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Use of Pulsed-Field Gel Electrophoresis for Investigation of a Cluster of Invasive Group A Streptococcal Illness — Spokane, Washington, 1999

On January 25, 1999, health officials in Spokane County, Washington (1999 population: 415,000), were notified of a fatal case of necrotizing fasciitis (NF) caused by community-acquired invasive group A streptococcus (GAS) infection. Although invasive GAS infection is not a reportable disease in Washington, Spokane health officials requested reports of additional invasive GAS cases from local hospital infection-control professionals and the medical examiner to identify other cases. This report describes a cluster of fatal illnesses caused by GAS in five residents of Spokane County and illustrates how investigators used pulsed-field gel electrophoresis (PFGE) to determine whether the cluster was unrelated sporadic cases or attributable to a common source.

For this investigation, a case of invasive GAS infection was defined as any illness with onset after January 1, 1999, in a Spokane County resident with isolation of GAS from a normally sterile body site such as blood or deep muscle tissue. Medical records of each patient were reviewed, and at a University of Washington laboratory, GAS isolates from all patients were compared using PFGE with three separate enzymes (*Sma* I, *Apa* I, and *Sac* II); GAS isolates also were T- and *emm*-typed at CDC.

Including the index case, five cases were identified, with illness onsets from January 25 through March 25. All cases were community acquired and fatal within 5 days of onset. All occurred in women aged 24–59 years. Four patients were morbidly obese (weights were 350, 374, and approximately 350 lbs; weight was not recorded for one). Four lived in the city of Spokane (1999 population: 189,000), and one lived in a nearby town. NF was diagnosed in four patients, and sepsis was diagnosed in one. GAS was isolated from both blood and wound tissue in three patients, from blood in one patient, and from a wound in one patient. Three had pre-existing skin breakdown at the NF site: one had had an open surgical abdominal wound for several months, one had chronic venous stasis of the legs with cellulitis and ulceration, and one had severe recurrent genital herpes.

GAS isolates from the five patients yielded four distinct PFGE patterns. The patterns of isolates from two patients were identical, while each pattern of the isolates from the other three patients was unique. Isolates from the two patients with identical

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PFGE patterns also had identical T- and *emm*-types (*emm*-type 1); isolates from the other three patients were unique (*emm*-types 3, 11, and 12). No epidemiologic relation between the two patients with identical isolates could be established. Prophylactic antibiotic treatment of close contacts was not pursued, and no secondary cases were identified.

Reported by: P Stepak, MD, Spokane Health Dept, Spokane; MC Roberts, PhD, Univ of Washington School of Public Health, Seattle; M Goldoft, MD, J Kobayashi, MD, Washington State Health Dept. Respiratory Diseases Br, Div of Bacterial and Mycotic Diseases and Active Bacterial Core Surveillance/Emerging Infections Program Network, National Center for Infectious Diseases; and an EIS Officer, CDC.

Editorial Note: The cases of GAS (i.e., *Streptococcus pyogenes*) infection described in this report were clustered in time and geographic area, suggesting they were epidemiologically related. Most cases of invasive GAS infection occur sporadically, although common-source outbreaks do occur, usually in long-term–care facilities or hospitals, especially among elderly, postsurgical, or postpartum patients (*1,2*). Investigators from Spokane and the state health department used PFGE in their investigation to determine that these cases were not caused by a common source.

GAS is a common cause of pharyngeal, skin, and other soft tissue infections. Transmission of GAS is generally person to person through contaminated secretions. Rarely, infection results in invasive disease, with clinical manifestations that include NF, pneumonia, meningitis, puerperal sepsis, and streptococcal toxic shock syndrome (STSS). The case-fatality rate of invasive disease is approximately 15%, although this figure increases to >50% if STSS results (*3*). In 1998 in the United States, an estimated 10,000 cases and 1300 deaths resulted from invasive GAS infection, of which 4.6% were associated with NF (*4*).

Risk factors for invasive GAS disease include diabetes, alcoholism, human immunodeficiency virus infection, malignancy, lack of skin integrity, recent surgery, abortion, or childbirth, and antecedent varicella in children (*5,6*). Four of the women with invasive GAS infection described in this report were obese. Obesity has not been associated previously with invasive GAS infection and merits further study.

GAS strains can be serotyped (identification of M and T antigens) with specific antisera and by genetic sequencing of the 5′ M-protein gene (*emm*) variable region (*7*). In the United States, the strains most likely to cause invasive infection are *emm* types 1, 3, and 12 (*5,8*). However, because these laboratory methods are not widely available and common-source community outbreaks are rare, GAS isolates from community-acquired cases are not routinely subtyped to determine relatedness. PFGE is widely available and discriminates GAS isolates effectively (*9*).

This report provides evidence that PFGE can be useful for assisting epidemiologic investigations of illnesses caused by GAS. In this investigation, PFGE results were concordant with traditional typing methods, performed locally, and available within 4 days of submission of the isolates. The investigators used PFGE to determine that the five cases, despite their similarities, did not represent a common-source outbreak but were a clustering of sporadic cases. PFGE testing provided evidence that a search for a common-source for these infections, which would have required substantial public-health resources, was not warranted.

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Radon Testing in Households with a Residential Smoker — United States, 1993–1994

Epidemiologic investigations of underground miners (*1*) and studies of alpha particle carcinogenesis among laboratory animals (*2*) suggest that exposure to the radioactive decay products (progeny) of radon is an important risk factor for lung cancer. Persons who smoke cigarettes and are exposed to these radon progeny have a substantially greater risk for developing malignancy than nonsmokers (*3*). Residential radon concentrations above the U.S. Environmental Protection Agency's (EPA) action level of 4 pCi/L are the primary sources of exposure among the general population (*4*). EPA and the Public Health Service promote home testing for radon, especially in households with a person who smokes. However, it is unknown whether households that contain smokers are more likely than those without smokers to test for radon. To characterize radon testing practices of households that contain a person who smokes within the dwelling (i.e., residential smoker), CDC analyzed survey data from the National Health Interview Survey (NHIS). This report summarizes the results of this analysis, which indicates that households with a residential smoker are significantly less likely to test for radon than those without smokers.

NHIS collects information on various health issues using an annual probability sample that is representative of the civilian, noninstitutionalized population of the United States. Radon testing and radon awareness data were collected through a personal interview with one randomly selected adult (aged ≥18 years) per household as part of the NHIS Year 2000 Supplements during 1990, 1991, 1993, and 1994. For this investigation, data from the 1993 and 1994 NHIS Year 2000 Supplements were combined and merged with the 1993 and 1994 NHIS household records to allow analysis

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at the household level (n=40,766). The results presented in this report are the mean values for the 1993 and 1994 NHIS Year 2000 Supplements combined. Response rates for the two survey years were 81.2% and 79.5%, respectively.

Radon testing data were derived from responses to the question "Has your household air been tested for the presence of radon?" Data representing the presence of a residential smoker were derived from responses to the question "Does anyone who lives here smoke cigarettes, cigars, or pipes anywhere inside this home?" Trailer homes and mobile homes and apartments or condominiums above the second floor were excluded (n=5801) because of their negligible radon exposure risk. A total of 34,965 households were considered at-risk for radon exposure.

The NHIS radon testing question was asked only of households that reported knowledge of radon. However, assuming that households without knowledge of radon did not have their residences tested, it is possible to calculate radon testing estimates for all households. This analysis included all households; however, it also provides radon testing estimates restricted to households with knowledge of radon, for comparison. The analyses for all households and households with knowledge of radon were calculated using SUDAAN and were weighted to produce national estimates.

During 1993–1994, an overall mean of 5.5 million (6.7%) households tested for radon (Table 1). This number of households included approximately 11.7 million persons.

Households that contained a residential smoker were significantly less likely to have tested for radon than households that did not contain a residential smoker (5.9% versus 7.1%, respectively). Differences were significant for the crude association (odds ratio [OR]=0.81; 95% confidence interval [CI]=0.74–0.90) and when controlling for household level of education, poverty status, geographic region, residence location, and presence of children (adjusted OR=0.88; 95% CI=0.79–0.97).

