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Tobacco Use Among High School Students — United States, 1997

Tobacco use is the single leading preventable cause of death in the United States (*1*). Approximately 80% of tobacco use occurs for the first time among youth aged <18 years (*2*), and the prevalence of cigarette smoking among adolescents increased during the early 1990s (*3*). To determine prevalence rates of cigarette, smokeless tobacco (chewing tobacco or snuff), and cigar use for U.S. high school students, CDC analyzed data from the 1997 Youth Risk Behavior Survey (YRBS). This report summarizes the results of the analysis, which indicate that the prevalence of current cigarette smoking among U.S. high school students increased from 27.5% in 1991 to 36.4% in 1997 and that, in 1997, 42.7% of students used cigarettes, smokeless tobacco, or cigars during the 30 days preceding the survey.

YRBS, a component of CDC's Youth Risk Behavior Surveillance System (*4*), biennially measures the prevalence of priority health-risk behaviors among youth through representative national, state, and local surveys. The 1997 national YRBS used a three-stage cluster sample design to obtain a representative sample of 16,262 students in grades 9–12 in the 50 states and the District of Columbia. The school response rate was 79.1%, the student response rate was 87.2%, and the overall response rate was 69.0%. Data were weighted to provide national estimates, and SUDAAN® (Software for the Statistical Analysis of Correlated Data) was used to calculate standard errors for determining 95% confidence intervals.*

Students completed a self-administered questionnaire that included questions about cigarette, smokeless tobacco, and cigar use. Lifetime cigarette smokers were defined as students who had ever smoked cigarettes, even one or two puffs. Current cigarette, smokeless tobacco, and cigar users were defined as students who reported product use on ≥1 of the 30 days preceding the survey. Frequent cigarette use was defined as smoking cigarettes on ≥20 of the 30 days preceding the survey. Any current tobacco use was defined as use of cigarettes, smokeless tobacco, or cigars on ≥1 of the 30 days preceding the survey. Data are presented only for non-Hispanic black, non-Hispanic white, and Hispanic students because the numbers of students from other racial/ethnic groups were too small for meaningful analysis.

*Differences between prevalence estimates were considered statistically significant if the 95% confidence intervals did not overlap. Use of trade names and commercial sources is for identification only and does not imply endorsement by CDC and the U.S. Department of Health and Human Services.

Tobacco Use Among High School Students — Continued

Prevalence of Cigarette Use

The overall prevalences of lifetime, current, and frequent cigarette use were 70.2%, 36.4%, and 16.7%, respectively (Table 1). The prevalence of lifetime cigarette smoking was higher among Hispanic male students (76.9%) than among white male students (70.4%). The prevalence of current cigarette smoking was higher among white students (39.7%) than Hispanic (34.0%) and black (22.7%) students, and Hispanic students (34.0%) were more likely to report current cigarette smoking than black students (22.7%). Among males, the prevalence of current cigarette smoking was higher among white students (39.6%) than black students (28.2%). Among females, the prevalence of current cigarette smoking was higher among white students (39.9%) than Hispanic (32.3%) and black (17.4%) students, and Hispanic female students (32.3%) were more likely to report current cigarette smoking than black female students (17.4%). Among black students, males (28.2%) were more likely than females (17.4%) to report current cigarette smoking.

The prevalence of frequent cigarette smoking was higher among white students (19.9%) than among Hispanic (10.9%) and black (7.2%) students. Among males, the prevalence of frequent cigarette smoking was higher among white students (19.8%) than black students (10.1%). Among females, the prevalence of frequent cigarette smoking was higher among white students (20.1%) than Hispanic (8.1%) and black (4.3%) students. Among black students, males (10.1%) were more likely than females (4.3%) to report frequent cigarette smoking.

Trend analyses of current cigarette smoking found significantly increasing trends overall and among all racial/ethnic subgroups ($p<0.001$). The overall prevalence of current cigarette smoking increased from 27.5% in 1991 to 36.4% in 1997. Among white students, current cigarette smoking increased from 30.9% in 1991 to 39.7% in 1997. Among black students, current cigarette smoking increased from 12.6% in 1991 to 22.7% in 1997. Among Hispanic students, current cigarette smoking increased from 25.3% in 1991 to 34.0% in 1997.

Prevalence of Smokeless Tobacco Use

The overall prevalence of current smokeless tobacco use was 9.3% (Table 1). The prevalence of current smokeless tobacco use was higher among male students (15.8%) than female students (1.5%) and among white students (12.2%) than black (2.2%) and Hispanic (5.1%) students. White male students (20.6%) were more likely than any other subgroup to report current smokeless tobacco use; Hispanic male students (8.4%) were more likely than black male students (3.2%) to report this behavior. Among Hispanic students, males (8.4%) were more likely than females (1.2%) to report current smokeless tobacco use.

Prevalence of Cigar Use

The overall prevalence of current cigar use was 22.0% (Table 1). Male students (31.2%) were more likely to use cigars than female students (10.8%). This difference held within each racial/ethnic subgroup. Ninth-grade students (17.3%) were less likely than 11th-grade students (24.2%) to use cigars.

Prevalence of Any Current Tobacco Use

The overall prevalence of any current tobacco use was 42.7% (Table 1). Male students (48.2%) were more likely to report any current tobacco use than female students

TABLE 1. Percentage of high school students* who used cigarettes, smokeless tobacco, or cigars, by sex, race/ethnicity, and grade — United States, Youth Risk Behavior Survey, 1997

	Cigarette use						Current smokeless tobacco use**		Current cigar use††		Any current tobacco use§§	
	Lifetime†		Current§		Frequent¶							
Category	%	(95% CI¶¶)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Sex												
Male	70.9	(±1.9)	37.7	(±2.7)	17.6	(±2.7)	15.8	(±3.7)	31.2	(±2.3)	48.2	(±2.8)
Female	69.3	(±2.6)	34.7	(±2.8)	15.7	(±2.1)	1.5	(±0.7)	10.8	(±2.4)	36.0	(±2.8)
Race/Ethnicity* **												
White, non-Hispanic	70.4	(±2.3)	39.7	(±2.4)	19.9	(±2.2)	12.2	(±2.5)	22.5	(±2.6)	46.8	(±1.9)
Male	70.4	(±2.4)	39.6	(±3.8)	19.8	(±3.3)	20.6	(±4.0)	32.5	(±2.1)	51.5	(±2.4)
Female	70.3	(±3.3)	39.9	(±3.2)	20.1	(±3.2)	1.6	(±0.9)	9.6	(±2.6)	40.8	(±3.1)
Black, non-Hispanic	68.4	(±4.4)	22.7	(±3.8)	7.2	(±1.8)	2.2	(±1.1)	19.4	(±3.2)	29.4	(±3.0)
Male	70.1	(±4.7)	28.2	(±5.5)	10.1	(±3.1)	3.2	(±1.7)	28.1	(±5.3)	37.6	(±4.7)
Female	66.8	(±5.2)	17.4	(±3.9)	4.3	(±1.8)	1.3	(±1.2)	11.0	(±2.9)	21.5	(±4.2)
Hispanic	75.0	(±2.7)	34.0	(±2.7)	10.9	(±2.6)	5.1	(±2.3)	20.3	(±4.4)	36.8	(±3.4)
Male	76.9	(±3.6)	35.5	(±3.6)	13.2	(±3.7)	8.4	(±3.3)	26.3	(±7.0)	41.3	(±5.0)
Female	72.7	(±3.9)	32.3	(±3.7)	8.1	(±2.7)	1.2	(±1.0)	13.0	(±2.8)	31.4	(±3.8)
Grade												
9	67.7	(±5.1)	33.4	(±5.1)	13.1	(±3.8)	9.7	(±2.7)	17.3	(±2.9)	38.0	(±5.3)
10	70.0	(±3.9)	35.3	(±4.1)	15.0	(±1.9)	6.8	(±1.7)	22.3	(±3.4)	40.9	(±4.1)
11	68.8	(±3.1)	36.6	(±3.6)	18.9	(±2.8)	10.0	(±2.5)	24.2	(±2.9)	44.2	(±3.1)
12	73.7	(±4.1)	39.6	(±4.9)	19.4	(±3.1)	10.5	(±3.6)	23.8	(±4.2)	47.0	(±6.1)
Total	**70.2**	**(±1.9)**	**36.4**	**(±2.3)**	**16.7**	**(±1.9)**	**9.3**	**(±2.2)**	**22.0**	**(±2.1)**	**42.7**	**(±2.3)**

* N=16,262.
† Ever tried cigarette smoking, even one or two puffs.
§ Smoked cigarettes on ≥1 of the 30 days preceding the survey.
¶ Smoked cigarettes on ≥20 of the 30 days preceding the survey.
** Used smokeless tobacco on ≥1 of the 30 days preceding the survey.
†† Smoked cigars on ≥1 of the 30 days preceding the survey.
§§ Smoked cigarettes, used smokeless tobacco, or smoked cigars on ≥1 of the 30 days preceding the survey.
¶¶ Confidence interval.
*** Numbers for other racial/ethnic groups were too small for meaningful analysis.

Tobacco Use Among High School Students — Continued

(36.0%), and this difference held within each racial/ethnic subgroup. The prevalence of any current tobacco use was higher among white students (46.8%) than Hispanic (36.8%) and black (29.4%) students. These differences held for both male and female students. The prevalence of any current tobacco use was higher among Hispanic students (36.8%) than black students (29.4%) overall and among female students (31.4% of Hispanic females and 21.5% of black females).

