group A		*Streptococcus pneumoniae*, invasive			
							Drug resistant, all ages		Age <5 years	
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002
UNITED STATES	4,915	6,161	3,874	3,085	1,209	1,127	597	551	82	45
NEW ENGLAND	217	301	63	54	67	59	2	1	1	1
Maine	13	41	2	2	8	10	-	-	-	-
N.H.	14	13	-	3	7	16	-	-	N	N
Vt.	3	14	-	-	6	1	2	1	1	1
Mass.	127	165	39	41	45	32	N	N	N	N
R.I.	16	5	2	-	1	-	-	-	-	-
Conn.	44	63	20	8	-	-	-	-	-	-
MID. ATLANTIC	394	795	222	186	152	183	26	27	21	11
Upstate N.Y.	108	147	50	23	94	80	19	27	16	11
N.Y. City	155	210	72	77	20	36	U	U	U	U
N.J.	43	227	58	42	12	48	N	N	N	N
Pa.	88	211	42	44	26	19	7	-	5	-
E.N. CENTRAL	669	1,057	255	424	268	274	124	38	38	22
Ohio	230	277	64	211	93	50	85	-	33	-
Ind.	53	50	26	13	21	8	39	36	5	6
Ill.	214	439	97	131	48	99	-	2	-	-
Mich.	110	163	51	38	105	78	N	N	N	N
Wis.	62	128	17	31	1	39	N	N	-	16
W.N. CENTRAL	332	424	176	295	104	69	77	138	11	9
Minn.	96	81	19	32	42	27	-	75	11	8
Iowa	72	56	8	28	-	-	N	N	N	N
Mo.	88	178	57	34	21	20	4	3	-	1
N. Dak.	6	5	-	-	3	-	3	-	-	-
S. Dak.	17	19	8	104	12	3	-	1	-	-
Nebr.	21	29	68	71	15	7	4	19	N	N
Kans.	32	56	16	26	11	12	66	40	N	N
S. ATLANTIC	1,414	1,593	1,695	1,149	213	182	318	269	2	1
Del.	7	12	71	3	3	-	-	3	N	N
Md.	131	119	141	134	77	25	-	-	-	-
D.C.	6	18	11	15	4	3	-	24	-	1
Va.	99	124	55	239	12	14	N	N	N	N
W. Va.	8	6	-	2	5	-	16	10	2	-
N.C.	246	218	161	64	28	48	N	N	U	U
S.C.	67	68	42	10	4	13	23	53	N	N
Ga.	338	363	633	422	21	50	103	105	N	N
Fla.	512	665	581	260	59	29	176	74	N	N
E.S. CENTRAL	323	309	185	220	35	34	22	51	-	-
Ky.	63	37	34	41	5	5	1	7	N	N
Tenn.	107	95	54	14	30	29	21	44	N	N
Ala.	103	98	72	79	-	-	-	-	N	N
Miss.	50	79	25	86	-	-	-	-	-	-
W.S. CENTRAL	237	393	473	217	58	64	17	11	9	-
Ark.	56	59	10	28	1	-	3	2	-	-
La.	52	58	51	26	1	1	14	9	7	-
Okla.	40	54	151	54	23	11	N	N	2	-
Tex.	89	222	261	109	33	52	N	N	-	-
MOUNTAIN	369	352	222	96	167	98	10	16	-	1
Mont.	25	7	1	-	-	-	-	-	-	-
Idaho	31	21	3	2	8	1	N	N	N	N
Wyo.	4	13	1	1	-	3	3	7	-	-
Colo.	104	101	36	27	61	33	-	-	-	-
N. Mex.	31	53	33	12	39	33	7	9	-	-
Ariz.	120	83	131	39	53	22	-	-	N	N
Utah	33	28	8	8	6	6	-	-	-	1
Nev.	21	46	9	7	-	-	-	-	-	-
PACIFIC	960	937	583	444	145	164	1	-	-	-
Wash.	71	35	36	15	-	26	-	-	N	N
Oreg.	65	59	16	29	N	N	N	N	N	N
Calif.	771	782	517	386	121	123	N	N	N	N
Alaska	23	16	3	1	-	-	-	-	N	N
Hawaii	30	45	11	13	24	15	1	-	-	-
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	3	-	-	-	N	N	N	N	N	N
