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Osteoporosis Among Estrogen-Deficient Women — United States, 1988–1994

Each year in the United States, hip fractures result in approximately 300,000 hospital admissions and an estimated $9 billion in direct medical costs (*1*). Most of these fractures result from osteoporosis among women who experience accelerated bone loss after natural or surgically induced menopause. Measurement of bone mineral density (BMD) is the best tool available to assess osteoporotic fracture risk for women after menopause (*2*); a reduction of one standard deviation (SD) in femoral BMD is comparable to a 14-year increase in age on the risk for hip fracture (*3*). A technology that allows highly accurate and precise measurement of BMD is dual energy x-ray absorptiometry (DXA). CDC's Third National Health and Nutrition Examination Survey (NHANES III) was the first nationally representative survey that used DXA to estimate osteoporosis prevalence based on BMD in the U.S. population, providing baseline information for assessing national prevention and intervention needs for this disease. This report compares self-reported health information with BMD measurements from NHANES III conducted during 1988–1994; the findings indicate that most estrogen-deficient women in the United States who had femoral osteoporosis based on BMD were unaware of having this condition, reflecting the evolving nature of research and clinical practice regarding osteoporosis.

NHANES III collected data through household interviews and direct standardized physical examinations using specially equipped mobile examination centers. A total of 14,646 men and nonpregnant women aged ≥20 years (excluding those with histories of fractures on both hips) underwent DXA scanning of the proximal femur. This represented 78% of the eligible interviewed sample, and 88% of the eligible examined sample. The analysis for this study was restricted to women who reported natural or surgically induced (i.e., bilateral oophorectomy) menopause and who had never used exogenous hormones. Women with these characteristics were considered to be at high risk for osteoporosis and thus had been identified previously as appropriate candidates for BMD testing (*4*). Women with BMD results that were unacceptable for technical reasons were excluded from the analysis (2%). The final analytic sample comprised 2314 women.

All estimates were generated using SUDAAN. Estimates were stratified by selected risk factors for osteoporosis (i.e., age, race, body mass index [BMI], and whether menopause had been induced surgically) and possible confounders of self-reporting

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(i.e., education or income level, urban or rural residence, health-care use, and usual source of care). Prevalence estimates of osteoporosis based on BMD were calculated using the World Health Organization (WHO) diagnostic criteria, which defined osteoporosis as a BMD value >2.5 SD below the mean of a young adult reference group* (*6,7*). Prevalence is reported for the total femur region because this skeletal site was chosen for standardization of femur BMD between different DXA densitometers (*8*). Prevalence of self-reported osteoporosis was estimated based on responses to the question, "Has a doctor ever told you that you had osteoporosis, sometimes called thin or brittle bones?" The concordance was the percentage of women who reported a diagnosis of osteoporosis out of women with femoral osteoporosis based on BMD measurements.

Among the study group of 2314 women, 17% (95% confidence interval [CI]=15.5%–19.0%) had a femoral BMD value that met WHO's definition for osteoporosis, and 5% (95% CI=4.3%–6.6%) reported having been told by a doctor they had osteoporosis (Table 1). Based on BMD results, the prevalence of osteoporosis was significantly higher among women aged ≥65 years (29.5%) than among younger women (5.7%), among non-Hispanic white women (18.7%) than among all women of other racial/ethnic groups (11.6%), and among women with a BMI <25 (33.3%) than among women with a BMI ≥25 (8.0%). The prevalence also was higher among women with bilateral oophorectomy than among those with natural menopause, but the difference was not statistically significant. Among women who self-reported having had osteoporosis diagnosed, risk for osteoporosis was higher among non-Hispanic whites, but there were no significant differences for women in other risk categories (Table 1). Self-reported data also suggested the prevalence was lower among women aged ≥65 years than among younger women.

Women's knowledge of their osteoporosis varied more by socioeconomic status (SES) and by health-care factors than by BMD measurements. Self-reported prevalence estimates generally were significantly lower among women with income at or below poverty level† (2.2%) and women not seen by a doctor for ≥6 months (2.6%). Although sample sizes in some of these strata were too small to detect statistical significance, lower SES and fewer health-care resources were associated with lower self-reported prevalence of osteoporosis. A similar association was not found in BMD measurements, which showed no differences between most of these categories or slightly higher prevalence among women with lower education levels or women with income at or below poverty level.

Overall, 7% of women whose osteoporosis was diagnosed by BMD were aware of their condition. The concordance between self-reported and BMD data was low in all population subgroups, particularly for women with lower SES and fewer health-care resources (range: 1%–5%) compared with women with higher SES and more health-care resources (range: 8%–10%).

Reported by: Div of Health Examination Statistics, National Center for Health Statistics, CDC.

Editorial Note: The findings in this report indicate that 93% of estrogen-deficient women with osteoporosis as defined by BMD were unaware of this condition; this

*The WHO criteria did not specify the reference group in terms of skeletal site, age, or race/ethnicity. In this study, non-Hispanic white women aged 20–29 years were used as the reference group (*5*).

†Poverty status is based on family income and household size using Bureau of the Census poverty thresholds.

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TABLE 1. Comparison of osteoporosis prevalence among estrogen-deficient women with selected characteristics by bone mineral density (BMD) and self-report — United States, Third National Health and Nutrition Examination Survey, 1988–1994

		BMD data		Self-report		
Characteristic	**No.**	**Prevalence**	**(95% CI*)**	**Prevalence**	**(95% CI)**	**Concordance %**
Age group (yrs)						
<65	1065	5.7	(3.9– 8.5)	7.2	(5.6–9.4)	7.3
≥65	1249	29.3	(25.7–33.5)	3.5	(2.2–5.7)	6.3
Race/Ethnicity						
Non-Hispanic white	1107	18.7	(16.4–21.2)	6.1	(4.7–7.8)	7.4
Other†	1207	11.6	(9.6–14.1)	2.6	(1.6–4.3)	5.6
Body mass index						
<25	739	33.3	(29.6–37.4)	6.5	(4.7–8.9)	11.0
≥25	1575	8.0	(6.4–10.0)	4.6	(3.3–6.5)	10.3
Bilateral oophorectomy						
Yes	171	30.1	(16.6–34.0)	2.6	(1.0–6.8)	4.7
No	2143	16.5	(14.8–18.3)	5.5	(4.4–7.0)	7.4
Education						
Less than high school	1354	19.6	(16.7–23.1)	4.0	(2.9–5.4)	4.0
High school or more	960	15.0	(13.0–17.3)	6.4	(4.7–8.6)	10.5
Poverty level§						
At or below	555	19.8	(15.2–25.8)	2.2	(1.2–4.3)	3.8
Above	1470	15.8	(13.8–18.4)	6.0	(4.8–7.6)	8.8
Residence						
Urban	967	16.0	(13.4–19.1)	6.6	(4.7–9.4)	10.3
Rural	1347	17.9	(15.6–20.5)	4.3	(3.2–5.8)	5.0
Last seen by a doctor						
<6 months	1760	18.0	(15.7–20.7)	6.2	(4.9–7.9)	7.8
≥6 months	554	14.3	(10.8–19.0)	2.6	(1.5–4.4)	4.5
Usual source of care						
Has regular doctor	1880	17.9	(15.9–20.2)	5.6	(4.5–6.9)	8.1
No regular doctor	434	13.1	(9.0–19.3)	3.9	(1.6–9.8)	1.0
Total	**2314**	**17.1**	**(15.5–19.0)**	**5.3**	**(4.3–6.6)**	**7.1**

*Confidence interval.
†Data for women of racial/ethinc groups other than non-Hispanic whites were too small for meaningful analysis.
§Poverty status is based on family income and household size using Bureau of the Census poverty thresholds.

finding, coupled with the observed high prevalence of osteoporosis in certain populations of women, underscores the need for greater awareness about the disease, especially among high-risk women and their health-care providers. Routine BMD screening has not been recommended for several reasons, including the high cost of densitometry, insufficient evidence that screening will influence treatment decisions and decrease fracture incidence, and lack of universally accepted criteria for using BMD results to initiate treatment (*5*). However, the level of awareness of osteoporosis among women described in this report who had undergone natural or surgically induced menopause and did not use hormone replacement therapy was low, even though these women have been identified as appropriate candidates for bone density testing (*4*).

Osteoporosis — Continued

Several factors probably explain the discrepancy between presence and awareness of low BMD among high-risk women at the time of NHANES III. The evolving nature of research and clinical practice regarding osteoporosis probably is a primary contributor. For example, the definition of osteoporosis, which traditionally required the presence of a fracture, was expanded in 1994 by a WHO expert panel to include diagnostic criteria that are based on low BMD alone (*7,9*). Development of accurate and precise noninvasive techniques to measure bone density and the availability of results from prospective studies linking low BMD to fracture risk were the basis of change to BMD-based diagnostic criteria. However, many of these developments occurred at roughly the same time NHANES III was being conducted, and access to and familiarity with bone densitometry among primary-care physicians was low during NHANES III (*8*). Finally, results of the study described in this report suggest that some of the discordance between presence and awareness of low BMD may reflect patterns of health-care access and use in different socioeconomic groups (e.g., those with lower health-care use have less opportunity to be evaluated for osteoporosis).

