CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

March 23, 2001 / Vol. 50 / No. 11

MMWR™
MORBIDITY AND MORTALITY
WEEKLY REPORT

World TB Day — March 24, 2001

March 24, 2001, will mark the 19th annual World TB Day, which recognizes the collaborative efforts of all countries involved in eliminating tuberculosis (TB). TB is the second leading cause of death among infectious diseases worldwide. An estimated 2 billion persons—one third of the world's population—are infected with the bacteria that cause TB, and approximately 2 million persons die each year from TB.

After years of decline in the United States, the number of reported TB cases increased 20% during 1985–1992. This resurgence was associated with deterioration of the infrastructure for TB services; the human immunodeficiency virus epidemic, which substantially increased the risk for active TB among persons with latent TB infection; immigration of persons from countries where TB was endemic; TB transmission in congregate settings (e.g., hospitals and prisons); and development of multidrug-resistant TB. However, a renewed emphasis on TB control and prevention in the mid-to-late 1990s resulted in substantial declines in the disease. In 2000, the provisional number of TB cases decreased for the eighth straight year to an all-time low of 16,372 cases, a 7% decrease over the 17,531 cases reported in 1999.

In 2000, the Institute of Medicine (IOM) released a CDC-commissioned report on the feasibility of eliminating TB in the United States. The report supports a statement by the Advisory Council for the Elimination of Tuberculosis that commits to the goal of eliminating TB in the United States. The IOM report states that more aggressive and decisive action will be required for TB elimination. The report also recommends that the United States further engage in global TB prevention and control efforts. Some of CDC's efforts in this area, specifically projects in the Russia Federation, are highlighted in this issue of *MMWR*. Additional information on World TB Day and CDC's global TB activities are available on the World-Wide Web, http://www.cdc.gov.

Tuberculosis Treatment Interruptions — Ivanovo Oblast, Russian Federation, 1999

In the Russian Federation, the number of tuberculosis (TB) cases increased from 45,000 (34 per 100,000 population) in 1991 to 124,000 (85 per 100,000 population) in 1999 (*1*). In 1995, the World Health Organization (WHO) implemented a pilot TB control project in the Ivanovo oblast of the Russian Federation (1995 population: 1.3 million), located 175 miles northeast of Moscow. The project is based on the following five

TB Treatment Interruptions — Continued

elements of the WHO directly observed treatment, short-course (DOTS) strategy for controlling TB: government commitment, laboratory-based diagnosis, a reliable supply of anti-TB medications, direct supervision of standardized treatment, and a recording and reporting system that permits evaluation of treatment outcomes. In most settings, implementing this strategy has resulted in cure rates of ≥85% (*2,3*); however, little improvement occurred in cure rates in Ivanovo after implementation of this strategy in 1995 (*4,5*). Although 17% of these poor outcomes were attributed to primary multidrug-resistant TB (MDR TB) (i.e., TB resistant to at least isoniazid and rifampin) (*4*), other factors that may have contributed to poor outcomes, such as treatment delay and interruption, were not quantified. To determine the extent of treatment interruption as a potential cause of poor outcomes among TB patients in Ivanovo, CDC reviewed TB treatment records for all newly diagnosed, never-treated pulmonary TB patients registered in Ivanovo from April through June 1999. This report summarizes the results of that analysis and indicates that approximately one fourth of highly infectious TB patients interrupted treatment for 2–8 weeks and nearly one fourth interrupted treatment for more than 8 weeks. On the basis of these results, TB project staff have increased efforts to reduce treatment interruption through use of incentives.

For each patient, the frequency and duration of treatment interruptions and treatment outcomes were recorded. The analysis was limited to new patients whose sputum smears were positive for acid-fast bacilli (AFB). TB treatment requires a minimum of 6 months of anti-TB medications: the first 2 months involve taking four anti-TB medications (i.e., intensive phase), and the following 4 months involve taking two anti-TB medications (i.e., continuation phase). Patients who discontinued medication for 2–8 consecutive weeks but eventually restarted treatment were considered to have interrupted treatment. Standard WHO definitions were used to assign mutually exclusive treatment outcomes for each patient; these definitions were dichotomized further into successful treatment versus poor outcome (*5*). Patients were considered to have had a successful treatment outcome if they completed 6 months of prescribed medication within 1 year of starting treatment. Patients were considered to have had a poor outcome if treatment failed (i.e., patient remained or again became AFB smear-positive following ≥5 months of treatment), they defaulted (i.e., interrupted treatment for >8 consecutive weeks), or they died for any reason during the course of TB treatment.

During April–June, 115 newly diagnosed, never-treated pulmonary TB patients were registered; 54 (47%) were AFB smear-positive. The median age of the smear-positive patients was 43 years (range: 17–85 years), and 34 (63%) were male. No patients were documented to have MDR TB by subsequent culture and susceptibility testing. Successful treatment outcomes were documented for 31 (57%) smear-positive patients. Of the remaining 23 with poor outcomes, treatment failed in six (26%) patients, 12 (52%) defaulted, and five (22%) died. Of the patients who died, three died within 1 month of starting treatment and two died in the second and third months of treatment, respectively.

Treatment interruption of 2–8 weeks occurred among 15 (28%) patients. Of patients who interrupted treatment, 13 (87%) were male, and 10 (67%) were aged ≤50 years. The median number of interruptions per patient was two (range: one–six). Among patients who interrupted treatment, three (20%) interrupted during the intensive phase, 10 (67%) during the continuation phase, and two (13%) during both phases of treatment. The median duration of all interruptions was 3 weeks (range: 2–8 weeks); of 30 interruptions, 20 (67%) were 2–3 weeks and 10 (33%) were 4–8 weeks.

TB Treatment Interruptions — Continued

Of the 31 AFB smear-positive patients who completed treatment, the median duration of treatment was 10 months (range: 6–18 months). Sixteen (52%) completed 6 months of prescribed medication within 6–9 months, eight (26%) within 10–12 months, and seven (23%) within 13–18 months.

Reported by: I Danilova, L Mitunina, M Urastova, M Stoyunin, Ivanovo TB Dispensary; V Shapkin, Oblast TB Hospital, Ivanovo; G Oswald, N Afanasiev, U.S. Agency for International Development; V Erokhin, V Punga, I Vassilieva, Central TB Research Institute, Moscow, Russia. M Grzemska, W Jakubowiak, H Kluge, World Health Organization, Geneva, Switzerland. International Activity, Div of TB Elimination, National Center for HIV, STD, and TB Prevention; and an EIS Officer, CDC.

Editorial Note: The incidence of adult TB cases in Ivanovo remained stable from 1996 to 1998 at approximately 45 per 100,000 annually (WHO, unpublished data, 1998). However, primary MDR TB more than doubled from 3.8% in 1996 to 9.4% in 1998 (*4*). Patients who default are at high risk for developing drug resistance or disease progression (*6,7*). However, interruptions of shorter duration also are of concern because patient adherence is important for treatment success (*8*) and to prevent transmission (*9*).

In Ivanovo, the rates of treatment default and interruption were high. Approximately one third interrupted treatment during the intensive phase, when patients with a high bacillary load are at greatest risk for developing drug resistance and for spreading untreated disease in the community. Half of the patients interrupted treatment more than once, and the median duration of interruption was long, resulting in considerable delays in treatment completion and increasing the workload of staff responsible for tracking patients who interrupted or defaulted. Reasons for treatment interruption included both patient and program factors such as cost of transportation and length of hospital stay required for treatment.

The findings in this report are subject to at least three limitations. First, the sample size of the population was small, limiting statistical power to detect significant differences in outcomes among groups. Second, other risk factors (e.g., human immunodeficiency virus infection and excessive alcohol consumtion) that may have affected the likelihood of both treatment interruption and poor outcomes could not be assessed in the treatment record review. Finally, not all patients were evaluated following treatment completion, and their final treatment outcome was not available.

On the basis of this study and another study examining reasons for treatment interruption (*10*), the TB project staff were encouraged to concentrate human and financial resources on treatment completion. To improve patient adherence and reduce treatment interruption, patients are now receiving food supplements or free transportation to the clinic. Aggressive efforts are being made to locate and restart treatment in patients who interrupt before completion. Vehicles, fuel, and public transportation passes have been provided to the TB project staff to enable them to find patients who interrupt treatment. Finally, health-care providers are receiving performance-based rewards if their patients complete treatment.

References

1. Shilova MV. Tuberculosis in Russia in 1999. Moscow, Russia: Ministry of Health of Russia, Sechenov Moscow Medical Academy, Scientific-Research Institute of Phthysiopulmonology, 2000.
2. China Tuberculosis Control Collaboration. Results of directly observed short-course chemotherapy in 112,842 Chinese patients with smear-positive tuberculosis. Lancet 1996; 347:358–62.