Reported by: Office on Smoking and Health, and Div of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: This report is the first to include cigarette, smokeless tobacco, and cigar use in a measure of current tobacco use and the first to report on past-month cigar use among a nationally representative sample of high school students. The increasing prevalence of cigarette smoking since 1991, the high rate of smokeless tobacco and cigar use, and the high rate of any tobacco use suggest that a major proportion of U.S. youth already have or are at risk for nicotine addiction (*5,6*) and the subsequent health problems caused by tobacco use (*2,6*).

In 1997, the prevalence of current cigarette smoking was 32% higher than in 1991; current cigarette smoking increased 80% among black students, 34% among Hispanic students, and 28% among white students. The reasons for the large differences in overall prevalence of current cigarette smoking and the increases in cigarette smoking among students in all the racial/ethnic groups are unclear and require further investigation. CDC is conducting research to help explain these differences and the reasons for continued increases in tobacco use among all youth.

The findings in this report are subject to at least two limitations. First, these data apply only to youth who attend high school and, therefore, are not representative of all persons in this age group. In 1996, only 6% of persons aged 16–17 years were not enrolled in a high school program and had not completed high school (*7*). Second, the measure of any current tobacco use described in this report might be an underestimate, because it does not include measures of pipe and "roll-your-own" tobacco smoking.

In 1994, CDC recommended that school-based tobacco-use prevention programs begin in elementary school and continue through 12th grade, with intensive instruction for students in grades six through eight (i.e., up to 10 smoking-focused sessions each year) (*8*). Data from the 1994 School Health Policies and Programs Study indicated that only 55% of middle/junior high and 47% of senior high school health education teachers taught tobacco-use prevention as a major topic (*9*). Of these teachers, 43% of middle/junior high and 42% of senior high school teachers taught only one or two classes on the topic. Additional research findings indicate that school-based tobacco-use prevention programs are most effective when supported by community-wide programs that involve parents, peers, mass media, and community organizations (*2*).

Tobacco-use prevention activities should be designed to prevent the use of all tobacco products. Such activities should include increasing tobacco prices, reducing access (e.g., by implementing and adequately enforcing minors' access restrictions), reducing the appeal of tobacco products (e.g., by restricting advertising and promotion), and conducting youth-oriented mass media campaigns and school-based tobacco-use prevention programs (*2,10*). Establishing health-oriented social norms (e.g., by increasing provision of smoke-free indoor air and decreasing modeling of

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tobacco use by parents, teachers, and celebrities) and increasing support and involvement from parents and schools also will contribute to prevention (*2*).

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One Thousand Days Until the Target Date for Global Poliomyelitis Eradication

On April 6, only 1000 days will remain until the end of 2000, the target date established by the World Health Assembly in 1988 for the eradication of poliomyelitis (*1*) and included as a year 2000 goal by the World Summit for Children in 1990. Progress toward this goal has included elimination of endemic polio from the Western Hemisphere in 1991 (*2*) and apparent elimination of endemic transmission in 1997 from both the Western Pacific and European (except Turkey and Tajikistan) regions of the World Health Organization (WHO). In addition, globally, reported polio cases have decreased >90% since 1988. These accomplishments underscore the feasibility of global eradication (*3*). All countries with endemic polio, except for Democratic Republic of Congo, Liberia, Sierra Leone, and Somalia, have conducted National Immunization Days*, one of the key strategies advocated by WHO to achieve polio eradication (*4*).

Despite this progress, many challenges remain. To accomplish the goal of eradication by the target date, polio eradication strategies† must be accelerated in all countries with endemic polio, especially in areas experiencing civil unrest or war. In particular, adequate surveillance must be established, and funding for eradication activities must be increased by external partner organizations, especially for the poorest countries. Support will need to be sustained through 2005, when global certification is anticipated.

The global partnership working to achieve polio eradication includes governments of countries with current or recent endemic polio, WHO, United Nations Children's Fund (UNICEF), Rotary International, and the governments of Australia, Canada, Denmark, Japan, United Kingdom, and the United States. Enhanced efforts are needed by this partnership to achieve a polio-free world by the beginning of the 21st century.

Reported by: Global Program for Vaccines and Immunization, World Health Organization, Geneva, Switzerland. United Nations Children's Fund, New York. Respiratory and Enteric Viruses Br, National Center for Infectious Diseases; Vaccine-Preventable Disease Eradication Div, National Immunization Program, CDC.

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*Mass campaigns over a short period (days to weeks) during which two doses of oral poliovirus vaccine are administered to all children in the target age group (usually 0–4 years) regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

†WHO recommends the following four strategies: 1) achieving and maintaining high routine vaccination coverage, 2) providing supplemental vaccination during National Immunization Days to interrupt widespread circulation of poliovirus, 3) establishing sensitive systems for epidemiologic and virologic surveillance, and 4) conducting mopping-up operations to eliminate the last remaining foci of poliovirus transmission.

Progress Toward Poliomyelitis Eradication — African Region, 1997

In 1988, the World Health Assembly established the goal of eradicating poliomyelitis worldwide by 2000 (*1*). To achieve this goal, the World Health Organization (WHO) promotes the implementation of specific strategies (*2,3*). Eradicating polio from the African continent is one of the remaining major challenges to achieving global eradication by the target date. This report summarizes progress in the African Region of WHO in 1997 with the implementation of polio eradication strategies, and suggests that polio eradication by 2000 remains a feasible target.

Reported routine coverage with three doses of oral poliovirus vaccine (OPV3) among children aged <1 year is low in the region overall but has increased from 47% in 1993 to 54% in 1996. In 1996, 12 countries reported that <50% of children were routinely vaccinated with OPV3. Of the largest and most populous countries (Angola, Democratic Republic of Congo [DR Congo], Ethiopia, and Nigeria), only Ethiopia improved routine coverage (from 54% in 1995 to 67% in 1996), but coverage remained low in 1996 in Angola (42%), DR Congo (36%), and Nigeria (26%). All 24 countries of central and western Africa reported OPV3 coverage levels at <60% in 1996, except Algeria (77%), Benin (80%), The Gambia (97%), Senegal (80%), and Togo (82%).

During 1997 and the first quarter of 1998, a total of 36 countries in the region conducted National Immunization Days (NIDs)* (Figure 1). These were the first NIDs for seven countries (Burundi, Guinea, Guinea-Bissau, Madagascar, Mali, Niger, and Senegal). Because of political instability, NIDs could not be conducted in Liberia, Republic of Congo, and Sierra Leone. Vaccination coverage was reported at ≥80% for both rounds in all countries except Central African Republic (81% and 73%), Gabon (78% and 82%), Kenya (76% and 80%), Lesotho (67% and 65%), Mozambique (65% and 75%), Nigeria (72% and 91%), Rwanda (73%, first round results only), and South Africa (81% and 76%) (Table 1). DR Congo conducted Subnational Immunization Days (SNIDs)† in 47 cities (25% of the total population); coverage was >85% for both rounds.

Nigeria conducted NIDs in 1996 and 1997, with reported coverage of 47% for the first and 75% for the second round in 1996, and 72% and 91% for first and second rounds, respectively, in 1997. In 1996, only five (16%) of 31 Nigerian states conducting NIDs reported coverage levels of >80% in both rounds. In 1997, a total of 16 (43%) of 37 states implementing NIDs achieved >80% coverage in both rounds. After 2 years of NIDs in Nigeria, 15 states did not reach coverage of >80% in three of four rounds.

In 1996, a total of 1949 polio cases were reported from the African region, with six countries accounting for 88% of cases: Nigeria (942), Ethiopia (264), DR Congo (219), Uganda (121), Chad (93), and Angola (81). In 1997, surveillance for acute flaccid paralysis (AFP) had been established in all but eight countries in the region (Burundi, Equatorial Guinea, Eritrea, Gabon, Liberia, Mali, Rwanda, and Sierra Leone). The rate of AFP reporting in each subregion (Western, Central, Southern, and Eastern) is low (average: <0.2 nonpolio AFP cases per 100,000 children aged <15 years). In two large countries that reported rates of nonpolio AFP of >0.4 per 100,000 (Ghana and Uganda), the geographic distribution of AFP cases within the country was uneven, and the

*Mass campaigns over a short period (days to weeks) during which two doses of OPV are administered to all children in the target age group (usually 0–4 years) regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