When the analysis was restricted to households that reported knowledge of radon (n=24,782), the percentage of households that tested for radon increased to 9.4%. Among households that contained a residential smoker, 8.3% tested for radon, and among households that did not contain a smoker, 9.8% tested. Differences were significant for both the crude association (OR=0.83; 95% CI=0.75–0.92) and when controlling for relevant covariates (adjusted OR=0.87; 95% CI=0.79–0.96).

Reported by: Illness and Disability Statistics Br, Div of Health Interview Statistics, National Center for Health Statistics, CDC.

Editorial Note: Each year, approximately 10%–14% of lung cancer deaths in the United States are attributable to indoor radon (*5*), making residential exposure the second leading single cause of lung cancer. The risk for malignancy increases in the presence of cigarette smoking because of a synergistic relation between indoor radon and cigarette smoking, an effect-modifying association that is characterized as submultiplicative. Although the biologic basis for the interaction between cigarette smoking and residential radon is unclear, smoking may promote radon-initiated cells (*6*), implying that initial exposure to radon may increase the susceptibility of lung cells to the harmful effects of smoking.

The Public Health Service and EPA encourage persons to determine their exposure to residential radon and to reduce high levels, especially in households that contain persons who smoke. One of the national health objectives for 2000 is to increase to at

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TABLE 1. Weighted percentage of households that tested for radon, by presence of a person who smokes in the residence (i.e., residential smoker) and selected household characteristics — United States, 1993–1994*

Characteristic	Residential smoker			No residential smoker			Total		
	No.†	%	(SE§)	No.	%	(SE)	No.	%	(SE)
Highest level education in the household									
<High school	67	1.8%	(0.3)	133	1.9%	(0.3)	**200**	**1.9%**	**(0.2)**
High school/General Equivalency Diploma	554	5.4%	(0.4)	874	5.2%	(0.3)	**1428**	**5.3%**	**(0.2)**
>High school	826	7.8%	(0.5)	3064	9.2%	(0.4)	**3890**	**8.8%**	**(0.3)**
Household poverty status¶									
At or above	1280	6.6%	(0.3)	3821	7.9%	(0.3)	**5101**	**7.6%**	**(0.2)**
Below	110	3.3%	(0.5)	135	2.6%	(0.3)	**246**	**2.9%**	**(0.3)**
Unknown	56	2.9%	(0.6)	124	3.1%	(0.4)	**180**	**3.0%**	**(0.4)**
Geographic region of household									
Northeast	445	9.2%	(0.6)	1458	13.4%	(0.6)	**1903**	**12.1%**	**(0.4)**
Midwest	491	6.9%	(0.5)	1206	8.2%	(0.6)	**1698**	**7.8%**	**(0.5)**
South	346	4.2%	(0.4)	895	5.0%	(0.3)	**1241**	**4.8%**	**(0.3)**
West	164	3.7%	(0.5)	522	3.7%	(0.5)	**686**	**3.7%**	**(0.5)**
Household location									
Urban	1070	5.8%	(0.3)	2968	6.9%	(0.3)	**4038**	**6.5%**	**(0.2)**
Rural	377	6.1%	(0.6)	1112	8.0%	(0.5)	**1489**	**7.4%**	**(0.4)**
Children residing in household									
Yes	608	6.4%	(0.5)	1848	9.0%	(0.4)	**2456**	**8.2%**	**(0.4)**
No	839	5.6%	(0.3)	2232	6.0%	(0.2)	**3071**	**5.9%**	**(0.2)**
Total	**1446**	**5.9%**	**(0.3)**	**4081**	**7.1%**	**(0.3)**	**5527**	**6.7%**	**(0.2)**

* This analysis included all households and excluded trailer homes and mobile homes and apartments and condominiums above the second floor.
† Number of households in thousands. Columns may not add to total because of rounding.
§ Standard error.
¶ Poverty status based on the U.S. Department of Agriculture's economy food plan.

least 40% the proportion of homes in which homeowners or occupants have tested their home for radon and have found either negligible risk or have modified the dwelling to reduce risk (objective 11.6) (*7*). In addition, the objective seeks to increase radon testing to at least 50% in high-risk households containing cigarette smokers. The findings in this report suggest that these goals probably will not be met.

The findings in this report are subject to at least three limitations. First, some respondents might not have been able to recall whether their homes had been tested for radon, resulting in reporting errors. Second, this investigation classified the smoking status of the household by asking whether the household contained a person who smoked within the dwelling; however, it did not assess whether a household contained a smoker who chose not to use tobacco products within the dwelling. An estimated 16.3% of adult smokers do not smoke within their residences (1995–1996 Current Population Survey, unpublished data, 1999). Identifying smokers who did not smoke in their dwelling would have provided a more complete picture of household smoking status, but the 1993 and 1994 NHIS did not allow this analysis. Finally, the analysis was limited to cigarette smoking, but the NHIS included smokers of all types of tobacco.

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Radon testing and mitigation practices need to improve in the United States, overall and among high-risk households that contain residential smokers. The most effective means of reducing risk for radon-related lung cancer in these households is to encourage the smoker to stop using tobacco products (*3,8,9*). However, to maximize lung cancer risk reduction, smokers in residences with high radon concentrations should quit smoking and reduce high radon levels (*8*). The National Research Council (*5*) estimates that eliminating indoor radon exposures that are in excess of the EPA's action level would prevent approximately 30% of radon-attributable lung cancer deaths, and of these, 86% would be among persons who have ever smoked during their lifetimes. The findings in this report underscore the importance of programmatic efforts aimed at improving radon testing and mitigation practices, particularly among households that contain a residential smoker.

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Cigarette Smoking Among High School Students — 11 States, 1991–1997

Tobacco use is the single leading preventable cause of death in the United States (*1*). Preventing initiation of tobacco use is a public health priority. Approximately 80% of persons who use tobacco begin before age 18 years (*1*), and the prevalence of cigarette smoking among high school students nationwide increased during the 1990s (*2*). This report presents findings of a study that examined trends in cigarette smoking among high school students in 11 states that collected Youth Risk Behavior Survey (YRBS) data during the 1990s. In six of the 11 states, the prevalence of current smoking and frequent smoking increased among high school students.

The Youth Risk Behavior Surveillance System measures the prevalence of health-risk behaviors among adolescents through biennial representative school-based surveys conducted separately at the national, state, and local levels. In 1997, 39 states conducted YRBS. This report presents YRBS results from 11 state surveys conducted

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by state education and health agencies where representative data were obtained (i.e., a scientifically selected sample, an overall response rate of ≥60%, and appropriate survey documentation) in 1997 and in at least two additional years since 1991. The 1991, 1993, 1995, and 1997 state surveys used a two-stage cluster sample design to produce representative samples of 9th- to 12th-grade students in each participating state. Data were available from 1991 to 1997 in Alabama, South Carolina, South Dakota, and Utah and from 1993 to 1997 in Hawaii, Massachusetts, Mississippi, Montana, Nevada, Vermont, and West Virginia. Across all sites and years, sample sizes ranged from 1192 to 8636, school response rates ranged from 70% to 100%, student response rates ranged from 61% to 91%, and overall response rates ranged from 60% to 87%.

For each of the cross-sectional surveys, students completed an anonymous self-administered questionnaire that included questions about cigarette smoking. The wording of these questions was identical in each survey. Lifetime cigarette smoking was defined as having ever smoked cigarettes, even one or two puffs. Current cigarette smoking was defined as smoking on ≥1 of the 30 days preceding the survey, and frequent cigarette smoking was defined as smoking on ≥20 of the 30 days preceding the survey. Students were asked at what age they first smoked a whole cigarette. Beginning in 1993, students were asked whether they smoked cigarettes on school property on ≥1 of the 30 days preceding the survey.

Data were weighted to provide estimates generalizable to all public school students in grades 9–12 in each state. The relative percentage change in behavior from the earliest survey conducted (baseline) to 1997 was calculated as the 1997 prevalence minus the baseline prevalence divided by the baseline prevalence. SUDAAN was used for all data analysis. Secular trends were analyzed using logistic regression analyses that controlled for sex, grade, and race/ethnicity (except in Vermont, where students were not asked about race/ethnicity) and that simultaneously assessed linear and higher order (i.e., quadratic) time effects (*3*). Quadratic trends suggest a significant but nonlinear trend in the data over time. When the trend includes significant linear and quadratic components, the data demonstrate some nonlinear variation (e.g., leveling off or change in direction) in addition to a linear effect. In 1993, Alabama did not ask students about lifetime, current, or frequent smoking or the age at which students smoked their first cigarette; therefore, only linear trend analyses were performed for Alabama for those variables.

