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Severe Acute Respiratory Syndrome — Taiwan, 2003

On April 22, 2003, the Taiwan Department of Health (DOH) was notified of seven cases of severe acute respiratory syndrome (SARS) among health-care workers (HCWs) at a large municipal hospital in Taipei (hospital A). Subsequent cases at eight hospitals have been associated with exposures at hospital A. Previously, all reported cases had been associated with persons recently returning to Taiwan from SARS-affected regions. This report summarizes epidemiologic findings of the outbreak in Taiwan and describes the impact of health-care–associated transmission of SARS.

As of May 22, a total of 483 probable cases had been reported (Figure 1). All probable SARS patients were hospitalized; 84 (17%) had been discharged, and 60 (12%) had died (Table). The median age of probable SARS patients was 43 years (range: 9 months–91 years); 341 (71%) cases were from Taipei City and Taipei County, the largest metropolitan region of the island. The first patient reported had onset of illness on February 25; the majority of cases occurred after April 21 and were associated with transmission in health-care settings.

Initial Cases (March 14–April 21)

Taiwan (2002 population: 23 million) has extensive business ties with Hong Kong and mainland China where SARS cases have been reported. The first case in Taiwan was identified on March 14 in a traveler from Guangdong Province in China. During March 14–April 21, Taiwan reported 28 probable SARS cases; of these, four resulted from secondary transmission (one HCW and three family contacts). During this period, SARS was characterized by sporadic cases among business travelers who were cared for primarily at large academic hospitals; secondary spread was limited to identified contacts. Initial actions by DOH included the formation of a SARS advisory committee, infection-control training, contact tracing and quarantine, and airport and border surveillance. Because of Taiwan's success with SARS control, in early April, the World Health Organization changed Taiwan's designation from an "affected area" to an "area with limited local transmission."

Health-Care–Associated Transmission (April 22–May 22)

Since April 22, SARS cases in Taiwan have increased and have been associated primarily with health-care settings. During April 22–May 1, the number of probable cases in Taiwan more than tripled, from 28 to 89. The source of the outbreak was hospital A, where an unrecognized SARS index patient had multiple exposures with patients, visitors, and HCWs who were not protected adequately to prevent acquisition of SARS.

Hospital A. The index patient was a laundry worker aged 42 years with diabetes mellitus and peripheral vascular disease who was employed at hospital A. On April 12, the worker had onset of fever and diarrhea and was evaluated in the emergency department (ED) on April 12, 14, and 15. The patient remained on duty and interacted frequently with patients, staff, and visitors. The patient had sleeping quarters in the hospital's basement and spent off-duty time socializing in the ED. On April 16, because of worsening symptoms, the patient was

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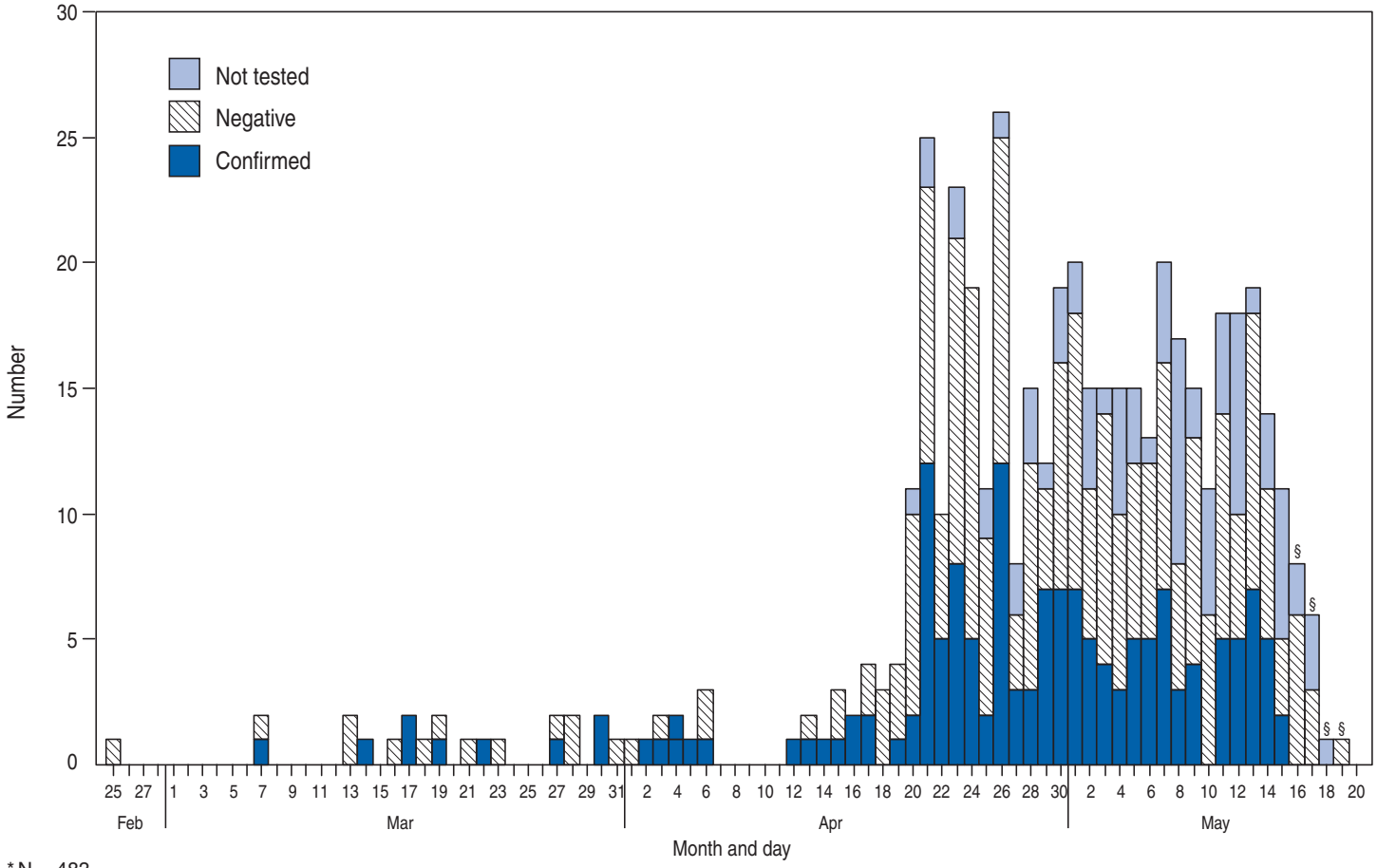
admitted to ward 8B of the hospital with a diagnosis of infectious enteritis. Stool samples revealed the presence of leukocytes, but cultures were negative. The patient was treated with intravenous antibiotics and the fever resolved. On April 18, the patient became short of breath. A chest radiograph showed bilateral infiltrates, and the patient was transferred to an isolation room in the intensive care unit for possible SARS. During the next few days, the patient had progressive respiratory failure and was intubated on April 22. A polymerase chain reaction (PCR) test was positive for SARS-associated coronavirus (SARS-CoV); the patient died on April 29. The source of infection for the patient is unknown.

The initial cluster of SARS cases reported on April 22 from hospital A included patients, visitors, and HCWs. The symptomatic HCWs included two nurses, a doctor, an administrator, a radiology technician, a nursing student, and another laundry worker. On the basis of epidemiologic links among the cases, 61 HCWs were identified and quarantined. Within 24 hours, 10 additional cases were identified from hospital A; none were from this quarantined cohort. By April 23, cases had been identified from the ED and from six different floors of the hospital, including ward 8B where the index patient had been admitted. The work location and number of case reports suggested widespread transmission. Because the index patient had been symptomatic for 6 days before SARS was diagnosed, the number of potentially exposed persons was estimated at 10,000 patients and visitors and 930 staff.

On April 23, DOH convened an emergency task force to plan the response to SARS transmission in hospital A. On April 24, hospital A was contained, and all patients, visitors, and staff were quarantined within the building. Home quarantine also was mandated for discharged patients and visitors who had been at hospital A since April 9. Inside the hospital, all recognized SARS patients were cohorted on two floors. Personal protective equipment (PPE) and disinfection materials were distributed, and active surveillance was enforced for all HCWs. However, incident SARS cases in hospital A continued to increase. During April 29–May 8, a total of 81 SARS patients were transferred to 15 hospitals throughout Taipei; it is unknown whether any of these patients were associated with secondary cases in other hospitals. All of the remaining patients (approximately 200) whose illnesses were not consistent with SARS case definitions were discharged to home quarantine or transferred to other facilities. As of May 22, a total of 137 probable cases were associated with exposures at hospital A, including 45 (33%) cases among HCWs; 26 (19%) persons died.

Secondary Clusters. To date, HCW clusters at eight additional hospitals in Taiwan have been linked to the initial out-

FIGURE 1. Number* of probable cases of severe acute respiratory syndrome, by laboratory status† and date of illness onset — Taiwan, February 25–May 22, 2003



*N = 483.
†Laboratory testing was conducted using polymerase chain reaction.
§The decline in the number of recent cases is probably caused by reporting lags.

break at hospital A. Preliminary data suggest that many of these clusters occurred when presymptomatic patients or patients with SARS symptoms attributed to other causes were discharged or transferred to other health-care facilities. SARS has now extended to multiple cities and regions of Taiwan, including several university and private hospitals (Figure 2). Four of these hospitals, including a 2,300-bed facility in southern Taiwan, have discontinued emergency and routine services. Sporadic community cases also have been reported in Taipei and southern Taiwan.

In response, DOH has reorganized its outbreak response structure, appointed a SARS task force commander, and created an emergency operations center. Efforts have focused on limiting nosocomial transmission by designating dedicated SARS hospitals throughout the island. Approximately 100 fever clinics also have been established to identify potential SARS patients and minimize risk for transmission in EDs. Patient care capacity will be expanded by the construction of 1,000 negative pressure isolation rooms; by the end of May, approximately 1,700 such rooms will be available. Campsites and military facilities have been identified to accommodate quarantined residents, and home quarantine will be enforced through web-based cameras. Screening for fever in all patients, HCWs, and visitors has been instituted at all health-care facilities. DOH also has developed an infection-control curriculum to train infection-control teams on educating and monitoring HCWs. Standard operating procedures for the management and containment of nosocomial SARS clusters are being finalized.

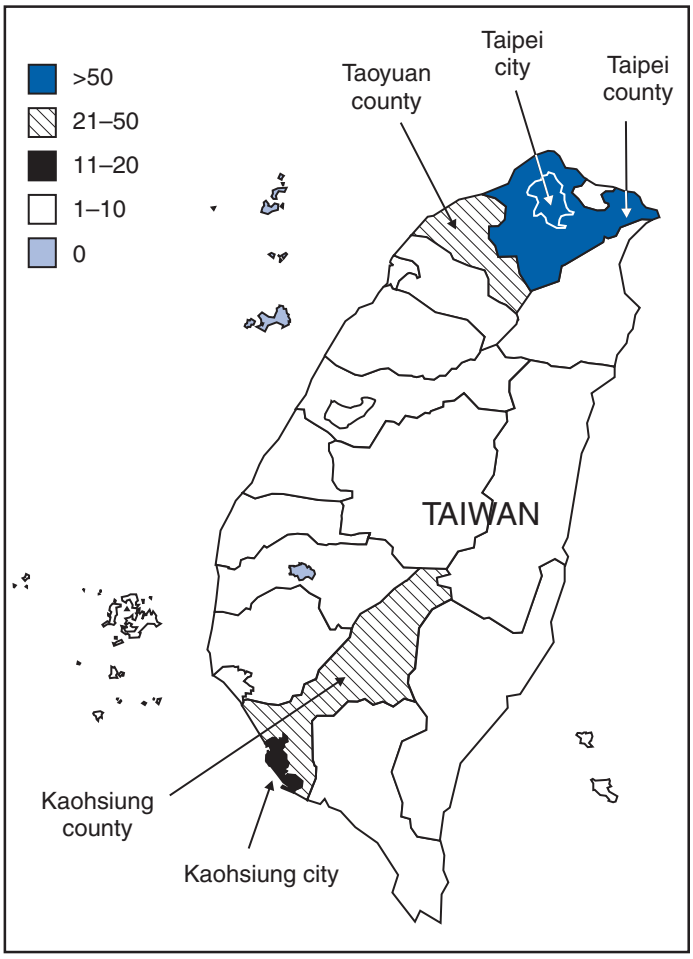
Reported by: *ML Lee, MD, CJ Chen, ScD, IJ Su, MD, KT Chen, MD, CC Yeh, MD, CC King, PhD, HL Chang, MPH, YC Wu, MD, MS Ho, MD, DD Jiang, PhD, SARS Prevention Task Force, Dept of Health, Taiwan, Republic of China. World Health Organization, Geneva, Switzerland. SARS Investigative Team; D Wong, MD, EIS Officer, CDC.*

TABLE. Number* and percentage of patients with probable severe acute respiratory syndrome (SARS), by selected characteristics — Taiwan, 2003†

Characteristics	Probable cases	
	No.	(%)
Age (yrs)		
0–4	9	(1.9)
5–17	16	(3.3)
18–64	360	(74.5)
≥65	95	(19.7)
Unknown	3	(0.6)
Sex		
Female	261	(54.0)
Male	222	(46.0)
Clinical status		
Hospitalized	339	(70.2)
Discharged	84	(17.4)
Died	60	(12.4)
SARS-associated coronavirus laboratory findings§		
Confirmed	151	(31.3)
Negative	225	(46.6)
Not tested	107	(22.2)

* N = 483.
† As of May 22.
§ Laboratory testing was conducted by using polymerase chain reaction.