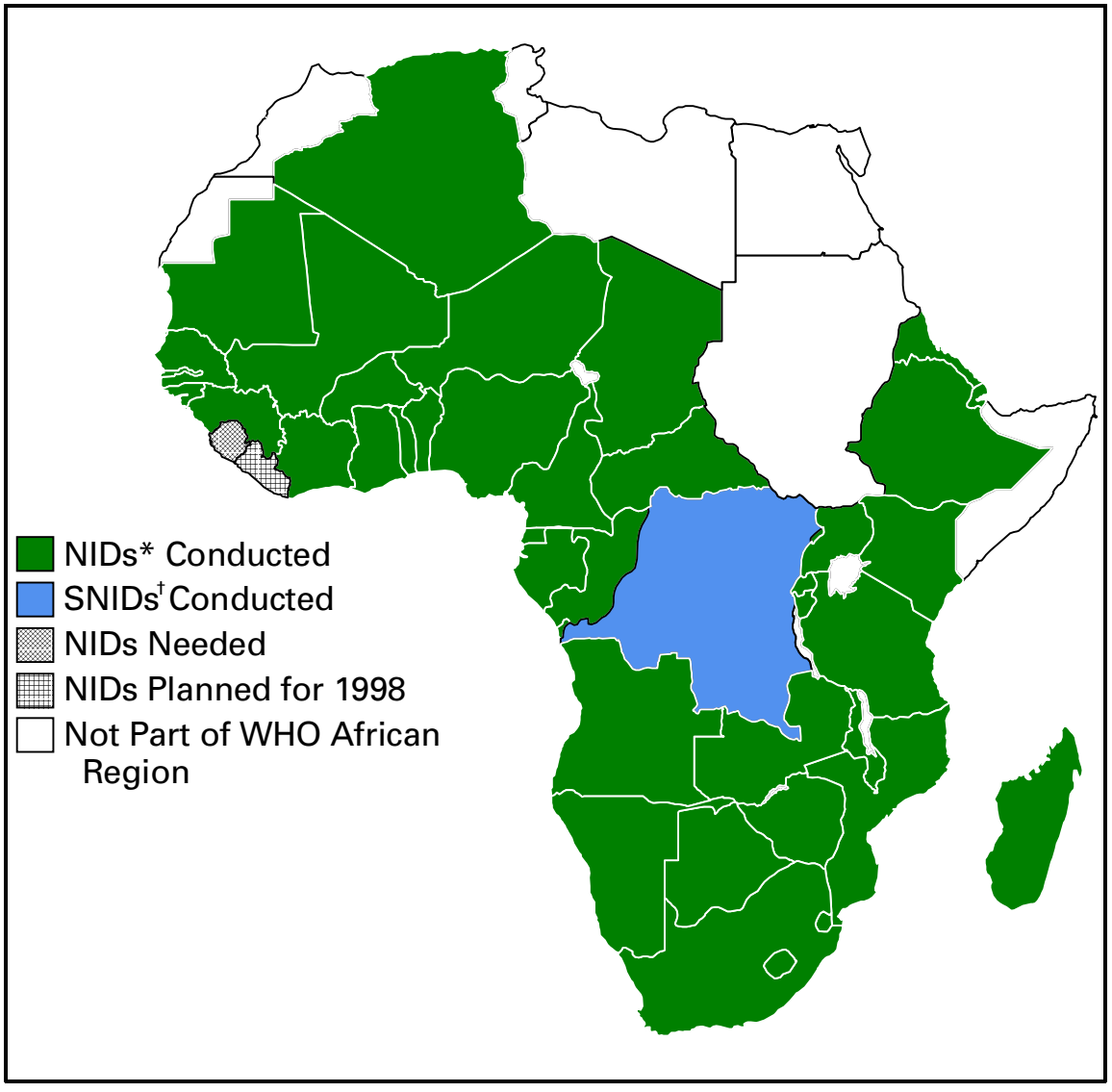
†Focal mass campaigns in high-risk areas over a short period (days to weeks) in which two doses of OPV are administered to all children in the target age group, regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

Poliomyelitis Eradication — Continued

percentage of AFP cases with two specimens collected within 14 days of onset of paralysis remained below the level of ≥80% recommended by WHO.

In 1997, stool specimens collected from 73 persons with AFP in countries in east Africa (Kenya, Tanzania, Uganda, and Zambia) were negative for wild poliovirus, and no wild poliovirus was recovered in southern Africa. Wild poliovirus was isolated from 33 AFP cases from DR Congo and many countries in central and western Africa. Wild

FIGURE 1. Areas where supplemental vaccination activities have been conducted, are planned, or are needed, by country — African Region of the World Health Organization (WHO)



*National Immunization Days are mass campaigns over a short period (days to weeks) during which two doses of oral poliovirus vaccine are administered to all children in the target age group (usually 0–4 years) regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

†Focal mass campaigns in high-risk areas over a short period (days to weeks) in which two doses of OPV are administered to all children in the target age group, regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

Poliomyelitis Eradication — Continued

TABLE 1. Vaccination coverage with three doses of oral poliovirus vaccine (OPV3) during 1996, and vaccination coverage during National Immunization Days (NIDs)*, nonpolio acute flaccid paralysis (AFP) rates†, and reported number of polio cases, during 1997, by countries with endemic polio — African Region of the World Health Organization

Region/Country	1996 OPV3 coverage	1997 NID coverage		Nonpolio AFP rate 1997	No. confirmed polio cases for 1997
		Round 1	Round 2		
Western					
Algeria	77%	92%	92%	0.28	0
Benin	80%	100%	100%	0.01	2
Burkina Faso	48%	100%	100%	0.19	3
Côte d'Ivoire	55%	100%	NR§	0.12	3
Chad	20%	91%	99%	0.14	2
Gambia¶	97%	—	—	0.25	0
Ghana	52%	98%	NR	0.42	4
Guinea	48%	100%	100%	0.10	0
Guinea-Bissau	54%	NR	NR	0.20	0
Liberia**	45%	—	—	††	NR
Mali	52%	95%	100%	††	NR
Mauritania	50%	90%	93%	0.60	0
Niger	23%	88%	95%	0.14	6
Nigeria	26%	72%	91%	0	4
Senegal	80%	97%	100%	0.19	2
Sierra Leone**	65%	—	—	††	NR
Togo	82%	99%	100%	0.13	1
Central					
Angola	42%	83%	90%	0.24	7
Cameroon	46%	91%	100%	0.17	11
Central African Republic	53%	81%	73%	0.19	8
Congo**	50%	—	—	0	NR
Democratic Republic of Congo	36%	95%§§	85%§§	0.07	6
Equatorial Guinea	64%	89%	100%	††	NR
Gabon	41%	78%	82%	††	NR
Southern					
Botswana	81%	97%§§	81%	0.57	0
Lesotho	58%	67%	65%	0.11	0
Madagascar	73%	100%	100%	0.19	0
Malawi	82%	96%	100%	0.20	0
Mozambique	60%	65%	75%	0.05	0
Namibia	71%	100%	95%	0.71	2
South Africa	73%	81%	76%	0.32	0
Swaziland	71%	NR	NR	0.50	0
Zimbabwe	76%	96%	96%	0.82	0
Eastern					
Burundi	63%	NR	NR	††	NR
Eritrea	46%	82%	84%	††	0
Ethiopia	67%	88%	NR	0.05	NR
Kenya	43%	76%	80%	0.11	0
Rwanda	99%	73%	NR	††	0
Tanzania	82%	95%	98%	0.11	NR
Uganda	79%	92%	94%	0.41	3
Zambia	83%	96%	87%	0.15	0

*Mass campaigns over a short period (days to weeks) during which two doses of oral poliovirus vaccine are administered to all children in the target age group (usually 0–4 years) regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

†Per 100,000 children aged <15 years.

§Not reported.

¶NIDs not needed.

**NIDs not conducted because of political instability.

††AFP surveillance system not yet established.

§§Conducted Subnational Immunization Days, which are focal mass campaigns in high-risk areas over a short period (days to weeks) in which two doses of OPV are administered to all children in the target age group, regardless of previous vaccination history, with an interval of 4–6 weeks between doses.

Poliomyelitis Eradication — Continued

poliovirus also was isolated after the first NIDs in the Benin, Central African Republic, Chad, Côte d'Ivoire, and Nigeria. Partial genomic sequencing of several wild poliovirus isolates from countries neighboring DR Congo and Nigeria indicated that they are related to viruses found in DR Congo and Nigeria.

Thirteen laboratories composing the African Regional Polio Laboratory Network—three regional reference laboratories and 10 intercountry and national laboratories—were fully functional in 1997. The network supports 31 countries in the region. Seven countries (Benin, Chad, DR Congo, Guinea, Guinea-Bissau, Ethiopia, and Mali) contributed specimens to network laboratories for the first time in 1997.

Reported by: Expanded Program on Immunization, World Health Organization Regional Office for Africa, Harare, Zimbabwe. Global Program for Vaccines and Immunization, World Health Organization, Geneva, Switzerland. Respiratory and Enteric Viruses Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Vaccine-Preventable Disease Eradication Div, National Immunization Program, CDC.

Editorial Note: Countries of the African Region made substantial progress toward polio eradication during 1996 and 1997 by 1) achieving high coverage during 2 years of conducting NIDs, 2) establishing AFP surveillance in many countries, and 3) creating a functional regional laboratory network. In addition, high-level political commitment and support for polio eradication in Africa achieved in 1996 was sustained in 1997.

The two most important remaining reservoirs of wild poliovirus are Nigeria and DR Congo. In Nigeria, several states have not yet conducted one set of adequate double-round supplemental OPV vaccination during NIDs, and reported routine vaccination coverage with OPV3 was low during 1996. The first NIDs in DR Congo are scheduled to begin in August 1998. Surveillance data and genomic sequencing of viruses indicate that Nigeria and DR Congo are large remaining virus reservoirs that frequently export wild poliovirus to neighboring countries, making it more difficult for these countries to become polio free.

AFP surveillance, although improving, remains at low levels. High-quality AFP surveillance is essential to assess the impact of polio eradication activities and, at later stages, to guide interventions aimed at the interruption of wild poliovirus transmission in the remaining virus reservoirs. Emphasis should be placed on active surveillance at the provincial level to improve the completeness and timeliness of detection, reporting, and investigation of AFP cases and the collection of appropriate stool specimens. Identifying personnel to conduct surveillance and ensuring transportation and operating expenses at the provincial level are important constraints.

AFP surveillance in the African Region has already provided important epidemiologic information. Wild poliovirus was isolated widely even after the first NIDs in west and central African countries, indicating that wild poliovirus transmission had not yet been interrupted in those areas. In comparison with eastern and southern Africa, rapid success of polio eradication activities in west and central Africa is constrained further by lower levels of routine vaccination coverage in most countries. AFP surveillance represents the first surveillance system being implemented throughout the African Region that requires epidemiologic and virologic investigation of individual cases; its procedures are relatively complex and operationally demanding. Once fully established, AFP surveillance can facilitate surveillance, evaluation, and action for other diseases, including hemorrhagic fever, yellow fever, meningitis, epidemic dysentery, and other important and emerging diseases.

Poliomyelitis Eradication — Continued

Polio eradication in Africa is receiving increased external financial and technical support from Rotary International, WHO, United Nations Children's Fund (UNICEF), U.S. Agency for International Development (USAID), Basic Support for Institutionalizing Child Survival (BASICS) project, CDC, the government of Japan, the Canadian International Development Agency, vaccine manufacturers, and other partners.