The NHANES III data in this study are subject to at least two limitations. First, self-reported data may include reporting errors because some respondents could not recall a diagnosis of osteoporosis or did not understand the osteoporosis question correctly. Second, the self-reported data included a physician's diagnosis of osteoporosis at any sites of the skeleton, while the DXA data included only BMD measurements of the proximal femur.

The proportion of women with osteoporosis who know their condition may increase in response to changes in health-care practices, reimbursements, and treatment options. The Medicare Bone Mass Measurement Coverage Standardization Act established national criteria for bone density test reimbursement in the Medicare program as of July 1, 1998; previously, each Medicare carrier made its own coverage decision. The new act authorized standardized coverage for persons at high risk for osteoporosis, such as estrogen-deficient women, persons with vertebral abnormalities, persons receiving long-term glucocorticoid therapy, persons with primary hyperparathroidism, and persons being monitored to assess the response of an osteoporosis drug therapy approved by the Food and Drug Administration.[§] The number of therapeutic options for addressing osteoporosis also has doubled with the approval of alendronate in 1995 and raloxifene in 1997 for treating and/or preventing osteoporosis, providing alternatives to the established therapies of estrogen replacement therapy and calcitonin. Finally, the National Osteoporosis Foundation (NOF) has released more detailed guidelines on bone density testing and treatment for osteoporosis (*10*). Additional information is available from NOF, telephone (800) 400-1079 or World-Wide Web site http://www.nof.org.

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[§]Public Law 105-33, Balanced Budget Act of 1997.

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World AIDS Day — December 1, 1998

"Be a force for change—talk with young people about AIDS" is the theme designated by the Joint United Nations Program on Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) for this year's World AIDS Day, December 1, 1998. Approximately 30 million persons were living with HIV/AIDS by the beginning of 1998 (*1*). Many of them were infected as adolescents or young adults. In the United States, in areas with both AIDS and HIV infection reporting, 3% of persons with AIDS and 14% of those with HIV infection reported during January 1994–June 1997 were aged 13–24 years (*2*). Therefore, decreasing high-risk sexual and drug-using behaviors among teenagers and young adults should continue to be an important primary HIV prevention priority.

Information from 12 local and state health departments participating in the Supplement to HIV/AIDS Surveillance Project (*3*) indicates that many infected adolescents and young adults continue to engage in high-risk sexual behaviors (e.g., sexual intercourse without condoms and with multiple sex partners); however, some modify their behavior after learning they are infected (CDC, unpublished data, 1998).

Additional information about World AIDS Day and AIDS and HIV infection in teenagers and young adults is available from CDC's National AIDS Clearinghouse, telephone (800) 458-5231, and on the World-Wide Web, http://www.cdcnpin.org; CDC's National AIDS Hotline, telephone (800) 342-2437; and CDC's Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention World-Wide Web site, http://www.cdc.gov/nchstp/hiv_aids/dhap.htm.

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Risks for HIV Infection Among Persons Residing in Rural Areas and Small Cities — Selected Sites, Southern United States, 1995–1996

The southern region of the United States* accounts for the largest proportion (34%) of the 641,086 acquired immunodeficiency syndrome (AIDS) cases reported through 1997 and for 54% of the 58,689 AIDS cases among persons residing in rural areas (CDC, unpublished data, 1998). This report describes characteristics of persons infected with human immunodeficiency virus (HIV) who reside in rural areas and small cities of the southern United States and indicates that, before infection, there was a low prevalence of perceived risk.

The Supplement to HIV/AIDS Surveillance Project (SHAS) interviews persons who are reported with HIV infection or AIDS to state health departments. Participants must be aged ≥18 years and medically able to complete the interview (*1*). Interviews were conducted during 1995–1996 in selected rural areas and small cities† of four southern states that participate in SHAS (Delaware, Florida, Georgia, and South Carolina). In all four states, persons with AIDS who met the eligibility criteria were identified from AIDS case reports and were invited, through their health-care provider, to participate; persons with HIV infection but not AIDS were recruited at clinics where they received HIV care. Of all persons reported with AIDS during 1995–1996 from the four states, the percentages who resided in rural areas and small cities at the time of AIDS diagnosis were as follows: Delaware, 19%; Florida, 9%; Georgia, 18%; and South Carolina, 44%.

The survey instrument included questions about sociodemographics, and, for the time before HIV infection was diagnosed, perceived risk for infection, sexual behavior, and substance use. Category of exposure to HIV was determined from the case report form or based on the interview data and assigned according to the CDC surveillance risk hierarchy (*2*).

Sociodemographic Characteristics of Respondents

Of 956 persons who met all eligibility criteria, 608 (64%) completed the interview (AIDS, 58%; HIV, 42%); 348 (36%) refused or could not be located. Persons who completed the interview were more likely than nonrespondents to have progressed to AIDS (71% versus 52%, p=0.001). Adjusting for disease status, respondents did not differ from nonrespondents by sex, race/ethnicity, and category of exposure to HIV. Of the 608 persons interviewed, 403 (66%) resided in Georgia; 89 (15%), Florida; 67 (11%), South Carolina; and 49 (8%), Delaware.

Most (66%) respondents were men (Table 1). The median age for men was 36 years (range: 19–75 years) and for women was 33 years (range: 18–67 years). Most respondents were non-Hispanic black and of low socioeconomic status (Table 1). Sexual behavior was the most common risk for exposure to HIV (67% for men and 66% for women). Among men, the most common category of exposure was having sex with men (40%); for women, it was heterosexual contact with an at-risk or infected partner (66%) (Table 1).

*Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

†For this project, "rural" was defined as a nonmetropolitan statistical area (MSA) and small city as an MSA with a population of <250,000.

Risks for HIV Infection — Continued

TABLE 1. Sociodemographic characteristics of persons with HIV/AIDS, by sex — selected sites, Southern United States, 1995–1996

Characteristic	Men No.	Men (%)	Women No.	Women (%)
Disease status*				
AIDS	247	(62)	107	(52)
HIV infection	154	(38)	100	(48)
Race/Ethnicity*				
Non-Hispanic black	251	(63)	176	(85)
Non-Hispanic white	124	(33)	23	(11)
Other†	16	(4)	8	(4)
Education*				
≥12 years	258	(64)	103	(50)
<12 years	142	(36)	104	(50)
Employment status*				
Employed	100	(25)	27	(13)
Unemployed	301	(75)	180	(87)
Household income*				
<$10,000	234	(58)	165	(80)
≥$10,000	165	(42)	42	(20)
State of residence*				
Delaware	41	(10)	8	(4)
Florida	67	(17)	22	(11)
Georgia	245	(61)	158	(76)
South Carolina	48	(12)	19	(9)
Exposure category				
Men who have sex with men (MSM)	158	(40)	—	—
Injecting-drug use (IDU)	62	(16)	35	(17)
MSM and IDU	24	(6)	—	—
Heterosexual contact	105	(27)	136	(66)
Other§	47	(12)	35	(17)
Total¶	**401**	**(100)**	**207**	**(100)**

*$p<0.05$ (chi square for difference in sex).
†Numbers for racial/ethnic groups other than black and white were too small for meaningful analysis.
§Includes no identified risk, blood transfusion, and hemophilia.
¶Columns may not add to total because of missing data.

Risk Behaviors

Respondents were asked, "Before you found out you were infected with HIV or had AIDS, did you think you could become infected with HIV?"; 52% of men and 65% of women believed they could not get infected. The most common reasons were not knowing how HIV was spread (men: 33%, women: 29%), thinking that their sex partners were not infected (women: 35%, men: 27%), and thinking only persons who inject drugs or men who have sex with men are at risk for infection (women: 21%, men: 14%).

High-risk sexual and drug-use behaviors (e.g., exchanging sex for money or drugs, sex with an injecting-drug user, injecting drugs, and using crack cocaine) were common among both men and women (Table 2). However, among men, the prevalence of these behaviors was higher among those from small cities than from rural areas. Among women, there were few differences by geographic area.

Risks for HIV Infection — Continued

TABLE 2. Risk behaviors of persons with HIV/AIDS, by sex — selected sites, Southern United States, 1995–1996

	Men		Women	
	No.	(%)	No.	(%)
Unprotected sex with opposite-sex partner*				
Yes	273	(69)	202	(98)
No	124	(31)	5	(2)
Unprotected sex with same-sex partner*				
Yes	174	(44)	19	(9)
No	223	(56)	188	(81)
Sex with injecting-drug user*				
Yes	79	(20)	48	(23)
No	91	(23)	30	(14)
Don't know	228	(57)	129	(62)
Sex with HIV positive partner*				
Yes	125	(31)	90	(43)
No	172	(43)	63	(30)
Don't know	101	(25)	54	(26)
STD† visit during previous 10 years				
Yes	205	(51)	113	(55)
No	195	(49)	94	(45)
Gave money or drugs for sex*				
Yes	108	(27)	10	(5)
No	286	(73)	196	(95)
Received money or drugs for sex*				
Yes	48	(12)	52	(25)
No	348	(88)	155	(75)
Possible problem with alcohol				
Yes	141	(35)	63	(30)
No	260	(65)	144	(70)
Injected drugs				
Yes	62	(16)	29	(14)
No	334	(84)	178	(86)
Used crack cocaine				
Yes	150	(37)	87	(42)
No	251	(63)	120	(58)
Total§	**401**	**(100)**	**207**	**(100)**

*$p<0.05$ (chi square for difference in sex).
†Sexually transmitted disease.
§Columns may not add to total or 100% because of missing data.