FIGURE 2. Geographic distribution of probable cases of severe acute respiratory syndrome — Taiwan, 2003*



* N = 483. As of May 22.

Editorial Note: Efforts to control SARS in Taiwan appeared to be effective for approximately 5 weeks after identification of the first travel-associated case (*1*). Despite national efforts to implement extensive control measures, unrecognized cases of SARS led to nosocomial clusters and subsequent spread to other health-care facilities and community settings. These clusters resulted in substantial morbidity and mortality and resulted in the closure of several large health-care facilities. In one neighborhood in Taipei, three hospitals were affected, impacting facility access and deterring residents from seeking routine medical care.

Although nosocomial transmission of SARS has been well-documented, Taiwan's experience demonstrates that spread among HCWs can occur despite knowledge about the epidemiology and transmission of SARS. Multiple factors probably contributed to the rapid and widespread transmission in hospital A. The index patient had been symptomatic with fever and diarrhea for 6 days before SARS was suspected, and infection-control procedures were implemented. SARS infection-control guidelines focused primarily on health-care workers. However, in Taiwan, visitors include personal attendants hired by families to provide care for inpatients. Personal attendants are not routinely supplied with PPE; some personal attendants had SARS and might have contributed to disease spread.

Unrecognized cases of SARS also have been implicated in recent outbreaks at health-care facilities in Singapore (*2*). Several factors might contribute to difficulties in recognizing cases of SARS. Early symptoms of SARS are nonspecific and are associated with other more common illnesses. Patients with SARS who are immunocompromised or who have chronic conditions (e.g., diabetes mellitus or chronic renal insufficiency) might not have fever when acutely ill or have symptoms attributable to underlying disease, delaying SARS diagnosis (*2,3*). PCR tests to detect SARS-CoV are readily available in Taiwan; however, these tests might not detect the virus early during illness, and a negative test result does not rule out SARS (*4*). Finally, some patients might not reveal useful contact information (e.g., exposure to an implicated health-care facility) for fear of being stigmatized by the local community or causing their friends and families to be quarantined.

In Taiwan, exposures within health-care facilities have accelerated SARS transmission. The public health investiga-

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tion is ongoing, and the number of SARS cases associated with health-care settings will probably increase. The extensive outbreak in Taiwan underscores the need for HCW education that promotes the early recognition of SARS and the prompt implementation of appropriate infection-control procedures. These educational efforts should be directed to HCWs in all facilities, including smaller and nonacademic hospitals.

Acknowledgment

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Update: Severe Acute Respiratory Syndrome — United States, May 21, 2003

CDC continues to work with state and local health departments, the World Health Organization (WHO), and other partners to investigate cases of severe acute respiratory syndrome (SARS). This report updates SARS cases reported worldwide and in the United States and highlights recent modifications to the U.S. SARS case definition that define criteria for exclusion of previously reported SARS cases and for reporting travel-associated cases of SARS.

During November 1, 2002–May 21, 2003, a total of 7,956 SARS cases were reported to WHO from 28 countries, including the United States; 666 deaths (case-fatality proportion: 8.4%) have been reported (*1*). A total of 355 SARS cases identified in the United States have been reported from 40 states with 290 (82%) cases classified as suspect SARS and 65 (18%) classified as probable SARS (more severe illnesses characterized by the presence of pneumonia or acute respiratory distress syndrome) (Figure, Table) (*2*). One probable and nine suspect cases have been identified since the last update (*3*).

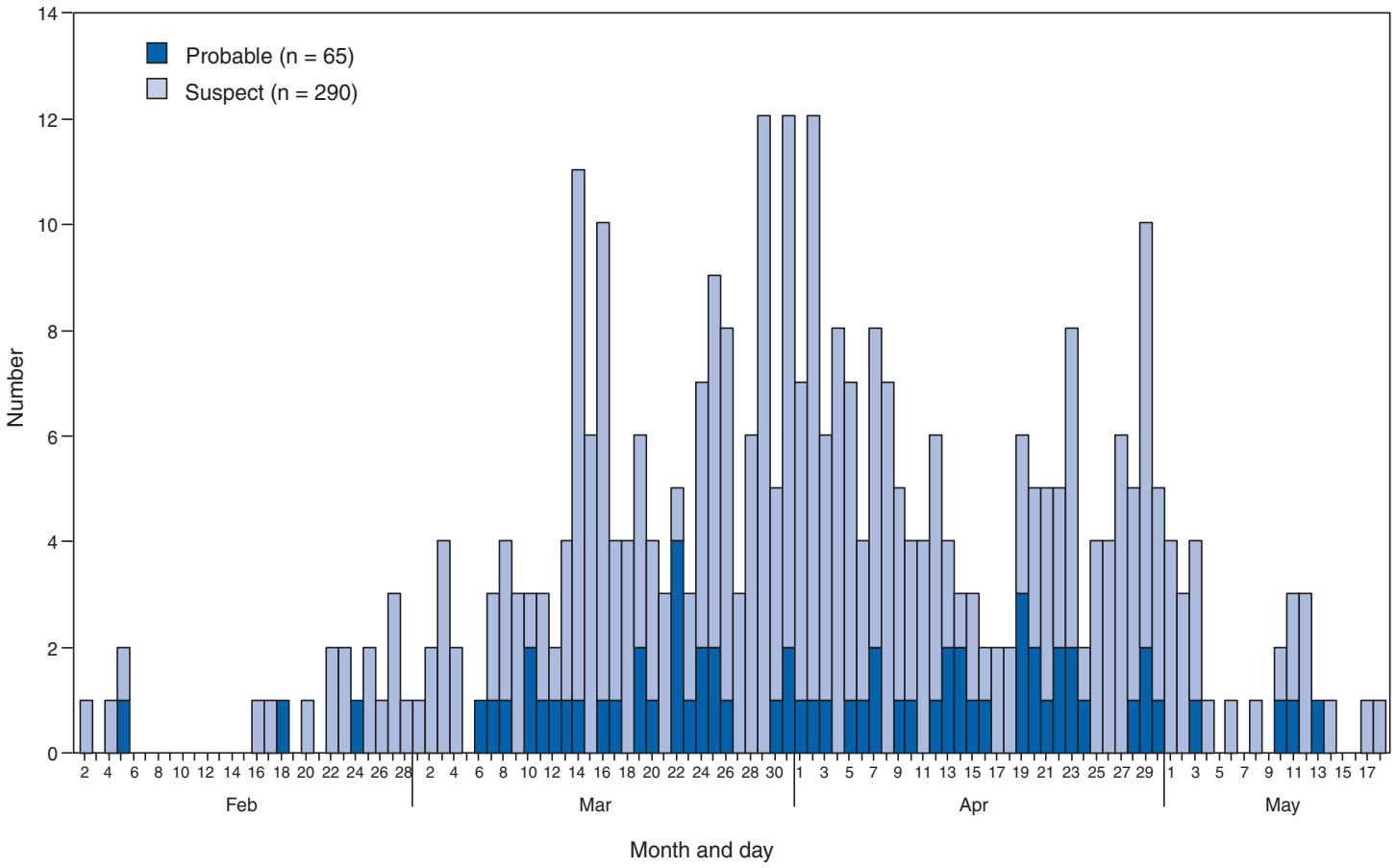
Of the 65 probable SARS patients, 41 (63%) were hospitalized, and two (3%) required mechanical ventilation. No SARS-related deaths have been reported in the United States. Of 65 probable cases, 63 (97%) were attributed to international travel to areas with documented or suspected community transmission of SARS within the 10 days before illness onset; the remaining two (3%) probable cases occurred in a health-care worker who provided care to a SARS patient and a household contact of a SARS patient. Among the 63 probable SARS cases attributed to travel, 33 (52%) patients reported travel to mainland China; 19 (30%) to Hong Kong Special Administrative Region, China; six (10%) to Singapore; two (3%) to Hanoi, Vietnam; nine (14%) to Toronto, Canada; and one (2%) to Taiwan. Of the probable SARS patients, five (8%) had visited more than one area with SARS during the 10 days before illness onset.

Laboratory testing to evaluate infection with the SARS-associated coronavirus (SARS-CoV) has been completed for 122 cases (26 probable and 96 suspect). Since the last update (*3*), the number of cases with laboratory-confirmed infection with SARS-CoV remains at six; all are probable SARS cases with no suspect SARS cases having laboratory evidence of infection with SARS-CoV. Negative findings (i.e., the absence of antibody to SARS-CoV in convalescent serum obtained >21 days after symptom onset) have been documented for 116 cases (96 suspect and 20 probable).

The number of new cases reported in the United States has been decreasing in recent weeks. The epidemiologic profile of reported cases remains unchanged with most cases associated with international travel and few instances of secondary spread to family members or other contacts. However, vigilance is critical to ensure rapid recognition and appropriate management of persons with SARS

The low specificity of the surveillance case definition captures many persons unlikely to have SARS. The CDC surveillance case definition has been revised to include interim criteria for excluding new or previously reported suspect or probable cases of SARS for whom an alternative diagnosis can fully explain the patient's illness (*2*). Factors that might be considered in assigning alternative diagnoses include the strength of the epidemiologic exposure criteria for SARS, the specificity of the diagnostic tests, and the compatibility of the clinical presentation and course of illness for the alternative diagnosis. The epidemiologic criteria for travel exposure also have been revised and now reflect updated information about the occurrence of community transmission in areas with SARS. Hanoi, Vietnam and Toronto, Canada are now considered areas with previous community transmission of SARS because >30 days have elapsed since the onset of symptoms for the

FIGURE. Number* of reported cases of severe acute respiratory syndrome, by classification and date of illness onset — United States, 2003



* N = 355.

last reported case (*4*). As a result, travel alerts for these cities were removed on May 15 and May 20, respectively. Persons reporting travel to these areas will meet the surveillance case definition if illness onset occurred within 10 days (i.e., one incubation period) after removal of the travel alert.

These revisions to the case definition are for surveillance purposes only. Clinical judgment, rather than surveillance criteria, should continue to guide the management of patients and implementation of public health response measures when persons with an unknown respiratory illness are identified.

As state and local health departments review and reclassify cases using these new criteria, case counts might change but the result will more accurately reflect the occurrence of SARS in the United States.

Reported by: *State and local health departments. SARS Investigative Team, CDC.*

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TABLE. Number* and percentage of reported severe acute respiratory syndrome (SARS) cases, by selected characteristics — United States, 2003

Characteristic	Probable cases† (n = 65) No.	(%)§	Suspect cases† (n = 290) No.	(%)§
Age (yrs)				
0–4	9	(14)	44	(15)
5–9	1	(2)	13	(4)
10–17	4	(6)	9	(3)
18–64	38	(58)	199	(69)
≥65	12	(19)	21	(7)
Unknown	1	(2)	4	(1)
Sex				
Female	26	(40)	141	(49)
Male	38	(58)	146	(50)
Unknown	1	(2)	3	(1)
Race				
White	29	(45)	156	(54)
Black	1	(2)	7	(2)
Asian	29	(45)	101	(35)
Other	2	(3)	2	(1)
Unknown	4	(6)	24	(8)
Exposure				
Travel¶	63	(97)	263	(91)
Close contact	1	(2)	23	(8)
Health-care worker	1	(2)	4	(1)
Hospitalized >24 hrs**				
Yes	41	(63)	72	(25)
No	24	(37)	212	(73)
Unknown	0	(0)	6	(2)
Required mechanical ventilation				
Yes	2	(3)	2	(1)
No	59	(91)	283	(98)
Unknown	4	(6)	5	(2)
SARS-associated coronarivus laboratory findings				
Confirmed	6	(9)	0	(0)
Negative	20	(31)	96	(33)
Undetermined††	39	(60)	194	(67)

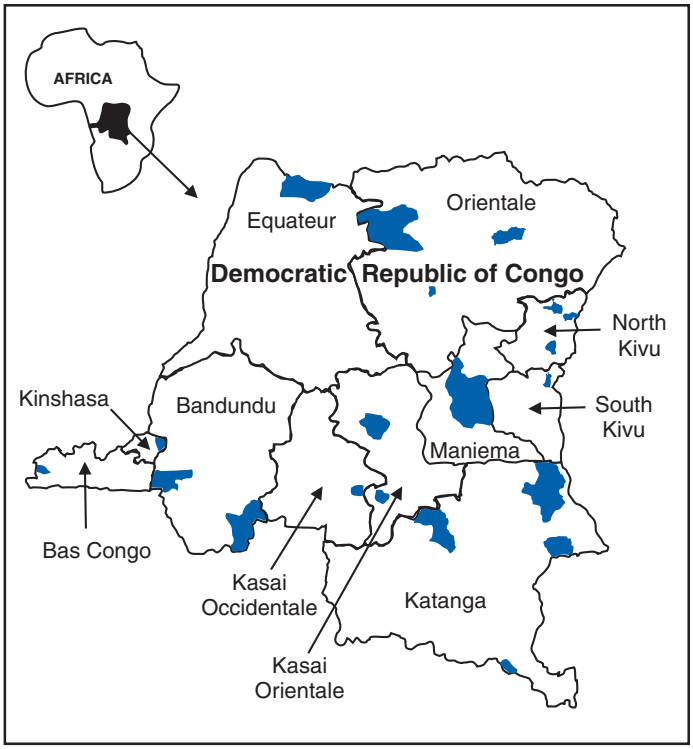
* N = 355.
† CDC. Updated interim U.S. case definition of severe acute respiratory syndrome (SARS). Available at http://www.cdc.gov/ncidod/sars/casedefinition.htm.
§ Percentages might not total 100% because of rounding.
¶ To mainland China; Hong Kong Special Administrative Region, China; Hanoi, Vietnam; Singapore; Toronto, Canada; or Taiwan.
** As of May 21, no SARS-related deaths have been reported in the United States.
†† Collection and/or laboratory testing of specimens has not been completed.