Polio eradication is achievable in the African Region by 2000 if the following constraints and potential obstacles are addressed: 1) rapid improvements of AFP surveillance in all countries with endemic polio, 2) implemention of NIDs in the remaining countries that have not conducted NIDs, and 3) implementation of polio eradication strategies in countries experiencing internal strife or civil war. In addition, substantial additional financial support is needed, primarily for surveillance and to conduct activities in countries experiencing civil unrest or war.

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State Differences in Reported Healthy Days Among Adults — United States, 1993–1996

Traditional population health measures, such as infant mortality rates, vaccination rates, and average life expectancy, have emphasized morbidity and mortality. During the past decade, weighted indices of population health (e.g., years of healthy life and disability-adjusted life-years), which combine life expectancy with aspects of health-related quality of life (HRQOL), have provided more comprehensive summary measures (*1*). To meet the need for a less complex measure that is more sensitive to local variations in population health, CDC developed the "healthy days" index. This HRQOL index tracks the number of healthy days (i.e., days when persons' physical and mental health were both good) during the preceding 30 days for a specific population (*2–5*). This report describes state differences for 1993–1996 in the mean number of healthy days reported by adults, including large differences within each state by level of formal education.

The healthy days index is part of CDC's Behavioral Risk Factor Surveillance System (BRFSS), an ongoing, state-based, random-digit–dialed telephone survey of the noninstitutionalized U.S. population aged ≥18 years. The system tracks the prevalence of important health- and safety-related behaviors. The healthy days index derives from two standard BRFSS questions about the estimated number of days during the preceding 30 days when physical health (including "physical illness and injury") or mental health (including "stress, depression, and problems with emotions") was not good. This number is subtracted from 30, and the remainder is the estimated number of healthy days during the preceding 30 days. To enable comparisons, data were age-standardized to the 1990 U.S. population aged ≥18 years and were weighted to reflect the age, racial/ethnic, and sex distribution of the state population (*6*). Some analyses were restricted to the 15% of adult respondents who had less than a high school

Healthy Days — Continued

education, an important socioeconomic group* with high percentages of persons in low-income households (42%), persons in racial/ethnic minority groups (40%), uninsured persons (30%), and persons who are unemployed or have a severe work disability (19%).

During 1993–1996, the overall state-weighted mean number of healthy days during the preceding 30 days for all adults was 24.7, ranging from 23.7 (Kentucky and Nevada) to 26.0 (South Dakota) ($p<0.05$; weighted z-test after adjustment for multiple comparisons) (Table 1).† For this 4-year period, in comparison with the overall mean number, 10 states (California, Colorado, Florida, Indiana, Kentucky, Massachusetts, Michigan, Nevada, Oregon, and Rhode Island) had statistically lower mean numbers of healthy days. Fourteen states (Connecticut, Georgia, Hawaii, Illinois, Iowa, Kansas, Maine, Maryland, New Jersey, North Carolina, Ohio, Oklahoma, South Dakota, and Tennessee) had statistically higher mean numbers of healthy days.

Overall, persons with less than a high school education had a mean number of 22.8 healthy days; high school graduates or equivalent with no college degree, 24.7 days; and college graduates, 26.0 days. In each state and the District of Columbia, the mean number of healthy days was higher for persons who had higher educational levels; the exception was Alaska, in which high school graduates with no college degree had a mean number of 0.2 fewer healthy days than persons with less education.

For 1993–1996, mean numbers of healthy days by state for adults with less than a high school education were grouped by quartile and evaluated for geographic patterns (Figure 1). Each Bureau of the Census region (i.e., Northeast, North Central, South, and West) had one or more states in the highest quartile (i.e., ≥23.5 healthy days) and one or more states in the lowest quartile (i.e., ≤22.0 healthy days). Kentucky (21.3 healthy days) had a significantly lower mean, and Alaska (24.8) and North Carolina (24.5) had significantly higher means, than the overall mean for persons with less than a high school education.

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Editorial Note: Asking randomly selected adults to report the number of days during the preceding 30 days when physical and mental health were good provides valid and useful data about the overall health of communities (*2–5*). The composite healthy

*Educational status was used as a proxy for low socioeconomic status in lieu of household income because of a change (in 1995–1996) in the BRFSS question about income that limited comparability with earlier years.

†The District of Columbia was not included in state comparisons, but in 1993–1996 it reported a higher overall mean number of healthy days than any of the states.

Healthy Days — Continued

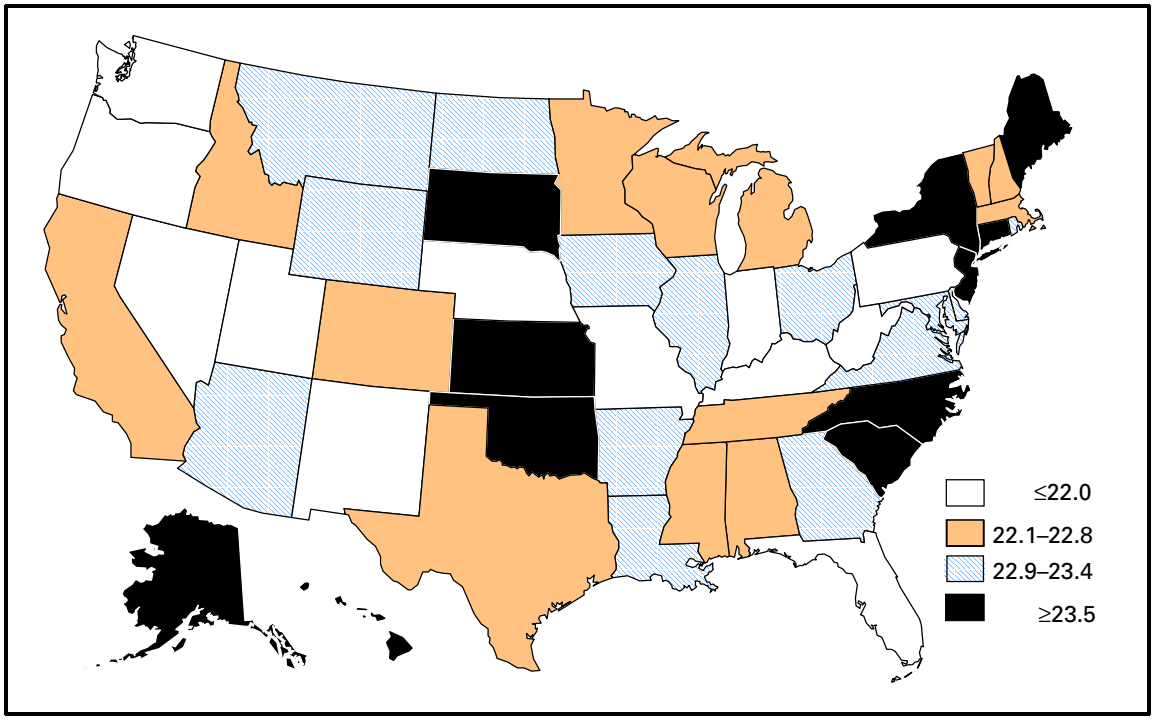
TABLE 1. Mean number of "healthy days" among adults,* by state and educational level — United States, Behavioral Risk Factor Surveillance System, 1993–1996