TB Treatment Interruptions — Continued

3. Kumaresan JA, Ahsan Ali AK, Parkkali LM. Tuberculosis control in Bangladesh: success of the DOTS strategy. Int J Tuberc Lung Dis 1998;2:992–8.
4. CDC. Primary multidrug-resistant tuberculosis—Ivanovo oblast, Russia, 1999. MMWR 1999;48:661–4.
5. World Health Organization. Treatment of tuberculosis: guidelines for national programmes. Geneva, Switzerland: World Health Organization, 1997.
6. Mitchison DA. How drug resistance emerges as a result of poor compliance during short course chemotherapy for tuberculosis. Int J Tuberc Lung Dis 1998;2:10–5.
7. Laserson KF, Osorio L, Sheppard JD, et al. Clinical and programmatic mismanagement rather than community outbreak as the cause of chronic, drug-resistant tuberculosis in Buenaventura, Colombia, 1998. Int J Tuberc Lung Dis 2000;4:673–83.
8. Addington WW. Patient compliance: the most serious remaining problem in control of tuberculosis in the US. Chest 1979;76:741–3.
9. Pablos-Mendez A, Knirsch CA, Barr RG, Lerner BH, Frieden TR. Nonadherence in tuberculosis treatment: predictors and consequences in New York City. Am J Med 1997;102:164–70.
10. Larson JL, Danilova ID, Caudill C, et al. Factors associated with tuberculosis treatment delay and interruption, Ivanovo, Russia—1999 [Abstract]. Presented at the EIS Conference, Atlanta, Georgia, April 2000.

Evaluation of a Directly Observed Therapy Short-Course Strategy for Treating Tuberculosis — Orel Oblast, Russian Federation, 1999–2000

During the 1990s, the number of tuberculosis (TB) cases increased dramatically in the Russian Federation (*1–3*), and the rise paralleled concomitant increases in TB-associated mortality (*2,3*). In November 1998, the World Health Organization (WHO), the U.S. Agency for International Development, and CDC, in collaboration with the Central Tuberculosis Research Institute of the Russian Academy of Medical Sciences and the Russian Ministry of Health, identified three regions as demonstration sites for implementing a WHO control strategy program of directly observed treatment short-course (DOTS). The program was designed to provide comprehensive TB care to both civilian and prison populations within each region (oblast), and periodic cohort analyses of treatment outcomes were recommended to evaluate its progress. This report summarizes evaluations of treatment outcomes for patients enrolled during the first 6 months of the project in Orel oblast and indicates that treatment success rates among TB patients in Orel were high. These findings support the use of DOTS as a control strategy in the Russian Federation.

Orel (1999 population: 900,000) is located approximately 200 miles southwest of Moscow. In 1999, the TB rate for Orel was 72 per 100,000 population, and 3.7% of newly diagnosed, smear-positive patients had primary multidrug-resistant TB (MDR TB) (i.e., TB resistant to at least isoniazid and rifampin). Case finding for TB followed existing national directives, which include the passive detection of symptomatic cases, active case finding among household contacts, and regular screening of groups considered to be at risk (e.g., prisoners, teachers, and health-care workers). In the Russian Federation, TB is generally diagnosed by chest radiograph and clinical findings; however, in the oblasts where the demonstration projects have been implemented, smear microscopy and mycobacterial culture are used by clinicians to diagnose TB. In Orel, clinicians use the standard WHO-recommended short course chemotherapy regimen (isoniazid, rifampin, ethambutol, and pyrazidamine for 2 months followed by isoniazid and rifampin for 4 months) for patients not treated previously for TB.

Treating TB Disease — Continued

Prospective data collection began in October 1999 on all Orel TB patients without a history of TB treatment. Sputum conversion and treatment outcomes for patients registered during October–December 1999 and January–March 2000 are presented in this report. Sputum conversion was defined as achieving three consecutive negative sputum smear and/or culture specimens from a previously positive patient. WHO/International Union Against Tuberculosis and Lung Disease definitions for six mutually exclusive treatment outcomes were used.* Prison patients and retreatment patients (i.e., patients who had previously been treated for TB) were enrolled beginning in January 2000 and were included in the analysis of second quarter outcomes.

A total of 349 patients were enrolled in the study: 128 during October–December 1999 and 221 during January–March 2000; 331 (95%) had pulmonary TB, and 265 (76%) were men. Mean age at diagnosis was 40 years (range: 15–89 years). Enrollment was higher in the second quarter, in part because of the inclusion of prisoners (n=39) and retreatment case-patients (n=six). Of the 310 civilian patients, 182 (52%) had positive smears or cultures for *Mycobacterium tuberculosis* before treatment, and 128 (41%) had negative bacteriologic findings; 146 (47%) reported having symptoms at TB diagnosis, and 164 (53%) were asymptomatic and were identified through routine screening. Culture confirmation of TB diagnosis was significantly higher in symptomatic patients than in those diagnosed through a screening procedure (77% versus 56%; $p<0.001$). In prisoners, routine biannual screening is mandatory. Fifteen (39%) prison case-patients had positive smears, and 20 (51%) were bacteriologically confirmed.

Of isolates from 179 culture-positive patients tested for susceptibility to five anti-TB drugs, 55 (31%) were resistant to streptomycin, 27 (15%) to isoniazid, 20 (11%) to kanamycin, five (3%) to rifampin, and five (3%) to ethambutol. Six (3%) patients had MDR TB, and all were civilians. MDR TB prevalence was 1% among patients with no history of previous TB treatment (five of 343) and 17% among retreatment cases (one of six).

Treatment success (i.e., patients with bacteriologically documented cure and those who completed treatment) was attained for 88% of new and 60% of retreatment TB patients. Among new, culture-positive pulmonary case-patients, 88% were either cured or completed treatment; this proportion declined to 81% for patients identified as smear-positive at diagnosis. Cure and completion rates among prisoners were high (97%), with no prison patients defaulting. Overall, case-fatality rates were high in Orel (5%), particularly among smear-positive patients (12%).

Reported by: B Kazeonny, T Khorosheva, T Aptekar, Orel Oblast TB Dispensary, Orel; L Rybka, Central TB Research Institute of the Russian Academy of Medical Sciences; H Kluge, W Jakubowiak, D Pashkevich, World Health Organization, Moscow, Russia. International Activity, Div of TB Elimination, National Center for HIV, STD, and TB Prevention; and an EIS Officer, CDC.

*WHO treatment outcomes include bacteriologic cure: patients with a positive smear or culture before treatment and negative bacteriologic results at the end of therapy; treatment completion: patients who complete treatment without bacteriologic proof of cure or failure; treatment failure: patients who fail to achieve bacteriologic conversion within 5 months after the start of treatment, who become smear- or culture-positive again during treatment after a previous conversion, or who are identified with multidrug-resistant TB (i.e., resistant to isoniazid and rifampin with pretreatment positive culture); death: patients who die of any cause during the course of treatment; default: patients who interrupt treatment for $\geq$2 months after completing at least one month of therapy or patients whose drug intake is <80% of the prescribed doses at any given month during treatment; transferred out: patients who are transferred to another reporting unit before completion of therapy (*4*).

Treating TB Disease — Continued

Editorial Note: The findings in this report indicate that treatment success rates among TB patients in Orel were high. Although rates for smear-positive patients during the first 6 months of the project were slightly lower than the WHO global target of 85%, these findings are consistent with expected success rates for a newly implemented DOTS project. The higher treatment success rates among Orel patients in whom asymptomatic TB was diagnosed using chest radiograph (without bacteriologic confirmation) compared with those with bacteriologic confirmation may reflect either early diagnosis of disease or incorrect diagnosis. The higher proportion of cases among prisoners identified through asymptomatic radiographic screening in Orel and the lack of defaulters in this group may account for their better outcomes compared with civilians.

The treatment success rates reported here were higher than those reported in the other project areas of the Russian Federation that implemented the DOTS strategy (*5*–*7*). Reasons for the higher treatment success rates in Orel may include earlier clinical presentation of patients and efforts by local staff to ensure that patients remained on treatment. Another factor may be the lower rates of MDR TB; studies in other areas of the Russian Federation have documented rates of 5%–22% in new TB patients (*5*–*7*). The higher proportion of deaths among Orel TB patients may indicate delays in treatment of TB disease, raising concern about sustained community transmission from unidentified infectious cases, the potential lack of education about TB symptoms in the general population, and the possibility of delayed recognition by physicians.

The public health system in the Russian Federation is struggling to control the newly re-emergent TB epidemic. Although the DOTS strategy is an inexpensive and effective method of TB control in other high-burden countries (*1*), the adoption of DOTS in the Russian Federation has begun only recently. Because aspects of the strategy depart from long-standing Russian TB control traditions, convincing TB physicians to adopt DOTS has been difficult. The findings in this report suggest that the successful implementation of DOTS in the Russian Federation is possible despite these historic differences in TB control, and that treatment success rates above the WHO global target of 85% can be achieved.