Elevated Mortality Associated With Armed Conflict — Democratic Republic of Congo, 2002

In August 1998, citing a need to control insecurity on their western borders, Rwanda and Uganda sent troops into the Democratic Republic of Congo (DRC) (estimated 2002 population: 51 million). Within 6 months, troops from seven neighboring countries were fighting in the DRC, with various Congolese groups supporting different invading armies (*1*). During 1998–2002, the majority of the fighting occurred in the DRC's five eastern provinces (1996 population: 19.9 million). To assess the impact of the armed conflict on public health, the International Rescue Committee (IRC), with support from CDC, conducted a nationwide mortality survey to measure DRC's nationwide crude mortality rate (CMR) and to compare CMRs in DRC's five eastern provinces with CMRs in the five western provinces. This report summarizes the results of the survey, which indicate that the overall CMR in the DRC is the highest in the world, with the majority of deaths caused by preventable infectious diseases. The findings underscore the importance of the ongoing peace process, which appears to have contributed to a decrease in mortality rates in eastern DRC, and highlights the importance of collecting population-based health data regularly during armed conflicts.

Conducted during September 14–November 13, 2002, the survey employed a three-stage cluster approach to measure CMRs. In the first stage, 20 health zones were selected systematically proportional to the population: 10 in the war-affected areas of the five eastern provinces (Katanga, Maniema, North Kivu, Orientale, and South Kivu) and 10 in the five western provinces (Bandundu, Bas Congo, Equateur, Kasai Occidentale, and Kasai Orientale) (Figure). Of approximately 14.3 million persons in the war-affected areas of the five eastern provinces, 5 million (35%) could not be visited because of ongoing fighting, and the health zones in which these persons live were excluded from the site selection process. All health zones in the five western provinces were available for selection. In the second stage, 15 locations were selected in each targeted health zone, with the probability of selection proportional to population; the locations comprised the smallest known population units (i.e., specific avenues, clinic areas, or villages). In the final stage, a specific household was selected by using one of three methods: 1) counting all households in the selected population and selecting one at random; 2) dividing the selected population into roughly equal segments, selecting one segment at random, counting the households in that segment, and selecting one at random; or 3) selecting a random point in space by using a map and a global positioning system unit if the population was spread over an entire clinic area with no further population breakdown.

FIGURE. Health zones in which crude mortality rates were assessed — International Rescue Committee Mortality Study, Democratic Republic of Congo, 2002



Interviewers visited the selected households and explained the purpose of the survey to a person aged ≥14 years. A person consenting to an interview was asked about the age and sex of current household residents and the occurrence of any pregnancies, births, or deaths among current residents since January 2002. From households selected initially, interviewers visited the next 14 closest occupied households. If no person aged ≥14 years was home, or if members of a household refused to be interviewed, the household was skipped and the next was visited. Persons were included as household residents only if they had slept in that household on the preceding night.

CMRs were calculated by using the following formula: CMR = (number of deaths / number of living residents minus half the number of births plus half the number of deaths) x 1,000 / the number of months in the recall period. Deaths were included if a decedent had slept in the interviewed household or lived with the interviewed family at the time of death during 2002. The recall period was January 1, 2002, through the median day of the specific health zone evaluation (median: 9.3 months; range: 8.5–10.3 months). The mortality rate for children aged <5 years (<5MR) was estimated by using the following formula: <5MR = (number of deaths among children aged <5 years/number of children aged

<5 years who were alive at the time of the survey plus one half of deaths among those aged <5 years during recall period) x 1,000 / the number of months in the recall period. This equation assumes that both the total number of children born and the number of children who turned age 5 years remained constant during the recall period. Mortality in this survey was expressed as deaths per 1,000 population per month. Previous findings indicate that a baseline CMR of 1.5 deaths per 1,000 population per month occurs in poor areas of sub-Saharan Africa in the absence of armed conflict (*2*).

No person aged ≥14 years was present at the time of the survey in 488 (17.9%) of 2,717 households visited in the east and in 672 (23.0%) of 2,927 households visited in the west. Of 4,484 households in which a person aged ≥14 years was present at the time of the survey, 4,475 (99.8%) agreed to participate, and nine (0.2%) declined. Of the 10 selected eastern health zones, two could not be surveyed, one because of the refusal of local authorities and one because of security constraints. In each case, the closest neighboring health zone was surveyed. Of the 150 locations selected among the 10 eastern health zones visited, five (3.0%) were not surveyed because of time and logistic constraints, and five (3.0%) could not be reached for security reasons; if a location could not be reached, the nearest accessible village was visited instead. All 10 selected western health zones were surveyed, and all 150 locations were reached.

During January–September 2002, CMR in the eastern provinces was 3.5 deaths per 1,000 population per month (95% confidence interval [CI] = 2.2–4.9), and the <5MR was 9.0 (95% CI = 4.0–14.0); the CMR in the western provinces was 2.0 (95% CI = 1.5–2.6), and the <5MR was 4.4 (95% CI = 3.2–5.7) (Table 1). These differences were not statistically significant.

Cause of death was reported by interviewed families (Table 2). Of 689 reported deaths, 404 (59%) were attributed to infectious diseases, which also might have been responsible for other deaths for which the cause was reported as unknown. War-related violence accounted for no deaths in the west and for seven (1.6%) of 443 deaths reported in the east, compared with 69 (11.1%) of 624 violent deaths recorded by IRC in 2000 and 84 (9.4%) of 894 violent deaths in 2001 (*3*).

On the basis of these results, the nationwide CMR is 2.2 deaths per 1,000 population per month, which exceeds the CMRs reported for all other nations in 2001 (*4*). If mortality among the approximately 5 million inaccessible persons who were not surveyed in the eastern provinces is at least as high as that in the areas surveyed, the nationwide CMR is approximately 2.4 deaths per 1,000 population per month.

TABLE 1. Number of persons interviewed, numbers of births and deaths, and crude mortality rate (CMR)*, by location — International Rescue Committee Mortality Survey, Democratic Republic of Congo, 2002

Location	No. interviewed	No. births	No. deaths	CMR
Eastern				
Katana	1,323	45	22	1.9
Kalemie	1,372	34	51	4.2
Butembo	1,373	34	5	0.4
Kyondo	895	26	7	0.9
Pweto	1,119	40	50	4.8
Kisangani	1,902	64	110	6.2
Kalima	1,712	61	47	3.0
Aketi	1,354	60	58	4.6
Mweso	1,066	52	65	6.3
Isiro	1,309	40	28	2.2
Total	**13,425**	**456**	**443**	**3.5†**
Western				
Kimbanseke	1,523	36	23	1.8
Popokabaka	1,064	34	28	3.0
Lukula	1,232	50	15	1.4
Lukonga	1,161	51	41	3.9
Bipemba	1,199	62	30	2.8
Kabongo	1,381	69	29	2.3
Panda-Kapolwe	1,019	47	16	1.7
South Lodja	1,653	66	20	1.2
Kahemba	1,278	38	18	1.4
Gbadolite	1,407	63	26	0.6
Total	**12,917**	**516**	**246**	**2.0§**

* Per 1,000 population per month.
† 95% confidence interval (CI) = 2.2–4.9.
§ 95% CI = 1.5–2.5.

TABLE 2. Cause of reported deaths, by age, region, and illness — International Rescue Committee Mortality Survey, Democratic Republic of Congo, 2002

	East		West		Total	
Cause	Aged <5 yrs (n = 198)	Aged ≥5 yrs (n = 245)	Aged <5 yrs (n = 109)	Aged ≥5 yrs (n = 137)	No.	(%)
Febrile illness	68	51	56	33	**208**	**(30.0)**
Diarrheal illness	28	24	7	9	**68**	**(9.9)**
ARI*	15	16	5	6	**42**	**(6.1)**
Malnutrition	16	6	3	6	**31**	**(4.5)**
Measles	17	4	2	2	**25**	**(3.6)**
Neonatal	12	–	16	–	**28**	**(4.1)**
Tuberculosis	–	10	–	15	**25**	**(3.6)**
Meningitis	6	4	7	4	**21**	**(3.0)**
Other/Unknown	36	130	13	62	**241**	**(35.0)**

*Acute respiratory illness.

Reported by: *L Roberts, PhD, M Zantop, MPH, International Rescue Committee, New York, New York. P Ngoy, MD, International Rescue Committee, Kinshasa; C Lubula, L Mweze, International Rescue Committee, Bukavu, Democratic Republic of Congo. C Mone, MPH, International Rescue Committee, Bujumbura, Burundi.*

Editorial Note: The nationwide CMR estimate for the DRC of 2.2 deaths per 1,000 population per month presented in this report is much greater than the 1.3 deaths per 1,000

population per month reported in 1997, the year before the outbreak of war (*4*). As is usually the case in protracted war settings, violence was not reported as the major cause of death (*2*). In both the war-affected and the nonwar-affected areas surveyed, febrile illness and diarrhea associated with infectious diseases were the most commonly reported causes of death. This might reflect deteriorating economic and health conditions combined with the disruption of the health-care system.

During January 1999–August 2001, three nongovernment organizations recorded substantially elevated CMRs through population-based sample surveys of specific health zones with populations ranging from 62,000 to 347,000 persons. During January–August 2001, Doctors Without Borders documented CMRs of 1.2–9.0 deaths per 1,000 population per month in five health zones in five provinces (*5*). During 1999–2001, IRC conducted 11 surveys in seven health zones in the five eastern provinces. These surveys, with recall periods of 14–17 months, documented CMRs of 2.7–12.1 deaths per 1,000 population per month (*3*). Through an extrapolation process, these two IRC surveys were used to estimate an average CMR of 5.4 deaths per 1,000 population per month in the five eastern provinces during August 1998–April 2001 (*3*). Medical Relief International (MERLIN) documented a CMR of 10.0 deaths per 1,000 population per month in the eastern health zone of Kalima in a 3-month period during 2000 (MERLIN, unpublished data, 2001).

Although the method of selecting health zones was not random in the two previous IRC surveys, by chance, two Eastern provinces (Kalima and Kalemie) were selected in both 2001 and 2002 and were evaluated during both years by using similar methods. The CMR in Kalima declined from 7.1 deaths per 1,000 population per month during January 2000–March 2001 to 3.0 during 2002. During the same period, the CMR in Kalemie declined from 10.8 deaths per 1,000 population per month to 4.2. The improved CMR reflects a decline of 96% in the rate of violent deaths, from 1.0 deaths per 1,000 population per month in 2000 to <0.1 in 2002. These findings for the eastern provinces indicate a marked reduction in CMRs during 2002 compared with the preceding 3 years (*3*).

The findings in this report are subject to at least four limitations. First, avoiding areas with the worst security conditions probably resulted in underestimating CMRs. Second, data from past surveys conducted by IRC might not be comparable because different methods were used to select health zones. Third, because empty households experienced more deaths than occupied households (*6*), CMRs probably were underestimated. Finally, no formal verbal autopsy procedure was followed, and no independent confirmation of the deaths was sought.

Violence-related mortality in eastern DRC has decreased when peace initiatives have been implemented. A peace accord signed in early 2001 curtailed hostilities substantially and resulted in the withdrawal of most foreign troops during 2002. In addition, during 2000–2002, approximately 5,500 United Nations (UN) observers arrived in addition to an increase in humanitarian assistance and aid workers.

Epidemiologists can provide timely and representative health data to assess the public health impact of armed conflict. After the first series of IRC surveys conducted in 2000, the UN Security Council passed a resolution demanding the withdrawal of foreign troops (*7*). The impact of the second round of IRC surveys conducted in 2001 on the current peace process is unclear. Epidemiologic techniques involving creative, flexible, and practical measurement techniques need to be developed further and employed on a regular basis to address the public health consequences of armed conflicts. Humanitarian efforts in DRC should focus on the war-affected eastern areas and on controlling infectious diseases.