In South Carolina, South Dakota, and Vermont, lifetime smoking among high school students significantly increased linearly from baseline to 1997 (Table 1). The percentage increase in these states was 2%, 8%, and 5%, respectively. Massachusetts and Nevada showed significant quadratic trends, with the highest prevalence occurring in 1995.

The prevalence of current smoking significantly increased linearly in Alabama, Massachusetts, Mississippi, Montana, South Carolina, and South Dakota (Table 2) with percentage increases of 29%, 14%, 13%, 24%, 51%, and 42%, respectively. Massachusetts also showed a significant quadratic trend, with leveling between 1995 and 1997. South Carolina showed a significant quadratic trend, with leveling between 1991 and 1993 followed by increases in 1995 and 1997.

In Alabama, Massachusetts, Montana, South Carolina, South Dakota, and Vermont frequent smoking significantly increased linearly from baseline to 1997 (Table 2) with

Cigarette Smoking — Continued

TABLE 1. Percentage of high school students who reported lifetime cigarette use* — selected states, Youth Risk Behavior Survey, 1991–1997†

	1991		1993		1995		1997	
State	%	(95% CI§)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Alabama	74.2	(±1.7)			73.2	(±3.0)	74.9	(±2.5)
Hawaii			65.5	(±3.0)	68.8	(±4.2)	67.4	(±5.2)
Massachusetts			67.8	(±2.8)	71.5	(±2.5)	69.1¶	(±2.6)
Mississippi			75.9	(±3.1)	74.4	(±4.1)	71.4	(±3.3)
Montana			69.7	(±2.9)	72.8	(±2.3)	73.4	(±2.4)
Nevada			68.2	(±3.4)	72.8	(±3.0)	68.6¶	(±3.7)
South Carolina	73.9	(±2.1)	72.2	(±2.3)	76.6	(±1.6)	75.1**	(±1.3)
South Dakota	69.4	(±4.0)	70.6	(±3.5)	70.8	(±6.7)	74.8**	(±3.1)
Utah	48.8	(±4.4)	46.4	(±2.5)	47.8	(±4.3)	41.6	(±5.2)
Vermont			69.4	(±1.9)	74.0	(±2.5)	72.7**	(±2.2)
West Virginia			76.8	(±2.0)	76.4	(±3.0)	75.4	(±2.9)

*Ever tried cigarette smoking, even one or two puffs.
†Trend analyses were adjusted for demographics, including sex, grade, and race/ethnicity (except in Vermont where race/ethnicity was not assessed), and higher order time effects. Prevalence estimates were not standardized for demographics.
§Confidence interval.
¶Significant quadratic effect ($p<0.05$).
**Significant linear effect ($p<0.05$).

percentage increases of 26%, 19%, 52%, 39%, 49%, and 21%, respectively. Vermont also showed a significant quadratic trend, with leveling between 1995 and 1997.

The proportion of students who reported smoking a whole cigarette before age 13 years significantly decreased linearly from baseline to 1997 in Nevada and Utah (Table 3). The percentage decrease was 17% in Nevada and 32% in Utah. Utah also showed a significant quadratic trend, with leveling between 1993 and 1995 before a decline in 1997.

In Alabama, Mississippi, South Carolina, and South Dakota, smoking on school property among high school students significantly increased linearly from 1993 to 1997. Percentage increases were 24%, 45%, 36%, and 32%, respectively.

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

Editorial Note: For all five behaviors, trends among high school students in most of the 11 states were consistent with trends from the national YRBS.* From baseline to 1997, the prevalence of students reporting lifetime smoking remained stable in six states and across the nation (*4*), although in three states, lifetime smoking increased. The prevalence of current and frequent smoking increased in six states and remained stable in five states; in 1995, current smoking peaked in Massachusetts and frequent smoking leveled in Vermont. Across the nation, from 1991 to 1997, current smoking (*2*) and frequent smoking increased 32% (*4*); from 1993 to 1997, current smoking increased 19%, and frequent smoking increased 21% (*4*). The percentage of students who reported smoking before age 13 years remained stable in nine states and across the nation (*4*) and decreased in two states. Smoking on school property remained stable in six states and across the nation (*4*) and increased in four states.

*The national YRBS is representative of high school students nationwide but does not provide state-specific estimates.

TABLE 2. Percentage of high school students who reported current cigarette use* and frequent cigarette use† — selected states, Youth Risk Behavior Survey, 1991–1997§

	Current cigarette use								Frequent cigarette use							
	1991		1993		1995		1997		1991		1993		1995		1997	
State	%	(95% CI¶)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Alabama	27.8	(±2.3)			31.0	(±3.0)	35.8**	(±2.8)	13.3	(±1.5)			13.7	(±2.2)	16.8**	(±2.3)
Hawaii			28.2	(±3.3)	32.4	(±4.6)	29.2	(±3.2)			13.3	(±2.0)	16.9	(±3.0)	14.5	(±1.6)
Massachusetts			30.2	(±2.9)	35.7	(±2.8)	34.4**,††	(±2.6)			15.5	(±2.2)	18.2	(±2.7)	18.4**	(±2.8)
Mississippi			27.6	(±3.9)	35.0	(±4.6)	31.3**	(±4.6)			13.6	(±3.0)	13.9	(±3.5)	13.8	(±2.8)
Montana			30.7	(±3.4)	34.8	(±2.7)	38.1**	(±2.7)			12.7	(±2.1)	16.8	(±2.4)	19.3**	(±2.3)
Nevada			29.9	(±3.3)	32.9	(±3.4)	29.4	(±3.2)			14.0	(±2.5)	15.8	(±2.7)	14.5	(±2.9)
South Carolina	25.6	(±1.6)	26.7	(±2.6)	32.6	(±2.4)	38.6**,††	(±2.3)	13.1	(±1.3)	12.8	(±1.9)	15.4	(±1.5)	18.2**	(±2.1)
South Dakota	30.9	(±4.6)	36.7	(±3.4)	38.0	(±8.1)	44.0**	(±3.7)	16.3	(±4.5)	18.0	(±4.1)	17.5	(±4.7)	24.3**	(±3.7)
Utah	16.8	(±3.5)	17.4	(±2.0)	17.0	(±3.8)	16.4	(±3.0)	8.3	(±3.2)	8.2	(±1.7)	8.1	(±3.1)	7.3	(±1.9)
Vermont			33.5	(±3.1)	40.0	(±3.5)	38.3	(±4.1)			17.4	(±2.0)	21.8	(±1.9)	21.0**,††	(±2.7)
West Virginia			38.9	(±2.7)	43.0	(±3.5)	41.9	(±4.2)			19.9	(±2.2)	24.6	(±3.0)	24.1	(±3.6)

*Smoked cigarettes on ≥1 of the 30 days preceding the survey.
†Smoked cigarettes on ≥20 of the 30 days preceding the survey.
§Trend analyses were adjusted for demographics, including sex, grade, and race/ethnicity (except in Vermont where race/ethnicity was not assessed), and higher order time effects. Prevalence estimates were not standardized for demographics.
¶Confidence interval.
**Significant linear effect ($p<0.05$).
††Significant quadratic effect ($p<0.05$).