References

1. Shilova MV. Tuberculosis in Russia in 1999. Moscow, Russia: Ministry of Health of Russia, Sechenov Moscow Medical Academy, Scientific-Research Institute of Phthysiopulmonology, 2000.
2. Shilova MV. Tuberculosis in Russia in 1998. Moscow, Russia: Ministry of Health of Russia, Sechenov Moscow Medical Academy, Scientific-Research Institute of Phthysiopulmonology, 1999.
3. Perelman MI. Tuberculosis in Russia. Int J Tuberc Lung Dis 2000;4:1097–103.
4. World Health Organization. Treatment of tuberculosis: guidelines for national programmes. Geneva, Switzerland: WHO Global Tuberculosis Program, 1997.
5. Kimmerling ME, Kluge H, Vezhina N, et al. Inadequacy of the current WHO re-treatment in a central Siberian prison: treatment failure and MDR TB. Int J Tuberc Lung Dis 1999;3:451–3.
6. Espinal MA, Sang JK, Suarez PG, et al. Standard short-course chemotherapy for drug-resistant tuberculosis: treatment outcomes in 6 countries. JAMA 2000;283:2537–45.
7. CDC. Primary multidrug-resistant tuberculosis—Ivanovo Oblast, Russia, 1999. MMWR 1999;48:661–3.

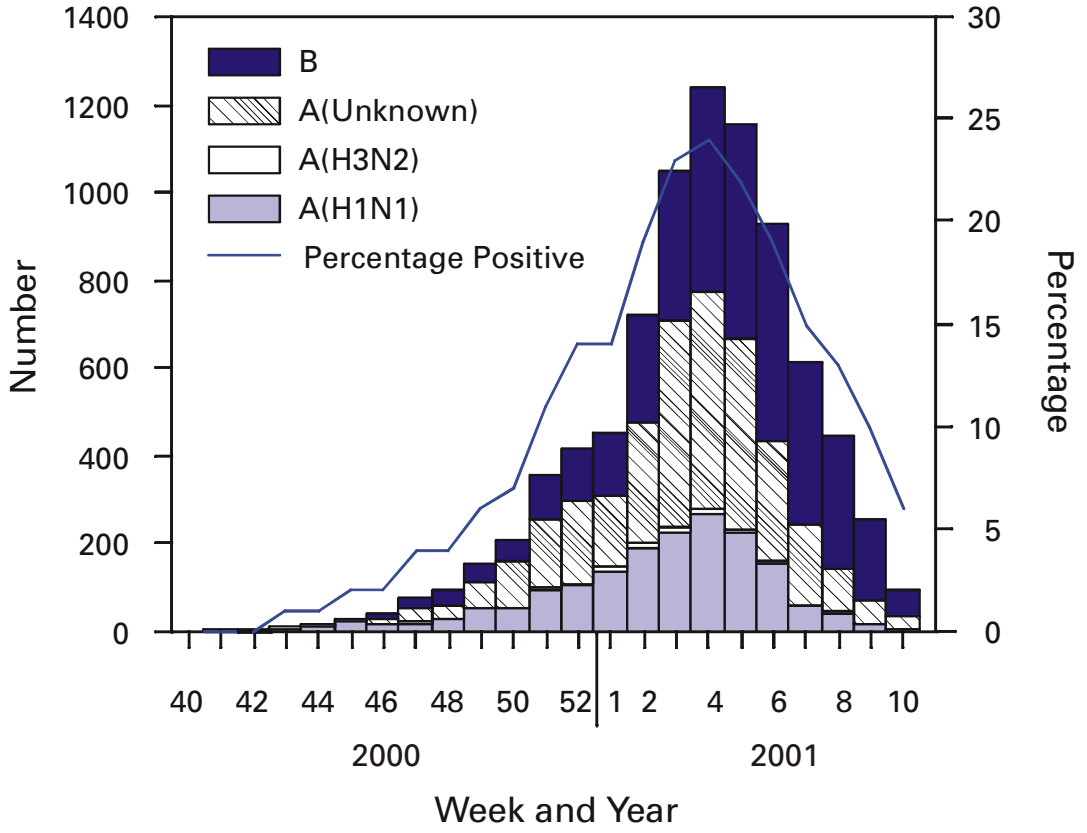
Influenza Activity — United States, 2000–01 Season

This report summarizes influenza activity in the United States during October 1, 2000–March 10, 2001 (*1*)*. Influenza activity increased in December and January and peaked at the end of January. The most frequently isolated viruses were influenza A (H1N1); however, influenza B viruses have been co-circulating and appear to be increasing.

During October 1, 2000–March 10, 2001, the World Health Organization (WHO) collaborating laboratories and National Respiratory and Enteric Virus Surveillance System (NREVSS) laboratories tested 64,840 specimens for influenza, and 8386 (13%) were positive. Of these, 4885 (58%) were influenza type A and 3501 (42%) were influenza type B. Of the 4885 influenza A viruses identified, 1826 (37%) were subtyped: 1746 (96%) were A (H1N1) and 80 (4%) were A (H3N2). The percentage of specimens positive for influenza infections, an indicator of influenza activity, peaked at 24% during the week ending January 27, 2001. For the week ending March 10, 6% of tested specimens were positive for influenza (Figure 1).

*The four components of the influenza surveillance system have been described (*1*). Data reported as of March 15, 2001.

FIGURE 1. Number* and percentage of respiratory specimens testing positive for influenza reported by World Health Organization and National Respiratory and Enteric Virus Surveillance System collaborating laboratories, by week and year — United States, 2000–01 season



* 8386.

Influenza Activity — Continued

CDC antigenically characterized 436 influenza viruses received from U.S. laboratories since October 1. Of the 259 influenza A (H1N1) isolates characterized, 246 (95%) were similar to A/New Caledonia/20/99, the H1N1 component of the 2000–01 influenza vaccine, and 13 (5%) were similar to A/Bayern/07/95. Although A/Bayern-like viruses are antigenically distinct from A/New Caledonia-like viruses, the A/New Caledonia/20/99 vaccine strain produces high titers of antibody that cross-react with A/Bayern/07/95-like viruses (*2*). Of the 16 influenza A (H3N2) characterized viruses, all were antigenically similar to the vaccine strain A/Panama/2007/99. Of the 161 influenza B viruses characterized, 29 (18%) were similar to the vaccine strain B/Beijing/184/93, and 132 (82%) were more closely related antigenically to the B/Sichuan/379/99 reference strain than to the current vaccine strain. The B/Sichuan virus exhibited cross-reactivity with the vaccine strain.

During October 1–March 10, the percentage of patient visits to U.S. sentinel physicians for influenza-like illness (ILI)[†] peaked at 4.1% during the week ending January 27. During that week, the percentage of patient visits for ILI was elevated above baseline levels (0–3%) in six of nine surveillance regions. For the week ending March 10, 1.6% of patient visits to U.S. sentinel physicians were the result of ILI.

As reported by state and territorial epidemiologists, influenza activity[§] peaked during the weeks ending February 3 and 10, 2001, when 38 states reported regional or widespread influenza activity. For the week ending March 10, one state reported widespread activity, 12 states reported regional activity, 35 states reported sporadic activity, one state reported no activity, and one state did not report.

For the week ending March 10, the 122 Cities Mortality Reporting System attributed 8.0% of recorded deaths to pneumonia and influenza (P&I). This percentage was below the epidemic threshold[¶] of 8.7% for this week. The percentage of P&I deaths remained below the epidemic threshold each week since October 1.

Reported by: Participating state and territorial epidemiologists and state public health laboratory directors. WHO collaborating laboratories. National Respiratory and Enteric Virus Surveillance System laboratories. Sentinel Physicians Influenza Surveillance System. Surveillance Systems Br, Div of Public Health Surveillance and Informatics, Epidemiology Program Office; WHO Collaborating Center for Reference and Research on Influenza, Influenza Br and Respiratory and Enteric Virus Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Influenza activity during the 2000–01 season was moderate and lower than the previous three seasons. Three surveillance system components (i.e., WHO/NREVSS laboratories, U.S. sentinel physicians, and state and territorial epidemiologists' reports) indicated that activity peaked during late January and early February. The predominant influenza strain circulating this season has been influenza A (H1N1); however, the proportion of influenza B virus isolates has been increasing. During the

[†] Temperature of >100.0 F (>37.8 C) and either cough or sore throat in the absence of a known cause.

[§] Levels of influenza activity are 1) *no activity*; 2) *sporadic*—sporadically occurring ILI or culture-confirmed influenza with no outbreaks detected; 3) *regional*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of <50% of the state's population; and 4) *widespread*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of >50% of the state's population.

[¶] The epidemic threshold is 1.654 standard deviations above the seasonal baseline. The expected seasonal baseline is projected using a robust regression procedure in which a periodic regression model is applied to observed percentages of deaths from P&I since 1983.