State	All education levels		Educational level: Less than high school graduate		High school graduate/ Some college		College graduate	
	Mean	SE†	Mean	SE	Mean	SE	Mean	SE
Alabama	25.0	0.12	22.2	0.40	25.3	0.15	26.5	0.22
Alaska	25.1	0.19	24.8	0.54	24.6	0.25	26.7	0.31
Arizona	25.1	0.14	23.4	0.53	25.0	0.17	26.2	0.24
Arkansas	24.7	0.13	23.0	0.40	24.9	0.16	26.1	0.26
California	24.1	0.09	22.7	0.29	23.9	0.12	25.2	0.17
Colorado	24.2	0.12	22.4	0.51	23.7	0.17	25.8	0.19
Connecticut	25.6	0.11	23.7	0.49	25.4	0.15	26.6	0.19
Delaware	24.8	0.12	23.1	0.44	24.8	0.15	25.7	0.23
District of Columbia	26.5	0.14	24.1	0.62	26.7	0.18	26.8	0.24
Florida	24.3	0.09	21.5	0.35	24.3	0.12	25.5	0.18
Georgia	25.2	0.11	22.9	0.34	25.7	0.14	26.3	0.21
Hawaii	25.8	0.10	23.9	0.63	25.8	0.13	26.1	0.21
Idaho	24.6	0.11	22.8	0.42	24.5	0.14	25.8	0.22
Illinois	25.4	0.10	23.0	0.40	25.4	0.13	26.3	0.18
Indiana	23.9	0.11	21.5	0.39	23.9	0.14	25.7	0.23
Iowa	25.4	0.09	23.3	0.42	25.3	0.11	26.3	0.18
Kansas	25.8	0.11	23.9	0.54	25.6	0.13	26.8	0.17
Kentucky	23.7	0.11	21.3	0.32	24.3	0.15	25.3	0.23
Louisiana	24.8	0.13	23.1	0.39	24.9	0.16	26.3	0.22
Maine	25.5	0.13	23.5	0.50	25.6	0.17	26.4	0.25
Maryland	25.5	0.08	23.0	0.35	25.4	0.10	26.4	0.13
Massachusetts	24.1	0.13	22.6	0.48	23.5	0.18	25.7	0.18
Michigan	24.3	0.10	22.1	0.41	24.1	0.13	25.7	0.18
Minnesota	24.6	0.08	22.3	0.47	24.4	0.11	25.7	0.15
Mississippi	25.0	0.13	22.8	0.38	25.3	0.17	26.8	0.24
Missouri	24.5	0.14	21.9	0.46	24.3	0.18	26.3	0.20
Montana	24.9	0.13	23.1	0.60	24.8	0.17	26.0	0.27
Nebraska	25.2	0.15	21.6	0.70	25.1	0.18	26.2	0.22
Nevada	23.7	0.14	21.0	0.65	23.6	0.17	24.8	0.34
New Hampshire	25.0	0.13	22.5	0.56	24.9	0.17	26.2	0.20
New Jersey	25.3	0.12	23.6	0.48	25.0	0.17	26.3	0.20
New Mexico	24.6	0.16	22.0	0.62	24.5	0.21	25.9	0.25
New York	24.6	0.10	23.7	0.30	24.5	0.14	25.2	0.18
North Carolina	25.8	0.09	24.5	0.26	25.9	0.12	26.8	0.19
North Dakota	24.5	0.12	22.9	0.59	24.6	0.14	25.6	0.24
Ohio	25.4	0.13	23.1	0.45	25.5	0.17	26.8	0.22
Oklahoma	25.9	0.12	23.7	0.46	26.0	0.15	26.8	0.23
Oregon	24.4	0.10	21.9	0.39	24.1	0.12	25.8	0.17
Pennsylvania	24.6	0.10	21.9	0.37	24.6	0.12	26.1	0.16
Rhode Island	23.9	0.15	22.3	0.48	23.7	0.20	25.3	0.25
South Carolina	25.1	0.12	23.5	0.34	25.2	0.16	26.0	0.23
South Dakota	26.0	0.10	23.8	0.37	26.1	0.13	27.1	0.19
Tennessee	25.2	0.09	22.8	0.28	25.5	0.12	26.8	0.18
Texas	24.4	0.13	22.4	0.39	24.1	0.18	26.0	0.25
Utah	24.3	0.11	21.5	0.47	24.1	0.14	25.6	0.21
Vermont	24.7	0.11	22.6	0.44	24.5	0.15	26.0	0.17
Virginia	25.1	0.12	23.1	0.41	24.9	0.16	26.2	0.19
Washington	24.4	0.09	21.5	0.42	24.1	0.12	25.9	0.14
West Virginia	24.6	0.11	22.0	0.33	25.1	0.13	26.6	0.21
Wisconsin	24.7	0.12	22.2	0.51	24.7	0.15	25.6	0.24
Wyoming	24.9	0.14	23.1	0.62	24.8	0.16	25.8	0.25
All respondents	**24.7**	**0.02**	**22.8**	**0.08**	**24.7**	**0.03**	**26.0**	**0.04**

* Total sample size=431,996; age-adjusted to the 1990 U.S. population aged ≥18 years.
† Standard error.

Healthy Days — Continued

FIGURE 1. Mean number of "healthy days" among adults with less than a high school education,* by state — United States, Behavioral Risk Factor Surveillance System, 1993–1996



*Age-adjusted to the 1990 U.S. population aged ≥18 years.

days index used in the BRFSS since January 1993 indicates statistically significant differences in overall adult health by state. In almost all states, the number of healthy days also differed significantly by educational level. This difference reinforces the findings of other studies that suggest major improvements in population health may not be possible without reducing disparities between lower and higher socioeconomic groups. In addition, the significant differences found among some states for adults with less than a high school education indicate that such persons experience higher HRQOL in some states than in others. However, the ability of the index to detect and isolate the effects of particular state policies, such as welfare reform and managed health-care programs, remains untested. Subsequent analyses will examine HRQOL differences among potentially vulnerable subgroups, including reproductive-aged women, unemployed persons, persons without health insurance, persons with disabilities, and older persons.

The healthy days index has good construct validity in other published analyses and has performed acceptably in construct, criterion, and known-groups validity in a general population comparison with the widely used and validated Medical Outcomes Study Short Form 36 (SF-36)[§] (*7*). In that comparison, the individual components of the healthy days index (recent physical and mental health) also had acceptable validity and correlated most strongly with the related SF-36 scales. The striking persistence of

[§]The SF-36 is a set of 36 survey questions and associated subscales designed to measure key aspects of HRQOL in patient and community populations, whereas the healthy days index is designed to provide a concise summary estimate of HRQOL in community populations.

Healthy Days — Continued

large differences in healthy days across socioeconomic groups in each state further supports the construct validity of the index in this study.

The findings in this report are subject to at least three limitations. First, because the BRFSS excludes households without telephones, the findings may overestimate average numbers of healthy days for groups with lower socioeconomic status. Second, the BRFSS may underrepresent persons at a low level of health and functioning, because time and functional capacity are needed to complete the survey. Third, differences by state also may reflect differences in population composition, socioeconomic factors, climate, natural and human-made disasters, environmental quality, and other unknown factors.

The substantial amount of BRFSS data concerning healthy days and related HRQOL items being collected by state health agencies (>500,000 adults were surveyed through 1997) provides public health planners with valuable information that can be used to help set population health goals and objectives (*8*) and to monitor performance of health programs over time (*9,10*). The BRFSS data described in this report indicate that the mean number of healthy days differs by state and by subpopulations within each state, suggesting that public health and social strategies must be tailored to specific populations, including persons who have lower levels of education, to ensure that community health objectives can be met.

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Notice to Readers

National Public Health Week — April 6–12, 1998

April 6–12, 1998, has been designated National Public Health Week. This year's theme, "Healthy People in Healthy Communities," recognizes the contributions of public health to the nation's well-being and focuses public attention on important physical and mental health concerns in our communities. The benefits of public health

include prevention of disease and injury, promotion of healthy behaviors, and protection against environmental hazards. Primarily because of collaboration between public health professionals at the federal, state, and local levels and their partners in communities, persons in the United States have better health, live in healthier conditions, are more knowledgeable about taking care of their health, and live longer than at any time in the past.

Additional information about National Public Health Week is available from local and state health departments or the national offices of the American Public Health Association, telephone (202) 789-5627; the Association of State and Territorial Health Officials, telephone (202) 371-9090; the National Association of County and City Health Officials, telephone (202) 783-5550; the National Association of Local Boards of Health, telephone (419) 353-7714; and CDC's Office of Communications (404) 639-3286.

Notice to Readers

National Minority Cancer Awareness Week — April 19–25, 1998

National Minority Cancer Awareness Week is April 19–25, 1998. In 1998, an estimated 564,800 persons will die from cancer in the United States (*1*); of these, approximately 85,000 will occur among racial/ethnic minorities (S. Landis, M.P.H., Department of Epidemiology and Surveillance Research, American Cancer Society, personal communication, 1998). This week is dedicated to increasing the awareness of the importance of detecting cancer early among racial/ethnic minority groups.

To improve cancer control and prevention within minority and underserved populations, CDC and other federal, state, local, and nonprofit organizations encourage and support various activities, including 1) tracking cancer rates among minority populations, 2) recruiting members of minority groups into clinical trials, 3) increasing and improving research efforts that target minority and underserved populations, and 4) implementing community-based education programs and outreach initiatives that target and address the specific needs of different racial/ethnic groups.

CDC's cancer prevention and control resources include six priority areas: the National Program of Cancer Registries, the National Breast and Cervical Cancer Early Detection Program, the National Skin Cancer Prevention Education Program, colorectal cancer control, prostate cancer control, and tobacco-related issues. Additional information is available from CDC's Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion; telephone: (770) 488-4751; and World-Wide Web site: http://www.cdc.gov/nccdphp/dcpc.

Reference

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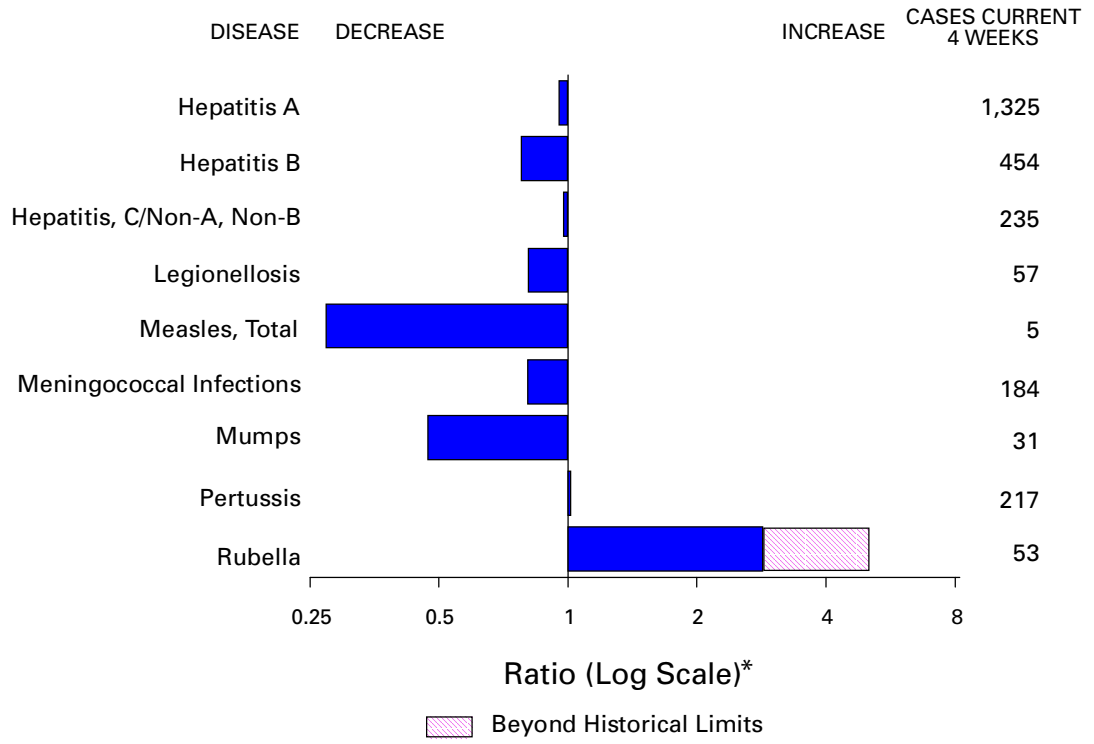
FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending March 28, 1998, with historical data — United States