TABLE 3. Percentage of high school students who reported smoking a whole cigarette before age 13 years and smoking cigarettes on school property* — selected states, Youth Risk Behavior Survey, 1991–1997†

	Smoked a whole cigarette before age 13 years								Smoked cigarettes on school property§					
	1991		1993		1995		1997		1993		1995		1997	
State	%	(95% CI¶)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Alabama	28.2	(±1.6)			27.8	(±2.3)	27.9	(±3.1)	10.4	(±1.4)	10.2	(±1.6)	12.9**	(±2.0)
Hawaii			28.8	(±4.2)	28.2	(±2.2)	25.6	(±2.9)	15.4	(±3.1)	18.3	(±3.6)	16.0	(±2.4)
Massachusetts			24.4	(±2.0)	23.9	(±2.3)	24.3	(±2.7)	17.7	(±2.4)	18.9	(±2.4)	18.9	(±2.7)
Mississippi			27.5	(±3.2)	26.9	(±4.7)	23.1	(±4.3)	9.1	(±2.5)	9.4	(±3.5)	13.2**	(±4.0)
Montana			26.7	(±2.2)	26.0	(±2.4)	26.1	(±1.7)	11.9	(±2.2)	15.4	(±2.4)	15.3	(±2.1)
Nevada			28.2	(±3.0)	28.7	(±2.4)	23.4**	(±2.6)	15.1	(±2.5)	17.3	(±2.8)	14.8	(±3.1)
South Carolina	29.4	(±1.4)	30.4	(±2.2)	28.9	(±2.2)	26.5	(±1.8)	12.1	(±1.9)	14.8	(±1.8)	16.5**	(±2.0)
South Dakota	22.8	(±3.2)	28.7	(±4.2)	24.7	(±4.2)	25.6	(±3.6)	14.8	(±2.3)	16.2	(±5.4)	19.5**	(±3.0)
Utah	18.6	(±2.9)	17.9	(±1.9)	17.7	(±2.8)	12.6**,††	(±2.1)	8.7	(±1.6)	8.5	(±3.2)	6.5	(±2.2)
Vermont			27.5	(±1.4)	27.1	(±2.8)	27.0	(±2.3)			21.5	(±2.8)	18.0§§	(±3.8)
West Virginia			35.4	(±2.6)	33.2	(±2.9)	31.7	(±3.7)	18.1	(±1.8)	21.8	(±2.6)	21.0	(±3.4)

*On ≥1 of the 30 days preceding the survey.
†Trend analyses were adjusted for demographics, including sex, grade, and race/ethnicity (except in Vermont where race/ethnicity was not assessed), and higher order time effects. Prevalence estimates were not standardized for demographics.
§No state asked this question in 1991.
¶Confidence interval.
**Significant linear effect ($p<0.05$).
††Significant quadratic effect ($p<0.05$).
§§No trend analyses were conducted because this question was not asked in 1993.

Cigarette Smoking — Continued

Additional research is needed to understand the variations between state and national trends. Differences in sociodemographic factors, efforts to prevent tobacco use, tobacco use policies, and enforcement of access laws may account for these variations. The tobacco industry's promotional strategies, such as reducing cigarette wholesale prices in Massachusetts following the January 1993 excise tax increase (*5*), also may have influenced state-specific trends.

The findings in this report are subject to at least three limitations. First, these data apply only to adolescents who attend public high school. In 1996, in the states for which data were available, high school dropout rates ranged from 2.9% to 9.6% (*6*). Second, the extent of underreporting or overreporting in YRBS cannot be determined, although the survey questions demonstrate good test-retest reliability (*7*). Finally, although the data for each state are representative of the students in that state, the states that were examined in this study may not be representative of all states.

To reduce tobacco use among youth, CDC recommends that states establish and sustain comprehensive tobacco-control programs (*8*). Although many states are allocating resources to tobacco control, no state is implementing all recommended program components. Comprehensive tobacco-control programs should reduce the appeal of tobacco products, implement youth-oriented mass media campaigns, increase tobacco excise taxes, and reduce youth access to tobacco products (*1*). CDC's "Guidelines for School Health Programs to Prevent Tobacco Use and Addiction" recommends school-based tobacco-use prevention programs in grades K–12, with intensive instruction in grades 6–8 (*9*). In support of this recommendation, CDC identifies evidence-based curricula to prevent tobacco use and addiction through its Research-to-Classroom program. These programs are most effective when linked to communitywide programs involving families, peers, and community organizations (*9*). The guidelines also recommend tobacco-free school-sponsored functions and tobacco-free school buildings, property, and vehicles. Consistent with these recommendations, the Pro-Children Act of 1994 requires smoke-free environments in schools receiving federal funds (*10*). However, most schools lack comprehensive prohibitions identified in the guidelines (*10*), and smoking on school property is increasing in some states.

The Youth Risk Behavior Surveillance System provides an important mechanism to track state progress in reducing tobacco use and other important health risk behaviors among youth. CDC provides support to every state to collect and use YRBS data. States also can conduct the Youth Tobacco Survey to obtain additional information about tobacco use and related factors (*11*). If these efforts are expanded and maintained, all states could obtain data essential for planning and monitoring tobacco-use prevention programs for youth.

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Cigarette Smoking — Continued

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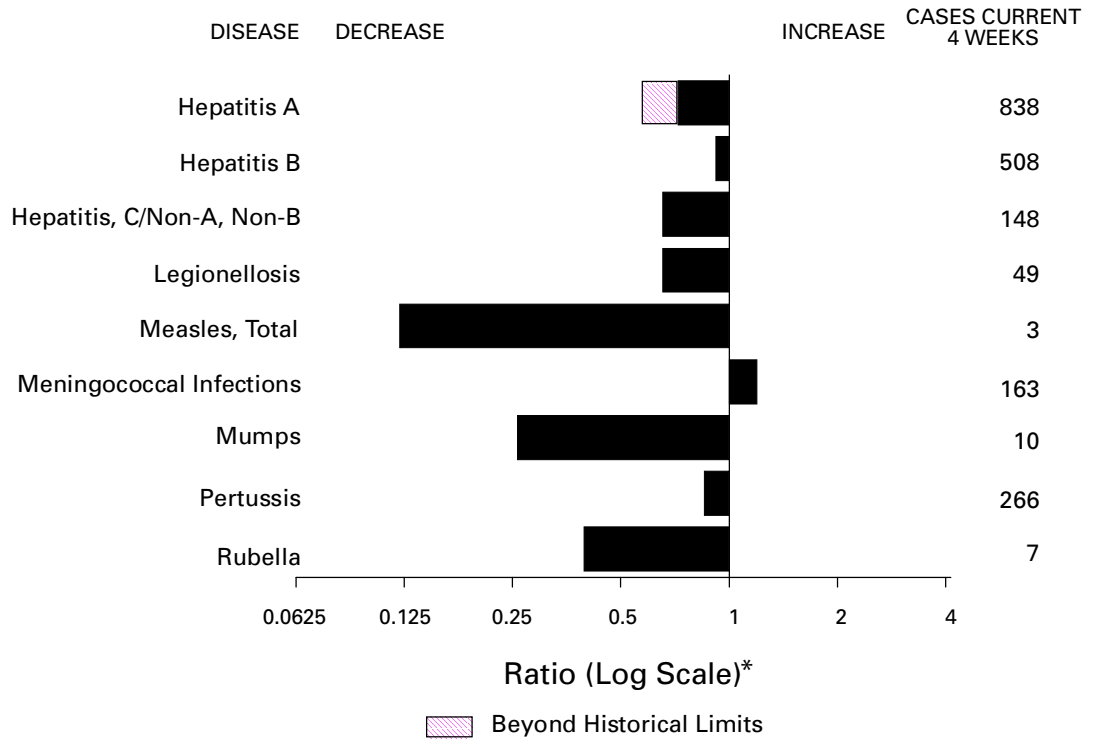
FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending August 7, 1999, with historical data — United States



*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 August 7, 1999 (31st Week)

	Cum. 1999		Cum. 1999
Anthrax	-	HIV infection, pediatric*§	86
Brucellosis*	23	Plague	2
Cholera	4	Poliomyelitis, paralytic	-
Congenital rubella syndrome	3	Psittacosis*	16
Cyclosporiasis*	16	Rabies, human	-
Diphtheria	2	Rocky Mountain spotted fever (RMSF)	283
Encephalitis: California*	6	Streptococcal disease, invasive Group A	1,364
eastern equine*	2	Streptococcal toxic-shock syndrome*	27
St. Louis*	-	Syphilis, congenital¶	109
western equine*	-	Tetanus	16
Ehrlichiosis human granulocytic (HGE)*	77	Toxic-shock syndrome	72
human monocytic (HME)*	18	Trichinosis	6
Hansen Disease*	50	Typhoid fever	174
Hantavirus pulmonary syndrome*†	11	Yellow fever	-
Hemolytic uremic syndrome, post-diarrheal*	41		

-: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 July 25, 1999.
¶ Updated from reports to the Division of STD Prevention, NCHSTP.