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Update: Global Measles Control and Mortality Reduction — Worldwide, 1991–2001

Despite international recognition of the high burden of disease associated with measles and the existence for 40 years of a safe, effective, and inexpensive vaccine, measles remains the leading cause of vaccine-preventable childhood mortality. In 1990, the World Summit for Children adopted a goal of vaccinating 90% of the world's children against measles by 2000 (*1*). In 2001, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) developed the Global Measles Strategic Plan for 2001–2005 (*2*). The

plan's objectives are 1) to decrease the annual number of measles deaths by 50% by 2005 compared with 1999 levels (875,000 deaths), 2) to achieve and maintain interruption of indigenous measles transmission in large geographic areas with elimination goals, and 3) to convene a global consultation in 2005 to review progress and assess the feasibility of global measles eradication. In May 2002, the United Nations General Assembly Special Session on Children also resolved to reduce measles deaths by 50% by 2005 compared with 1999 levels (*3*). This report describes progress toward eliminating measles worldwide. Data from WHO's Global Burden of Disease (GBD) project indicate that approximately 1.7 million vaccine-preventable childhood deaths occurred in 2000, of which 777,000 (46%) were attributed to measles (*4*). The measles deaths occurred overwhelmingly among children living in poor countries with inadequate vaccination services. To prevent these deaths, stronger political commitment is needed to provide all children worldwide with two opportunities for measles immunization.

To estimate cause-specific deaths, GBD first estimates a total number of worldwide childhood deaths based on WHO life table estimates (*4*). Total deaths are classified into three groups according to a model derived from the WHO mortality database (*4*). Within the communicable disease category, the contributions of individual causes of death are estimated based on data from multiple sources (e.g., vital registration systems, population laboratories, surveys, and epidemiologic modeling of specific conditions) (*4*). An alternative approach using a model to estimate measles-associated morbidity and mortality based on country-specific data, including demographic profiles, vaccine coverage, and estimated case-fatality ratios, determined that approximately 805,000 measles-associated deaths occurred globally during 2000, compared with the 777,000 deaths annually estimated through the GBD project (*5*).

Countries report measles vaccination coverage routinely to WHO. Coverage usually is determined by the number of doses of vaccine delivered through routine health services divided by the birth cohort of the previous year. When reports are not received, WHO estimates the most likely coverage based on previous reports from the country or current reports from countries with historically similar vaccination coverage. During 2001, a total of 159 countries representing 90% of the global population reported measles vaccination coverage to WHO; coverage was estimated for the remaining countries. To supplement this information, WHO requests that countries report on an annual basis results from any coverage surveys conducted (*6*).

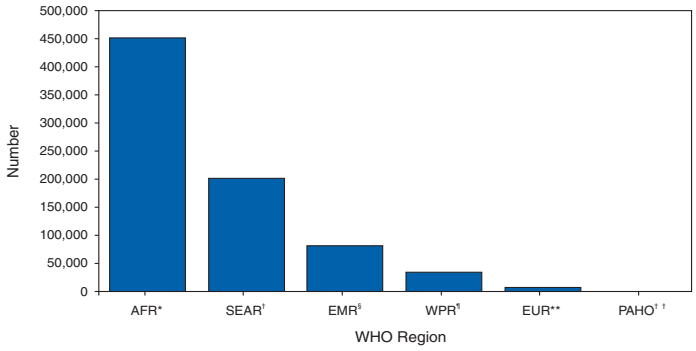
According to GBD, of the estimated 777,000 worldwide measles deaths in children during 2000, approximately 453,000 (58%) occurred in the WHO African Region, and approximately 202,000 (26%) in the South East Asian Region (*4*) (Figure 1). Of the global measles deaths, >98% occurred in the 75 countries with per capita gross domestic products of <$1,000 (WHO, unpublished data, 2003).

During 1991–2001, estimated worldwide measles vaccination coverage ranged from 69% to 76%. However, worldwide figures mask regional and national disparities. During this period, estimated coverage for the WHO regions of the Americas, Europe, and the Western Pacific was 82%–94%; estimated coverage for the Eastern Mediterranean Region was 67%–73%, and coverage in the South East Asia Region was 50%–72%. The African Region had the lowest estimated coverage, at 51%–60%.

Since 2000, WHO and UNICEF have recommended that, in addition to achieving high coverage with the first dose of measles vaccine, all children be offered a second opportunity for measles vaccination to maximize both individual and population immunity (*7*). This represents a second opportunity for measles immunization for children who did not receive measles vaccine from the routine program and for those who did not develop immunity to measles after receiving measles vaccine. During 1997–2001, a total of 156 (82%) of 191 countries provided a second opportunity through supplementary immunization activities or through routine health services (*6*) (Figure 2).

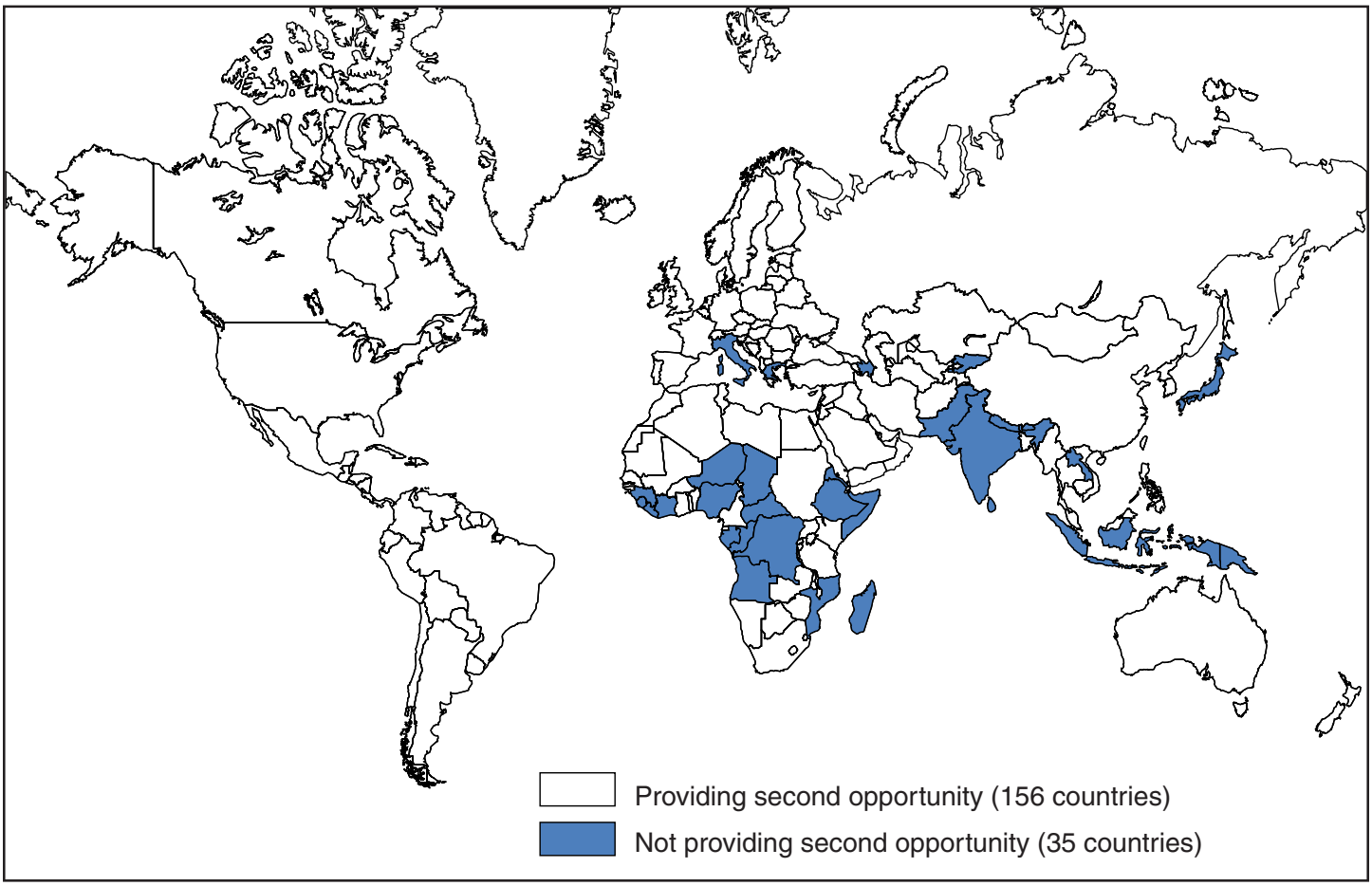
Reported by: *V Dietz, Pan American Health Organization, World Health Organization, Washington, DC. J Spika, European Regional Office; R Kezaala, African Regional Office; E Moshni, Eastern Mediterranean Regional Office; A Thapa, South Eastern Asian Regional Office; J McFarland, Western Pacific Regional Office; M Gacic-Dobo,*

FIGURE 1. Estimated number of measles deaths, by World Health Organization (WHO) region, 2000



* African Region.
† South Eastern Asian Region.
§ Eastern Mediterranean Region.
¶ Western Pacific Region.
** European Region.
†† Pan American Health Organization.

FIGURE 2. Countries providing second opportunity* for measles immunization — Worldwide, 1997–2001



* Country has implemented a 2-dose routine measles schedule and/or within the preceding 4 years has conducted a national vaccination campaign achieving ≥90% coverage of children aged <5 years.

M Birmingham, J Bilous, B Hersh, Dept of Vaccines and Biologicals, World Health Organization, Geneva, Switzerland. L Cairns, P Strebel, Global Immunization Div, National Immunization Program, CDC.

Editorial Note: Although substantial progress has been made in reducing measles deaths globally, in 2000, measles was estimated to be the fifth leading cause of mortality worldwide for children aged <5 years (*4*). Measles deaths occur disproportionately in Africa and South East Asia. In 2000, the African Region of WHO, with 10% of the world's population, accounted for 41% of estimated measles cases and 58% of measles deaths; the South East Asia region, with 25% of the world's population and 28% of measles cases, accounted for 26% of measles deaths (*4*). The burden of mortality in Africa reflects low routine vaccination coverage and high case-fatality ratios. In South East Asia, where vaccination coverage is slightly below average worldwide levels, the large population amplifies the number of cases and deaths resulting from ongoing measles transmission.

The overwhelming majority of measles deaths in 2000 occurred in countries eligible to receive financial support from the Global Alliance for Vaccines and Immunization's Vaccine Fund (WHO, unpublished data, 2003). The majority of measles deaths occur among young children living in poor countries with inadequate vaccination services. Like human immunodeficiency virus, malaria, and tuberculosis, measles can be considered a disease of poverty. However, unlike these diseases, measles can be prevented through vaccination.

Support from the Vaccine Fund for strengthening vaccination services and raising routine vaccination coverage can help reduce the high burden of measles. However, in countries with historically inadequate vaccination services, routine vaccination alone is not sufficient to reduce measles deaths or to achieve measles control because the large numbers of older children who missed routine vaccination remain susceptible to measles. The Measles Mortality Reduction and Regional Elimination Strategic Plan 2001–2005 outlines four main elements to

reduce measles mortality: 1) achieving high (i.e., ≥90%) vaccination coverage nationally and in each district with the first dose of measles vaccine administered through routine health services to children who are aged 9 months or slightly older, 2) offering a second opportunity for measles immunization to all children, 3) establishing effective surveillance for measles, and 4) improving case management (*3*). Countries are encouraged to review measles epidemiology, develop a 3–5 year plan for measles mortality reduction (*8*), identify reasons for low routine coverage, strengthen routine vaccination services, improve vaccination safety, and integrate measles vaccination activities with other public health activities as appropriate.

Although well-conducted supplemental vaccination activities can increase population immunity substantially and reduce measles cases and deaths, new birth cohorts rapidly add susceptible persons to the population. Bolstering routine vaccination services to ensure that the majority of infants receive measles vaccine and other vaccines is essential to sustain the impact of measles mortality reduction activities.

In 2001, the Measles Partnership was formed to reduce measles deaths in Africa. Members of this partnership include WHO, UNICEF, the United Nations Foundation, the American Red Cross, and CDC. During 2001–2002, this partnership contributed $40 million for the vaccination of approximately 60 million children aged 9 months–14 years living in 13 African countries. Preliminary evidence suggests that these campaigns have had a substantial impact in reducing measles deaths (WHO African Regional Office, unpublished data, 2002).

Surveillance to assess burden of disease and guide vaccination policy remains critical. Outbreak investigations should be used as an opportunity to learn about the changing epidemiology of measles. These investigations can provide information about patterns of transmission, including case-fatality ratios and age distribution and vaccination status of cases.

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Update: Adverse Events Following Civilian Smallpox Vaccination — United States, 2003

During January 24–May 9, 2003, smallpox vaccine was administered to 36,217 civilian health-care and public health workers in 55 jurisdictions to prepare the United States for a possible terrorist attack using smallpox virus. This report updates information on vaccine-associated adverse events among civilians vaccinated since the beginning of the program and among contacts of vaccinees, received by CDC from the Vaccine Adverse Event Reporting System (VAERS) as of May 9.