*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 March 28, 1998 (12th Week)

	Cum. 1998		Cum. 1998
Anthrax	-	Plague	-
Brucellosis	3	Poliomyelitis, paralytic[¶]	-
Cholera	-	Psittacosis	10
Congenital rubella syndrome	-	Rabies, human	-
Cryptosporidiosis*	416	Rocky Mountain spotted fever (RMSF)	13
Diphtheria	-	Streptococcal disease, invasive Group A	449
Encephalitis: California*	-	Streptococcal toxic-shock syndrome*	16
eastern equine*	-	Syphilis, congenital**	10
St. Louis*	-	Tetanus	3
western equine*	-	Toxic-shock syndrome	27
Hansen Disease	25	Trichinosis	1
Hantavirus pulmonary syndrome*[†]	-	Typhoid fever	61
Hemolytic uremic syndrome, post-diarrheal*	4	Yellow fever	-
HIV infection, pediatric*[§]	64		

-: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 to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention (NCHSTP), last update March 28, 1998.
[¶] One suspected case of polio with onset in 1998 has also been reported to date.
**Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending March 28, 1998, and March 22, 1997 (12th 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	10,971	11,590	107,668	100,694	177	59	66,930	63,321	711	631
NEW ENGLAND	316	259	4,279	4,135	24	10	1,172	1,406	8	16
Maine	4	16	216	204	1	-	13	8	-	-
N.H.	13	2	212	189	5	2	26	41	-	2
Vt.	8	10	66	98	-	-	1	14	-	-
Mass.	98	122	1,934	1,731	10	8	502	551	8	14
R.I.	32	29	577	487	3	-	74	127	-	-
Conn.	161	80	1,274	1,426	5	-	556	665	-	-
MID. ATLANTIC	3,365	3,616	13,487	12,887	13	1	7,934	8,071	82	59
Upstate N.Y.	425	541	N	N	10	-	1,005	1,208	75	42
N.Y. City	1,936	1,785	7,594	6,921	-	1	3,534	3,373	-	-
N.J.	521	856	1,725	2,432	3	-	1,398	1,679	-	-
Pa.	483	434	4,168	3,534	N	-	1,997	1,811	7	17
E.N. CENTRAL	791	727	19,575	16,375	29	7	14,025	10,024	103	159
Ohio	149	167	5,614	5,111	9	-	3,438	3,308	5	5
Ind.	83	87	2,337	2,028	6	3	1,531	1,409	2	1
Ill.	374	250	4,945	2,557	10	-	4,262	1,360	5	22
Mich.	142	178	5,392	4,113	4	-	4,294	2,903	91	131
Wis.	43	45	1,287	2,566	N	4	500	1,044	-	-
W.N. CENTRAL	202	264	7,188	7,203	20	8	3,039	2,968	81	34
Minn.	32	38	1,341	1,709	6	4	471	554	-	-
Iowa	9	45	874	1,174	2	-	239	295	7	7
Mo.	101	140	2,702	2,556	4	3	1,527	1,502	72	21
N. Dak.	3	2	163	219	1	1	15	15	-	2
S. Dak.	7	2	392	234	-	-	68	29	-	-
Nebr.	15	20	573	303	3	-	197	98	-	-
Kans.	35	17	1,143	1,008	4	-	522	475	2	4
S. ATLANTIC	3,013	3,064	22,877	19,193	22	8	19,067	19,581	39	45
Del.	40	38	563	-	-	1	334	248	-	-
Md.	333	316	1,740	1,537	9	4	1,981	2,915	4	5
D.C.	196	192	N	N	-	-	813	1,038	-	-
Va.	175	246	2,686	2,693	N	3	1,789	2,059	1	4
W. Va.	19	17	634	761	N	-	169	236	2	1
N.C.	217	153	5,097	4,163	6	-	4,397	3,752	7	17
S.C.	164	156	4,026	2,940	1	-	2,607	2,761	-	12
Ga.	369	373	4,420	1,696	2	-	4,005	2,764	8	-
Fla.	1,500	1,573	3,711	5,403	4	-	2,972	3,808	17	6
E.S. CENTRAL	384	360	7,781	7,579	12	3	7,470	7,828	24	70
Ky.	63	32	1,449	1,470	2	-	850	1,006	-	2
Tenn.	143	177	3,015	2,793	7	3	2,607	2,414	21	34
Ala.	118	89	2,384	1,827	3	-	2,967	2,593	3	4
Miss.	60	62	933	1,489	-	-	1,046	1,815	-	30
W.S. CENTRAL	1,369	994	15,064	10,060	2	-	9,559	7,197	9	52
Ark.	52	57	831	606	1	-	1,075	1,025	-	1
La.	212	205	2,813	1,475	-	-	2,442	1,481	-	37
Okla.	71	47	2,183	1,532	1	-	1,174	1,068	-	1
Tex.	1,034	685	9,237	6,447	-	-	4,868	3,623	9	13
MOUNTAIN	354	384	4,262	5,359	15	8	1,615	1,758	181	73
Mont.	10	12	211	158	1	-	11	11	4	3
Idaho	8	4	431	369	2	-	36	25	55	13
Wyo.	1	9	180	110	-	-	10	14	81	24
Colo.	65	127	-	693	2	1	603	471	8	12
N. Mex.	55	26	951	960	4	3	176	318	14	12
Ariz.	128	71	2,043	2,110	N	2	696	700	-	5
Utah	35	23	306	308	4	-	35	36	9	1
Nev.	52	112	140	651	2	2	48	183	10	3
PACIFIC	1,177	1,922	13,155	17,903	40	14	3,049	4,488	184	123
Wash.	78	173	2,518	2,128	10	3	438	502	5	5
Oreg.	40	74	677	1,102	9	7	115	159	2	1
Calif.	1,036	1,649	9,121	14,014	21	3	2,345	3,612	142	74
Alaska	-	16	458	306	-	-	70	118	1	-
Hawaii	23	10	381	353	N	1	81	97	34	43
Guam	-	-	8	94	N	-	2	10	-	-
P.R.	272	264	U	U	1	U	81	142	1	17
V.I.	13	11	N	N	N	U	-	-	-	-
Amer. Samoa	-	-	-	-	N	U	-	-	-	-
C.N.M.I.	-	-	N	N	N	U	7	8	-	2

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

*Updated monthly to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update March 28, 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 March 28, 1998, and March 22, 1997 (12th 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	217	197	731	702	211	291	1,485	2,001	1,192	3,124	1,425
NEW ENGLAND	11	15	128	143	8	9	17	35	53	72	271
Maine	1	1	-	-	1	-	1	-	U	5	36
N.H.	2	2	5	4	-	1	-	-	2	1	30
Vt.	-	2	1	2	-	-	-	-	1	-	13
Mass.	4	6	31	26	7	7	14	16	41	35	73
R.I.	4	1	14	18	-	1	-	-	9	5	22
Conn.	-	3	77	93	-	-	2	19	U	26	97
MID. ATLANTIC	44	33	439	462	64	72	53	86	96	512	321
Upstate N.Y.	13	7	219	42	19	9	3	12	U	58	207
N.Y. City	6	1	-	28	30	43	9	16	U	269	U
N.J.	1	5	3	116	8	15	14	41	96	111	46
Pa.	24	20	217	276	7	5	27	17	U	74	68
E.N. CENTRAL	71	81	21	6	13	25	222	180	78	378	12
Ohio	33	41	20	2	1	1	46	61	5	84	11
Ind.	15	9	1	3	1	2	45	41	U	29	-
Ill.	5	4	-	1	5	11	84	17	73	192	-
Mich.	14	22	-	-	6	9	38	22	U	50	-
Wis.	4	5	U	U	-	2	9	39	U	23	1
W.N. CENTRAL	16	15	6	1	8	7	40	47	44	92	119
Minn.	1	-	1	-	4	3	-	13	U	28	26
Iowa	-	1	4	-	2	1	-	1	U	10	24
Mo.	8	5	-	-	1	3	30	22	40	33	7
N. Dak.	-	1	-	-	-	-	-	-	U	2	27
S. Dak.	-	1	-	-	-	-	-	-	4	2	14
Nebr.	6	5	-	1	-	-	4	-	-	-	-
Kans.	1	2	1	-	1	-	6	11	U	17	21
S. ATLANTIC	41	20	97	66	58	58	611	815	211	437	557
Del.	6	2	-	11	1	2	6	4	-	8	-
Md.	8	10	86	46	21	19	121	234	56	41	128
D.C.	2	1	4	4	3	4	21	31	25	17	-
Va.	3	1	1	-	5	13	49	68	30	40	151
W. Va.	N	N	-	-	-	-	-	-	17	9	19
N.C.	4	3	-	2	6	4	192	177	83	63	136
S.C.	4	1	-	1	-	3	73	96	U	52	23
Ga.	-	-	2	1	12	9	96	146	U	81	43
Fla.	14	2	4	1	10	4	53	59	U	126	57
E.S. CENTRAL	2	8	10	14	5	7	268	450	-	247	54
Ky.	-	-	-	1	-	1	34	31	U	34	11
Tenn.	2	3	5	2	4	2	148	188	U	87	29
Ala.	-	2	5	-	1	1	62	114	U	84	14
Miss.	-	3	-	11	-	3	24	117	U	42	-
W.S. CENTRAL	-	1	-	1	3	5	178	276	16	452	43
Ark.	-	-	-	-	-	1	30	36	16	23	1
La.	-	-	-	-	3	3	82	110	-	19	-
Okla.	-	1	-	-	-	1	11	28	U	37	42
Tex.	-	-	-	1	-	-	55	102	U	373	-
MOUNTAIN	15	14	1	-	12	14	46	37	60	87	30
Mont.	1	-	-	-	-	1	-	-	2	2	8
Idaho	-	1	-	-	1	-	-	-	1	1	-
Wyo.	1	1	-	-	-	1	-	-	1	1	21
Colo.	4	4	-	-	4	7	4	-	U	18	-
N. Mex.	1	-	-	-	4	2	-	-	7	2	-
Ariz.	1	3	-	-	2	-	39	31	38	40	1
Utah	6	4	-	-	1	-	2	1	11	1	-
Nev.	1	1	1	-	-	3	1	5	U	22	-
PACIFIC	17	10	29	9	40	94	50	75	634	847	18
Wash.	1	2	-	-	-	1	4	3	U	59	-
Oreg.	-	-	1	3	6	5	2	1	U	23	-
Calif.	16	7	28	6	34	88	44	70	591	696	11
Alaska	-	-	-	-	-	-	-	-	10	23	7
Hawaii	-	1	-	-	-	-	-	1	33	46	-
Guam	-	-	-	-	-	-	-	2	-	13	-
P.R.	-	-	-	-	-	2	73	53	-	-	17
V.I.	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	-	1	2	8	-	-