Crack cocaine use was higher among persons whose exposure category was injecting-drug use (65%) than among persons whose exposure category was heterosexual contact (35%; p=0.001). Crack cocaine users were more likely than those who had not used crack cocaine to have exchanged sex for money or drugs (57% versus 15%; p=0.001).

Risks for HIV Infection — Continued

Reported by: SA Fann, Georgia Dept of Human Resources. L Conti, Florida Dept of Health. D Smith, South Carolina Dept of Health and Environmental Control. M Herr, Delaware Dept of Health and Social Svcs. Div of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention; and an EIS Officer, CDC.

Editorial Note: The findings in this report indicate that most respondents were exposed to HIV through sexual transmission and reported high-risk sexual behaviors (e.g., unprotected sex and exchanging sex for money or drugs). However, many respondents reported that, before learning of their infection, they had not known how HIV was spread and had not known their partners' risks for HIV. These findings emphasize the importance of sustained access to counseling and behavioral risk reduction programs for at-risk populations and HIV-infected persons in these geographic areas.

Sexually acquired HIV infection among rural residents has been linked to increased use of crack cocaine and the resultant exchange of sex for drugs (*3*). In this study, crack cocaine use was even more prevalent among persons whose mode of exposure was injecting-drug use than heterosexual contact. Other factors related to sexual transmission of HIV in these geographic areas are high rates of sexually transmitted diseases (STDs) and alcohol abuse (*4*).

Further research is needed to understand the differences in the number of cases and type of risk for HIV between residents of rural areas and small cities. These differences may explain the higher rates of AIDS among residents of small cities compared with residents of rural areas. However, the number and rate of AIDS cases in these areas are low compared with larger MSAs in the South.

Most respondents in this study were black, of low socioeconomic status—reflecting in part the characteristics of residents of these areas—and at risk for acquiring HIV through sexual contact. These characteristics are similar to other reports on AIDS in the rural South (*4–7*). The disproportionately high rate of HIV/AIDS among blacks may be a result of a higher prevalence of certain risk behaviors or a function of sexual networks in which the high prevalence of infection increases the likelihood of contact with an infected partner. The extent to which the prevalence of low socioeconomic indicators in this population are associated with having AIDS or having moved to a rural area that is economically depressed or both is unknown.

The findings in this report are subject to at least two limitations. First, HIV-infected persons may be reluctant to seek confidential HIV testing or disclose their risk behaviors because of confidentiality concerns or lack of anonymity (*8*). Second, because participants were recruited from selected states, the findings from this report may not be generalizable to other rural areas and small cities in the southeast or other areas in the United States.

This report highlights the need for HIV-education efforts in rural areas and small cities. Behavioral interventions can be effective in HIV prevention (*9*); however, programs that have been designed for urban areas will need to be adapted for use in rural areas. Routinely offering HIV counseling and testing at STD clinics, substance abuse treatment programs, and in prenatal care and other medical settings can reduce the number of missed opportunities for HIV prevention among persons at risk and help prevent further increases in HIV/AIDS in rural areas and small cities.

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Risks for HIV Infection — Continued

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Laboratory-Based Surveillance for Rotavirus — United States, July 1997–June 1998

Rotavirus infections are the leading cause of severe gastroenteritis among infants and young children worldwide (*1,2*). Each year in the United States, rotavirus causes an estimated 2.7 million cases of gastroenteritis among children aged <5 years, resulting in approximately 500,000 outpatient clinic and emergency department visits and 49,000 hospitalizations (*3,4*). In addition, rotavirus accounts for an estimated $264 million in health-care costs and approximately $1 billion in total medical and nonmedical costs (*3*). The large disease burden and cost associated with rotavirus have led to the development of rotavirus vaccines. In August 1998, the first live attenuated rotavirus vaccine (Rotashield® [Wyeth Lederle Vaccines and Pediatrics])* was approved for use in infants by the Food and Drug Administration. The Advisory Committee on Immunization Practices has recommended that this vaccine be given as a three-dose schedule to infants aged 2, 4, and 6 months. Since 1991, rotavirus activity in the United States has been prospectively monitored by the National Respiratory and Enteric Virus Surveillance System (NREVSS), a voluntary, laboratory-based system (*5*). This report summarizes surveillance data from NREVSS during the 1997–1998 rotavirus season and reviews issues related to rotavirus surveillance that are important for a national rotavirus vaccine program.

From July 1997 through June 1998, 66 laboratories in 41 states participated in NREVSS. Each laboratory reported weekly to CDC the number of stool specimens tested and the number positive for rotavirus by antigen-detection and electron microscopy methods. Of 22,912 fecal specimens examined, 5343 (23%) were positive for rotavirus. Seasonal increases in rotavirus detection were noted throughout the United States, and the timing of peak rotavirus activity varied by geographic location. Activity peaked first in the Southwest during November–December 1997 and last in the North and Northeast during April–May. Temporal and geographic trends during the July 1997–June 1998 reporting period varied slightly from trends during previous

*Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services or CDC.

Surveillance for Rotavirus — Continued

years (*5*), with late-season peaks in some laboratories in the western United States. Laboratories in Montana, Nevada, and Washington reported peak rotavirus activity during April, and an additional laboratory in Nevada reported peak activity during May, substantially later than the usual December–January peak for these sites. Data from Alaska and Hawaii were not available.

Reported by: National Respiratory and Enteric Virus Surveillance System collaborating laboratories, National Rotavirus Strain Surveillance System collaborating laboratories; Viral Gastroenteritis Section, Respiratory and Enteric Viruses Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: Rotavirus causes seasonal peaks of gastroenteritis each year in the United States, and the temporal and geographic patterns observed during the July 1997–June 1998 reporting period were generally characteristic of trends noted during previous years (*5*). The late-season (April–May 1998) peaks reported by laboratories in the southwestern United States is unusual and, so far, unexplained. The annual seasonal peaks of activity and the proportion of total specimens positive for rotavirus noted in this surveillance system are consistent with data collected from other temperate countries (*6*).

Surveillance systems for rotavirus are particularly important as a means to measure the impact of the licensure of the first rotavirus vaccine for use in U.S. infants. NREVSS is the largest, nationally representative system for surveillance of rotavirus infections in the United States (*5*). Participating laboratories transmit reports to CDC weekly by using an automated telephone reporting system, which allows for timely analysis of rotavirus activity. NREVSS has been an important tool for characterizing the geographic and temporal trends of rotavirus infections in the United States, and its findings have been validated by disease-based surveillance studies (*4,7,8*). Initiation of a new vaccine program against rotavirus gastroenteritis will generate additional surveillance needs, such as the capability for monitoring rotavirus strain prevalences and assessing disease burden over time. Although the implications for the potential effectiveness of the vaccine are unclear, these findings highlight the importance of laboratory-based surveillance to monitor for the emergence of novel or unusual rotavirus strains following the introduction of the new vaccine. In addition, disease-based rotavirus surveillance systems will be initiated during the 1998–99 rotavirus season to monitor the effectiveness of rotavirus vaccine programs.

To monitor rotavirus strain circulation in the United States, CDC, in collaboration with state and local public health laboratories, established the National Rotavirus Strain Surveillance in 1996 (*9*). During November 1996–May 1997, 10 laboratories submitted rotavirus-positive stool specimens to CDC for strain characterization. During this period, the four rotavirus strains that predominate worldwide and that are represented in the licensed vaccine accounted for 83% of isolates tested. However, 9% of strains characterized had not been detected previously in the United States and are not represented in the current vaccine. The implications for the potential effectiveness of the vaccine are unclear.

NREVSS will continue to monitor for changes in the epidemiology of rotavirus following implementation of a vaccine program, and will provide a foundation for expansion of U.S. strain surveillance. The combination of NREVSS, strain surveillance, and disease-based surveillance will make it possible to monitor the impact of the new vaccine program.

Surveillance for Rotavirus — Continued

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Prevalence of Overweight Among Third- and Sixth-Grade Children — New York City, 1996

Childhood overweight is the leading cause of pediatric hypertension, and overweight children are at high risk for developing long-term chronic conditions, including adult-onset diabetes mellitus, coronary heart disease, orthopedic disorders, and respiratory disease (*1*). Overweight among children and adolescents in the United States increased from 1976–1980 to 1988–1994 (*2–4*). Information is needed to describe overweight in smaller geographic areas for local health planning. This report presents findings from a study examining the weight status of third- and sixth-graders in New York City (NYC) in 1996. The findings indicate a high prevalence of overweight among NYC third- and sixth-graders, regardless of sex or racial/ethnic characteristics.