Influenza Activity — Continued

weeks ending February 24, March 3, and 10, 70% of isolates nationwide were influenza B, and during those weeks influenza B viruses predominated (range: 61%–93%) in eight of nine surveillance regions.

Influenza activity as reported by WHO/NREVSS laboratories and U.S. sentinel physicians peaked during the week ending January 27, when 24% of specimens tested were positive for influenza and 4.1% of visits to U.S. sentinel physicians were the result of ILI. During the previous three seasons, the peak percentage of specimens testing positive for influenza ranged from 28% to 32% and the timing of the peak varied from as early as mid-to-late December during the 1999–2000 season to as late as the middle of February during the 1998–99 season. The peak percentage of patient visits to sentinel physicians for ILI ranged from 4.9% in late December of the 1997–98 season to 5.6% during early February of the 1999–2000 season.

As reported by state and territorial epidemiologists, influenza activity peaked during the weeks ending February 3 and 10, when 38 states reported regional or widespread influenza activity. This peak was lower than those reported during the 1997–98, 1998–99, and 1999–2000 seasons, when 46, 43, and 44 states reported regional or widespread influenza activity, respectively. Similar to the laboratory and sentinel physician data, the peak number of states reporting regional or widespread activity during the 1999–2000 season occurred earlier (mid-January) than this season and either of the previous two seasons.

As reported by the 122 Cities Mortality Reporting System, the percentage of total deaths that resulted from P&I remained below the epidemic threshold each week since October 1. During the previous three seasons, the percentage of deaths attributed to P&I was above epidemic threshold for 10 consecutive weeks each season.

Influenza A (H1N1) viruses, the predominant strain this year, last circulated widely in the United States during the 1995–96 and 1988–89 seasons. Influenza A (H1N1) viruses circulated during 1918–1957, then disappeared for 20 years. The influenza A (H1N1) virus that reappeared in 1977 was antigenically and genetically similar to strains isolated in 1950 and 1951. Since their reappearance in 1977, influenza A (H1N1) viruses have had less impact on persons born during or before the mid-1950s than on those born after that time probably because immunity developed during the 1940s and 1950s (*3*).

CDC collects and reports U.S. influenza surveillance data during October–May. This information is updated weekly and is available through CDC's voice information system, telephone (888) 232-3228, the fax information system, telephone (888) 232-3299 (request document number 361100), or on the World-Wide Web, http://www.cdc.gov/ncidod/diseases/flu/weekly.htm.

References

1. CDC. Influenza activity—Unites States, 1999–2000 season. MMWR 1999;48:1039–42.
2. CDC. Influenza activity—United States and worldwide, April–October 2000. MMWR 2000;49:1006–8.
3. Noble GR. Epidemiologic and clinical aspects of influenza. In: Beare AS, ed. Basic and applied influenza research. Boca Raton, Florida: CRC Press, 1982:11–50.

Notice to Readers

World Water Day — March 22, 2001

In 1992, the United Nations Conference on Environment and Development designated March 22 of each year World Water Day. This year's theme, "Water and Health," will be organized by the World Health Organization (WHO). The objectives of World Water Day are to focus attention on the problems related to the drinking water supply; the importance of conservation, preservation, and protection of water resources; and to increase participation by governments, international agencies, nongovernment organizations, and the private sector in World Water Day activities (*1*).

Approximately 1.1 billion persons do not have access to potable water, and 2.4 billion persons do not have acceptable sanitation. Diarrhea causes 4 billion episodes of illness and 2.2 million deaths every year; the greatest burden of illness occurs among children aged <5 years. Safe water, adequate sanitation, and hygiene education can reduce diarrheal disease mortality by an estimated average of 65% and related morbidity by 26% (*2*).

In response to the need for safe drinking water, CDC, in collaboration with the CARE/CDC Health Initiative, the Rotary Club of Estes Park, Colorado, the Gangarosa International Health Foundation, the CDC Foundation, and CARE has produced *Safe Water Systems for the Developing World: A Handbook for Implementing Household-Based Water Treatment and Safe Storage Projects*. This handbook was developed as a resource for program managers, technical staff, and other personnel in organizations involved in water and sanitation projects. The Safe Water System is a water quality intervention that uses simple, inexpensive technologies to improve water quality at the point of use.

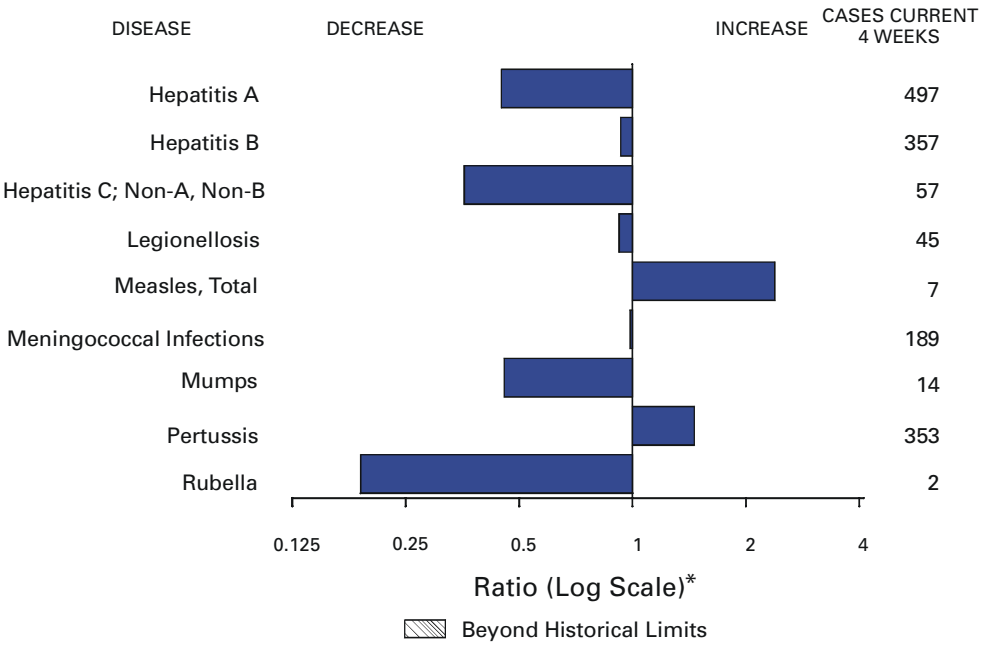
Additional information about World Water Day is available from WHO and the International Water and Sanitation Centre's World-Wide Web site, http://www.worldwaterday.org*. Information about the Safe Water System is available from the Foodborne and Diarrheal Diseases Branch, National Center for Infectious Diseases, CDC, e-mail: safewater@cdc.gov, telephone (404) 639-2206, and on the World-Wide Web, http://www.cdc.gov/safewater.

References

1. IRC International Water and Sanitation Centre. World Water Day objectives. Available at http://www.worldwaterday.org. Accessed March 2001.
2. World Health Organization and United Nations Children's Fund. Global water supply and sanitation assessment 2000 report. Geneva, Switzerland and New York, New York: World Health Organization and United Nations Children's Fund, 2000.

*References to sites of non-CDC organizations on the World-Wide Web are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of pages found at these sites.

FIGURE I. Selected notifiable disease reports, United States, comparison of provisional 4-week totals ending March 17, 2001, 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 March 17, 2001 (11th Week)

	Cum. 2001		Cum. 2001
Anthrax	-	Poliomyelitis, paralytic	-
Brucellosis*	12	Psittacosis*	3
Cholera	-	Q fever*	2
Cyclosporiasis*	25	Rabies, human	-
Diphtheria	-	Rocky Mountain spotted fever (RMSF)	18
Ehrlichiosis: human granulocytic (HGE)*	3	Rubella, congenital syndrome	-
human monocytic (HME)*	2	Streptococcal disease, invasive, group A	596
Encephalitis: California serogroup viral*	-	Streptococcal toxic-shock syndrome*	15
eastern equine*	-	Syphilis, congenital¶	5
St. Louis*	-	Tetanus	1
western equine*	-	Toxic-shock syndrome	29
Hansen disease (leprosy)*	9	Trichinosis	2
Hantavirus pulmonary syndrome*†	2	Tularemia*	3
Hemolytic uremic syndrome, postdiarrheal*	11	Typhoid fever	29
HIV infection, pediatric*§	37	Yellow fever	-
Plague	-		

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

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending March 17, 2001, and March 18, 2000 (11th Week)