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

*Additional information about areas displaying "U" for cumulative 1998 Tuberculosis cases can be found in Notice to Readers, *MMWR* Vol. 47, No. 2, p. 39.

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending March 28, 1998, and March 22, 1997 (12th 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	247	284	3,879	6,134	1,461	1,815	-	1	-	6	7	17
NEW ENGLAND	14	16	73	141	13	44	-	-	-	1	1	-
Maine	2	2	9	8	-	3	-	-	-	-	-	-
N.H.	1	2	5	8	4	2	-	-	-	-	-	-
Vt.	2	-	4	4	-	1	-	-	-	-	-	-
Mass.	9	11	14	77	6	25	-	-	-	1	1	-
R.I.	-	1	5	9	3	4	-	-	-	-	-	-
Conn.	-	-	36	35	-	9	-	-	-	-	-	-
MID. ATLANTIC	34	37	199	556	193	315	-	-	-	-	-	5
Upstate N.Y.	14	1	79	40	68	45	-	-	-	-	-	3
N.Y. City	6	18	60	293	50	134	-	-	-	-	-	1
N.J.	14	11	2	86	-	62	-	-	-	-	-	1
Pa.	-	7	58	137	75	74	-	-	-	-	-	-
E.N. CENTRAL	39	45	563	770	183	287	-	-	-	1	1	4
Ohio	19	21	94	116	20	24	-	-	-	-	-	-
Ind.	5	4	65	58	18	25	-	-	-	-	-	-
Ill.	14	14	74	220	23	84	-	-	-	-	-	3
Mich.	-	5	308	328	118	136	-	-	-	1	1	1
Wis.	1	1	22	48	4	18	-	-	-	-	-	-
W.N. CENTRAL	9	9	424	430	97	137	-	-	-	-	-	1
Minn.	2	2	15	24	6	3	-	-	-	-	-	-
Iowa	1	2	192	52	14	7	-	-	-	-	-	-
Mo.	2	2	169	250	64	116	-	-	-	-	-	1
N. Dak.	-	-	2	4	1	-	-	-	-	-	-	-
S. Dak.	-	2	2	5	1	-	-	-	-	-	-	-
Nebr.	-	-	8	19	2	4	-	-	-	-	-	-
Kans.	4	1	36	76	9	7	-	-	-	-	-	-
S. ATLANTIC	69	55	440	350	237	200	-	1	-	4	5	-
Del.	-	-	-	8	-	1	-	-	-	-	-	-
Md.	15	22	93	95	34	41	-	-	-	1	1	-
D.C.	-	-	13	11	3	17	-	-	-	-	-	-
Va.	9	2	60	39	25	16	-	-	-	2	2	-
W. Va.	2	2	-	3	1	4	-	-	-	-	-	-
N.C.	8	7	24	54	49	47	-	-	-	-	-	-
S.C.	1	3	8	27	-	17	-	-	-	-	-	-
Ga.	17	15	111	38	59	13	-	-	-	1	1	-
Fla.	17	4	131	75	66	44	-	1	-	-	1	-
E.S. CENTRAL	10	15	94	141	115	141	-	-	-	-	-	1
Ky.	-	2	-	22	-	7	-	-	-	-	-	-
Tenn.	10	10	66	67	94	96	-	-	-	-	-	-
Ala.	-	3	28	30	21	17	-	-	-	-	-	1
Miss.	-	-	-	22	-	21	U	-	U	-	-	-
W.S. CENTRAL	15	10	233	921	81	112	-	-	-	-	-	-
Ark.	-	1	11	44	17	15	-	-	-	-	-	-
La.	7	1	8	49	8	23	-	-	-	-	-	-
Okla.	7	7	105	393	7	6	-	-	-	-	-	-
Tex.	1	1	109	435	49	68	-	-	-	-	-	-
MOUNTAIN	39	34	770	963	187	201	-	-	-	-	-	-
Mont.	-	-	7	31	2	1	-	-	-	-	-	-
Idaho	-	-	47	45	7	7	-	-	-	-	-	-
Wyo.	-	-	14	11	4	5	-	-	-	-	-	-
Colo.	7	5	63	117	23	44	-	-	-	-	-	-
N. Mex.	-	2	44	66	77	66	-	-	-	-	-	-
Ariz.	24	12	507	402	43	39	-	-	-	-	-	-
Utah	4	3	46	212	16	27	-	-	-	-	-	-
Nev.	4	12	42	79	15	12	-	-	-	-	-	-
PACIFIC	18	63	1,083	1,862	355	378	-	-	-	-	-	6
Wash.	1	-	150	113	30	11	-	-	-	-	-	-
Oreg.	15	12	86	105	26	31	-	-	-	-	-	-
Calif.	-	48	838	1,595	294	326	-	-	-	-	-	3
Alaska	1	1	1	9	2	6	-	-	-	-	-	-
Hawaii	1	2	8	40	3	4	-	-	-	-	-	3
Guam	-	-	-	-	-	1	U	-	U	-	-	-
P.R.	-	-	9	82	136	230	-	-	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	U	-	U	-	-	-
C.N.M.I.	-	4	-	1	7	14	U	-	U	-	-	1

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

*Of 54 cases among children aged <5 years, serotype was reported for 22 and of those, 12 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 March 28, 1998, and March 22, 1997 (12th 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	701	999	6	92	126	50	779	1,070	9	86	9
NEW ENGLAND	46	59	-	-	6	5	160	324	-	10	-
Maine	4	6	-	-	-	-	4	6	-	-	-
N.H.	1	5	-	-	-	-	15	35	-	-	-
Vt.	1	2	-	-	-	1	22	110	-	-	-
Mass.	21	38	-	-	1	4	116	163	-	1	-
R.I.	3	2	-	-	4	-	-	9	-	-	-
Conn.	16	6	-	-	1	-	3	1	-	9	-
MID. ATLANTIC	48	88	-	2	16	9	68	81	1	52	3
Upstate N.Y.	20	19	-	2	3	9	68	39	1	52	1
N.Y. City	8	17	-	-	1	-	-	16	-	-	2
N.J.	20	19	-	-	2	-	-	6	-	-	-
Pa.	-	33	-	-	10	-	-	20	-	-	-
E.N. CENTRAL	118	126	-	12	15	20	95	115	-	-	3
Ohio	50	48	-	7	3	-	34	47	-	-	-
Ind.	23	12	-	-	3	20	34	8	-	-	-
Ill.	20	39	-	-	5	-	5	18	-	-	-
Mich.	12	10	-	5	3	-	12	22	-	-	-
Wis.	13	17	-	-	1	-	10	20	-	-	3
W.N. CENTRAL	57	76	1	9	5	3	65	57	-	-	-
Minn.	3	2	-	4	3	-	39	31	-	-	-
Iowa	9	17	1	3	2	-	13	7	-	-	-
Mo.	26	41	-	1	-	1	9	7	-	-	-
N. Dak.	-	-	-	1	-	-	-	1	-	-	-
S. Dak.	5	3	-	-	-	2	2	1	-	-	-
Nebr.	1	3	-	-	-	-	2	2	-	-	-
Kans.	13	10	-	-	-	-	-	8	-	-	-
S. ATLANTIC	141	185	1	17	16	6	70	97	-	2	-
Del.	1	3	-	-	-	-	-	-	-	-	-
Md.	14	23	-	2	1	-	14	54	-	-	-
D.C.	-	5	-	-	-	-	-	2	-	-	-
Va.	14	11	-	2	1	-	-	14	-	-	-
W. Va.	3	6	-	-	-	1	1	3	-	-	-
N.C.	19	36	1	6	5	4	34	13	-	1	-
S.C.	15	31	-	3	1	1	6	4	-	1	-
Ga.	36	28	-	-	2	-	-	2	-	-	-
Fla.	39	42	-	4	6	-	15	5	-	-	-
E.S. CENTRAL	25	76	-	-	10	-	13	29	-	-	-
Ky.	-	17	-	-	-	-	-	9	-	-	-
Tenn.	25	26	-	-	3	-	4	8	-	-	-
Ala.	-	25	-	-	4	-	9	7	-	-	-
Miss.	-	8	U	-	3	U	-	5	U	-	-
W.S. CENTRAL	40	76	1	18	13	1	33	18	7	16	-
Ark.	7	17	-	-	-	-	4	2	-	-	-
La.	16	21	-	-	4	-	-	3	-	-	-
Okla.	17	11	-	-	-	-	6	-	-	-	-
Tex.	-	27	1	18	9	1	23	13	7	16	-
MOUNTAIN	51	67	2	7	6	3	200	186	-	5	-
Mont.	2	4	-	-	-	-	1	2	-	-	-
Idaho	2	4	-	-	1	-	103	101	-	-	-
Wyo.	3	-	-	1	-	-	-	3	-	-	-
Colo.	12	15	-	1	2	1	28	61	-	-	-
N. Mex.	8	13	N	N	N	1	46	10	-	1	-
Ariz.	18	15	-	1	-	-	13	8	-	1	-
Utah	5	8	-	-	1	1	6	-	-	2	-
Nev.	1	8	2	4	2	-	3	1	-	1	-
PACIFIC	175	246	1	27	39	3	75	163	1	1	3
Wash.	23	25	-	4	3	3	64	62	-	-	-
Oreg.	36	56	N	N	N	-	8	5	-	-	-
Calif.	113	162	1	14	28	-	-	90	-	-	1
Alaska	1	1	-	2	2	-	-	2	-	-	-
Hawaii	2	2	-	7	6	-	3	4	1	1	2
Guam	-	1	U	-	1	U	-	-	U	-	-
P.R.	1	6	-	2	4	-	2	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	U	-	-	U	-	-	U	-	-
C.N.M.I.	-	-	U	-	-	U	-	-	U	-	-