V.I.	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-	U

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending March 22, 2003, and March 23, 2002 (12th Week)*

Reporting area	Syphilis: Primary & secondary		Syphilis: Congenital		Tuberculosis		Typhoid fever		Varicella (Chickenpox)
	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003	Cum. 2002	Cum. 2003
UNITED STATES	1,373	1,375	68	94	1,282	2,190	49	68	23,535
NEW ENGLAND	35	16	-	-	42	79	4	5	540
Maine	-	-	-	-	-	4	-	-	272
N.H.	3	-	-	-	3	3	-	-	-
Vt.	-	-	-	-	-	1	-	-	209
Mass.	26	10	-	-	30	28	1	4	57
R.I.	5	2	-	-	3	16	2	-	2
Conn.	1	4	-	-	6	27	1	1	-
MID. ATLANTIC	141	142	10	12	284	365	5	22	1
Upstate N.Y.	5	4	5	1	35	47	2	2	N
N.Y. City	71	83	4	4	217	183	2	11	-
N.J.	38	33	1	7	-	84	1	7	-
Pa.	27	22	-	-	32	51	-	2	1
E.N. CENTRAL	197	274	21	13	200	191	3	8	22,358
Ohio	46	43	2	-	25	24	-	3	394
Ind.	5	13	3	-	27	20	1	1	-
Ill.	63	78	11	12	105	96	-	1	-
Mich.	81	134	5	1	40	37	2	2	1,078
Wis.	2	6	-	-	3	14	-	1	20,886
W.N. CENTRAL	33	18	-	-	75	95	-	3	8
Minn.	10	8	-	-	30	43	-	2	N
Iowa	2	-	-	-	5	-	-	-	-
Mo.	12	5	-	-	13	30	-	1	-
N. Dak.	-	-	-	-	-	-	-	-	8
S. Dak.	-	-	-	-	9	5	-	-	-
Nebr.	-	2	-	-	2	1	-	-	-
Kans.	9	3	-	-	16	16	-	-	-
S. ATLANTIC	379	339	8	23	193	440	11	10	591
Del.	1	4	-	-	-	-	-	-	1
Md.	61	36	-	2	31	45	2	1	-
D.C.	6	10	1	-	-	-	-	-	7
Va.	19	8	1	-	40	48	5	-	116
W. Va.	-	-	-	-	3	6	-	-	436
N.C.	40	77	3	6	28	41	1	-	N
S.C.	27	30	1	3	36	28	-	-	31
Ga.	75	51	-	6	42	72	1	5	-
Fla.	150	123	2	6	13	200	2	4	-
E.S. CENTRAL	92	144	10	9	129	140	2	2	-
Ky.	16	15	1	2	19	20	-	2	N
Tenn.	41	57	5	3	37	67	-	-	N
Ala.	29	53	4	2	58	39	2	-	-
Miss.	6	19	-	2	15	14	-	-	-
W.S. CENTRAL	179	174	8	24	34	411	-	4	3
Ark.	10	10	-	-	17	19	-	-	-
La.	21	34	-	-	-	-	-	-	3
Okla.	9	16	-	-	17	24	-	-	N
Tex.	139	114	8	24	-	368	-	4	-
MOUNTAIN	63	58	8	4	41	51	2	2	34
Mont.	-	-	-	-	-	-	-	-	N
Idaho	1	1	-	-	1	-	-	-	N
Wyo.	-	-	-	-	1	1	-	-	2
Colo.	3	5	2	1	12	16	2	1	-
N. Mex.	7	6	-	-	-	9	-	-	-
Ariz.	48	45	6	3	21	16	-	-	-
Utah	2	-	-	-	6	5	-	1	32
Nev.	2	1	-	-	-	4	-	-	-
PACIFIC	254	210	3	9	284	418	22	12	-
Wash.	16	11	-	-	49	48	-	-	-
Oreg.	12	4	-	-	14	22	2	2	-
Calif.	220	194	3	9	184	302	20	10	-
Alaska	-	-	-	-	13	18	-	-	-
Hawaii	6	1	-	-	24	28	-	-	-
Guam	-	-	-	-	-	-	-	-	-
P.R.	33	4	1	-	-	-	-	-	20
V.I.	-	1	-	-	-	-	-	-	-
Amer. Samoa	U	U	U	U	U	U	U	U	U
C.N.M.I.	-	U	-	U	-	U	-	U	-

N: Not notifiable. U: Unavailable. - : No reported cases.