A three-stage probability design was used to select a representative sample of third- and sixth-grade students attending public and private schools in NYC. Schools were initially stratified by socioeconomic status (lower-, middle-, and upper-income groups) and by racial/ethnic composition on the basis of the predominant characteristic of the student population in each school (non-Hispanic white, non-Hispanic black, Hispanic, and mixed [i.e., no one racial/ethnic group predominated]). A separate stratum was created for private and parochial schools because the database used for the sampling frame did not include racial/ethnic characteristics of students for those schools.

Stage one of the sampling involved a stratified random selection and recruitment of 32 schools for participation in the study. A larger-than-necessary random sample of schools was selected in each stratum. Schools refusing to participate were replaced by another randomly selected school from the respective stratum. In stage two, one random sample of up to four homeroom classrooms from each grade level was selected from each school, yielding 137 total classrooms. The size of the school deter-

Overweight — Continued

mined the number of classrooms sampled. Finally, interviewers randomly selected students within classrooms who had received informed parental consent to participate. An average of five students was randomly selected from each classroom, the number varying depending on the size of the classroom. Data collection occurred in February and March 1996.

Height and weight were measured by trained interviewers using standard anthropometric techniques and equipment (*5*). Body mass index (BMI) (weight in kilograms divided by height in meters squared) was used as the indicator of weight status. Children were considered overweight when their BMI was at or above the age- and sex-specific 95th percentile from the second and third National Health and Nutrition Examination surveys (CDC, unpublished data, 1995). Interviewers conducted a dietary assessment for each child using a quantitative 24-hour dietary recall. Interviewers were trained by nutritionists to use standardized probing techniques to obtain the foods and quantity consumed throughout the previous day. Two-dimensional models and measuring devices were used to assist with quantifying the amount of food consumed. The University of Minnesota Nutrient Data System was used to convert dietary recall data into nutrient values. Physical activity was assessed on the basis of reported frequency of participation in a fixed list of sports and other common physical activities.

Statistical weights were constructed to account for the complex sampling design and the underlying population of school children in NYC. Weighted statistical analysis was carried out using SUDAAN software for calculating variance estimates (*6*). Eleven third-grade and seven sixth-grade children were excluded from the analysis because of missing height and/or weight measurements. The final analysis included 307 third-graders and 337 sixth-graders averaging 8.1 and 11.2 years of age, respectively.

The analysis indicated that 19.7% of third-graders and 21.2% of sixth-graders were overweight (Table 1). The reported mean daily energy consumption was 1839 calories for third-graders and 1953 calories for sixth-graders. Overweight was more prevalent among NYC boys (21.7 among third-graders and 22.7 among sixth-graders) and black non-Hispanic children (24.9 among third-graders and 27.2 among sixth-graders) in both grades, but these differences were not statistically significant.

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Editorial Note: The high prevalence of overweight among children has been well documented in national surveys conducted since 1976. However, the national surveys do not provide information at the state and local levels for planning community interventions. This study was designed to capture such information in a geographically defined area within New York state for use in local health planning activities. The grades were specifically chosen to plan interventions targeted to mid-elementary and early middle-school children.

The findings suggest that children in NYC are substantially more overweight than children of comparable age in the United States. The prevalence of overweight among children aged 6–11 years in the Third National Health and Nutrition Examination Survey (NHANES III), 1988–1994, was 13.7%: 14.7% and 12.5% for boys and girls, respec-

Overweight — Continued

TABLE 1. Prevalence of overweight,* by grade, sex, and race/ethnicity† — New York City, 1996

Characteristic	No.	(%)	(95% CI§)
Third grade			
Sex			
Boys	131	(21.7)	(13.5%–29.9%)
Girls	176	(18.2)	(11.5%–24.9%)
Race/Ethnicity			
Non-Hispanic white	67	(15.3)	(6.3%–24.3%)
Non-Hispanic black	107	(24.9)	(14.7%–35.1%)
Hispanic	101	(21.1)	(11.7%–30.5%)
Total	**307**	**(19.7)**	**(14.6%–24.8%)**
Sixth grade			
Sex			
Boys	131	(22.7)	(13.3%–32.1%)
Girls	206	(20.1)	(12.5%–27.7%)
Race/Ethnicity			
Non-Hispanic white	76	(18.7)	(6.7%–30.7%)
Non-Hispanic black	106	(22.2)	(11.4%–33.0%)
Hispanic	105	(19.7)	(9.5%–29.7%)
Total	**337**	**(21.2)**	**(15.1%–27.3%)**

* Body mass index (BMI) (kg/m^2) at or above sex- and age-specific 95th BMI percentile calculated at 1-year age intervals, derived from the second and third National Health and Nutrition Examination surveys.
† Numbers for racial/ethnic groups other than non-Hispanic white, non-Hispanic black, and Hispanic were too small for meaningful analysis. As a result, the numbers to not equal to the total.
§ Confidence interval.

tively (*4*). However, the findings from the study in NYC should be compared with the national survey findings with caution. This NYC study relied on a small sample size that limits the ability to compare groups within the study population and to national surveys. In addition, the racial/ethnic composition of children in NYC is different from that of children nationally.

The higher prevalence of overweight among non-Hispanic black children in this study is probably related to environmental factors, including differences in diet and physical activity. Compared with non-Hispanic white sixth-graders, non-Hispanic black sixth-graders on average reported consuming approximately 200 more calories and more servings of less nutritious snack foods per day. Non-Hispanic black sixth-graders also reported lower levels of physical activity compared with non-Hispanic whites, particularly girls. Socioeconomic factors also may influence differences in diet and physical activity among non-Hispanic blacks compared with other children. Further analysis to better understand the racial/ethnic differences in diet and physical activity for this study population is being conducted.

The findings of this study are subject to at least three limitations. First, the health profile of students in schools not willing to participate may differ from that of schools that participated. However, every effort was made to randomize the selection and to obtain a representative sample of schools by socioeconomic status, racial/ethnic composition, and geographic location. Second, biases may occur because of the parents'

Overweight — Continued

or guardians' unwillingness to provide informed consent for their child's participation in the study. Third, the small sample size reduces the precision of these findings.

The reported mean daily energy consumption in this study is comparable to the 1897 calories reported for children aged 6–11 years in NHANES III (*7*). The small difference in reported mean daily intake between third- and sixth-grade NYC children observed in this study may be, in part, due to the dietary assessment methodology used. For example, younger children may have difficulty recalling foods consumed or estimating the amount consumed using two-dimensional food models.

The substantial prevalence of overweight observed in this study increases the likelihood that NYC children will suffer the morbidity and health costs associated with chronic disease later in life. Overweight ultimately results from an excess intake of calories relative to energy expenditure. Because excessive caloric restriction may be detrimental to children going through a phase of rapid growth and development, the emphasis should be placed on increasing energy expenditure through physical activity, while maintaining balanced caloric intake and improving eating habits, to achieve health promotion and disease prevention goals.

Culturally sensitive prevention efforts targeted to diverse urban populations at an early age will be needed to reduce health-care costs and the morbidity and mortality associated with overweight during adolescence and adulthood. The New York State Department of Health has identified overweight as a public health priority in its report, *Communities Working Together for a Healthier New York: Opportunities to Improve the Health of New Yorkers*. This includes a goal to reduce the prevalence of overweight to no more than 15% among school children by the year 2006. To achieve this goal, the New York State Department of Health is implementing a program-based intervention, "Eat Well Play Hard," through the Special Supplemental Nutrition Program for Women, Infants, and Children, the Child and Adult Care Food Program, and the state's Hunger Prevention and Nutrition Assistance Program. The intervention targets selected dietary behaviors and increasing physical activity beginning in the preschool period. The "Eat Well Play Hard" intervention is guided by an expert advisory panel with representation from major hospitals and academic institutions in NYC. Because these programs deliver most of their services to NYC residents, "Eat Well Play Hard" is designed to have a substantial impact on groups at highest risk for overweight in that part of the state. In addition, the state's Healthy Heart Program is providing nutrition services through four school-based health clinics in NYC. These provide nutrition counseling to overweight students and work with cafeteria and teachers to improve the nutrition environment in the schools. Healthy Heart also funds coalitions in NYC to increase opportunities for physical activity and improved nutrition, one of which is targeting these services to teenagers.

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Overweight — Continued

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Update: Influenza Activity — United States, 1998–99 Season

In collaboration with the World Health Organization (WHO), its collaborating laboratories, and state and local health departments, CDC conducts surveillance to monitor influenza activity and to detect antigenic changes in the circulating strains of influenza viruses. This report summarizes influenza activity from October 4 through November 7, 1998; during this period, overall influenza activity in the United States was low. However, outbreaks of influenza A occurred in New York during October–November.

As of November 7, the 110 WHO and National Respiratory Enteric Virus Surveillance System collaborating laboratories in the United States have tested 3394 clinical specimens (by culture or direct antigen-detection techniques) for respiratory viruses. Of these, 16 (0.5%) were influenza A, and two (0.1%) were influenza B. The six influenza A isolates collected since October 4 and antigenically characterized by CDC were related to A/Sydney/05/97(H3N2), the H3N2 component in the 1998–99 influenza vaccine, and the two influenza B isolates that were characterized by CDC were related to B/Beijing/184/93, the B component in the 1998–99 influenza vaccine.