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

TABLE IV. Deaths in 122 U.S. cities,* week ending March 28, 1998 (12th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	569	409	110	31	7	12	51
Boston, Mass.	143	81	38	16	3	5	17
Bridgeport, Conn.	36	34	1	-	-	1	-
Cambridge, Mass.	17	15	1	1	-	-	2
Fall River, Mass.	21	17	4	-	-	-	-
Hartford, Conn.	67	44	15	3	2	3	3
Lowell, Mass.	24	20	2	2	-	-	3
Lynn, Mass.	12	11	1	-	-	-	-
New Bedford, Mass.	27	20	6	-	-	1	-
New Haven, Conn.	37	28	6	1	1	1	3
Providence, R.I.	46	30	13	2	1	-	4
Somerville, Mass.	7	5	2	-	-	-	1
Springfield, Mass.	37	27	6	3	-	1	6
Waterbury, Conn.	43	35	7	1	-	-	4
Worcester, Mass.	52	42	8	2	-	-	8
MID. ATLANTIC	2,408	1,725	435	163	42	42	146
Albany, N.Y.	48	33	9	5	1	-	-
Allentown, Pa.	18	16	2	-	-	-	-
Buffalo, N.Y.	70	54	10	3	3	-	3
Camden, N.J.	26	18	3	3	1	1	1
Elizabeth, N.J.	17	14	2	-	1	-	-
Erie, Pa.	52	43	7	1	-	1	5
Jersey City, N.J.	58	46	8	3	-	1	2
New York City, N.Y.	1,145	794	227	85	16	23	56
Newark, N.J.	U	U	U	U	U	U	U
Paterson, N.J.	20	12	3	2	-	3	-
Philadelphia, Pa.	500	346	97	32	14	10	36
Pittsburgh, Pa.§	48	36	8	4	-	-	6
Reading, Pa.	27	22	5	-	-	-	3
Rochester, N.Y.	135	98	27	7	1	2	13
Schenectady, N.Y.	19	14	1	4	-	-	1
Scranton, Pa.	37	29	3	5	-	-	2
Syracuse, N.Y.	116	94	16	3	2	1	11
Trenton, N.J.	29	20	6	3	-	-	1
Utica, N.Y.	17	17	-	-	-	-	1
Yonkers, N.Y.	26	19	1	3	3	-	5
E.N. CENTRAL	2,096	1,462	379	140	53	62	138
Akron, Ohio	51	34	11	3	1	2	-
Canton, Ohio	47	36	10	1	-	-	3
Chicago, Ill.	406	268	83	35	12	8	35
Cincinnati, Ohio	116	73	22	13	5	3	14
Cleveland, Ohio	151	98	31	9	5	8	4
Columbus, Ohio	136	90	27	9	4	6	9
Dayton, Ohio	115	93	18	3	1	-	10
Detroit, Mich.	220	147	33	23	6	11	7
Evansville, Ind.	42	26	11	5	-	-	-
Fort Wayne, Ind.	71	53	8	8	-	2	1
Gary, Ind.	14	8	6	-	-	-	-
Grand Rapids, Mich.	65	45	13	2	1	4	2
Indianapolis, Ind.	166	110	33	13	4	6	13
Lansing, Mich.	56	49	7	-	-	-	5
Milwaukee, Wis.	129	91	23	7	4	4	14
Peoria, Ill.	42	31	7	2	2	-	7
Rockford, Ill.	49	36	6	5	1	1	4
South Bend, Ind.	58	49	5	-	2	2	8
Toledo, Ohio	89	70	12	-	3	4	1
Youngstown, Ohio	73	55	13	2	2	1	1
W.N. CENTRAL	768	569	120	47	6	21	57
Des Moines, Iowa	U	U	U	U	U	U	U
Duluth, Minn.	21	19	1	1	-	-	2
Kansas City, Kans.	30	22	4	1	2	1	-
Kansas City, Mo.	121	85	18	11	1	1	8
Lincoln, Nebr.	32	23	6	1	-	2	1
Minneapolis, Minn.	196	161	24	7	-	4	17
Omaha, Nebr.	111	75	21	9	2	4	13
St. Louis, Mo.	98	69	20	7	-	2	8
St. Paul, Minn.	92	71	12	7	-	2	8
Wichita, Kans.	67	44	14	3	1	5	-

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	996	665	191	94	27	19	68
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	175	106	42	18	5	4	16
Charlotte, N.C.	102	67	15	14	4	2	9
Jacksonville, Fla.	156	110	32	12	-	2	11
Miami, Fla.	111	65	22	17	7	-	-
Norfolk, Va.	58	38	9	9	1	1	4
Richmond, Va.	72	51	13	5	1	2	2
Savannah, Ga.	50	34	12	3	-	1	6
St. Petersburg, Fla.	80	55	14	5	4	2	2
Tampa, Fla.	183	130	32	11	5	5	18
Washington, D.C.	U	U	U	U	U	U	U
Wilmington, Del.	9	9	-	-	-	-	-
E.S. CENTRAL	958	676	185	63	13	17	77
Birmingham, Ala.	173	122	32	10	1	4	12
Chattanooga, Tenn.	67	41	17	8	1	-	5
Knoxville, Tenn.	96	69	21	3	2	1	21
Lexington, Ky.	104	75	20	6	3	-	6
Memphis, Tenn.	199	147	38	8	2	4	30
Mobile, Ala.	135	89	30	11	3	2	1
Montgomery, Ala.	63	52	5	4	-	2	1
Nashville, Tenn.	121	81	22	13	1	4	1
W.S. CENTRAL	1,771	1,169	308	154	85	55	131
Austin, Tex.	98	61	22	10	3	2	6
Baton Rouge, La.	54	39	10	5	-	-	-
Corpus Christi, Tex.	48	39	5	1	-	3	4
Dallas, Tex.	198	127	42	15	7	7	7
El Paso, Tex.	80	62	12	3	2	1	5
Ft. Worth, Tex.	133	90	24	11	4	4	17
Houston, Tex.	509	314	100	57	24	14	40
Little Rock, Ark.	71	53	11	3	3	1	7
New Orleans, La.	145	58	11	26	34	16	-
San Antonio, Tex.	208	149	38	12	6	3	15
Shreveport, La.	87	68	14	3	-	2	10
Tulsa, Okla.	140	109	19	8	2	2	20
MOUNTAIN	1,010	721	171	73	25	17	78
Albuquerque, N.M.	93	72	10	8	1	2	5
Boise, Idaho	42	34	4	2	1	1	2
Colo. Springs, Colo.	47	32	12	3	-	-	1
Denver, Colo.	109	79	15	9	4	2	12
Las Vegas, Nev.	192	137	38	12	3	2	13
Ogden, Utah	26	22	3	-	1	-	3
Phoenix, Ariz.	200	130	39	16	6	6	13
Pueblo, Colo.	24	19	4	1	-	-	4
Salt Lake City, Utah	108	65	18	14	7	4	9
Tucson, Ariz.	169	131	28	8	2	-	16
PACIFIC	938	681	165	56	22	13	99
Berkeley, Calif.	11	8	1	1	-	1	1
Fresno, Calif.	92	65	16	7	3	1	6
Glendale, Calif.	U	U	U	U	U	U	U
Honolulu, Hawaii	54	44	6	4	-	-	3
Long Beach, Calif.	82	66	11	3	1	1	5
Los Angeles, Calif.	U	U	U	U	U	U	U
Pasadena, Calif.	36	28	7	-	1	-	7
Portland, Oreg.	139	96	31	9	1	1	16
Sacramento, Calif.	170	121	33	11	4	1	24
San Diego, Calif.	26	15	5	2	2	2	1
San Francisco, Calif.	U	U	U	U	U	U	U
San Jose, Calif.	177	123	35	13	5	1	16
Santa Cruz, Calif.	22	16	4	1	1	-	3
Seattle, Wash.	U	U	U	U	U	U	U
Spokane, Wash.	58	44	9	2	1	2	6
Tacoma, Wash.	71	55	7	3	3	3	11
TOTAL	11,514¶	8,077	2,064	821	280	258	845

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.

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