In this vaccination program, CDC, the Food and Drug Administration, and state health departments are conducting surveillance for vaccine-associated adverse events among civilian vaccinees (*1*). As part of the vaccination program, civilian vaccinees receive routine follow-up, and reported adverse events after vaccination receive follow-up as needed. The U.S. Department of Defense is conducting surveillance for vaccine-associated adverse events among military vaccinees and providing follow-up care to those persons with reported adverse events.

Adverse events that have been associated with smallpox vaccination are classified on the basis of evidence supporting the reported diagnoses. Cases verified by virologic testing, or in some instances by other diagnostic testing, are classified as confirmed (Table 1). Cases are classified as probable if possible alternative etiologies are investigated and excluded and supportive information for the diagnosis is found. Patients are classified as suspected if they have clinical features compatible with the diagnosis, but either further investigation is required or investigation of the case did not provide supporting evidence for the diagnosis. All reports of events that follow vaccination are accepted (i.e., events associated temporally); however, reported adverse events are not necessarily associated causally with vaccination, and some or all of these events might be coincidental. This report includes cases reported as of May 9 that either are under investigation or have a reported final diagnosis. Because of ongoing discussions of final case definitions, numbers and classifications of adverse events might change and will be updated regularly in *MMWR*.

TABLE 1. Number of cases* of selected adverse events associated with smallpox vaccination among civilians, by type — United States, January 24–May 9, 2003

Adverse events	No. new cases (May 3–9)			Total (January 24–May 9)		
	Suspected†	Probable§	Confirmed¶	Suspected	Probable	Confirmed
Eczema vaccinatum	—**	—	—	—	—	—
Fetal vaccinia	—	—	—	—	—	—
Generalized vaccinia	—	—	—	1	—	1
Inadvertent inoculation, nonocular	—	—	—	9	—	4
Ocular vaccinia	—	—	—	1	—	2
Progressive vaccinia	—	—	—	—	—	—
Erythema multiforme major (Stevens-Johnson syndrome)	—	—	—	—	—	—
Myo/pericarditis	1	—	—	18	6	—
Postvaccinial encephalitis or encephalomyelitis	1	—	—	1	—	—
Pyogenic infection of vaccination site	—	—	—	—	—	—

* Under investigation or completed as of May 9, 2003; numbers and classifications of adverse events will be updated regularly in *MMWR* as more information becomes available.
† Events are classified as suspected if they have clinical features compatible with the diagnosis but either further investigation is required or additional investigation of the case did not provide supporting evidence for the diagnosis and did not identify an alternative diagnosis.
§ Events are classified as probable if possible alternative etiologies are investigated and supportive information is found.
¶ For the first six events listed, events are classified as confirmed if virologic tests are positive. For the last four events, events are classified as confirmed based on diagnostic testing (e.g., histopathology); confirmation of events thought to be immunologically mediated (i.e., erythema multiforme, myo/pericarditis, or postvaccinial encephalitis or encephalomyelitis) does not establish causality.
** No cases reported.

In collaboration with the Smallpox Vaccine Safety Working Group of the Advisory Committee on Immunization Practices, a case definition for myo/pericarditis has been developed and will be described in a subsequent *MMWR*. Using this definition to categorize all reports received through May 9, a total of 24 cases are consistent with the definition of myo/pericarditis; one of these was a new report received during May 3–9 (Table 1).

During May 3–9, no cases of eczema vaccinatum, erythema multiforme major, fetal vaccinia, or progressive vaccinia have been reported (Table 1). One case of suspected postvaccinial encephalomyelitis (PVE) was reported.

A man aged 38 years with a history of heavy tobacco use had acute respiratory distress and hypoxia on April 18, a total of 10 days after primary smallpox vaccination. He had a diagnosis of acute epiglottitis and was hospitalized and treated with intravenous corticosteroids, bronchodilators, antibiotics, and intermittent lorazepam for agitation. He improved and was discharged on April 25 on an oral steroid taper and bupropion to aid in smoking cessation.

On April 26, he had acute behavioral changes characterized by intense agitation, emotional lability, and confusion, and was readmitted. On examination, the patient was afebrile and oriented with no focal neurologic deficits, but with moderate difficulty with concentration. Computerized tomography (CT) of the head showed several punctate areas of deep white matter hypodensity. Magnetic resonance imaging (MRI) of the brain with and without gadolinium displayed multiple nonenhancing punctate areas of increased signal in the deep subcortical white matter seen mainly on fluid attenuation inversion recovery (FLAIR) sequences, a nonspecific finding potentially consistent with a history of heavy smoking, severe hypertension, or amphetamine use. Laboratory studies showed an elevated creatine phosphokinase (CPK) of 3,000 u/L (normal: <175 u/L), and a urine toxicology screen was positive for marijuana and benzodiazepines; other studies were normal. Cerebrospinal fluid (CSF) protein, glucose, cell counts, and markers of acute demyelination (oligoclonal banding, IgG indices) were normal; CSF polymerase chain reaction for herpes simplex virus and vaccinia virus were negative. An electroencephalogram (EEG) showed changes consistent with benzodiazepine effect. The patient's behavioral changes improved, CPK levels decreased to 278, and he was discharged on April 29 with a diagnosis of steroid-induced psychosis.

On May 3, the patient suffered an uprovoked generalized tonic-clonic seizure. An MRI was unchanged from the previous scan. However, post-infectious demyelination was considered because of the patient's smallpox vaccination history. He was placed on phenytoin, steroids were increased, and he was discharged the following day with a diagnosis of post-infectious encephalomyelitis. As of May 8, the patient remained mildly confused and emotionally labile.

During May 3–9, one other serious adverse event was reported for hospitalization and antibiotic administration, and 23 other nonserious events were reported (Table 2). Among the 488 vaccinees with reported other nonserious adverse events during January 24–May 9, the most common signs and symptoms were fever (n = 92), rash (n = 88), headache (n = 82), pain (n = 78), and fatigue (n = 74) (Table 2). All of these commonly reported events are consistent with mild expected reactions following receipt of smallpox vaccine. Some vaccinees reported multiple signs and symptoms.

During this reporting period, no vaccinia immune globulin was released for civilian vaccinees. No cases of vaccine transmission from civilian vaccinees to their contacts have been reported during the vaccination program (Table 3). A total of 10 cases of transmission from military personnel to civilian contacts have been reported. Surveillance for adverse events during the civilian and military smallpox vaccination programs is ongoing; regular surveillance reports will be published in *MMWR*.

TABLE 2. Number of cases* of other adverse events reported after smallpox vaccination among civilians, by severity — United States, January 24–May 9, 2003

Adverse events	No. new cases (May 3–9)	Total (January 24–May 9)
Other serious adverse events†	1§	**59**
Other nonserious adverse events¶	23	**488**

* Under investigation or completed as of May 9, 2003; numbers and classifications of adverse events will be updated regularly in *MMWR* as more information becomes available.
† Events that result in hospitalization, permanent disability, life-threatening illness, or death. These events are temporally associated with vaccination but are not necessarily causally associated with vaccination.
§ Includes one case of hospitalization for antibiotic administration.
¶ Include expected self-limited responses to smallpox vaccination (e.g., fatigue, headache, pruritis, local reaction at vaccination site, regional lymphadenopathy, lymphangitis, fever, myalgia and chills, and nausea); additional events are temporally associated with smallpox vaccination but are not necessarily causally associated with vaccination.

TABLE 3. Vaccinia immune globulin release and vaccinia transmission to contacts — United States, January 24–May 9, 2003

Events	No. new cases (May 3–9)	Total (January 24–May 9)
Vaccinia immune globulin release	0	**1**
Vaccinia transmission to contacts*		
Health-care settings	0	**0**
Other settings	0	**0**

* No cases of transmission from civilian vaccinees have been reported. Ten cases of transmission from military personnel to civilian contacts have been reported and are included in Table 1 (eight inadvertent inoculation, and two ocular vaccinia).

Reported by: *Smallpox vaccine adverse events coordinators. National Center for Infectious Diseases; National Immunization Program, CDC.*

Editorial Note: PVE is a rare adverse event associated with smallpox vaccination (*2–5*). Estimates have varied, but occurrence is thought to range from 2.4–12.3 cases per million vaccinees depending on age, vaccination status, and surveillance methods (*2–4*); approximately 15%–25% of PVE cases are fatal, and approximately 25% of survivors develop substantial neurologic sequelae (*2*). Although the exact pathogenesis is unknown, it is likely that both a direct, vaccinia-associated acute viral encephalomyelitis and an autoimmune-mediated inflammatory reaction resulting in postvaccination demyelination (acute disseminated encephalomyelitis [ADEM]) occur (*6*). Patients with PVE show signs of encephalitis (alteration of mental status and focal neurologic deficits), myelitis (upper- and lower-motor neuron dysfunction, sensory level and bowel and bladder dysfunction), or both. Rarely, vaccinia virus might be detected in CSF (*7*).

Several features of this case are not typical of PVE. Examination on April 26 showed only difficulties with concentration; no focal deficits or encephalopathy were observed. Neurodiagnostic studies, including CSF examination and EEG, were normal. Consideration of PVE followed seizure. MRI findings before and after the seizure might indicate demyelination consistent with ADEM, but might also be consistent with the patient's heavy smoking history, although unusual in a person aged <50 years. Although neither MRI displayed the multifocal enhancing white matter lesions associated typically with ADEM, it is unknown whether very early treatment with high-dose steroids might impact MRI findings of ADEM. Other potential etiologies for development of a seizure in this patient include bupropion use (*8,9*). Investigation of this case is ongoing.

This case highlights the difficulty in diagnosing PVE. The diagnosis is exclusionary. Temporal association with vaccination does not necessarily indicate causality because acute encephalomyelitis might be caused by many different metabolic, toxic, and infectious conditions (*10*), and appropriate diagnostic studies, including serum chemistry profile, neuroimaging, blood cultures, and CSF examination, should be pursued as indicated. In the setting of a recent smallpox vaccination, patients with acute mental status changes, focal neurologic deficits, or white matter lesions on MRI must be evaluated for other more common causes of encephalomyelitis and treatable etiologies such as herpes simplex encephalitis should be excluded. Neurologic adverse events following smallpox vaccination should be reported promptly to state health departments and to VAERS.

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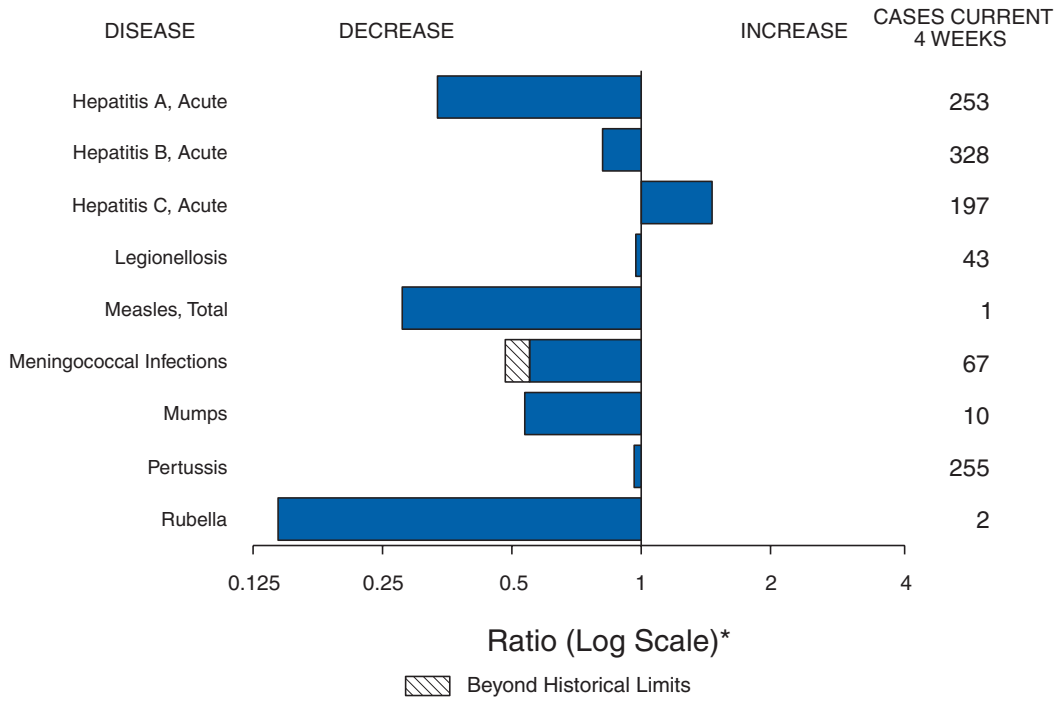
FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals May 17, 2003, with historical data



* 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 May 17, 2003 (20th Week)*