TABLE II. Provisional cases of selected notifiable diseases, United States, weeks ending August 7, 1999, and August 8, 1998 (31st Week)

Reporting Area	AIDS		Chlamydia		Cryptosporidiosis		*Escherichia coli* O157:H7*			
							NETSS		PHLIS	
	Cum. 1999†	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	26,427	27,228	345,146	343,124	834	1,254	1,266	1,373	761	1,188
NEW ENGLAND	1,298	1,007	11,121	12,170	50	96	150	176	119	165
Maine	43	21	193	607	13	21	17	21	-	-
N.H.	31	23	550	575	7	11	19	22	21	32
Vt.	6	14	282	244	12	15	16	8	7	7
Mass.	842	506	5,354	4,978	18	44	82	95	52	91
R.I.	70	81	1,383	1,416	-	5	16	5	6	1
Conn.	306	362	3,359	4,350	-	-	U	25	33	34
MID. ATLANTIC	6,746	7,543	43,265	35,961	117	337	88	145	31	51
Upstate N.Y.	846	966	N	N	76	198	80	97	-	-
N.Y. City	3,592	4,053	21,963	15,786	22	126	2	8	8	9
N.J.	1,278	1,458	6,300	6,935	9	13	6	40	23	31
Pa.	1,030	1,066	15,002	13,240	10	-	N	N	-	11
E.N. CENTRAL	1,719	2,071	49,570	58,149	85	148	246	244	152	206
Ohio	262	435	14,051	15,798	26	47	95	59	53	40
Ind.	224	353	6,548	6,256	14	30	35	58	22	31
Ill.	783	818	16,512	15,567	16	43	71	68	33	43
Mich.	360	350	12,459	12,486	29	18	45	59	17	38
Wis.	90	115	U	8,042	-	10	N	N	27	54
W.N. CENTRAL	611	528	18,994	20,253	76	171	262	205	141	197
Minn.	105	102	3,264	4,123	14	58	81	79	80	95
Iowa	55	49	1,398	2,274	22	41	55	55	26	35
Mo.	295	243	8,279	7,362	15	14	26	19	26	35
N. Dak.	4	4	325	572	11	18	3	6	1	12
S. Dak.	13	11	832	955	4	18	27	12	4	14
Nebr.	45	48	1,933	1,707	9	18	56	19	-	-
Kans.	94	71	2,963	3,260	1	4	14	15	4	6
S. ATLANTIC	7,281	6,810	76,483	65,779	191	136	157	101	91	95
Del.	95	90	1,610	1,473	-	1	2	-	1	1
Md.	793	824	6,397	4,779	10	12	10	19	-	9
D.C.	274	566	N	N	7	4	-	1	-	-
Va.	372	501	8,603	7,291	10	2	35	-	29	34
W. Va.	40	59	1,088	1,440	-	1	7	6	1	3
N.C.	482	459	13,619	12,688	5	-	30	20	27	32
S.C.	683	449	8,635	11,208	-	-	17	5	13	3
Ga.	1,091	727	18,651	13,699	94	47	14	39	-	-
Fla.	3,451	3,135	17,880	13,201	65	69	42	11	20	13
E.S. CENTRAL	1,145	1,079	24,786	23,714	14	17	77	77	34	44
Ky.	176	155	4,442	3,645	4	7	22	24	-	-
Tenn.	442	374	8,282	7,854	4	6	34	32	18	27
Ala.	287	329	7,013	5,978	4	-	17	18	13	16
Miss.	240	221	5,049	6,237	2	4	4	3	3	1
W.S. CENTRAL	2,858	3,318	50,230	51,712	34	32	43	54	47	64
Ark.	107	123	3,500	2,177	-	5	7	6	5	8
La.	541	581	7,726	8,260	21	10	3	3	6	2
Okla.	74	184	4,937	5,928	3	3	15	10	9	5
Tex.	2,136	2,430	34,067	35,347	10	14	18	35	27	49
MOUNTAIN	1,021	965	19,611	19,173	52	81	109	186	63	154
Mont.	5	18	817	731	8	6	8	8	-	2
Idaho	16	19	988	1,156	3	15	9	19	6	13
Wyo.	4	1	445	386	-	-	3	49	5	53
Colo.	197	186	4,228	4,816	5	8	38	35	28	33
N. Mex.	65	153	2,711	2,172	22	33	5	16	2	13
Ariz.	518	376	7,628	6,548	9	12	19	21	12	16
Utah	84	70	1,169	1,378	-	-	20	30	8	15
Nev.	132	142	1,625	1,986	5	7	7	8	2	9
PACIFIC	3,748	3,907	51,086	56,213	215	236	134	185	83	212
Wash.	218	266	6,982	6,582	-	-	36	31	26	60
Oreg.	118	117	3,548	3,149	79	25	32	56	23	60
Calif.	3,348	3,411	37,724	43,962	136	208	66	96	28	82
Alaska	13	17	1,099	1,131	-	-	-	2	-	-
Hawaii	51	96	1,733	1,389	-	3	-	-	6	10
Guam	5	-	226	232	-	-	N	N	-	-
P.R.	821	1,136	U	U	-	-	5	2	U	U
V.I.	19	18	N	N	-	-	N	N	U	U
Amer. Samoa	-	-	U	U	-	-	N	N	U	U
C.N.M.I.	-	-	N	N	-	-	N	N	U	U

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

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

†Updated monthly from reports to the Division of HIV/AIDS Prevention–Surveillance and Epidemiology, National Center for HIV, STD, and TB Prevention, last update July 25, 1999.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending August 7, 1999, and August 8, 1998 (31st Week)

Reporting Area	Gonorrhea		Hepatitis C/NA,NB		Legionellosis		Lyme Disease	
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	185,921	201,328	2,158	1,954	535	731	4,870	7,446
NEW ENGLAND	3,369	3,464	59	46	36	45	1,327	2,681
Maine	15	37	2	-	4	1	15	43
N.H.	58	54	-	-	3	3	2	25
Vt.	33	21	4	2	8	4	4	7
Mass.	1,500	1,219	50	41	12	21	470	530
R.I.	358	211	3	3	3	8	225	214
Conn.	1,405	1,922	-	-	6	8	611	1,862
MID. ATLANTIC	23,553	21,550	97	128	102	174	2,671	3,586
Upstate N.Y.	3,679	3,950	62	64	32	47	1,819	1,721
N.Y. City	9,463	7,081	-	-	7	28	14	122
N.J.	3,465	4,458	-	-	5	9	124	683
Pa.	6,946	6,061	35	64	58	90	714	1,060
E.N. CENTRAL	32,785	39,405	1,126	445	144	252	74	454
Ohio	8,541	10,073	1	7	51	90	48	23
Ind.	3,868	3,602	1	5	43	45	23	17
Ill.	11,650	12,788	22	30	10	29	2	11
Mich.	8,726	9,423	520	296	37	47	1	11
Wis.	U	3,519	582	107	3	41	U	392
W.N. CENTRAL	8,103	9,807	84	25	29	37	87	79
Minn.	1,208	1,518	4	7	1	3	37	46
Iowa	367	714	-	7	13	5	17	18
Mo.	4,285	5,275	71	8	10	9	16	8
N. Dak.	31	49	-	-	-	-	1	-
S. Dak.	83	150	-	-	2	2	-	-
Nebr.	881	684	3	2	3	15	6	3
Kans.	1,248	1,417	6	1	-	3	10	4
S. ATLANTIC	55,840	54,167	139	63	72	82	497	491
Del.	999	815	1	-	6	8	19	37
Md.	5,625	5,443	30	8	12	25	339	352
D.C.	1,456	2,674	-	-	1	5	3	4
Va.	5,844	4,153	10	7	16	9	53	35
W. Va.	307	496	13	4	N	N	13	8
N.C.	11,832	11,050	29	14	13	6	44	35
S.C.	4,645	7,255	14	3	7	7	5	3
Ga.	12,392	11,659	1	9	-	3	-	3
Fla.	12,740	10,622	41	18	17	19	21	14
E.S. CENTRAL	19,711	22,493	193	159	66	40	76	56
Ky.	1,959	2,087	10	16	49	17	20	12
Tenn.	6,649	6,715	84	85	14	11	30	24
Ala.	6,245	7,645	1	3	3	5	15	11
Miss.	4,858	6,046	98	55	-	7	11	9
W.S. CENTRAL	27,655	31,756	143	312	3	13	17	16
Ark.	1,769	2,413	9	12	-	1	2	6
La.	6,054	7,205	100	19	1	2	-	2
Okla.	2,413	3,230	12	7	2	8	4	2
Tex.	17,419	18,908	22	274	-	2	11	6
MOUNTAIN	5,399	5,248	89	277	31	43	10	7
Mont.	22	26	4	7	-	2	-	-
Idaho	49	107	4	85	-	2	1	2
Wyo.	14	18	30	63	-	1	3	1
Colo.	1,311	1,203	15	17	9	8	-	-
N. Mex.	553	526	5	64	1	2	1	2
Ariz.	2,687	2,375	21	4	4	9	-	-
Utah	107	150	5	19	11	16	3	-
Nev.	656	843	5	18	6	3	2	2
PACIFIC	9,506	13,438	228	499	52	45	111	76
Wash.	1,210	1,132	10	12	9	8	3	5
Oreg.	489	442	15	10	N	N	7	11
Calif.	7,389	11,385	203	423	42	35	101	59
Alaska	181	191	-	-	1	1	-	1
Hawaii	237	288	-	54	-	1	-	-
Guam	32	29	-	-	-	2	-	-
P.R.	176	238	-	-	-	-	-	-
V.I.	U	U	U	U	U	U	U	U
Amer. Samoa	U	U	U	U	U	U	U	U
C.N.M.I.	-	24	-	-	-	-	-	-