Reporting Area	AIDS		Chlamydia†		Cryptosporidiosis		*Escherichia coli* O157:H7*			
							NETSS		PHLIS	
	Cum. 2001§	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
UNITED STATES	5,820	6,226	117,782	140,712	241	264	169	286	107	225
NEW ENGLAND	200	500	4,222	4,863	7	20	22	26	15	29
Maine	3	6	197	284	-	2	3	3	1	2
N.H.	12	6	203	227	-	-	4	4	3	4
Vt.	9	-	123	118	3	6	1	1	-	2
Mass.	118	360	1,788	2,029	1	5	13	8	9	7
R.I.	24	17	632	487	1	2	-	-	-	-
Conn.	34	111	1,279	1,718	2	5	1	10	2	14
MID. ATLANTIC	1,180	1,591	6,797	12,689	19	20	12	28	8	39
Upstate N.Y.	29	65	N	N	8	12	12	26	6	32
N.Y. City	740	985	4,232	5,368	11	4	-	1	1	-
N.J.	241	387	781	2,748	-	1	-	1	1	2
Pa.	170	154	1,784	4,573	-	3	N	N	-	5
E.N. CENTRAL	463	591	14,366	24,587	82	59	34	51	17	13
Ohio	77	91	234	6,624	26	13	16	9	10	5
Ind.	45	56	2,368	2,699	11	3	7	3	1	3
Ill.	226	354	3,911	7,011	-	6	4	19	4	-
Mich.	97	67	6,010	4,629	24	6	3	10	-	2
Wis.	18	23	1,843	3,624	21	31	4	10	2	3
W.N. CENTRAL	110	147	5,723	8,011	8	15	19	49	15	45
Minn.	29	31	1,213	1,731	-	4	3	9	8	19
Iowa	15	10	610	774	4	2	3	10	-	4
Mo.	38	67	1,439	2,840	1	4	9	21	4	12
N. Dak.	1	-	193	209	-	1	-	2	-	2
S. Dak.	-	2	396	389	-	1	1	-	1	1
Nebr.	9	7	619	718	3	2	-	3	-	4
Kans.	18	30	1,253	1,350	-	1	3	4	2	3
S. ATLANTIC	1,673	1,508	25,481	26,322	53	38	23	25	10	17
Del.	37	25	645	607	-	-	-	-	-	-
Md.	131	154	2,723	2,461	12	4	-	5	-	1
D.C.	166	113	647	593	3	-	-	-	U	U
Va.	137	113	3,302	3,300	3	1	3	5	4	5
W. Va.	12	7	457	440	-	-	1	2	-	1
N.C.	101	74	4,134	4,001	10	3	13	6	2	2
S.C.	171	153	2,590	3,498	-	-	1	-	-	-
Ga.	187	180	4,822	4,883	12	22	2	2	2	3
Fla.	731	689	6,161	6,539	13	8	3	5	2	5
E.S. CENTRAL	360	279	9,636	10,447	4	9	7	14	3	14
Ky.	51	37	1,812	1,682	-	-	-	5	2	4
Tenn.	132	104	2,963	2,977	1	1	4	4	1	8
Ala.	95	91	2,506	3,384	2	6	3	1	-	-
Miss.	82	47	2,355	2,404	1	2	-	4	-	2
W.S. CENTRAL	629	532	20,561	21,121	4	14	13	16	18	26
Ark.	45	20	1,877	994	2	1	-	4	-	3
La.	188	91	3,716	4,003	1	2	-	-	6	7
Okla.	36	17	2,095	1,813	1	1	5	4	5	3
Tex.	360	404	12,873	14,311	-	10	8	8	7	13
MOUNTAIN	241	210	6,434	8,103	20	18	13	29	8	12
Mont.	5	3	366	271	-	1	-	8	-	-
Idaho	5	3	390	421	2	1	2	4	-	1
Wyo.	-	1	175	164	-	1	-	2	-	2
Colo.	40	52	576	2,252	12	6	7	10	4	5
N. Mex.	15	25	1,136	991	3	1	-	-	-	-
Ariz.	93	55	2,685	2,729	1	2	4	3	3	3
Utah	23	28	237	469	2	6	-	1	1	1
Nev.	60	43	869	806	-	-	-	1	-	-
PACIFIC	964	868	24,562	24,569	44	71	26	48	13	30
Wash.	117	101	2,879	2,670	N	U	4	5	5	8
Oreg.	38	22	1,041	1,005	8	2	3	7	1	6
Calif.	798	721	19,507	19,685	36	69	19	32	5	13
Alaska	2	-	493	501	-	-	-	-	-	-
Hawaii	9	24	642	708	-	-	-	4	2	3
Guam	5	7	-	-	-	-	N	N	U	U
P.R.	158	150	960	U	-	-	-	1	U	U
V.I.	1	5	U	U	U	U	U	U	U	U
Amer. Samoa	-	-	U	U	U	U	U	U	U	U
C.N.M.I.	-	-	U	U	U	U	U	U	U	U

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

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

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

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

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending March 17, 2001, and March 18, 2000 (11th Week)

Reporting Area	Gonorrhea		Hepatitis C; Non-A, Non-B		Legionellosis		Listeriosis	Lyme Disease	
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2001	Cum. 2000
UNITED STATES	55,257	73,139	311	700	117	135	60	418	854
NEW ENGLAND	1,170	1,376	4	5	2	13	6	116	127
Maine	28	17	-	-	-	2	-	-	-
N.H.	26	20	-	-	-	2	-	42	15
Vt.	19	10	2	2	1	-	-	1	-
Mass.	545	552	2	3	1	7	4	14	30
R.I.	155	115	-	-	-	-	-	-	-
Conn.	397	662	-	-	-	2	2	59	82
MID. ATLANTIC	4,446	7,248	18	133	7	24	6	195	591
Upstate N.Y.	1,295	1,131	11	10	5	11	3	161	189
N.Y. City	1,898	2,347	-	-	1	-	1	-	18
N.J.	476	1,553	-	116	-	-	-	-	84
Pa.	777	2,217	7	7	1	13	2	34	300
E.N. CENTRAL	6,974	14,784	40	64	39	41	8	10	21
Ohio	185	3,737	4	-	20	17	2	10	2
Ind.	1,042	1,227	-	-	4	5	-	-	1
Ill.	1,815	4,869	-	8	-	4	-	-	1
Mich.	3,316	3,377	36	56	11	8	5	-	-
Wis.	616	1,574	-	-	4	7	1	U	17
W.N. CENTRAL	2,455	3,342	44	96	10	5	2	10	14
Minn.	395	648	-	-	1	1	-	7	6
Iowa	202	193	-	-	2	2	-	-	-
Mo.	1,013	1,643	41	93	4	2	1	3	3
N. Dak.	9	10	-	-	-	-	-	-	-
S. Dak.	43	57	-	-	-	-	-	-	-
Nebr.	218	244	2	1	2	-	-	-	1
Kans.	575	547	1	2	1	-	1	-	4
S. ATLANTIC	16,092	20,474	16	16	22	26	8	69	82
Del.	345	322	-	1	-	2	-	-	11
Md.	1,713	1,654	5	2	7	8	1	61	58
D.C.	667	467	-	-	1	-	-	3	-
Va.	1,865	2,103	-	-	2	3	1	2	5
W. Va.	96	119	-	1	N	N	1	-	4
N.C.	3,396	3,625	4	7	2	3	-	2	4
S.C.	2,065	4,385	2	-	-	2	-	-	-
Ga.	2,496	3,164	-	-	1	-	2	-	-
Fla.	3,449	4,635	5	5	9	8	3	1	-
E.S. CENTRAL	6,377	7,480	43	103	8	3	4	2	-
Ky.	732	682	1	10	5	1	1	2	-
Tenn.	2,007	2,311	11	21	2	1	2	-	-
Ala.	2,139	2,594	-	3	1	1	1	-	-
Miss.	1,499	1,893	31	69	-	-	-	-	-
W.S. CENTRAL	10,226	11,050	100	226	1	4	1	-	3
Ark.	1,183	502	1	3	-	-	1	-	-
La.	2,568	2,822	51	124	1	2	-	-	2
Okla.	1,023	830	1	-	-	-	-	-	-
Tex.	5,452	6,896	47	99	-	2	-	-	1
MOUNTAIN	2,032	2,240	17	18	7	8	5	1	-
Mont.	18	2	-	-	-	-	-	-	-
Idaho	18	22	1	-	-	1	-	-	-
Wyo.	15	16	3	-	-	-	-	-	-
Colo.	751	763	5	9	3	4	1	-	-
N. Mex.	184	186	6	4	1	-	1	-	-
Ariz.	732	903	-	4	2	-	1	-	-
Utah	24	70	-	-	-	3	-	-	-
Nev.	290	278	2	1	1	-	2	1	-
PACIFIC	5,485	5,145	29	39	21	11	20	15	16
Wash.	645	495	7	4	4	5	-	-	-
Oreg.	196	110	4	9	N	N	2	2	1
Calif.	4,471	4,391	18	26	17	6	18	13	15
Alaska	55	59	-	-	-	-	-	-	-
Hawaii	118	90	-	-	-	-	-	N	N
Guam	-	-	-	-	-	-	-	-	-
P.R.	263	97	-	1	2	-	-	N	N
V.I.	U	U	U	U	U	U	-	U	U
Amer. Samoa	U	U	U	U	U	U	-	U	U
C.N.M.I.	U	U	U	U	U	U	-	U	U