	Cum. 2003	Cum. 2002		Cum. 2003	Cum. 2002
Anthrax	-	1	Hansen disease (leprosy)†	20	32
Botulism:	-	-	Hantavirus pulmonary syndrome†	6	5
foodborne	5	5	Hemolytic uremic syndrome, postdiarrheal†	43	40
infant	21	28	HIV infection, pediatric†§	91	56
other (wound & unspecified)	8	4	Measles, total	9¶	7**
Brucellosis†	20	37	Mumps	75	109
Chancroid	14	34	Plague	-	-
Cholera	-	3	Poliomyelitis, paralytic	-	-
Cyclosporiasis†	12	48	Psittacosis†	4	10
Diphtheria	-	-	Q fever†	28	15
Ehrlichiosis:	-	-	Rabies, human	-	1
human granulocytic (HGE)†	14	29	Rubella	4	4
human monocytic (HME)†	22	9	Rubella, congenital	-	2
other and unspecified	-	2	Streptococcal toxic-shock syndrome†	73	62
Encephalitis/Meningitis:	-	-	Tetanus	2	8
California serogroup viral†	-	-	Toxic-shock syndrome	48	42
eastern equine†	-	-	Trichinosis	2	10
Powassan†	-	-	Tularemia†	5	9
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 April 27, 2003.
¶ Of nine cases reported, eight were indigenous and one was imported from another country.
** Of seven cases reported, four were indigenous and three were imported from another country.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending May 17, 2003, and May 18, 2002 (20th 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	15,551	12,786	300,916	310,789	1,288	1,550	657	788	-	-
NEW ENGLAND	501	448	10,155	10,225	-	-	37	38	-	-
Maine	23	8	743	536	N	N	3	1	-	-
N.H.	12	12	561	614	-	-	3	9	-	-
Vt.	6	5	388	286	-	-	7	8	-	-
Mass.	227	236	4,069	4,136	-	-	17	11	-	-
R.I.	39	40	1,235	1,009	-	-	5	5	-	-
Conn.	194	147	3,159	3,644	N	N	2	4	-	-
MID. ATLANTIC	3,357	2,473	31,183	33,804	-	-	79	115	-	-
Upstate N.Y.	180	187	7,186	5,905	N	N	27	24	-	-
N.Y. City	1,625	1,477	11,304	11,625	-	-	24	43	-	-
N.J.	602	542	4,060	4,831	-	-	3	8	-	-
Pa.	950	267	8,633	11,443	N	N	25	40	-	-
E.N. CENTRAL	1,394	1,325	55,680	57,415	3	9	132	225	-	-
Ohio	230	262	15,493	14,624	-	-	23	51	-	-
Ind.	227	155	6,163	6,429	N	N	16	18	-	-
Ill.	595	558	15,801	18,371	-	2	15	44	-	-
Mich.	275	282	12,398	11,608	3	7	29	43	-	-
Wis.	67	68	5,825	6,383	-	-	49	69	-	-
W.N. CENTRAL	288	193	17,146	17,268	-	-	68	75	-	-
Minn.	57	44	3,114	4,073	N	N	36	25	-	-
Iowa	34	39	1,602	1,929	N	N	10	6	-	-
Mo.	137	64	6,590	5,422	-	-	6	12	-	-
N. Dak.	-	-	483	493	N	N	3	5	-	-
S. Dak.	7	2	947	836	-	-	11	5	-	-
Nebr.	22	21	1,711	1,762	-	-	2	16	-	-
Kans.	31	23	2,699	2,753	N	N	-	6	-	-
S. ATLANTIC	4,565	4,278	57,818	58,336	1	1	105	114	-	-
Del.	81	81	1,196	1,053	N	N	1	1	-	-
Md.	415	638	6,347	5,886	1	1	9	5	-	-
D.C.	478	202	950	1,278	-	-	-	3	-	-
Va.	427	276	6,705	6,285	-	-	11	1	-	-
W. Va.	33	23	975	947	N	N	-	1	-	-
N.C.	519	338	9,092	9,039	N	N	12	17	-	-
S.C.	316	321	5,581	5,782	-	-	2	2	-	-
Ga.	613	786	11,866	12,093	-	-	46	41	-	-
Fla.	1,683	1,613	15,106	15,973	N	N	24	43	-	-
E.S. CENTRAL	623	600	19,933	20,523	N	N	41	50	-	-
Ky.	67	109	3,197	3,417	N	N	9	1	-	-
Tenn.	270	252	7,082	6,441	N	N	9	26	-	-
Ala.	143	117	5,282	6,437	-	-	20	19	-	-
Miss.	143	122	4,372	4,228	N	N	3	4	-	-
W.S. CENTRAL	1,661	1,452	37,403	41,556	-	-	28	18	-	-
Ark.	48	97	2,507	2,659	-	-	1	4	-	-
La.	195	363	5,529	7,100	N	N	1	7	-	-
Okla.	75	77	3,976	4,008	N	N	3	3	-	-
Tex.	1,343	915	25,391	27,789	-	-	23	4	-	-
MOUNTAIN	586	434	17,852	19,344	926	1,036	36	46	-	-
Mont.	8	6	410	681	N	N	7	3	-	-
Idaho	10	8	955	870	N	N	6	15	-	-
Wyo.	3	3	401	339	-	-	1	5	-	-
Colo.	128	95	3,809	5,413	N	N	7	8	-	-
N. Mex.	44	28	2,497	3,002	-	4	-	6	-	-
Ariz.	272	176	5,972	5,778	907	1,011	3	5	-	-
Utah	27	22	1,652	865	4	5	9	1	-	-
Nev.	94	96	2,156	2,396	15	16	3	3	-	-
PACIFIC	2,576	1,583	53,746	52,318	357	504	131	107	-	-
Wash.	180	171	6,046	5,611	N	N	12	9	-	-
Oreg.	108	152	2,973	2,530	-	-	16	13	-	-
Calif.	2,246	1,235	42,873	41,157	357	504	103	84	-	-
Alaska	9	2	1,384	1,407	-	-	-	-	-	-
Hawaii	33	23	470	1,613	-	-	-	1	-	-
Guam	2	1	-	-	-	-	-	-	-	-
P.R.	437	377	483	1,156	N	N	N	N	-	-
V.I.	13	50	-	65	-	-	-	-	-	-
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 April 27, 2003.