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

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending August 7, 1999, and August 8, 1998 (31st Week)

Reporting Area	Malaria		Rabies, Animal		Salmonellosis*			
					NETSS		PHLIS	
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998
UNITED STATES	672	764	3,273	4,456	17,687	20,972	13,933	18,626
NEW ENGLAND	27	42	486	823	914	1,354	951	1,293
Maine	2	3	90	138	84	101	53	40
N.H.	2	3	31	44	76	97	86	141
Vt.	2	-	63	37	46	73	37	56
Mass.	10	16	102	271	651	759	498	761
R.I.	3	2	61	47	57	83	48	31
Conn.	8	18	139	286	U	241	229	264
MID. ATLANTIC	143	214	636	961	1,991	3,604	1,601	3,515
Upstate N.Y.	43	48	450	668	674	839	580	836
N.Y. City	50	117	U	U	458	1,168	579	1,009
N.J.	29	29	113	119	332	732	442	719
Pa.	21	20	73	174	527	865	-	951
E.N. CENTRAL	66	83	67	69	2,389	3,575	1,853	2,649
Ohio	14	5	23	43	650	863	448	731
Ind.	10	7	-	5	256	393	201	345
Ill.	19	35	3	-	881	1,096	399	687
Mich.	21	31	38	19	564	698	534	597
Wis.	2	5	3	2	38	525	271	289
W.N. CENTRAL	34	51	360	486	1,230	1,304	1,062	1,348
Minn.	6	26	64	80	303	314	371	361
Iowa	12	4	83	109	157	221	71	183
Mo.	12	12	9	24	397	377	477	498
N. Dak.	-	2	88	89	20	36	4	50
S. Dak.	-	-	44	111	62	54	26	67
Nebr.	-	1	2	5	119	103	-	25
Kans.	4	6	70	68	172	199	113	164
S. ATLANTIC	205	154	1,232	1,477	4,027	3,705	2,876	3,021
Del.	1	1	29	26	54	42	91	74
Md.	61	50	238	304	429	498	421	488
D.C.	11	12	-	-	51	45	-	-
Va.	45	29	313	371	701	564	570	502
W. Va.	1	1	71	54	89	92	81	92
N.C.	12	12	247	385	566	507	589	677
S.C.	5	4	102	98	261	252	217	244
Ga.	19	17	122	121	603	608	651	665
Fla.	50	28	110	118	1,273	1,097	256	279
E.S. CENTRAL	15	18	173	177	1,010	1,065	508	899
Ky.	5	3	24	24	228	230	-	103
Tenn.	6	9	63	95	269	307	258	412
Ala.	3	4	86	56	299	287	217	316
Miss.	1	2	-	2	214	241	33	68
W.S. CENTRAL	9	15	73	110	1,221	1,828	1,353	1,520
Ark.	-	1	14	19	243	216	76	165
La.	6	6	-	-	159	240	220	389
Okla.	2	1	59	91	202	222	130	73
Tex.	1	7	-	-	617	1,150	927	893
MOUNTAIN	26	39	116	117	1,723	1,353	1,146	1,265
Mont.	4	-	41	34	37	54	1	33
Idaho	1	7	-	-	53	63	45	58
Wyo.	1	-	32	45	27	40	22	35
Colo.	10	10	1	4	462	329	454	320
N. Mex.	2	11	5	3	217	156	151	148
Ariz.	5	5	32	25	532	399	420	435
Utah	2	1	4	6	289	193	-	119
Nev.	1	5	1	-	106	119	53	117
PACIFIC	147	148	130	236	3,182	3,184	2,583	3,116
Wash.	13	14	-	-	365	263	279	386
Oreg.	14	13	1	1	287	176	327	210
Calif.	112	117	122	214	2,270	2,590	1,781	2,362
Alaska	1	1	7	21	26	25	6	17
Hawaii	7	3	-	-	234	130	190	141
Guam	-	1	-	-	20	14	-	-
P.R.	-	-	43	32	230	398	-	-
V.I.	U	U	U	U	-	-	-	-
Amer. Samoa	U	U	U	U	-	-	-	-
C.N.M.I.	-	-	-	-	-	17	-	-

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

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

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending August 7, 1999, and August 8, 1998 (31st Week)

Reporting Area	Shigellosis*				Syphilis (Primary & Secondary)		Tuberculosis	
	NETSS		PHLIS					
	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999†	Cum. 1998†
UNITED STATES	7,296	10,929	3,209	6,041	3,664	4,137	7,974	9,465
NEW ENGLAND	200	256	145	228	32	41	242	251
Maine	4	8	-	-	-	1	12	6
N.H.	7	10	6	12	-	1	6	6
Vt.	4	4	3	-	3	4	1	3
Mass.	171	168	93	154	20	24	142	131
R.I.	14	20	9	12	1	1	26	34
Conn.	U	46	34	50	8	10	55	71
MID. ATLANTIC	439	1,510	213	1,232	160	176	1,433	1,730
Upstate N.Y.	149	306	34	98	19	23	166	211
N.Y. City	115	479	81	489	67	34	783	831
N.J.	103	460	98	443	27	62	320	370
Pa.	72	265	-	202	47	57	164	318
E.N. CENTRAL	1,170	1,605	612	828	684	597	682	980
Ohio	293	324	60	78	62	87	147	151
Ind.	112	102	28	30	200	110	U	99
Ill.	500	867	354	687	293	252	324	462
Mich.	217	154	120	4	129	104	172	200
Wis.	48	158	50	29	U	44	39	68
W.N. CENTRAL	643	547	445	249	85	89	272	263
Minn.	115	97	159	113	5	6	95	87
Iowa	15	43	15	32	7	-	29	20
Mo.	438	70	245	53	57	70	106	96
N. Dak.	2	4	-	3	-	-	2	3
S. Dak.	10	27	4	20	-	1	9	14
Nebr.	37	286	-	15	6	4	12	10
Kans.	26	20	22	13	10	8	19	33
S. ATLANTIC	1,391	2,332	312	763	1,178	1,542	1,822	1,597
Del.	8	14	4	9	6	16	12	20
Md.	77	115	23	39	234	430	155	179
D.C.	34	12	-	-	34	45	29	68
Va.	60	97	32	50	98	98	131	174
W. Va.	7	11	3	7	2	2	29	26
N.C.	128	184	60	89	294	445	235	244
S.C.	81	98	38	35	125	179	194	191
Ga.	130	616	37	171	201	170	391	283
Fla.	866	1,185	115	363	184	157	646	412
E.S. CENTRAL	762	516	374	320	667	724	339	697
Ky.	167	79	-	37	58	70	106	106
Tenn.	473	92	333	127	384	343	U	231
Ala.	67	309	37	154	139	162	177	227
Miss.	55	36	4	2	86	149	56	133
W.S. CENTRAL	1,009	2,144	754	668	540	580	874	1,357
Ark.	56	121	21	29	40	75	92	72
La.	76	147	53	181	121	237	U	75
Okla.	330	163	102	43	124	23	81	105
Tex.	547	1,713	578	415	255	245	701	1,105
MOUNTAIN	463	665	241	400	151	147	249	319
Mont.	6	6	-	3	-	-	10	12
Idaho	10	12	5	8	1	1	14	7
Wyo.	2	1	1	-	-	1	1	3
Colo.	78	93	60	77	1	8	U	35
N. Mex.	54	164	23	77	10	19	37	37
Ariz.	252	346	146	212	131	103	141	123
Utah	31	23	-	16	2	3	27	36
Nev.	30	20	6	7	6	12	19	66
PACIFIC	1,219	1,354	113	1,353	167	241	2,061	2,271
Wash.	58	74	51	80	46	23	91	147
Oreg.	40	83	40	77	4	2	64	70
Calif.	1,097	1,167	-	1,167	114	215	1,770	1,917
Alaska	-	4	-	2	1	-	35	33
Hawaii	24	26	22	27	2	1	101	104
Guam	7	25	-	-	1	1	-	51
P.R.	40	34	-	-	101	121	41	88
V.I.	-	-	-	-	U	U	U	U
Amer. Samoa	-	-	-	-	U	U	U	U
C.N.M.I.	-	13	-	-	-	147	-	68