* Incidence data for reporting years 2002 and 2003 are provisional and cumulative (year-to-date).

TABLE III. Deaths in 122 U.S. cities,* week ending March 22, 2003 (12th Week)

Reporting Area	All causes, by age (years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	502	371	91	24	11	5	40
Boston, Mass.	174	126	33	7	3	5	14
Bridgeport, Conn.	37	27	8	2	-	-	2
Cambridge, Mass.	12	9	2	1	-	-	-
Fall River, Mass.	19	16	2	-	1	-	2
Hartford, Conn.	U	U	U	U	U	U	U
Lowell, Mass.	32	23	5	2	2	-	4
Lynn, Mass.	13	10	3	-	-	-	2
New Bedford, Mass.	32	26	5	1	-	-	6
New Haven, Conn.	U	U	U	U	U	U	U
Providence, R.I.	66	52	12	1	1	-	1
Somerville, Mass.	3	2	-	-	1	-	-
Springfield, Mass.	37	23	5	6	3	-	1
Waterbury, Conn.	33	21	9	3	-	-	3
Worcester, Mass.	44	36	7	1	-	-	5
MID. ATLANTIC	2,343	1,676	434	150	36	43	141
Albany, N.Y.	48	37	4	5	1	1	1
Allentown, Pa.	26	19	6	-	1	-	1
Buffalo, N.Y.	87	61	16	1	1	8	12
Camden, N.J.	23	15	5	2	-	1	1
Elizabeth, N.J.	12	7	1	4	-	-	3
Erie, Pa.	49	36	13	-	-	-	4
Jersey City, N.J.	44	31	12	1	-	-	-
New York City, N.Y.	1,290	933	231	79	18	26	69
Newark, N.J.	42	23	10	8	1	-	3
Paterson, N.J.	27	14	1	10	2	-	2
Philadelphia, Pa.	281	189	58	22	6	5	11
Pittsburgh, Pa.§	34	21	10	2	1	-	1
Reading, Pa.	21	14	5	2	-	-	2
Rochester, N.Y.	146	115	23	5	2	1	13
Schenectady, N.Y.	20	14	4	2	-	-	4
Scranton, Pa.	34	22	8	2	2	-	4
Syracuse, N.Y.	86	69	13	2	1	1	5
Trenton, N.J.	19	16	2	1	-	-	-
Utica, N.Y.	25	19	6	-	-	-	1
Yonkers, N.Y.	29	21	6	2	-	-	4
E.N. CENTRAL	2,016	1,393	405	115	45	57	146
Akron, Ohio	46	33	6	3	4	-	2
Canton, Ohio	45	38	6	-	1	-	6
Chicago, Ill.	350	214	75	29	15	17	18
Cincinnati, Ohio	75	53	11	5	3	3	3
Cleveland, Ohio	143	89	41	6	4	3	7
Columbus, Ohio	181	128	32	15	2	4	16
Dayton, Ohio	142	108	24	6	2	2	10
Detroit, Mich.	207	128	55	15	6	2	22
Evansville, Ind.	47	34	10	3	-	-	3
Fort Wayne, Ind.	62	43	11	4	-	4	3
Gary, Ind.	19	9	8	2	-	-	-
Grand Rapids, Mich.	51	38	9	1	1	2	8
Indianapolis, Ind.	172	120	35	9	2	6	10
Lansing, Mich.	52	33	14	1	1	3	3
Milwaukee, Wis.	108	77	23	5	1	2	10
Peoria, Ill.	62	48	12	1	-	1	4
Rockford, Ill.	54	41	7	4	-	2	6
South Bend, Ind.	45	35	6	1	1	2	2
Toledo, Ohio	86	67	10	3	2	4	11
Youngstown, Ohio	69	57	10	2	-	-	2
W.N. CENTRAL	623	428	125	33	15	22	50
Des Moines, Iowa	91	65	19	1	2	4	12
Duluth, Minn.	37	26	7	2	1	1	3
Kansas City, Kans.	28	22	4	2	-	-	3
Kansas City, Mo.	84	56	17	4	1	6	2
Lincoln, Nebr.	52	39	8	2	3	-	6
Minneapolis, Minn.	79	52	16	6	3	2	6
Omaha, Nebr.	103	65	21	11	2	4	10