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

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending March 17, 2001, and March 18, 2000 (11th Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
					NETSS		PHLIS	
	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000
UNITED STATES	160	181	812	997	3,728	4,884	2,908	4,255
NEW ENGLAND	16	4	90	105	298	304	267	327
Maine	-	1	14	22	13	28	8	15
N.H.	1	-	2	2	24	20	19	21
Vt.	-	-	20	6	16	14	15	20
Mass.	5	3	22	33	189	186	144	188
R.I.	-	-	9	5	11	6	28	18
Conn.	10	-	23	37	45	50	53	65
MID. ATLANTIC	19	33	128	171	297	702	393	792
Upstate N.Y.	7	10	103	131	124	113	64	207
N.Y. City	11	13	1	U	139	210	156	239
N.J.	-	5	24	22	-	223	72	134
Pa.	1	5	-	18	34	156	101	212
E.N. CENTRAL	24	25	4	13	537	725	452	383
Ohio	5	2	-	2	187	173	126	140
Ind.	7	1	1	-	44	60	40	77
Ill.	-	15	-	-	137	255	144	1
Mich.	12	6	3	6	108	103	98	116
Wis.	-	1	-	5	61	134	44	49
W.N. CENTRAL	3	10	58	79	230	222	205	274
Minn.	1	4	12	22	31	39	75	82
Iowa	1	-	13	7	40	24	3	28
Mo.	1	1	3	2	82	71	85	79
N. Dak.	-	-	11	10	1	2	5	16
S. Dak.	-	-	9	22	21	11	12	15
Nebr.	-	2	-	-	16	31	-	24
Kans.	-	3	10	16	39	44	25	30
S. ATLANTIC	43	44	355	365	975	809	674	699
Del.	1	-	-	10	16	12	13	15
Md.	19	21	74	78	124	138	96	135
D.C.	4	-	-	-	15	-	U	U
Va.	8	12	64	81	100	81	79	84
W. Va.	-	-	30	25	3	21	13	17
N.C.	1	4	108	97	205	159	115	112
S.C.	1	-	18	23	123	76	150	68
Ga.	1	-	24	28	142	122	180	202
Fla.	8	7	37	23	247	200	28	66
E.S. CENTRAL	7	7	9	34	249	240	97	184
Ky.	1	2	2	5	47	47	30	29
Tenn.	3	-	7	25	66	55	56	87
Ala.	3	4	-	4	102	83	-	58
Miss.	-	1	-	-	34	55	11	10
W.S. CENTRAL	3	2	74	162	210	460	282	322
Ark.	-	-	-	-	38	43	29	22
La.	1	2	-	-	27	56	73	73
Okla.	1	-	15	9	17	39	22	38
Tex.	1	-	59	153	128	322	158	189
MOUNTAIN	12	12	33	34	299	425	218	335
Mont.	1	1	5	9	9	18	-	-
Idaho	1	-	-	-	12	24	4	24
Wyo.	-	-	10	16	9	6	6	4
Colo.	6	6	-	-	86	112	66	88
N. Mex.	1	-	1	2	33	41	29	39
Ariz.	1	2	17	7	105	127	78	124
Utah	1	2	-	-	30	63	35	56
Nev.	1	1	-	-	15	34	-	-
PACIFIC	33	44	61	34	633	997	320	939
Wash.	1	2	-	-	53	50	37	119
Oreg.	5	5	-	-	43	55	41	71
Calif.	26	35	39	27	529	831	177	695
Alaska	1	-	22	7	8	12	-	14
Hawaii	-	2	-	-	-	49	65	40
Guam	-	-	-	-	-	-	U	U
P.R.	-	2	26	11	44	68	U	U
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U

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

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

TABLE II. (Cont'd) Provisional cases of selected notifiable diseases, United States, weeks ending March 17, 2001, and March 18, 2000 (11th Week)

Reporting Area	Shigellosis* NETSS Cum. 2001	Shigellosis* NETSS Cum. 2000	Shigellosis* PHLIS Cum. 2001	Shigellosis* PHLIS Cum. 2000	Syphilis (Primary & Secondary) Cum. 2001	Syphilis (Primary & Secondary) Cum. 2000	Tuberculosis Cum. 2001	Tuberculosis Cum. 2000
UNITED STATES	1,870	3,053	987	1,957	909	1,336	1,321	2,067
NEW ENGLAND	22	66	27	52	7	20	62	57
Maine	-	2	-	-	-	-	-	2
N.H.	-	1	-	1	-	-	6	1
Vt.	-	1	-	-	-	-	-	-
Mass.	17	47	19	36	4	17	34	35
R.I.	-	6	1	6	-	1	3	2
Conn.	5	9	7	9	3	2	19	17
MID. ATLANTIC	161	269	122	262	51	57	266	331
Upstate N.Y.	87	71	2	82	3	2	33	26
N.Y. City	60	126	56	102	36	29	106	194
N.J.	-	45	21	36	7	10	79	79
Pa.	14	27	43	42	5	16	48	32
E.N. CENTRAL	301	515	169	181	117	275	159	187
Ohio	86	26	43	23	13	16	21	38
Ind.	56	57	8	10	26	91	14	14
Ill.	74	198	68	2	15	96	79	111
Mich.	68	175	48	140	57	56	26	13
Wis.	17	59	2	6	6	16	19	11
W.N. CENTRAL	219	169	162	124	8	23	63	85
Minn.	66	39	104	47	5	3	34	32
Iowa	39	22	2	23	-	6	9	7
Mo.	63	86	44	37	2	11	14	35
N. Dak.	9	-	1	1	-	-	-	-
S. Dak.	4	1	1	-	-	-	1	3
Nebr.	13	15	-	11	-	2	5	1
Kans.	25	6	10	5	1	1	-	7
S. ATLANTIC	303	313	101	116	370	422	257	309
Del.	2	1	-	2	1	2	-	-
Md.	21	24	4	8	42	81	25	40
D.C.	13	-	U	U	9	16	10	-
Va.	14	12	6	13	31	27	21	23
W. Va.	3	1	6	2	-	1	6	9
N.C.	91	18	47	10	102	111	22	49
S.C.	22	3	11	1	54	36	14	18
Ga.	24	23	23	51	38	70	50	73
Fla.	113	231	4	29	93	78	109	97
E.S. CENTRAL	149	137	37	101	107	188	110	156
Ky.	57	31	16	20	9	18	12	14
Tenn.	19	62	16	75	51	123	31	58
Ala.	37	9	-	4	23	25	56	61
Miss.	36	35	5	2	24	22	11	23
W.S. CENTRAL	188	511	223	166	146	194	39	356
Ark.	88	45	65	3	12	12	23	20
La.	11	69	38	35	28	51	-	6
Okla.	2	8	-	5	18	45	16	9
Tex.	87	389	120	123	88	86	-	321
MOUNTAIN	150	212	82	86	40	39	54	85
Mont.	-	-	-	-	-	-	-	-
Idaho	5	22	-	15	-	-	4	-
Wyo.	-	1	-	1	-	-	-	-
Colo.	32	38	21	17	2	1	18	9
N. Mex.	26	23	20	14	4	3	1	17
Ariz.	74	74	34	31	26	33	14	22
Utah	5	5	7	8	6	-	4	7
Nev.	8	49	-	-	2	2	13	30
PACIFIC	377	861	64	869	63	118	311	501
Wash.	39	160	37	190	13	10	38	34
Oreg.	21	79	19	46	2	2	-	1
Calif.	316	609	-	624	45	106	266	437
Alaska	1	3	-	2	-	-	7	12
Hawaii	-	10	8	7	3	-	-	17
Guam	-	-	U	U	-	-	-	-
P.R.	3	10	U	U	62	37	-	17
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U

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

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

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending March 17, 2001, and March 18, 2000 (11th Week)