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

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

†Cumulative reports of provisional tuberculosis cases for 1999 are unavailable ("U") for some areas using the Tuberculosis Information System (TIMS).

TABLE III. Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending August 7, 1999, and August 8, 1998 (31st Week)

Reporting Area	*H. influenzae*, invasive		Hepatitis (Viral), by type				Measles (Rubeola)					
			A		B		Indigenous		Imported*		Total	
	Cum. 1999†	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	1999	Cum. 1999	1999	Cum. 1999	Cum. 1999	Cum. 1998
UNITED STATES	745	710	8,996	13,521	3,829	5,794	-	33	1	17	50	47
NEW ENGLAND	55	47	120	172	62	115	-	5	-	4	9	3
Maine	5	2	5	13	1	2	-	-	-	-	-	-
N.H.	12	8	9	8	9	10	-	-	-	1	1	-
Vt.	4	3	3	13	1	4	-	-	-	-	-	1
Mass.	21	31	38	63	28	45	-	4	-	2	6	2
R.I.	1	2	11	10	23	35	-	-	-	-	-	-
Conn.	12	1	54	65	-	19	-	1	-	1	2	-
MID. ATLANTIC	111	107	566	1,039	422	778	-	-	-	2	2	13
Upstate N.Y.	59	34	156	201	124	144	-	-	-	2	2	2
N.Y. City	19	33	104	364	96	268	-	-	-	-	-	-
N.J.	32	33	57	211	40	137	-	-	-	-	-	8
Pa.	1	7	249	263	162	229	-	-	-	-	-	3
E.N. CENTRAL	110	121	1,757	1,988	383	880	-	1	-	1	2	15
Ohio	41	40	428	208	58	48	-	-	-	-	-	1
Ind.	20	27	105	97	32	69	-	1	-	-	1	3
Ill.	40	45	300	469	-	154	-	-	-	-	-	-
Mich.	9	4	898	1,071	292	271	-	-	-	1	1	10
Wis.	-	5	26	143	1	338	U	-	U	-	-	1
W.N. CENTRAL	61	63	478	1,007	278	247	-	-	-	-	-	-
Minn.	19	48	45	83	30	24	U	-	U	-	-	-
Iowa	14	2	91	362	106	42	-	-	-	-	-	-
Mo.	20	8	260	447	108	147	-	-	-	-	-	-
N. Dak.	-	-	1	3	-	4	U	-	U	-	-	-
S. Dak.	1	-	8	18	1	1	-	-	-	-	-	-
Nebr.	3	-	40	19	11	11	-	-	-	-	-	-
Kans.	4	5	33	75	22	18	-	-	-	-	-	-
S. ATLANTIC	175	130	1,185	1,063	714	565	-	1	1	4	5	7
Del.	-	-	2	3	-	-	-	-	-	-	-	1
Md.	46	43	220	246	103	90	U	-	U	-	-	1
D.C.	4	-	37	35	14	8	U	-	U	-	-	-
Va.	13	13	99	145	58	61	-	1	-	2	3	2
W. Va.	6	5	25	1	16	4	-	-	-	-	-	-
N.C.	25	20	90	66	142	126	-	-	-	-	-	-
S.C.	3	3	25	18	40	23	-	-	-	-	-	-
Ga.	45	26	300	317	96	115	-	-	-	-	-	2
Fla.	33	20	387	232	245	138	-	-	1	2	2	1
E.S. CENTRAL	52	42	275	264	297	303	-	-	-	-	-	2
Ky.	6	7	54	19	34	28	-	-	-	-	-	-
Tenn.	30	23	133	153	154	170	-	-	-	-	-	1
Ala.	14	10	39	48	51	43	-	-	-	-	-	1
Miss.	2	2	49	44	58	62	-	-	-	-	-	-
W.S. CENTRAL	39	35	1,557	2,410	374	1,285	-	4	-	3	7	-
Ark.	2	-	32	60	31	60	-	-	-	-	-	-
La.	7	16	59	45	72	62	U	-	U	-	-	-
Okla.	26	17	311	350	86	52	-	-	-	-	-	-
Tex.	4	2	1,155	1,955	185	1,111	-	4	-	3	7	-
MOUNTAIN	67	84	858	2,085	395	524	-	2	-	-	2	-
Mont.	1	-	14	67	16	4	-	-	-	-	-	-
Idaho	1	-	27	168	16	20	-	-	-	-	-	-
Wyo.	1	1	4	25	9	3	-	-	-	-	-	-
Colo.	10	17	151	160	53	64	-	-	-	-	-	-
N. Mex.	17	4	31	97	138	203	-	-	-	-	-	-
Ariz.	30	42	516	1,296	106	128	-	1	-	-	1	-
Utah	5	3	32	129	22	45	-	1	-	-	1	-
Nev.	2	17	83	143	35	57	U	-	U	-	-	-
PACIFIC	75	81	2,200	3,493	904	1,097	-	20	-	3	23	7
Wash.	3	6	196	693	39	60	-	-	-	-	-	1
Oreg.	30	33	153	271	56	114	-	8	-	-	8	-
Calif.	33	34	1,838	2,481	790	907	-	11	-	3	14	6
Alaska	5	1	4	14	12	8	-	-	-	-	-	-
Hawaii	4	7	9	34	7	8	-	1	-	-	1	-
Guam	-	-	2	1	2	2	U	1	U	-	1	-
P.R.	1	2	107	35	97	156	-	-	-	-	-	-
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.	-	-	-	1	-	43	U	-	U	-	-	-

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

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

†Of 149 cases among children aged <5 years, serotype was reported for 69 and of those, 16 were type b.