TABLE II. (*Continued*) Provisional cases of selected notifiable diseases, United States, weeks ending May 17, 2003, and May 18, 2002 (20th 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	382	527	58	24	46	5	5,178	6,660	112,673	132,085
NEW ENGLAND	20	38	7	2	5	1	380	594	2,521	3,048
Maine	3	2	1	-	-	-	43	64	81	29
N.H.	5	4	-	-	-	-	14	18	43	51
Vt.	-	1	-	-	-	-	32	44	32	41
Mass.	6	21	1	2	5	1	181	317	1,019	1,335
R.I.	1	3	-	-	-	-	42	40	365	364
Conn.	5	7	5	-	-	-	68	111	981	1,228
MID. ATLANTIC	24	38	2	-	13	2	946	1,454	11,993	15,611
Upstate N.Y.	17	26	1	-	9	-	302	388	2,669	3,098
N.Y. City	3	2	-	-	-	-	405	564	4,253	4,731
N.J.	4	10	-	-	-	-	56	172	2,075	2,977
Pa.	N	N	1	-	4	2	183	330	2,996	4,805
E.N. CENTRAL	89	158	8	5	7	-	861	1,146	25,136	27,397
Ohio	23	24	8	2	7	-	305	301	8,734	7,968
Ind.	12	10	-	-	-	-	-	-	2,403	2,782
Ill.	17	57	-	2	-	-	200	364	7,022	9,231
Mich.	20	28	-	1	-	-	237	305	4,979	5,237
Wis.	17	39	-	-	-	-	119	176	1,998	2,179
W.N. CENTRAL	53	68	4	4	6	-	515	625	5,729	6,701
Minn.	20	21	3	3	-	-	190	222	787	1,180
Iowa	7	15	-	-	-	-	80	91	334	452
Mo.	16	15	N	N	N	N	124	173	3,011	3,198
N. Dak.	1	-	-	-	1	-	12	6	23	26
S. Dak.	2	1	-	-	-	-	18	22	65	93
Nebr.	5	9	1	1	-	-	48	53	545	626
Kans.	2	7	-	-	5	-	43	58	964	1,126
S. ATLANTIC	36	48	18	9	-	-	908	985	28,298	34,001
Del.	-	2	N	N	N	N	14	19	467	632
Md.	-	3	-	-	-	-	44	38	2,967	3,335
D.C.	1	-	-	-	-	-	13	18	699	1,052
Va.	8	9	1	-	-	-	99	70	3,092	4,013
W. Va.	1	1	-	-	-	-	10	10	323	372
N.C.	5	9	5	-	-	-	N	N	5,152	6,261
S.C.	-	-	-	-	-	-	37	20	3,022	3,510
Ga.	10	14	2	4	-	-	364	299	5,853	6,421
Fla.	11	10	10	5	-	-	327	511	6,723	8,405
E.S. CENTRAL	21	20	-	-	4	-	115	115	9,574	11,569
Ky.	8	4	-	-	4	-	N	N	1,335	1,337
Tenn.	8	12	-	-	-	-	48	51	2,911	3,555
Ala.	4	1	-	-	-	-	67	64	3,112	4,079
Miss.	1	3	-	-	-	-	-	-	2,216	2,598
W.S. CENTRAL	31	14	10	-	7	1	80	49	15,076	18,446
Ark.	2	1	-	-	-	-	42	49	1,273	1,633
La.	-	1	-	-	-	-	3	-	3,509	4,381
Okla.	2	3	-	-	-	-	35	-	1,525	1,765
Tex.	27	9	10	-	7	1	-	-	8,769	10,667
MOUNTAIN	46	46	7	2	4	1	455	477	3,825	4,167
Mont.	1	8	-	-	-	-	22	29	29	39
Idaho	12	5	4	-	-	-	58	25	32	35
Wyo.	1	2	-	1	-	-	6	8	20	24
Colo.	16	10	1	-	4	1	125	161	928	1,349
N. Mex.	1	4	2	1	-	-	17	60	411	560
Ariz.	9	5	N	N	N	N	83	61	1,569	1,367
Utah	5	6	-	-	-	-	99	81	165	77
Nev.	1	6	-	-	-	-	45	52	671	716
PACIFIC	62	97	2	2	-	-	918	1,215	10,521	11,145
Wash.	16	10	1	-	-	-	63	150	1,115	1,134
Oreg.	9	24	1	2	-	-	113	139	367	315
Calif.	36	45	-	-	-	-	701	852	8,729	9,251
Alaska	1	4	-	-	-	-	30	31	200	232
Hawaii	-	14	-	-	-	-	11	43	110	213
Guam	N	N	-	-	-	-	-	-	-	-
P.R.	-	1	-	-	-	-	10	4	44	195
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 May 17, 2003, and May 18, 2002 (20th 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	599	766	5	11	90	137	14	9	2,053	3,767
NEW ENGLAND	46	51	-	-	2	6	3	1	78	147
Maine	2	1	-	-	-	-	1	-	2	6
N.H.	6	4	-	-	-	-	-	-	5	8
Vt.	6	3	-	-	-	-	-	-	3	-
Mass.	20	24	-	-	2	3	1	1	43	69
R.I.	2	8	-	-	-	-	1	-	10	18
Conn.	10	11	-	-	-	3	-	-	15	46
MID. ATLANTIC	95	147	-	1	12	23	4	-	305	490
Upstate N.Y.	39	56	-	1	6	7	-	-	39	74
N.Y. City	17	32	-	-	4	7	-	-	133	175
N.J.	16	36	-	-	2	5	-	-	36	73
Pa.	23	23	-	-	-	4	4	-	97	168
E.N. CENTRAL	81	161	1	1	15	29	-	-	209	468
Ohio	34	44	-	-	7	5	-	-	37	124
Ind.	21	19	-	-	2	5	-	-	13	22
Ill.	19	63	-	-	5	12	-	-	68	153
Mich.	7	7	1	1	1	-	-	-	73	100
Wis.	-	28	-	-	-	7	-	-	18	69
W.N. CENTRAL	42	23	-	-	5	2	4	3	62	138
Minn.	18	15	-	-	5	2	-	1	14	22
Iowa	-	1	-	-	-	-	-	-	15	28
Mo.	15	5	-	-	-	-	4	2	17	32
N. Dak.	-	-	-	-	-	-	-	-	-	1
S. Dak.	1	1	-	-	-	-	-	-	-	3
Nebr.	-	-	-	-	-	-	-	-	3	5
Kans.	8	1	-	-	-	-	-	-	13	47
S. ATLANTIC	137	161	-	2	13	21	-	-	520	1,087
Del.	-	-	-	-	-	-	-	-	4	7
Md.	33	42	-	-	4	1	-	-	56	123
D.C.	-	-	-	-	-	-	-	-	14	37
Va.	15	11	-	-	3	2	-	-	34	34
W. Va.	3	2	-	-	-	-	-	-	6	10
N.C.	10	16	-	-	-	3	-	-	26	111
S.C.	3	4	-	-	-	1	-	-	18	32
Ga.	25	38	-	-	3	8	-	-	191	225
Fla.	48	48	-	2	3	6	-	-	171	508
E.S. CENTRAL	45	27	1	1	6	8	-	-	55	121
Ky.	2	3	-	-	-	-	-	-	11	26
Tenn.	25	14	-	-	4	5	-	-	30	47
Ala.	16	5	1	1	1	2	-	-	9	20
Miss.	2	5	-	-	1	1	-	-	5	28
W.S. CENTRAL	30	28	-	2	5	6	-	-	191	263
Ark.	4	1	-	-	1	-	-	-	2	18
La.	6	3	-	-	1	1	-	-	20	34
Okla.	20	22	-	-	3	5	-	-	6	14
Tex.	-	2	-	2	-	-	-	-	163	197
MOUNTAIN	90	94	3	3	25	21	2	3	155	230
Mont.	-	-	-	-	-	-	-	-	2	7
Idaho	1	1	-	-	1	-	-	-	-	18
Wyo.	-	1	-	-	-	-	-	-	1	2
Colo.	15	16	-	-	4	2	-	-	22	33
N. Mex.	13	15	-	-	4	4	1	-	7	7
Ariz.	50	44	3	1	11	11	-	2	91	120
Utah	7	11	-	1	4	3	-	-	15	17
Nev.	4	6	-	1	1	1	1	1	17	26
PACIFIC	33	74	-	1	7	21	1	2	478	823
Wash.	3	2	-	1	2	1	1	-	23	64
Oreg.	25	26	-	-	3	3	-	-	27	34
Calif.	2	27	-	-	2	14	-	2	423	704
Alaska	-	1	-	-	-	1	-	-	5	7
Hawaii	3	18	-	-	-	2	-	-	-	14
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	-	-	-	-	-	-	-	-	9	76
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 May 17, 2003, and May 18, 2002 (20th 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	2,287	2,767	1,174	787	329	279	155	163	1,856	2,514
NEW ENGLAND	93	100	-	12	10	8	7	16	160	232
Maine	-	3	-	-	-	1	-	2	-	-
N.H.	6	6	-	-	1	1	2	2	4	19
Vt.	1	2	-	7	1	-	-	-	4	2
Mass.	75	62	-	5	3	4	3	9	13	197
R.I.	3	10	-	-	1	-	-	1	80	7
Conn.	8	17	-	-	4	2	2	2	59	7
MID. ATLANTIC	399	670	49	45	50	73	25	32	1,341	1,875
Upstate N.Y.	39	45	22	20	25	16	7	9	751	893
N.Y. City	162	340	-	-	7	15	7	8	1	28
N.J.	151	149	-	5	2	14	3	5	147	327
Pa.	47	136	27	20	16	28	8	10	442	627
E.N. CENTRAL	171	223	234	47	67	76	14	25	47	92
Ohio	59	35	5	-	35	30	3	9	12	9
Ind.	10	9	1	-	3	3	1	1	4	2
Ill.	1	40	6	10	3	11	3	4	-	9
Mich.	84	119	222	37	26	22	7	7	-	-
Wis.	17	20	-	-	-	10	-	4	31	72
W.N. CENTRAL	105	87	93	354	12	18	4	5	27	31
Minn.	13	2	1	-	2	2	2	-	17	16
Iowa	4	11	-	1	4	5	-	1	4	5
Mo.	64	48	92	349	3	6	-	2	3	8
N. Dak.	-	1	-	-	1	-	-	1	-	-
S. Dak.	1	-	-	-	-	1	-	-	-	-
Nebr.	12	15	-	4	1	4	2	-	-	-
Kans.	11	10	-	-	1	-	-	1	3	2
S. ATLANTIC	675	629	78	76	102	54	39	22	194	210
Del.	2	6	-	-	-	3	N	N	30	34
Md.	41	62	7	6	18	6	5	3	121	121
D.C.	1	7	-	-	1	2	-	-	3	6
Va.	41	84	1	-	6	3	4	1	10	7
W. Va.	7	12	1	1	N	N	1	-	-	-
N.C.	54	79	3	10	9	4	8	2	17	22
S.C.	55	35	23	3	4	4	1	3	1	2
Ga.	242	156	3	33	11	5	11	5	4	1
Fla.	232	188	40	23	53	27	9	8	8	17
E.S. CENTRAL	136	125	34	85	9	8	5	8	11	13
Ky.	33	17	7	2	-	5	-	2	2	5
Tenn.	52	52	6	13	7	-	1	3	6	1
Ala.	28	28	4	2	1	3	3	3	-	4
Miss.	23	28	17	68	1	-	1	-	3	3
W.S. CENTRAL	114	427	630	111	32	11	20	10	30	28
Ark.	2	50	-	8	-	-	-	-	-	-
La.	26	45	18	35	-	4	-	-	3	1
Okla.	16	4	-	-	2	2	1	3	-	-
Tex.	70	328	612	68	30	5	19	7	27	27
MOUNTAIN	238	180	25	13	20	12	12	11	5	4
Mont.	8	3	1	-	-	1	1	-	-	-
Idaho	-	3	-	-	2	-	-	-	1	1
Wyo.	2	9	-	3	1	-	-	-	-	-
Colo.	34	30	18	1	4	3	5	2	1	-
N. Mex.	13	44	-	1	2	1	2	-	-	1
Ariz.	137	54	3	-	6	3	4	7	-	1
Utah	18	13	-	1	3	4	-	2	2	-
Nev.	26	24	3	7	2	-	-	-	1	1
PACIFIC	356	326	31	44	27	19	29	34	41	29
Wash.	24	25	6	10	2	1	1	3	-	-
Oreg.	48	59	5	5	N	N	1	2	12	1
Calif.	276	234	20	29	25	18	27	26	28	28
Alaska	6	5	-	-	-	-	-	-	1	-
Hawaii	2	3	-	-	-	-	-	3	N	N
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	13	58	-	-	-	-	-	2	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 May 17, 2003, and May 18, 2002 (20th 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	301	394	789	877	1,770	2,389	1,513	2,601	98	132
NEW ENGLAND	7	24	36	54	189	256	161	303	-	1
Maine	1	1	5	4	2	3	14	19	-	-
N.H.	1	5	3	5	12	3	4	9	-	-
Vt.	-	1	-	4	25	42	10	52	-	-
Mass.	5	11	22	29	146	198	65	98	-	1
R.I.	-	1	2	4	4	1	20	21	-	-
Conn.	-	5	4	8	-	9	48	104	-	-
MID. ATLANTIC	61	96	62	116	143	111	166	367	7	13
Upstate N.Y.	17	14	14	26	84	75	103	206	-	-
N.Y. City	32	56	15	20	-	-	1	10	3	3
N.J.	3	15	8	16	7	-	62	49	3	1
Pa.	9	11	25	54	52	36	-	102	1	9
E.N. CENTRAL	30	65	106	131	144	284	16	21	2	4
Ohio	6	10	32	44	87	156	5	3	2	2
Ind.	-	2	20	17	24	16	2	4	-	-
Ill.	11	27	23	28	-	43	1	5	-	2
Mich.	12	19	22	19	16	29	8	5	-	-
Wis.	1	7	9	23	17	40	-	4	-	-
W.N. CENTRAL	11	31	59	74	104	222	219	175	2	14
Minn.	8	11	13	17	33	70	12	7	-	-
Iowa	2	2	10	11	23	74	24	18	1	-
Mo.	-	7	27	29	22	46	4	13	1	14
N. Dak.	-	1	-	-	1	5	23	14	-	-
S. Dak.	-	-	1	2	2	5	20	37	-	-
Nebr.	-	5	4	10	1	3	51	-	-	-
Kans.	1	5	4	5	22	19	85	86	-	-
S. ATLANTIC	86	88	135	128	160	161	721	934	76	80
Del.	-	1	7	5	1	2	18	9	-	-
Md.	24	28	12	3	18	22	2	158	15	10
D.C.	5	5	-	-	-	1	-	-	-	-
Va.	7	9	9	17	33	69	192	227	1	1
W. Va.	2	1	1	-	3	4	28	64	-	-
N.C.	6	7	16	14	62	14	264	234	47	50
S.C.	1	3	7	13	6	24	57	29	9	11
Ga.	14	10	14	13	17	11	116	147	-	7
Fla.	27	24	69	63	20	14	44	66	4	1
E.S. CENTRAL	7	5	30	39	38	64	19	130	9	12
Ky.	1	1	-	6	11	15	11	9	-	-
Tenn.	4	1	8	14	15	31	-	108	7	7
Ala.	2	1	10	10	9	11	8	13	-	1
Miss.	-	2	12	9	3	7	-	-	2	4
W.S. CENTRAL	30	3	176	101	123	560	120	492	-	7
Ark.	3	1	8	15	-	332	25	-	-	-
La.	1	2	22	19	4	4	-	-	-	-
Okla.	2	-	8	9	12	22	95	40	-	3
Tex.	24	-	138	58	107	202	-	452	-	4
MOUNTAIN	10	14	30	54	362	313	33	75	2	1
Mont.	-	-	2	2	-	2	7	4	-	-
Idaho	1	-	2	3	9	34	1	-	-	-
Wyo.	-	-	1	-	59	5	-	6	1	-
Colo.	7	7	8	17	157	144	1	-	-	-
N. Mex.	-	-	3	1	18	32	2	4	-	-
Ariz.	1	2	10	16	82	74	21	60	1	-
Utah	1	2	-	1	29	14	1	-	-	-
Nev.	-	3	4	14	8	8	-	1	-	1
PACIFIC	59	68	155	180	507	418	58	104	-	-
Wash.	8	5	13	32	107	126	-	-	-	-
Oreg.	5	2	31	25	130	33	1	-	-	-
Calif.	45	55	108	117	268	251	54	79	-	-
Alaska	-	1	1	1	-	2	3	25	-	-
Hawaii	1	5	2	5	2	6	-	-	-	-
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	-	1	2	2	-	1	20	29	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 May 17, 2003, and May 18, 2002 (20th Week)*

Reporting area	Salmonellosis		Shigellosis		Streptococcal disease, invasive, group A		*Streptococcus pneumoniae*, invasive: Drug resistant, all ages		*Streptococcus pneumoniae*, invasive: 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	9,326	11,056	7,548	5,127	2,451	2,158	1,041	1,295	163	119
NEW ENGLAND	466	596	104	96	145	121	5	4	1	1
Maine	33	54	4	3	14	16	-	-	-	-
N.H.	30	34	3	4	11	22	-	-	N	N
Vt.	12	24	3	-	13	7	5	3	1	1
Mass.	265	344	67	68	103	69	N	N	N	N
R.I.	27	23	3	4	4	7	-	1	-	-
Conn.	99	117	24	17	-	-	-	-	-	-
MID. ATLANTIC	924	1,539	422	396	331	378	53	62	44	40
Upstate N.Y.	264	373	121	56	186	154	27	58	34	35
N.Y. City	331	435	142	170	48	91	U	U	U	U
N.J.	65	325	72	86	15	80	N	N	N	N
Pa.	264	406	87	84	82	53	26	4	10	5
E.N. CENTRAL	1,324	1,896	489	624	572	509	234	88	75	48
Ohio	415	438	100	289	159	108	154	-	53	-
Ind.	159	120	44	24	52	21	80	86	17	19
Ill.	377	728	222	204	146	164	-	2	-	-
Mich.	211	314	86	59	198	150	N	N	N	N
Wis.	162	296	37	48	17	66	N	N	5	29
W.N. CENTRAL	577	737	267	451	176	131	104	272	16	21
Minn.	172	166	35	69	88	66	-	182	16	19
Iowa	114	115	21	37	N	N	N	N	N	N
Mo.	145	271	90	50	34	28	7	4	-	1
N. Dak.	14	9	-	7	6	-	3	-	-	1
S. Dak.	24	29	8	131	13	7	-	1	-	-
Nebr.	48	49	83	105	18	13	-	23	N	N
Kans.	60	98	30	52	17	17	94	62	N	N
S. ATLANTIC	2,436	2,434	2,635	1,740	416	356	530	645	4	3
Del.	21	15	111	5	5	1	1	3	N	N
Md.	248	213	212	261	148	48	-	-	-	-
D.C.	12	27	20	20	8	4	2	29	-	1
Va.	240	238	108	348	45	36	N	N	N	N
W. Va.	18	29	-	2	16	7	29	31	4	2
N.C.	351	318	273	111	36	71	N	N	U	U
S.C.	116	141	125	24	15	25	52	104	N	N
Ga.	510	404	865	431	48	80	159	166	N	N
Fla.	920	1,049	921	538	95	84	287	312	N	N
E.S. CENTRAL	574	590	374	406	85	53	69	74	-	-
Ky.	106	96	47	57	18	7	5	8	N	N
Tenn.	184	163	116	22	67	46	64	66	N	N
Ala.	173	168	136	156	-	-	-	-	N	N
Miss.	111	163	75	171	-	-	-	-	-	-
W.S. CENTRAL	762	1,015	2,100	524	187	86	29	124	22	4
Ark.	96	136	23	73	2	3	7	5	-	-
La.	67	217	75	147	1	1	22	119	8	4
Okla.	82	97	253	117	42	18	N	N	14	-
Tex.	517	565	1,749	187	142	64	N	N	-	-
MOUNTAIN	674	666	337	191	277	277	16	26	1	2
Mont.	36	29	2	1	1	-	-	-	-	-
Idaho	71	49	8	2	11	5	N	N	N	N
Wyo.	26	20	1	3	-	6	3	8	-	-
Colo.	185	178	53	43	97	58	-	-	-	-
N. Mex.	52	98	65	46	61	54	13	18	-	-
Ariz.	186	166	173	73	99	142	-	-	N	N
Utah	68	49	19	12	7	12	-	-	1	2
Nev.	50	77	16	11	1	-	-	-	-	-
PACIFIC	1,589	1,583	820	699	262	247	1	-	-	-
Wash.	153	121	65	34	23	8	-	-	N	N
Oreg.	145	128	33	35	N	N	N	N	N	N
Calif.	1,227	1,222	717	609	218	216	N	N	N	N
Alaska	36	23	4	2	-	-	-	-	N	N
Hawaii	28	89	1	19	21	23	1	-	-	-
Guam	-	-	-	-	-	-	-	-	-	-
P.R.	47	118	1	10	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 May 17, 2003, and May 18, 2002 (20th Week)*