Reporting Area	*H. influenzae*, Invasive		Hepatitis (Viral), By Type				Measles (Rubeola)					
			A		B		Indigenous		Imported*		Total	
	Cum. 2001†	Cum. 2000	Cum. 2001	Cum. 2000	Cum. 2001	Cum. 2000	2001	Cum. 2001	2001	Cum. 2001	Cum. 2001	Cum. 2000
UNITED STATES	266	293	1,669	2,704	973	1,197	-	13	2	9	22	15
NEW ENGLAND	11	28	83	76	12	23	-	3	-	1	4	-
Maine	-	1	1	3	1	1	-	-	-	-	-	-
N.H.	-	4	3	7	4	6	-	-	-	-	-	-
Vt.	-	3	2	2	1	2	-	1	-	-	1	-
Mass.	11	17	31	33	2	1	-	2	-	1	3	-
R.I.	-	-	3	2	4	1	-	-	-	-	-	-
Conn.	-	3	43	29	-	12	-	-	-	-	-	-
MID. ATLANTIC	28	43	85	170	106	209	-	1	1	2	3	6
Upstate N.Y.	11	17	32	52	20	21	-	-	1	2	2	-
N.Y. City	9	14	43	86	77	109	-	-	-	-	-	6
N.J.	7	10	-	7	-	10	-	-	-	-	-	-
Pa.	1	2	10	25	9	69	-	1	-	-	1	-
E.N. CENTRAL	30	50	189	390	129	120	-	-	1	3	3	3
Ohio	20	16	58	90	27	24	-	-	-	-	-	2
Ind.	5	3	7	11	3	5	-	-	-	-	-	-
Ill.	-	19	40	164	9	2	-	-	1	3	3	-
Mich.	2	3	84	112	90	88	-	-	-	-	-	1
Wis.	3	9	-	13	-	1	-	-	-	-	-	-
W.N. CENTRAL	5	11	112	226	41	73	-	3	-	-	3	-
Minn.	-	6	5	21	1	3	-	-	-	-	-	-
Iowa	1	-	9	25	5	11	-	-	-	-	-	-
Mo.	3	4	33	140	28	47	-	3	-	-	3	-
N. Dak.	-	1	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	1	-	1	-	-	-	-	-	-	-
Nebr.	1	-	17	6	4	8	-	-	-	-	-	-
Kans.	-	-	47	34	2	4	-	-	-	-	-	-
S. ATLANTIC	100	64	311	254	207	182	-	2	-	1	3	-
Del.	-	-	-	5	-	2	-	-	-	-	-	-
Md.	26	23	50	34	26	34	-	2	-	1	3	-
D.C.	-	-	12	-	3	-	-	-	-	-	-	-
Va.	8	13	27	42	16	28	U	-	U	-	-	-
W. Va.	4	1	-	23	3	-	-	-	-	-	-	-
N.C.	16	5	23	56	51	73	-	-	-	-	-	-
S.C.	2	1	13	3	1	2	-	-	-	-	-	-
Ga.	16	17	80	32	58	10	-	-	-	-	-	-
Fla.	28	4	106	59	49	33	-	-	-	-	-	-
E.S. CENTRAL	16	14	60	115	68	87	-	-	-	-	-	-
Ky.	-	8	9	8	5	14	-	-	-	-	-	-
Tenn.	9	4	31	38	27	39	-	-	-	-	-	-
Ala.	6	2	19	15	23	6	-	-	-	-	-	-
Miss.	1	-	1	54	13	28	-	-	-	-	-	-
W.S. CENTRAL	5	19	205	518	45	116	-	1	-	-	1	-
Ark.	-	-	16	41	16	15	-	-	-	-	-	-
La.	1	6	13	20	12	33	-	-	-	-	-	-
Okla.	4	13	36	79	16	9	-	-	-	-	-	-
Tex.	-	-	140	378	1	59	-	1	-	-	1	-
MOUNTAIN	57	38	197	168	115	94	-	-	-	1	1	-
Mont.	-	-	4	1	1	3	-	-	-	-	-	-
Idaho	1	2	23	8	4	4	-	-	-	1	1	-
Wyo.	-	-	1	2	-	-	-	-	-	-	-	-
Colo.	10	10	25	40	26	23	-	-	-	-	-	-
N. Mex.	10	11	6	21	33	28	-	-	-	-	-	-
Ariz.	33	11	95	68	36	28	-	-	-	-	-	-
Utah	1	2	17	13	4	3	-	-	-	-	-	-
Nev.	2	2	26	15	11	5	-	-	-	-	-	-
PACIFIC	14	26	427	787	250	293	-	3	-	1	4	6
Wash.	-	2	16	39	18	7	-	-	-	-	-	3
Oreg.	12	8	22	57	39	26	-	2	-	-	2	-
Calif.	1	5	381	684	192	254	-	1	-	1	2	3
Alaska	1	1	8	3	1	3	-	-	-	-	-	-
Hawaii	-	10	-	4	-	3	-	-	-	-	-	-
Guam	-	-	-	-	-	-	U	-	U	-	-	-
P.R.	-	1	19	82	10	59	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U	U	U	U	U

N: Not notifiable. U: Unavailable. - : No reported cases.
*For imported measles, cases include only those resulting from importation from other countries.
† Of 49 cases among children aged <5 years, serotype was reported for 20, and of those, four were type b.

TABLE III. (Cont'd) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending March 17, 2001, and March 18, 2000 (11th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000	2001	Cum. 2001	Cum. 2000
UNITED STATES	613	603	6	29	101	51	1,040	1,044	1	2	12
NEW ENGLAND	44	35	-	-	1	5	187	294	-	-	4
Maine	-	3	-	-	-	-	-	7	-	-	-
N.H.	4	3	-	-	-	2	16	42	-	-	1
Vt.	4	1	-	-	-	2	19	48	-	-	-
Mass.	24	21	-	-	-	-	146	189	-	-	3
R.I.	-	1	-	-	1	-	-	4	-	-	-
Conn.	12	6	-	-	-	1	6	4	-	-	-
MID. ATLANTIC	46	49	-	-	7	7	65	92	-	1	4
Upstate N.Y.	17	10	-	-	3	7	57	46	-	1	2
N.Y. City	10	16	-	-	2	-	-	20	-	-	2
N.J.	18	10	-	-	-	-	-	-	-	-	-
Pa.	1	13	-	-	2	-	8	26	-	-	-
E.N. CENTRAL	51	105	2	5	13	2	121	169	1	1	-
Ohio	26	17	-	1	4	2	98	108	-	-	-
Ind.	1	15	-	-	-	-	3	8	-	-	-
Ill.	-	31	2	3	3	-	6	14	1	1	-
Mich.	15	28	-	1	6	-	13	6	-	-	-
Wis.	9	14	-	-	-	-	1	33	-	-	-
W.N. CENTRAL	39	38	-	2	5	1	32	28	-	-	-
Minn.	-	3	-	-	-	-	-	9	-	-	-
Iowa	13	9	-	-	3	-	3	6	-	-	-
Mo.	13	21	-	-	1	-	17	4	-	-	-
N. Dak.	2	1	-	-	-	-	-	1	-	-	-
S. Dak.	2	2	-	-	-	-	2	1	-	-	-
Nebr.	2	1	-	-	1	-	-	2	-	-	-
Kans.	7	1	-	2	-	1	10	5	-	-	-
S. ATLANTIC	126	88	1	3	12	7	42	56	-	-	1
Del.	-	-	-	-	-	-	-	1	-	-	-
Md.	17	9	1	2	4	-	10	14	-	-	-
D.C.	-	-	-	-	-	-	-	-	-	-	-
Va.	12	16	U	1	1	U	6	3	U	-	-
W. Va.	4	2	-	-	-	-	1	-	-	-	-
N.C.	33	16	-	-	2	5	15	15	-	-	-
S.C.	9	6	-	-	4	1	6	11	-	-	-
Ga.	15	18	-	-	-	-	-	9	-	-	-
Fla.	36	21	-	-	1	1	4	3	-	-	1
E.S. CENTRAL	45	32	-	-	1	-	22	30	-	-	-
Ky.	7	7	-	-	-	-	5	20	-	-	-
Tenn.	17	13	-	-	-	-	13	2	-	-	-
Ala.	17	10	-	-	1	-	2	7	-	-	-
Miss.	4	2	-	-	-	-	2	1	-	-	-
W.S. CENTRAL	93	75	1	2	11	-	4	13	-	-	3
Ark.	8	3	1	1	-	-	2	4	-	-	-
La.	26	22	-	1	2	-	-	2	-	-	-
Okla.	11	8	-	-	-	-	1	-	-	-	-
Tex.	48	42	-	-	9	-	1	7	-	-	3
MOUNTAIN	31	36	-	4	3	25	516	194	-	-	-
Mont.	-	1	-	-	-	-	3	1	-	-	-
Idaho	3	4	-	-	-	18	132	31	-	-	-
Wyo.	-	-	-	1	-	-	-	-	-	-	-
Colo.	11	10	-	1	-	4	108	119	-	-	-
N. Mex.	6	4	-	2	1	1	12	26	-	-	-
Ariz.	6	11	-	-	-	1	255	11	-	-	-
Utah	2	5	-	-	-	1	6	4	-	-	-
Nev.	3	1	-	-	2	-	-	2	-	-	-
PACIFIC	138	145	2	13	48	4	51	168	-	-	-
Wash.	21	10	-	-	2	3	16	27	-	-	-
Oreg.	18	14	N	N	N	1	4	17	-	-	-
Calif.	98	117	1	12	41	-	31	116	-	-	-
Alaska	1	1	1	1	-	-	-	2	-	-	-
Hawaii	-	3	-	-	5	-	-	6	-	-	-
Guam	-	-	U	-	-	U	-	-	U	-	-
P.R.	1	3	-	-	-	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U	U	U	U
C.N.M.I.	U	U	U	U	U	U	U	U	U	U	U