St. Louis, Mo.	U	U	U	U	U	U	U
St. Paul, Minn.	52	39	11	1	-	1	3
Wichita, Kans.	97	64	22	4	3	4	5
S. ATLANTIC	1,562	970	339	159	55	37	103
Atlanta, Ga.	352	204	82	32	17	17	11
Baltimore, Md.	260	170	58	24	5	3	29
Charlotte, N.C.	118	73	27	12	2	3	10
Jacksonville, Fla.	138	67	24	33	13	1	5
Miami, Fla.	142	93	30	14	4	1	16
Norfolk, Va.	49	33	10	2	1	3	-
Richmond, Va.	71	38	21	6	4	2	5
Savannah, Ga.	66	49	9	5	3	-	1
St. Petersburg, Fla.	76	44	17	11	3	1	5
Tampa, Fla.	177	121	35	15	3	2	13
Washington, D.C.	100	69	22	5	-	4	4
Wilmington, Del.	13	9	4	-	-	-	4
E.S. CENTRAL	1,044	708	233	63	15	25	94
Birmingham, Ala.	181	116	44	14	4	3	17
Chattanooga, Tenn.	79	61	12	5	-	1	4
Knoxville, Tenn.	138	100	27	6	4	1	7
Lexington, Ky.	103	70	27	4	1	1	6
Memphis, Tenn.	196	118	50	10	2	16	31
Mobile, Ala.	123	89	25	5	2	2	7
Montgomery, Ala.	54	42	5	6	1	-	9
Nashville, Tenn.	170	112	43	13	1	1	13
W.S. CENTRAL	1,674	1,045	350	123	88	68	162
Austin, Tex.	77	56	15	3	2	1	9
Baton Rouge, La.	34	22	6	4	2	-	-
Corpus Christi, Tex.	40	29	10	-	-	1	3
Dallas, Tex.	217	125	51	15	11	15	18
El Paso, Tex.	90	57	18	8	7	-	2
Ft. Worth, Tex.	121	85	27	5	1	3	15
Houston, Tex.	488	271	86	52	53	26	42
Little Rock, Ark.	75	52	15	5	2	1	4
New Orleans, La.	U	U	U	U	U	U	U
San Antonio, Tex.	218	141	53	14	2	8	23
Shreveport, La.	199	138	42	5	8	6	32
Tulsa, Okla.	115	69	27	12	-	7	14
MOUNTAIN	873	604	170	57	27	14	69
Albuquerque, N.M.	133	91	29	8	5	-	6
Boise, Idaho	55	40	9	2	1	3	5
Colo. Springs, Colo.	32	18	6	5	2	1	1
Denver, Colo.	100	68	17	8	5	2	17
Las Vegas, Nev.	217	132	56	14	8	6	12
Ogden, Utah	26	23	1	1	-	1	4
Phoenix, Ariz.	U	U	U	U	U	U	U
Pueblo, Colo.	36	27	5	4	-	-	5
Salt Lake City, Utah	100	70	20	6	4	-	7
Tucson, Ariz.	174	135	27	9	2	1	12
PACIFIC	1,553	1,084	289	108	46	25	113
Berkeley, Calif.	20	15	5	-	-	-	2
Fresno, Calif.	89	53	20	10	4	2	8
Glendale, Calif.	17	15	1	1	-	-	1
Honolulu, Hawaii	75	60	10	5	-	-	8
Long Beach, Calif.	76	46	17	2	8	3	8
Los Angeles, Calif.	450	297	84	42	18	9	29
Pasadena, Calif.	23	19	1	1	-	2	5
Portland, Oreg.	104	75	22	1	3	3	6
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	128	83	28	12	3	1	14
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	242	187	31	15	6	3	-
Santa Cruz, Calif.	34	28	6	-	-	-	4
Seattle, Wash.	120	78	31	10	-	1	11
Spokane, Wash.	48	37	7	2	1	1	4
Tacoma, Wash.	127	91	26	7	3	-	13
TOTAL	12,190¶	8,279	2,436	832	338	296	918

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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