Regional* influenza activity was reported by New York (weeks ending October 17 and November 7) and by Maryland (weeks ending October 17 and October 31). Outbreaks of influenza A occurred in three nursing homes in Bronx and Nassau counties, New York. Through the week ending November 7, no other state and territorial epidemiologists reported regional influenza activity. The percentage of patient visits to sentinel physicians for influenza-like illness remained within baseline levels (0–3%) since the week ending October 4, and the percentage of deaths attributed to pneumonia and influenza reported by the vital statistics offices of 122 cities has not exceeded the epidemic threshold† during consecutive weeks through the week ending November 7.

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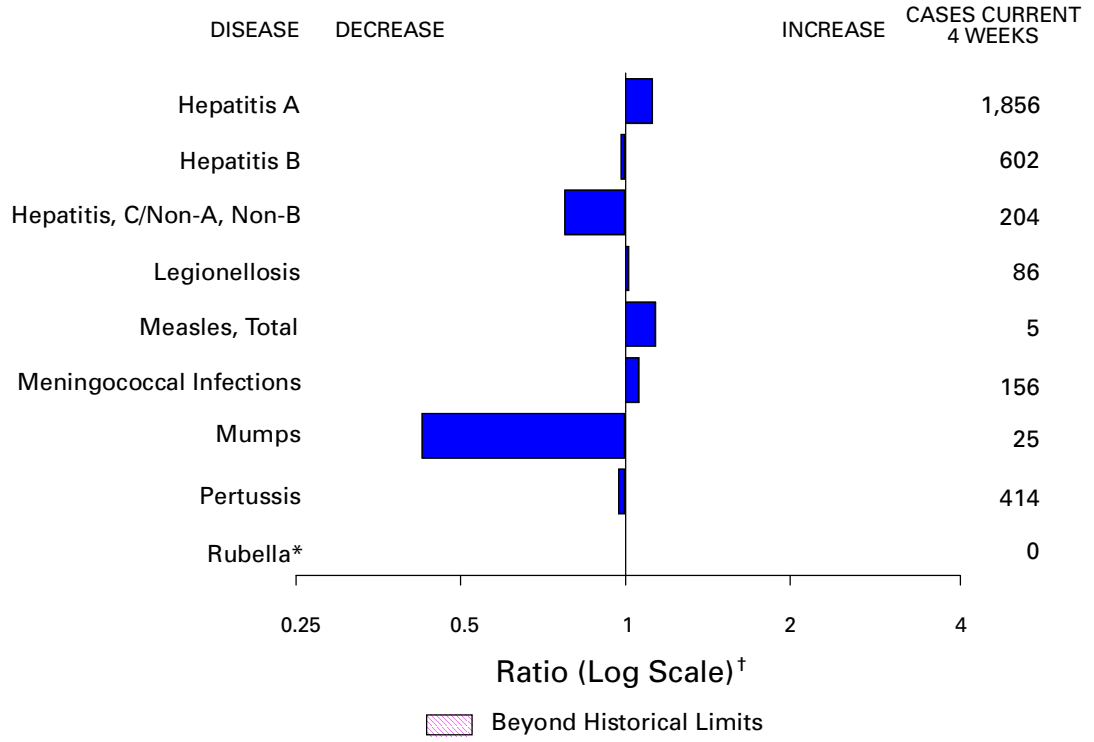
*Levels of activity are 1) *no activity*; 2) *sporadic*—sporadically occurring influenza-like illness (ILI) or culture-confirmed influenza with no outbreaks detected; 3) *regional*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of <50% of the state's total population;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

†The epidemic threshold is 1.645 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 pneumonia and influenza since 1983.

FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending November 14, 1998, with historical data — United States



*No rubella cases were reported for the current 4-week period, yielding a ratio for week 45 of zero (0).

†Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — provisional cases of selected notifiable diseases, United States, cumulative, week ending November 14, 1998 (45th Week)

	Cum. 1998		Cum. 1998
Anthrax	-	Plague	8
Brucellosis	50	Poliomyelitis, paralytic	1
Cholera	12	Psittacosis	43
Congenital rubella syndrome	3	Rabies, human	-
Cryptosporidiosis*	2,874	Rocky Mountain spotted fever (RMSF)	300
Diphtheria	1	Streptococcal disease, invasive Group A	1,853
Encephalitis: California*	81	Streptococcal toxic-shock syndrome*	45
eastern equine*	3	Syphilis, congenital¶	361
St. Louis*	24	Tetanus	34
western equine*	-	Toxic-shock syndrome	116
Hansen Disease	96	Trichinosis	12
Hantavirus pulmonary syndrome*†	19	Typhoid fever	293
Hemolytic uremic syndrome, post-diarrheal*	76	Yellow fever	-
HIV infection, pediatric*§	230		

-: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 October 25, 1998.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending November 14, 1998, and November 8, 1997 (45th Week)

Reporting Area	AIDS		Chlamydia		*Escherichia coli* O157:H7		Gonorrhea		Hepatitis C/NA,NB	
					NETSS†	PHLIS§				
	Cum. 1998*	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1998	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997
UNITED STATES	38,924	49,734	476,633	406,258	2,627	1,756	286,622	256,777	4,274	3,043
NEW ENGLAND	1,539	2,104	16,029	15,673	297	242	4,569	5,220	71	51
Maine	26	50	907	861	34	-	59	60	-	-
N.H.	28	34	824	712	41	42	79	83	-	-
Vt.	18	32	367	375	19	17	32	47	1	3
Mass.	785	729	7,335	6,362	139	139	1,987	1,847	67	41
R.I.	108	133	1,980	1,756	11	1	347	387	3	7
Conn.	574	1,126	4,616	5,607	53	43	2,065	2,796	-	-
MID. ATLANTIC	10,425	15,051	53,248	49,391	266	70	31,825	32,958	328	284
Upstate N.Y.	1,249	2,264	N	N	199	-	5,494	5,672	246	211
N.Y. City	5,885	8,005	30,371	23,646	7	12	13,542	12,357	-	-
N.J.	1,909	2,978	9,791	8,700	60	48	6,545	6,577	-	-
Pa.	1,382	1,804	13,086	17,045	N	10	6,244	8,352	82	73
E.N. CENTRAL	2,741	3,695	77,360	55,098	400	303	56,225	35,215	453	482
Ohio	562	766	22,213	19,579	108	60	14,476	12,774	8	17
Ind.	448	459	4,656	8,110	91	47	4,232	5,334	7	12
Ill.	1,044	1,515	23,434	U	100	58	19,599	U	31	82
Mich.	531	726	17,936	17,838	101	62	13,945	12,883	407	346
Wis.	156	229	9,121	9,571	N	76	3,973	4,224	-	25
W.N. CENTRAL	754	1,011	26,867	28,485	453	369	13,511	12,512	265	56
Minn.	146	175	5,498	5,813	190	191	2,124	2,044	9	4
Iowa	60	92	2,063	3,943	92	56	660	1,012	8	26
Mo.	367	506	10,515	10,543	45	60	7,501	6,427	241	10
N. Dak.	5	10	849	742	11	15	71	62	-	3
S. Dak.	15	8	1,351	1,171	30	34	199	133	-	-
Nebr.	59	84	2,191	2,281	54	-	891	1,011	4	2
Kans.	102	136	4,400	3,992	31	13	2,065	1,823	3	11
S. ATLANTIC	10,118	12,299	96,834	81,232	225	144	80,141	80,247	162	217
Del.	122	194	2,248	35	-	2	1,317	1,096	-	-
Md.	1,400	1,729	6,285	6,365	33	12	8,153	9,954	10	9
D.C.	751	956	N	N	1	-	3,139	3,823	-	-
Va.	771	1,010	11,129	10,134	N	42	7,847	7,625	11	25
W. Va.	72	108	2,249	2,527	11	7	710	802	6	16
N.C.	704	762	19,138	15,073	53	46	16,573	15,045	19	46
S.C.	640	688	14,400	10,902	13	9	9,167	10,070	8	36
Ga.	1,055	1,466	19,926	13,263	70	-	16,775	15,613	9	-
Fla.	4,603	5,386	21,459	22,933	44	26	16,460	16,219	99	85
E.S. CENTRAL	1,598	1,741	33,858	30,649	107	39	33,328	30,670	175	319
Ky.	249	321	5,535	5,466	31	-	3,235	3,548	19	12
Tenn.	591	677	11,554	11,080	50	33	10,024	9,687	149	214
Ala.	417	455	8,908	7,484	23	2	11,382	10,421	5	11
Miss.	341	288	7,861	6,619	3	4	8,687	7,014	2	82
W.S. CENTRAL	4,758	5,196	66,951	59,858	115	24	40,928	38,915	391	449
Ark.	177	193	3,330	2,482	11	10	3,387	4,165	10	14
La.	819	916	13,024	8,666	5	7	11,158	8,457	99	197
Okla.	256	256	8,387	6,417	22	7	4,634	4,155	14	7
Tex.	3,506	3,831	42,210	42,293	77	-	21,749	22,138	268	231
MOUNTAIN	1,360	1,424	27,925	25,770	325	216	7,861	7,010	322	273
Mont.	26	36	1,152	965	15	-	37	50	7	21
Idaho	27	48	1,754	1,416	38	22	146	126	87	61
Wyo.	3	13	616	519	53	55	29	45	63	66
Colo.	254	346	6,870	6,322	81	64	1,986	1,991	31	31
N. Mex.	189	146	3,280	3,328	18	13	795	744	84	50
Ariz.	549	343	9,886	9,215	21	26	3,549	3,082	8	25
Utah	114	125	1,837	1,505	77	21	192	239	23	5
Nev.	198	367	2,530	2,500	22	15	1,127	733	19	14
PACIFIC	5,631	7,213	77,561	60,102	439	349	18,234	14,030	2,107	912
Wash.	375	570	9,419	7,921	100	104	1,678	1,677	22	24
Oreg.	146	261	5,074	4,318	98	94	719	645	5	3
Calif.	4,949	6,256	59,360	44,980	234	137	15,143	10,940	2,025	734
Alaska	17	43	1,603	1,335	7	-	266	330	1	-
Hawaii	144	83	2,105	1,548	N	14	428	438	54	151
Guam	1	2	201	193	N	-	24	27	-	-
P.R.	1,499	1,715	U	U	6	U	329	495	-	-
V.I.	31	85	N	N	N	U	U	U	U	U
Amer. Samoa	-	-	U	U	N	U	U	U	U	U
C.N.M.I.	-	1	N	N	N	U	28	20	-	2