Reporting area	Syphilis: Primary & secondary Cum. 2003	Syphilis: Primary & secondary Cum. 2002	Syphilis: Congenital Cum. 2003	Syphilis: Congenital Cum. 2002	Tuberculosis Cum. 2003	Tuberculosis Cum. 2002	Typhoid fever Cum. 2003	Typhoid fever Cum. 2002	Varicella (Chickenpox) Cum. 2003
UNITED STATES	2,455	2,389	134	170	3,148	4,352	91	114	5,245
NEW ENGLAND	69	33	1	-	89	157	6	8	913
Maine	3	-	1	-	4	6	-	-	483
N.H.	7	-	-	-	3	6	-	-	-
Vt.	-	1	-	-	-	1	-	-	343
Mass.	50	21	-	-	54	76	1	7	85
R.I.	6	1	-	-	7	21	2	-	2
Conn.	3	10	-	-	21	47	3	1	-
MID. ATLANTIC	274	247	25	23	672	737	13	31	4
Upstate N.Y.	9	8	9	1	88	111	3	3	N
N.Y. City	159	143	9	8	396	373	7	14	-
N.J.	53	50	7	13	118	177	3	9	-
Pa.	53	46	-	1	70	76	-	5	4
E.N. CENTRAL	347	483	32	29	341	443	7	14	2,645
Ohio	85	53	2	-	47	65	-	4	582
Ind.	17	25	4	1	46	41	3	1	-
Ill.	119	182	10	23	175	222	-	4	-
Mich.	118	214	16	5	62	90	4	3	1,684
Wis.	8	9	-	-	11	25	-	2	379
W.N. CENTRAL	62	40	2	-	155	205	1	4	17
Minn.	13	18	-	-	63	83	-	2	N
Iowa	4	2	-	-	10	11	1	-	N
Mo.	25	10	2	-	16	66	-	1	-
N. Dak.	-	-	-	-	-	3	-	-	17
S. Dak.	-	-	-	-	9	8	-	-	-
Nebr.	-	3	-	-	12	6	-	1	-
Kans.	20	7	-	-	45	28	-	-	-
S. ATLANTIC	654	569	28	38	658	816	24	12	1,069
Del.	4	8	-	-	-	7	-	-	8
Md.	112	65	3	5	79	82	5	2	-
D.C.	12	17	1	1	-	-	-	-	7
Va.	31	19	1	1	66	74	10	-	264
W. Va.	-	-	-	-	7	9	-	-	697
N.C.	64	117	9	9	79	122	4	-	N
S.C.	45	50	3	4	55	48	-	-	93
Ga.	130	105	2	8	84	161	3	3	-
Fla.	256	188	9	10	288	313	2	7	N
E.S. CENTRAL	127	235	10	12	255	277	3	2	-
Ky.	20	38	1	2	42	50	-	2	N
Tenn.	52	96	4	4	80	106	1	-	N
Ala.	49	75	4	4	99	83	2	-	-
Miss.	6	26	1	2	34	38	-	-	-
W.S. CENTRAL	305	301	17	41	256	727	-	7	441
Ark.	14	16	-	2	37	49	-	-	-
La.	33	48	-	-	-	-	-	-	3
Okla.	21	25	-	1	49	54	-	-	N
Tex.	237	212	17	38	170	624	-	7	438
MOUNTAIN	109	121	13	7	98	113	3	6	156
Mont.	-	-	-	-	-	4	-	-	N
Idaho	6	1	-	-	1	2	-	-	N
Wyo.	-	-	-	-	2	2	-	-	24
Colo.	6	15	2	1	25	30	3	3	-
N. Mex.	20	14	-	-	-	12	-	-	-
Ariz.	69	84	11	6	55	46	-	-	2
Utah	3	2	-	-	9	12	-	2	130
Nev.	5	5	-	-	6	5	-	1	-
PACIFIC	508	360	6	20	624	877	34	30	-
Wash.	26	19	-	1	80	84	1	2	-
Oreg.	15	5	-	-	30	34	2	2	-
Calif.	466	332	6	19	489	684	31	26	-
Alaska	-	-	-	-	19	23	-	-	-
Hawaii	1	4	-	-	6	52	-	-	-
Guam	-	-	-	-	-	-	-	-	-
P.R.	65	85	1	12	-	24	-	-	111
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 May 17, 2003 (20th Week)

Reporting Area	All causes, by age (years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	522	347	113	39	13	10	54
Boston, Mass.	137	91	28	7	5	6	15
Bridgeport, Conn.	31	22	4	4	1	-	3
Cambridge, Mass.	14	7	6	1	-	-	2
Fall River, Mass.	15	10	2	3	-	-	-
Hartford, Conn.	44	28	10	3	2	1	8
Lowell, Mass.	19	14	5	-	-	-	3
Lynn, Mass.	13	8	3	2	-	-	2
New Bedford, Mass.	23	17	5	1	-	-	3
New Haven, Conn.	20	16	3	1	-	-	1
Providence, R.I.	77	52	11	10	3	1	-
Somerville, Mass.	9	6	2	-	-	1	-
Springfield, Mass.	30	19	6	4	1	-	7
Waterbury, Conn.	23	14	8	1	-	-	4
Worcester, Mass.	67	43	20	2	1	1	6
MID. ATLANTIC	2,169	1,482	459	149	41	34	106
Albany, N.Y.	55	33	15	3	2	2	-
Allentown, Pa.	14	14	-	-	-	-	-
Buffalo, N.Y.	77	48	24	5	-	-	9
Camden, N.J.	21	11	5	2	1	2	-
Elizabeth, N.J.	10	7	2	-	1	-	5
Erie, Pa.	39	27	7	3	2	-	5
Jersey City, N.J.	34	26	7	-	-	1	-
New York City, N.Y.	1,055	718	216	85	19	13	38
Newark, N.J.	42	19	16	5	1	1	1
Paterson, N.J.	27	17	6	3	1	-	1
Philadelphia, Pa.	424	275	100	31	7	11	22
Pittsburgh, Pa.§	33	22	7	2	2	-	1
Reading, Pa.	24	20	4	-	-	-	2
Rochester, N.Y.	111	87	17	3	2	2	7
Schenectady, N.Y.	25	18	6	1	-	-	2
Scranton, Pa.	29	25	3	1	-	-	1
Syracuse, N.Y.	88	66	13	4	3	2	8
Trenton, N.J.	16	12	3	1	-	-	1
Utica, N.Y.	23	18	5	-	-	-	1
Yonkers, N.Y.	22	19	3	-	-	-	2
E.N. CENTRAL	1,897	1,250	434	126	45	42	137
Akron, Ohio	4	4	-	-	-	-	4
Canton, Ohio	35	25	7	2	1	-	2
Chicago, Ill.	372	220	94	31	17	10	29
Cincinnati, Ohio	98	61	29	2	1	5	15
Cleveland, Ohio	109	77	21	9	1	1	3
Columbus, Ohio	186	128	41	11	1	5	18
Dayton, Ohio	129	91	28	4	3	3	15
Detroit, Mich.	192	103	62	16	5	6	14
Evansville, Ind.	38	29	7	1	1	-	1
Fort Wayne, Ind.	65	46	15	2	1	1	4
Gary, Ind.	12	5	3	2	2	-	-
Grand Rapids, Mich.	60	41	8	6	2	3	2
Indianapolis, Ind.	193	124	45	15	5	4	12
Lansing, Mich.	35	27	4	2	2	-	2
Milwaukee, Wis.	107	76	22	8	1	-	4
Peoria, Ill.	46	35	8	2	-	1	-
Rockford, Ill.	45	34	6	4	-	1	2
South Bend, Ind.	46	33	8	5	-	-	4
Toledo, Ohio	74	54	15	3	-	2	4
Youngstown, Ohio	51	37	11	1	2	-	2
W.N. CENTRAL	535	370	95	41	16	12	37
Des Moines, Iowa	80	58	15	4	1	2	14
Duluth, Minn.	31	22	5	1	1	2	1
Kansas City, Kans.	32	23	7	1	1	-	2
Kansas City, Mo.	88	60	14	6	5	2	5
Lincoln, Nebr.	41	32	6	3	-	-	5
Minneapolis, Minn.	51	33	11	1	3	3	3
Omaha, Nebr.	64	48	10	6	-	-	4
St. Louis, Mo.	U	U	U	U	U	U	U
St. Paul, Minn.	54	41	5	6	1	1	1
Wichita, Kans.	94	53	22	13	4	2	2
S. ATLANTIC	1,722	1,047	429	150	44	49	74
Atlanta, Ga.	770	432	212	78	22	26	23
Baltimore, Md.	160	96	39	13	6	6	12
Charlotte, N.C.	103	64	29	6	-	4	6
Jacksonville, Fla.	130	94	23	9	1	2	4
Miami, Fla.	15	7	6	-	2	-	-
Norfolk, Va.	44	30	5	4	3	2	1
Richmond, Va.	47	27	14	4	-	2	5
Savannah, Ga.	53	35	13	5	-	-	2
St. Petersburg, Fla.	82	53	19	6	3	1	3
Tampa, Fla.	203	143	40	11	2	5	16
Washington, D.C.	99	55	28	12	3	1	-
Wilmington, Del.	16	11	1	2	2	-	2
E.S. CENTRAL	841	554	189	69	20	8	53
Birmingham, Ala.	201	136	44	15	2	3	15
Chattanooga, Tenn.	74	48	17	5	2	2	2
Knoxville, Tenn.	93	66	18	7	2	-	9
Lexington, Ky.	68	36	25	6	1	-	2
Memphis, Tenn.	139	97	32	8	2	-	10
Mobile, Ala.	82	59	14	6	1	2	2
Montgomery, Ala.	38	24	5	6	2	1	5
Nashville, Tenn.	146	88	34	16	8	-	8
W.S. CENTRAL	1,582	981	354	145	55	46	88
Austin, Tex.	88	59	15	4	5	4	3
Baton Rouge, La.	50	34	8	7	1	-	1
Corpus Christi, Tex.	41	25	8	4	1	3	2
Dallas, Tex.	210	120	58	15	11	6	8
El Paso, Tex.	95	68	12	12	2	1	1
Ft. Worth, Tex.	113	75	27	5	3	3	8
Houston, Tex.	498	278	115	75	16	14	33
Little Rock, Ark.	77	45	23	4	2	3	2
New Orleans, La.	U	U	U	U	U	U	U
San Antonio, Tex.	216	147	43	11	7	8	11
Shreveport, La.	55	37	13	3	-	2	9
Tulsa, Okla.	139	93	32	5	7	2	10
MOUNTAIN	902	625	167	75	23	11	69
Albuquerque, N.M.	111	69	27	11	4	-	17
Boise, Idaho	43	34	9	-	-	-	8
Colo. Springs, Colo.	67	45	11	9	2	-	2
Denver, Colo.	115	67	26	12	5	5	3
Las Vegas, Nev.	272	189	48	25	8	1	12
Ogden, Utah	28	21	3	4	-	-	1
Phoenix, Ariz.	U	U	U	U	U	U	U
Pueblo, Colo.	31	27	2	1	1	-	2
Salt Lake City, Utah	94	68	14	8	1	3	10
Tucson, Ariz.	141	105	27	5	2	2	14
PACIFIC	1,784	1,243	373	89	42	36	132
Berkeley, Calif.	15	12	3	-	-	-	4
Fresno, Calif.	127	93	20	6	6	2	11
Glendale, Calif.	29	24	3	1	-	1	3
Honolulu, Hawaii	74	53	16	2	2	1	5
Long Beach, Calif.	72	48	17	1	5	1	11
Los Angeles, Calif.	466	308	114	29	8	7	32
Pasadena, Calif.	32	28	3	1	-	-	2
Portland, Oreg.	130	87	34	3	6	-	4
Sacramento, Calif.	188	139	30	12	4	3	18
San Diego, Calif.	174	118	35	10	3	7	17
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	151	107	32	8	2	2	12
Santa Cruz, Calif.	33	28	3	2	-	-	3
Seattle, Wash.	125	77	30	5	2	11	3
Spokane, Wash.	68	47	17	3	-	1	2
Tacoma, Wash.	100	74	16	6	4	-	5
TOTAL	11,954¶	7,899	2,613	883	299	248	750

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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