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

TABLE IV. Deaths in 122 U.S. cities,* week ending March 17, 2001 (11th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	609	451	107	37	8	6	69
Boston, Mass.	144	103	31	7	2	1	18
Bridgeport, Conn.	38	26	7	3	1	1	4
Cambridge, Mass.	26	16	10	-	-	-	3
Fall River, Mass.	31	24	3	4	-	-	2
Hartford, Conn.	81	57	14	3	5	2	11
Lowell, Mass.	34	23	6	5	-	-	7
Lynn, Mass.	10	8	1	1	-	-	2
New Bedford, Mass.	31	28	2	1	-	-	2
New Haven, Conn.	46	31	10	3	-	2	3
Providence, R.I.	U	U	U	U	U	U	U
Somerville, Mass.	6	6	-	-	-	-	-
Springfield, Mass.	41	23	14	4	-	-	1
Waterbury, Conn.	48	40	4	4	-	-	9
Worcester, Mass.	73	66	5	2	-	-	7
MID. ATLANTIC	2,312	1,598	472	160	49	31	127
Albany, N.Y.	53	36	14	2	1	-	5
Allentown, Pa.	20	17	2	1	-	-	1
Buffalo, N.Y.	103	71	23	2	2	5	13
Camden, N.J.	31	18	4	4	1	4	2
Elizabeth, N.J.	27	21	5	1	-	-	-
Erie, Pa.§	34	29	4	1	-	-	1
Jersey City, N.J.	37	26	7	4	-	-	-
New York City, N.Y.	1,279	866	291	86	24	10	50
Newark, N.J.	80	29	19	20	7	5	5
Paterson, N.J.	18	13	1	2	2	-	3
Philadelphia, Pa.	256	181	48	19	6	2	12
Pittsburgh, Pa.§	38	26	10	-	2	-	6
Reading, Pa.	26	23	1	2	-	-	1
Rochester, N.Y.	138	109	20	6	1	2	6
Schenectady, N.Y.	U	U	U	U	U	U	U
Scranton, Pa.§	30	28	2	-	-	-	3
Syracuse, N.Y.	80	61	10	4	3	2	14
Trenton, N.J.	34	21	8	4	-	1	1
Utica, N.Y.	28	23	3	2	-	-	4
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,011	1,422	375	133	35	46	132
Akron, Ohio	45	30	10	4	-	1	3
Canton, Ohio	44	29	5	7	-	3	6
Chicago, Ill.	U	U	U	U	U	U	U
Cincinnati, Ohio	96	64	25	3	-	4	8
Cleveland, Ohio	169	107	38	13	5	6	-
Columbus, Ohio	259	195	40	19	3	2	28
Dayton, Ohio	145	106	23	11	4	1	8
Detroit, Mich.	229	130	62	19	10	8	17
Evansville, Ind.	51	38	10	3	-	-	5
Fort Wayne, Ind.	59	42	12	2	2	1	5
Gary, Ind.	21	11	5	2	2	1	2
Grand Rapids, Mich.	72	55	12	3	1	1	6
Indianapolis, Ind.	340	244	60	21	5	10	14
Lansing, Mich.	38	27	8	1	1	1	2
Milwaukee, Wis.	108	87	12	8	-	1	10
Peoria, Ill.	50	43	4	1	-	2	1
Rockford, Ill.	50	37	11	1	-	1	3
South Bend, Ind.	41	34	5	1	1	-	1
Toledo, Ohio	137	92	29	12	1	3	13
Youngstown, Ohio	57	51	4	2	-	-	-
W.N. CENTRAL	881	621	173	53	20	14	64
Des Moines, Iowa	90	69	14	4	2	1	8
Duluth, Minn.	35	27	5	1	1	1	3
Kansas City, Kans.	20	12	4	4	-	-	1
Kansas City, Mo.	122	93	21	6	-	2	12
Lincoln, Nebr.	45	33	7	4	-	1	1
Minneapolis, Minn.	209	154	38	11	3	3	22
Omaha, Nebr.	66	48	17	-	-	1	4
St. Louis, Mo.	102	46	34	12	7	3	-
St. Paul, Minn.	108	83	15	6	2	2	7
Wichita, Kans.	84	56	18	5	5	-	6
S. ATLANTIC	1,339	870	288	125	36	19	106
Atlanta, Ga.	164	87	44	22	6	5	2
Baltimore, Md.	292	174	65	40	11	2	31
Charlotte, N.C.	107	81	17	5	2	2	19
Jacksonville, Fla.	183	116	44	14	9	-	11
Miami, Fla.	89	55	21	12	-	1	8
Norfolk, Va.	55	37	9	5	1	3	5
Richmond, Va.	73	52	15	3	1	2	7
Savannah, Ga.	3	1	1	-	1	-	-
St. Petersburg, Fla.	82	64	12	5	1	-	8
Tampa, Fla.	190	141	31	11	3	3	13
Washington, D.C.	101	62	29	8	1	1	2
Wilmington, Del.	U	U	U	U	U	U	U
E.S. CENTRAL	1,004	650	235	63	23	32	94
Birmingham, Ala.	208	138	41	11	11	6	23
Chattanooga, Tenn.	97	69	24	3	-	1	11
Knoxville, Tenn.	126	81	33	8	1	3	6
Lexington, Ky.	62	39	13	6	3	1	10
Memphis, Tenn.	216	133	55	14	-	14	8
Mobile, Ala.	87	64	16	7	-	-	2
Montgomery, Ala.	53	35	15	2	1	-	12
Nashville, Tenn.	155	91	38	12	7	7	22
W.S. CENTRAL	1,672	1,103	344	134	49	40	124
Austin, Tex.	115	66	24	13	2	8	6
Baton Rouge, La.	55	37	15	1	1	1	-
Corpus Christi, Tex.	75	49	15	4	5	2	5
Dallas, Tex.	224	127	56	21	10	10	15
El Paso, Tex.	84	58	18	6	2	-	3
Ft. Worth, Tex.	113	82	21	5	3	2	10
Houston, Tex.	372	225	76	47	13	11	36
Little Rock, Ark.	83	56	14	9	2	2	3
New Orleans, La.	U	U	U	U	U	U	U
San Antonio, Tex.	268	201	50	14	3	-	18
Shreveport, La.	119	80	24	7	5	3	14
Tulsa, Okla.	164	122	31	7	3	1	14
MOUNTAIN	1,115	750	224	93	30	17	96
Albuquerque, N.M.	191	127	40	18	4	2	16
Boise, Idaho	44	34	7	2	-	1	4
Colo. Springs, Colo.	56	42	10	2	1	1	2
Denver, Colo.	121	80	25	10	2	4	13
Las Vegas, Nev.	197	128	48	16	4	-	13
Ogden, Utah	30	25	1	2	1	1	3
Phoenix, Ariz.	168	106	33	14	11	4	13
Pueblo, Colo.	32	23	6	3	-	-	-
Salt Lake City, Utah	122	75	22	17	5	3	14
Tucson, Ariz.	154	110	32	9	2	1	18
PACIFIC	1,675	1,246	267	99	36	23	154
Berkeley, Calif.	19	12	4	2	-	-	3
Fresno, Calif.	174	127	25	12	6	4	22
Glendale, Calif.	19	17	1	1	-	-	2
Honolulu, Hawaii	90	60	17	7	5	1	9
Long Beach, Calif.	70	55	10	2	3	-	11
Los Angeles, Calif.	370	259	63	34	6	8	24
Pasadena, Calif.	37	31	4	1	1	-	2
Portland, Oreg.	182	148	23	8	1	2	13
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	157	120	26	5	4	2	20
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	205	152	36	11	2	4	19
Santa Cruz, Calif.	40	36	3	1	-	-	6
Seattle, Wash.	127	82	29	12	2	2	10
Spokane, Wash.	72	61	8	1	2	-	6
Tacoma, Wash.	113	86	18	2	4	-	7
TOTAL	12,618¶	8,711	2,485	897	286	228	966

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.

Contributors to the Production of the *MMWR* (Weekly)

Weekly Notifiable Disease Morbidity Data and 122 Cities Mortality Data

Samuel L. Groseclose, D.V.M., M.P.H.

State Support Team
Robert Fagan
Jose Aponte
Gerald Jones
David Nitschke
Scott Noldy
Carol A. Worsham

CDC Operations Team
Carol M. Knowles
Deborah A. Adams
Willie J. Anderson
Patsy A. Hall
Suzette A. Park
Felicia J. Perry
Pearl Sharp

Informatics

T. Demetri Vacalis, Ph.D.

Michele D. Renshaw Erica R. Shaver

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

Data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the following Friday. Address inquiries about the *MMWR* Series, including material to be considered for publication, to: Editor, *MMWR* Series, Mailstop C-08, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333; telephone (888) 232-3228.

☆U.S. Government Printing Office: 2001-633-173/48215 Region IV