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

*Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update October 25, 1998.

†National Electronic Telecommunications System for Surveillance.

§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending November 14, 1998, and November 8, 1997 (45th Week)

Reporting Area	Legionellosis		Lyme Disease		Malaria		Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal
	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998*	Cum. 1997	Cum. 1998
UNITED STATES	1,125	920	11,308	10,626	1,191	1,624	6,162	7,405	12,530	15,418	6,014
NEW ENGLAND	74	76	2,524	2,757	54	79	65	120	401	380	1,284
Maine	1	3	11	8	5	1	1	1	10	18	197
N.H.	6	7	42	34	5	8	2	-	12	15	72
Vt.	7	12	11	8	1	2	4	-	2	5	61
Mass.	28	26	703	282	16	30	39	60	229	212	458
R.I.	19	11	592	357	9	7	1	2	49	31	85
Conn.	13	17	1,165	2,068	18	31	18	57	99	99	411
MID. ATLANTIC	271	192	7,399	6,133	299	470	236	351	2,498	2,725	1,395
Upstate N.Y.	90	56	3,683	2,543	85	66	35	36	310	387	968
N.Y. City	27	20	26	160	137	291	65	75	1,301	1,360	U
N.J.	15	26	1,571	1,763	49	81	78	142	541	586	197
Pa.	139	90	2,119	1,667	28	32	58	98	346	392	230
E.N. CENTRAL	354	301	157	555	113	152	952	577	1,079	1,533	126
Ohio	120	107	80	37	15	18	125	192	86	233	54
Ind.	103	51	57	33	11	16	205	161	101	132	11
Ill.	27	30	8	13	35	60	394	U	545	814	16
Mich.	72	78	12	25	45	42	176	128	329	264	35
Wis.	32	35	U	447	7	16	52	96	18	90	10
W.N. CENTRAL	69	54	184	145	86	50	111	161	350	481	614
Minn.	6	2	150	108	51	21	8	16	129	124	110
Iowa	10	9	22	5	8	9	-	7	43	46	136
Mo.	24	19	2	25	15	11	83	105	92	203	25
N. Dak.	-	2	-	-	2	3	-	-	8	12	128
S. Dak.	3	2	-	1	-	1	1	1	16	10	130
Nebr.	19	15	3	2	1	1	6	3	23	20	7
Kans.	7	5	7	4	9	4	13	29	39	66	78
S. ATLANTIC	127	109	768	706	285	280	2,277	3,046	1,756	2,947	1,731
Del.	12	11	37	109	3	5	20	22	18	32	30
Md.	26	19	535	446	78	78	577	803	247	270	403
D.C.	6	4	4	9	17	19	70	102	93	87	-
Va.	19	25	64	58	52	64	134	214	250	275	500
W. Va.	N	N	12	10	2	1	3	3	38	48	69
N.C.	13	13	53	32	26	16	649	841	392	370	136
S.C.	10	7	7	2	6	16	303	331	214	293	136
Ga.	8	1	5	7	36	35	247	464	434	528	272
Fla.	31	29	51	33	65	46	274	266	70	1,044	185
E.S. CENTRAL	59	49	83	84	29	34	1,062	1,508	901	1,131	245
Ky.	25	11	23	15	6	12	93	120	144	164	31
Tenn.	22	28	41	38	15	7	493	650	289	385	125
Ala.	5	3	17	10	6	10	252	374	302	372	87
Miss.	7	7	2	21	2	5	224	364	166	210	2
W.S. CENTRAL	40	33	23	86	28	51	907	1,178	1,837	2,211	133
Ark.	-	2	6	25	1	5	100	149	125	168	31
La.	4	6	4	3	15	13	374	318	249	195	-
Okla.	12	2	2	24	4	8	108	109	141	177	102
Tex.	24	23	11	34	8	25	325	602	1,322	1,671	-
MOUNTAIN	71	61	22	11	61	62	203	162	386	482	209
Mont.	2	1	-	-	1	2	-	-	18	6	51
Idaho	2	2	5	3	8	-	2	1	12	10	-
Wyo.	1	1	1	2	-	2	1	-	4	2	62
Colo.	17	18	5	-	19	27	11	14	U	74	39
N. Mex.	2	3	4	1	12	8	22	8	59	57	6
Ariz.	19	12	1	2	8	11	152	124	180	207	19
Utah	22	17	-	1	1	3	4	5	48	28	26
Nev.	6	7	6	2	12	9	11	10	65	98	6
PACIFIC	60	45	148	149	236	446	349	302	3,322	3,528	277
Wash.	12	8	7	9	17	44	27	9	184	258	-
Oreg.	1	-	20	17	16	23	5	9	121	123	7
Calif.	45	36	120	121	197	366	315	282	2,831	2,930	247
Alaska	1	-	1	2	2	3	1	1	45	64	23
Hawaii	1	1	-	-	4	10	1	1	141	153	-
Guam	2	-	-	-	1	-	1	3	36	13	-
P.R.	-	-	-	-	-	5	162	216	68	164	49
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.	-	-	-	-	-	-	164	10	77	9	-

N: Not notifiable U: Unavailable -: no reported cases

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending November 14, 1998, and November 8, 1997 (45th Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported†		Total	
	Cum. 1998*	Cum. 1997	Cum. 1998	Cum. 1997	Cum. 1998	Cum. 1997	1998	Cum. 1998	1998	Cum. 1998	Cum. 1998	Cum. 1997
UNITED STATES	902	934	19,360	24,804	7,609	8,206	-	60	-	23	83	128
NEW ENGLAND	61	55	238	595	166	156	-	1	-	2	3	19
Maine	3	5	18	57	4	6	-	-	-	-	-	1
N.H.	9	10	13	32	18	15	-	-	-	-	-	1
Vt.	7	3	15	12	5	9	-	-	-	1	1	-
Mass.	36	32	98	245	50	67	-	1	-	1	2	16
R.I.	5	3	15	126	64	14	-	-	-	-	-	-
Conn.	1	2	79	123	25	45	-	-	-	-	-	1
MID. ATLANTIC	130	145	1,292	1,848	967	1,172	-	8	-	6	14	26
Upstate N.Y.	54	47	316	319	254	263	-	1	-	1	2	5
N.Y. City	26	39	328	819	243	416	-	-	-	-	-	10
N.J.	45	41	307	275	176	214	-	7	-	1	8	3
Pa.	5	18	341	435	294	279	-	-	-	4	4	8
E.N. CENTRAL	150	146	3,146	2,575	1,373	1,297	-	11	-	3	14	10
Ohio	45	78	275	276	70	76	-	-	-	1	1	-
Ind.	39	14	292	270	694	90	-	2	-	1	3	-
Ill.	51	36	584	722	167	243	-	-	-	-	-	7
Mich.	8	17	1,839	1,141	403	378	-	9	-	1	10	2
Wis.	7	1	156	166	39	510	-	-	-	-	-	1
W.N. CENTRAL	82	54	1,232	1,932	364	417	-	1	-	-	1	17
Minn.	64	42	115	184	43	36	-	-	-	-	-	8
Iowa	2	5	390	410	59	35	-	1	-	-	1	-
Mo.	9	4	562	985	219	298	-	-	-	-	-	1
N. Dak.	-	-	3	10	4	5	-	-	-	-	-	-
S. Dak.	-	2	31	21	2	1	-	-	-	-	-	8
Nebr.	1	1	39	85	14	14	-	-	-	-	-	-
Kans.	6	-	92	237	23	28	-	-	-	-	-	-
S. ATLANTIC	174	139	1,762	1,684	1,021	1,055	-	3	-	5	8	14
Del.	-	-	3	29	3	6	-	-	-	1	1	-
Md.	49	51	283	176	142	146	-	-	-	1	1	2
D.C.	-	-	54	28	11	29	-	-	-	-	-	1
Va.	16	12	190	202	91	112	-	-	-	2	2	1
W. Va.	5	3	7	11	8	16	-	-	-	-	-	-
N.C.	23	21	112	176	211	215	-	-	-	-	-	2
S.C.	3	4	37	97	41	90	-	-	-	-	-	1
Ga.	42	27	581	471	128	115	-	1	-	1	2	1
Fla.	36	21	495	494	386	326	-	2	-	-	2	6
E.S. CENTRAL	49	52	332	539	351	615	-	-	-	2	2	1
Ky.	7	8	21	67	40	36	-	-	-	-	-	-
Tenn.	27	29	200	329	242	389	U	-	U	1	1	-
Ala.	13	13	68	75	67	64	-	-	-	1	1	1
Miss.	2	2	43	68	2	126	-	-	-	-	-	-
W.S. CENTRAL	51	45	3,698	5,181	1,125	1,146	-	1	-	-	1	8
Ark.	-	2	89	191	87	78	-	-	-	-	-	-
La.	22	12	105	212	150	145	-	1	-	-	1	-
Okla.	26	28	535	1,298	88	43	-	-	-	-	-	1
Tex.	3	3	2,969	3,480	800	880	-	-	-	-	-	7
MOUNTAIN	104	76	2,930	3,787	738	757	-	3	-	-	3	8
Mont.	-	-	90	65	5	9	-	-	-	-	-	-
Idaho	1	1	226	121	40	41	-	-	-	-	-	-
Wyo.	1	4	35	30	7	23	-	-	-	-	-	-
Colo.	18	15	299	370	98	132	-	-	-	-	-	-
N. Mex.	7	8	134	313	288	229	-	-	-	-	-	-
Ariz.	53	29	1,769	1,988	163	176	-	3	-	-	3	5
Utah	5	3	178	513	66	80	-	-	-	-	-	1
Nev.	19	16	199	387	71	67	U	-	U	-	-	2
PACIFIC	101	222	4,730	6,663	1,504	1,591	-	32	-	5	37	25
Wash.	10	5	870	584	107	68	-	-	-	1	1	2
Oreg.	36	31	336	334	107	105	-	-	-	-	-	-
Calif.	47	171	3,471	5,577	1,272	1,394	-	5	-	3	8	19
Alaska	1	8	17	30	12	14	-	27	-	1	28	-
Hawaii	7	7	36	138	6	10	-	-	-	-	-	4
Guam	-	-	-	-	2	3	U	-	U	-	-	-
P.R.	2	-	49	254	333	719	-	-	-	-	-	-
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.	-	6	3	1	53	42	U	-	U	-	-	1

N: Not notifiable U: Unavailable -: no reported cases

*Of 212 cases among children aged <5 years, serotype was reported for 106 and of those, 42 were type b.

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

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending November 14, 1998, and November 8, 1997 (45th Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997	1998	Cum. 1998	Cum. 1997
UNITED STATES	2,306	2,799	3	421	556	90	5,233	4,719	-	328	157
NEW ENGLAND	100	177	-	7	10	8	817	858	-	38	1
Maine	6	17	-	-	-	-	5	16	-	-	-
N.H.	4	14	-	-	-	2	101	124	-	-	-
Vt.	5	4	-	-	-	-	68	217	-	-	-
Mass.	52	86	-	4	3	5	593	459	-	8	1
R.I.	8	20	-	1	6	-	9	16	-	1	-
Conn.	25	36	-	2	1	1	41	26	-	29	-
MID. ATLANTIC	217	296	-	29	50	3	512	346	-	130	33
Upstate N.Y.	62	76	-	6	11	3	276	139	-	111	5
N.Y. City	22	48	-	4	3	-	23	60	-	14	28
N.J.	54	62	-	2	7	-	5	13	-	4	-
Pa.	79	110	-	17	29	-	208	134	-	1	-
E.N. CENTRAL	342	427	-	69	77	9	565	519	-	-	6
Ohio	128	150	-	27	30	5	252	150	-	-	-
Ind.	62	48	-	6	12	-	137	54	-	-	-
Ill.	84	131	-	11	11	-	96	80	-	-	2
Mich.	40	61	-	25	20	4	63	53	-	-	-
Wis.	28	37	-	-	4	-	17	182	-	-	4
W.N. CENTRAL	194	209	1	30	15	6	491	416	-	33	-
Minn.	30	34	-	13	5	5	295	247	-	-	-
Iowa	39	44	1	11	8	-	69	70	-	-	-
Mo.	70	90	-	3	-	-	32	61	-	2	-
N. Dak.	5	2	-	2	-	1	3	1	-	-	-
S. Dak.	7	5	-	-	-	-	8	4	-	-	-
Nebr.	14	13	-	-	1	-	18	9	-	-	-
Kans.	29	21	-	1	1	-	66	24	-	31	-
S. ATLANTIC	400	476	-	47	62	10	287	383	-	19	78
Del.	2	5	-	-	-	-	5	1	-	-	-
Md.	26	41	-	-	1	-	51	108	-	1	-
D.C.	1	12	-	-	-	-	1	3	-	-	1
Va.	38	53	-	8	10	-	30	42	-	1	1
W. Va.	16	16	-	-	-	1	2	6	-	-	-
N.C.	54	84	-	11	10	5	96	112	-	13	59
S.C.	53	49	-	6	11	1	27	25	-	-	15
Ga.	90	93	-	1	10	-	24	13	-	-	-
Fla.	120	123	-	21	20	3	51	73	-	4	2
E.S. CENTRAL	219	210	-	14	29	5	114	127	-	2	1
Ky.	33	43	-	-	3	3	50	56	-	-	-
Tenn.	69	72	U	1	5	U	33	35	U	2	-
Ala.	93	71	-	8	9	2	28	26	-	-	1
Miss.	24	24	-	5	12	-	3	10	-	-	-
W.S. CENTRAL	270	268	-	57	77	9	345	248	-	87	4
Ark.	28	31	-	11	1	1	86	51	-	-	-
La.	57	48	-	10	13	-	9	18	-	-	-
Okla.	39	39	-	-	-	1	30	33	-	-	-
Tex.	146	150	-	36	63	7	220	146	-	87	4
MOUNTAIN	134	160	1	37	54	25	973	1,009	-	5	7
Mont.	4	8	-	-	-	-	9	17	-	-	-
Idaho	10	10	1	5	3	1	244	504	-	-	2
Wyo.	5	3	-	1	1	-	8	7	-	-	-
Colo.	27	43	-	6	3	3	199	313	-	-	-
N. Mex.	25	27	N	N	N	1	90	92	-	1	-
Ariz.	41	39	-	6	32	-	198	35	-	1	5
Utah	14	13	-	5	8	20	178	20	-	2	-
Nev.	8	17	U	14	7	U	47	21	U	1	-
PACIFIC	430	576	1	131	182	15	1,129	813	-	14	27
Wash.	58	80	-	10	19	14	297	341	-	9	5
Oreg.	76	111	N	N	N	-	86	46	-	-	-
Calif.	288	376	1	96	130	1	717	392	-	3	14
Alaska	3	2	-	2	8	-	14	16	-	-	-
Hawaii	5	7	-	23	25	-	15	18	-	2	8
Guam	1	1	U	2	1	U	-	-	U	-	-
P.R.	6	8	-	1	7	-	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	2	4	U	1	-	U	-	-

N: Not notifiable U: Unavailable -: no reported cases

TABLE IV. Deaths in 122 U.S. cities,* week ending November 14, 1998 (45th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	594	440	90	44	9	11	62
Boston, Mass.	165	109	33	18	1	4	27
Bridgeport, Conn.	53	41	3	6	1	2	-
Cambridge, Mass.	12	7	2	2	1	-	3
Fall River, Mass.	21	18	3	-	-	-	2
Hartford, Conn.	46	32	9	4	1	-	3
Lowell, Mass.	26	23	2	1	-	-	1
Lynn, Mass.	16	15	1	-	-	-	-
New Bedford, Mass.	26	23	2	1	-	-	2
New Haven, Conn.	41	28	5	6	1	1	4
Providence, R.I.	44	37	3	-	1	3	-
Somerville, Mass.	4	4	-	-	-	-	-
Springfield, Mass.	54	41	9	2	2	-	6
Waterbury, Conn.	24	17	6	1	-	-	1
Worcester, Mass.	62	45	12	3	1	1	13
MID. ATLANTIC	2,162	1,530	403	129	59	41	112
Albany, N.Y.	60	40	14	4	2	-	3
Allentown, Pa.	18	16	2	-	-	-	1
Buffalo, N.Y.	76	58	13	3	2	-	3
Camden, N.J.	30	16	6	2	2	4	1
Elizabeth, N.J.	9	7	2	-	-	-	1
Erie, Pa.	42	32	8	1	-	1	2
Jersey City, N.J.	29	25	4	-	-	-	-
New York City, N.Y.	1,216	846	228	83	35	24	51
Newark, N.J.	72	37	22	4	3	6	3
Paterson, N.J.	23	12	4	3	4	-	-
Philadelphia, Pa.	200	137	44	11	5	3	11
Pittsburgh, Pa.§	52	37	8	4	2	1	2
Reading, Pa.	16	16	-	-	-	-	-
Rochester, N.Y.	141	107	24	7	1	2	19
Schenectady, N.Y.	29	25	3	-	1	-	2
Scranton, Pa.	27	23	3	-	1	-	2
Syracuse, N.Y.	83	66	10	6	1	-	6
Trenton, N.J.	29	23	5	1	-	-	5
Utica, N.Y.	10	7	3	-	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,022	1,358	364	184	60	56	126
Akron, Ohio	56	42	3	5	3	3	1
Canton, Ohio	39	30	4	3	2	-	3
Chicago, Ill.	429	224	100	64	26	15	23
Cincinnati, Ohio	97	73	12	8	-	4	7
Cleveland, Ohio	147	92	31	15	1	8	2
Columbus, Ohio	186	145	25	8	5	3	16
Dayton, Ohio	118	87	23	5	-	3	7
Detroit, Mich.	185	101	42	27	11	4	10
Evansville, Ind.	55	44	7	4	-	-	2
Fort Wayne, Ind.	51	37	7	3	2	2	-
Gary, Ind.	8	1	2	3	2	-	-
Grand Rapids, Mich.	73	57	10	2	3	1	8
Indianapolis, Ind.	180	127	37	10	-	6	13
Lansing, Mich.	34	24	5	3	1	1	1
Milwaukee, Wis.	123	87	21	12	1	2	19
Peoria, Ill.	34	22	7	2	-	3	1
Rockford, Ill.	44	33	10	1	-	-	2
South Bend, Ind.	20	15	4	-	1	-	2
Toledo, Ohio	87	68	10	8	-	1	6
Youngstown, Ohio	56	49	4	1	2	-	3
W.N. CENTRAL	659	475	105	43	9	19	60
Des Moines, Iowa	61	43	11	4	-	3	6
Duluth, Minn.	24	18	4	1	1	-	2
Kansas City, Kans.	5	4	1	-	-	-	-
Kansas City, Mo.	119	77	19	8	4	3	4
Lincoln, Nebr.	38	28	6	2	1	1	3
Minneapolis, Minn.	147	110	22	11	1	3	13
Omaha, Nebr.	83	56	13	7	1	6	10
St. Louis, Mo.	110	83	19	5	-	3	12
St. Paul, Minn.	63	51	8	4	-	-	9
Wichita, Kans.	9	5	2	1	1	-	1

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,144	713	270	114	28	17	72
Atlanta, Ga.	88	54	23	8	2	1	1
Baltimore, Md.	142	88	28	20	3	3	13
Charlotte, N.C.	110	76	17	12	3	2	14
Jacksonville, Fla.	126	84	33	8	1	-	6
Miami, Fla.	109	51	39	16	2	-	-
Norfolk, Va.	70	46	16	1	4	3	4
Richmond, Va.	63	35	20	6	-	2	3
Savannah, Ga.	48	36	5	4	2	1	5
St. Petersburg, Fla.	37	29	3	3	2	-	1
Tampa, Fla.	171	115	38	12	3	2	16
Washington, D.C.	164	87	45	23	6	3	9
Wilmington, Del.	16	12	3	1	-	-	-
E.S. CENTRAL	796	517	182	56	23	18	66
Birmingham, Ala.	153	97	36	10	3	7	15
Chattanooga, Tenn.	58	39	11	4	2	2	1
Knoxville, Tenn.	83	59	16	5	-	3	19
Lexington, Ky.	85	58	18	3	5	1	7
Memphis, Tenn.	164	98	41	17	5	3	13
Mobile, Ala.	75	48	14	8	3	2	2
Montgomery, Ala.	47	31	15	1	-	-	8
Nashville, Tenn.	131	87	31	8	5	-	1
W.S. CENTRAL	1,322	865	264	115	40	38	70
Austin, Tex.	52	40	2	7	2	1	4
Baton Rouge, La.	13	6	2	2	2	1	2
Corpus Christi, Tex.	54	41	9	2	1	1	3
Dallas, Tex.	187	110	49	12	6	10	3
El Paso, Tex.	80	52	14	7	5	2	5
Ft. Worth, Tex.	98	68	18	8	1	3	10
Houston, Tex.	378	213	98	42	13	12	20
Little Rock, Ark.	75	54	13	6	1	1	4
New Orleans, La.	104	70	14	13	4	3	-
San Antonio, Tex.	189	143	28	13	4	1	12
Shreveport, La.	U	U	U	U	U	U	U
Tulsa, Okla.	92	68	17	3	1	3	7
MOUNTAIN	906	627	166	58	30	25	63
Albuquerque, N.M.	96	67	9	12	6	2	4
Boise, Idaho	37	25	7	-	1	4	2
Colo. Springs, Colo.	44	36	5	3	-	-	1
Denver, Colo.	103	71	18	7	3	4	11
Las Vegas, Nev.	151	110	31	7	2	1	4
Ogden, Utah	34	25	7	-	1	1	2
Phoenix, Ariz.	161	94	36	17	7	7	7
Pueblo, Colo.	29	21	5	2	1	-	4
Salt Lake City, Utah	98	65	18	6	5	4	12
Tucson, Ariz.	153	113	30	4	4	2	16
PACIFIC	1,532	1,158	205	103	34	31	136
Berkeley, Calif.	21	14	3	1	3	-	1
Fresno, Calif.	135	92	26	8	8	-	17
Glendale, Calif.	36	31	3	2	-	-	-
Honolulu, Hawaii	66	50	7	5	4	-	7
Long Beach, Calif.	76	57	11	4	2	2	8
Los Angeles, Calif.	415	345	29	28	6	7	22
Pasadena, Calif.	28	22	4	2	-	-	6
Portland, Oreg.	106	76	17	8	2	3	5
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	103	75	21	5	-	2	17
San Francisco, Calif.	136	95	22	15	2	2	20
San Jose, Calif.	115	89	16	6	2	2	10
Santa Cruz, Calif.	31	28	2	-	-	1	3
Seattle, Wash.	112	67	23	12	3	7	7
Spokane, Wash.	66	52	7	3	1	3	8
Tacoma, Wash.	86	65	14	4	1	2	5
TOTAL	11,137¶	7,683	2,049	846	292	256	767

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 or more. 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.

Influenza Activity — Continued

Virus Surveillance System collaborating laboratories. Sentinel Physicians Influenza Surveillance System. WHO Collaborating Center for Surveillance, Epidemiology, and Control of Influenza, Influenza Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The influenza A(H3N2) and influenza B viruses isolated in the United States during this season are similar to those isolated worldwide during the previous 6 months and to the A(H3N2) and B components in the 1998–99 influenza vaccine. During this season, no influenza A(H1N1) viruses have been identified in the United States. Few H1N1 isolates have been identified worldwide during the previous 6 months.

Although the optimal time for influenza vaccination is October through mid-November, health-care providers should continue to offer influenza vaccine to unvaccinated high-risk persons after mid-November, even if influenza activity has been detected in the community. The Advisory Committee on Immunization Practices recommends annual vaccination against influenza for persons aged ≥65 years; residents of nursing homes or chronic-care facilities; persons with chronic cardiovascular or pulmonary disorders, including children with asthma; persons requiring medical follow-up or hospitalization during the previous year because of diabetes or other chronic metabolic diseases, renal dysfunction, hemoglobinopathies, or immunosuppression; children and teenagers (aged 6 months–18 years) receiving long-term aspirin therapy (who may therefore be at risk for developing Reye syndrome after influenza); and women who will be in their second or third trimester of pregnancy during the influenza season. Vaccination also is recommended for health-care workers and others, including household members, in frequent contact with persons at high risk for influenza-related complications. Influenza vaccine also can be administered to other persons who want to reduce their likelihood of acquiring influenza and for whom vaccination is not contraindicated (*1*).

Antiviral agents can provide a useful adjunct to influenza vaccination (*1*). Amantadine and rimantadine are available for the prophylaxis or treatment of influenza A infection, but they are not effective against influenza type B viruses. In settings that house persons at high risk for influenza-related complications (e.g., nursing homes), contingency plans for rapid diagnostic testing for influenza type A viruses can help detect outbreaks early and guide use of antiviral drugs for prophylaxis and treatment (*2*).

Throughout the influenza season, surveillance data collected by CDC are updated weekly and are available through CDC's voice information system, telephone (888) 232-3228, or fax information system, telephone (888) 232-3299, by requesting document no. 361100, or through CDC's World-Wide Web site http://www.cdc.gov/ncidod/diseases/flu/weekly.htm.

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1. CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1998;47(no. RR-6).
2. Gomolin IH, Leib HB, Arden NH, Sherman FT. Control of influenza outbreaks in the nursing home: guidelines for diagnosis and management. J Am Geriatr Soc 1995;43:71–4.

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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.

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