TABLE III. (Cont'd.) Provisional cases of selected notifiable diseases preventable by vaccination, United States, weeks ending August 7, 1999, and August 8, 1998 (31st Week)

Reporting Area	Meningococcal Disease		Mumps			Pertussis			Rubella		
	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998	1999	Cum. 1999	Cum. 1998
UNITED STATES	1,565	1,752	2	208	446	74	3,043	3,180	2	161	315
NEW ENGLAND	84	77	-	4	3	3	336	582	-	7	38
Maine	5	5	-	-	-	-	-	5	-	-	-
N.H.	12	9	-	1	-	-	54	43	-	-	-
Vt.	4	1	-	1	-	2	31	57	-	-	-
Mass.	47	34	-	2	2	-	222	445	-	7	8
R.I.	4	3	-	-	-	1	18	5	-	-	1
Conn.	12	25	-	-	1	-	11	27	-	-	29
MID. ATLANTIC	140	185	-	25	170	4	610	336	-	21	142
Upstate N.Y.	38	48	-	6	2	4	524	167	-	17	113
N.Y. City	32	22	-	3	153	-	10	21	-	-	15
N.J.	37	42	-	-	6	-	12	10	-	1	13
Pa.	33	73	-	16	9	-	64	138	-	3	1
E.N. CENTRAL	250	275	2	26	57	12	269	358	-	2	-
Ohio	106	97	2	10	21	7	136	96	-	-	-
Ind.	43	49	-	3	5	3	32	69	-	1	-
Ill.	67	74	-	6	9	2	46	39	-	1	-
Mich.	33	32	-	7	20	-	28	40	-	-	-
Wis.	1	23	U	-	2	U	27	114	U	-	-
W.N. CENTRAL	171	152	-	10	21	7	128	252	2	82	31
Minn.	34	25	U	1	10	U	38	149	U	-	-
Iowa	32	25	-	4	7	4	31	54	2	32	-
Mo.	65	57	-	2	3	3	34	16	-	2	2
N. Dak.	3	2	U	-	1	U	-	3	U	-	-
S. Dak.	10	6	-	-	-	-	5	6	-	-	-
Nebr.	9	11	-	-	-	-	1	8	-	48	-
Kans.	18	26	-	3	-	-	19	16	-	-	29
S. ATLANTIC	265	291	-	36	28	32	215	166	-	22	9
Del.	4	1	-	-	-	1	1	2	-	-	-
Md.	39	24	U	3	-	U	51	28	U	1	-
D.C.	1	-	U	2	-	U	-	1	U	-	-
Va.	32	24	-	8	5	-	13	8	-	-	-
W. Va.	4	12	-	-	-	-	1	1	-	-	-
N.C.	30	44	-	8	9	5	58	65	-	21	6
S.C.	31	44	-	3	4	-	8	22	-	-	-
Ga.	47	65	-	2	1	-	20	10	-	-	-
Fla.	77	77	-	10	9	26	63	29	-	-	3
E.S. CENTRAL	121	122	-	8	11	-	58	72	-	1	-
Ky.	30	20	-	-	-	-	15	28	-	-	-
Tenn.	45	45	-	-	1	-	27	23	-	-	-
Ala.	27	35	-	7	6	-	12	18	-	1	-
Miss.	19	22	-	1	4	-	4	3	-	-	-
W.S. CENTRAL	136	196	-	26	37	3	95	208	-	7	80
Ark.	28	25	-	-	-	1	11	25	-	-	-
La.	34	38	U	3	5	U	3	2	U	-	-
Okla.	24	28	-	1	-	-	12	20	-	-	-
Tex.	50	105	-	22	32	2	69	161	-	7	80
MOUNTAIN	100	97	-	12	27	7	299	591	-	15	5
Mont.	2	3	-	-	-	-	2	3	-	-	-
Idaho	8	6	-	1	3	-	93	166	-	-	-
Wyo.	3	4	-	-	1	-	2	8	-	-	-
Colo.	26	18	-	3	5	4	72	151	-	-	-
N. Mex.	13	17	N	N	N	2	55	74	-	-	1
Ariz.	29	34	-	-	5	-	29	130	-	13	1
Utah	13	10	-	5	3	1	43	35	-	1	2
Nev.	6	5	U	3	10	U	3	24	U	1	1
PACIFIC	298	357	-	61	92	6	1,033	615	-	4	10
Wash.	47	50	-	2	7	5	527	192	-	-	5
Oreg.	53	60	N	N	N	-	24	40	-	-	-
Calif.	188	241	-	51	66	-	468	368	-	4	3
Alaska	5	2	-	1	2	1	4	4	-	-	-
Hawaii	5	4	-	7	17	-	10	11	-	-	2
Guam	1	2	U	1	2	U	1	-	U	-	-
P.R.	5	8	-	-	2	-	15	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	U	-	1	U	-	-

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

TABLE IV. Deaths in 122 U.S. cities,* week ending August 7, 1999 (31st Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	544	393	100	36	9	6	48
Boston, Mass.	140	101	28	8	-	3	12
Bridgeport, Conn.	40	24	9	6	1	-	-
Cambridge, Mass.	11	9	2	-	-	-	1
Fall River, Mass.	28	25	2	1	-	-	2
Hartford, Conn.	41	28	8	3	1	1	1
Lowell, Mass.	17	13	2	2	-	-	3
Lynn, Mass.	9	6	2	1	-	-	-
New Bedford, Mass.	20	17	2	1	-	-	-
New Haven, Conn.	32	19	10	1	2	-	1
Providence, R.I.	74	53	11	6	3	1	11
Somerville, Mass.	4	4	-	-	-	-	-
Springfield, Mass.	47	34	7	4	2	-	2
Waterbury, Conn.	20	15	4	1	-	-	3
Worcester, Mass.	61	45	13	2	-	1	12
MID. ATLANTIC	2,289	1,570	432	185	55	47	74
Albany, N.Y.	54	42	8	4	-	-	3
Allentown, Pa.	U	U	U	U	U	U	U
Buffalo, N.Y.	101	73	16	9	2	1	1
Camden, N.J.	37	25	8	3	-	1	4
Elizabeth, N.J.	9	8	-	1	-	-	-
Erie, Pa.	33	27	2	3	1	-	1
Jersey City, N.J.	43	32	6	3	-	2	-
New York City, N.Y.	1,192	824	222	100	26	20	22
Newark, N.J.	58	26	20	6	4	2	-
Paterson, N.J.	16	8	3	3	1	1	-
Philadelphia, Pa.	396	246	92	28	14	16	18
Pittsburgh, Pa.§	45	34	8	2	-	1	1
Reading, Pa.	30	23	2	2	2	1	-
Rochester, N.Y.	111	83	19	6	2	1	6
Schenectady, N.Y.	U	U	U	U	U	U	U
Scranton, Pa.	31	23	4	4	-	-	1
Syracuse, N.Y.	84	58	16	8	2	-	11
Trenton, N.J.	29	21	3	3	1	1	6
Utica, N.Y.	20	17	3	-	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	1,851	1,280	343	123	51	53	98
Akron, Ohio	45	29	6	3	5	2	-
Canton, Ohio	33	23	7	2	1	-	3
Chicago, Ill.	385	222	92	40	17	13	26
Cincinnati, Ohio	88	64	16	4	1	3	5
Cleveland, Ohio	128	80	32	10	4	2	-
Columbus, Ohio	188	128	42	9	4	5	13
Dayton, Ohio	118	89	19	9	1	-	3
Detroit, Mich.	U	U	U	U	U	U	U
Evansville, Ind.	44	33	6	4	1	-	2
Fort Wayne, Ind.	64	50	6	3	2	3	3
Gary, Ind.	26	14	8	2	1	1	-
Grand Rapids, Mich.	66	48	11	3	-	4	5
Indianapolis, Ind.	274	196	41	22	4	11	14
Lansing, Mich.	39	29	10	-	-	-	4
Milwaukee, Wis.	110	90	12	2	3	3	9
Peoria, Ill.	35	28	1	4	2	-	3
Rockford, Ill.	46	33	8	2	2	1	1
South Bend, Ind.	U	U	U	U	U	U	U
Toledo, Ohio	99	77	13	4	2	3	6
Youngstown, Ohio	63	47	13	-	1	2	1
W.N. CENTRAL	648	458	112	43	20	15	36
Des Moines, Iowa	60	46	10	2	2	-	5
Duluth, Minn.	21	15	2	1	2	1	-
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	100	70	20	5	2	3	3
Lincoln, Nebr.	38	29	7	1	1	-	1
Minneapolis, Minn.	172	134	23	8	2	5	20
Omaha, Nebr.	88	63	19	4	2	-	2
St. Louis, Mo.	112	60	20	17	9	6	-
St. Paul, Minn.	57	41	11	5	-	-	5
Wichita, Kans.	U	U	U	U	U	U	U

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	752	479	161	73	28	9	41
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	162	94	36	19	11	-	4
Charlotte, N.C.	91	62	15	9	5	-	10
Jacksonville, Fla.	133	90	25	16	1	1	10
Miami, Fla.	85	56	17	8	2	2	1
Norfolk, Va.	49	30	12	4	1	2	1
Richmond, Va.	42	29	7	4	1	1	2
Savannah, Ga.	1	-	1	-	-	-	1
St. Petersburg, Fla.	U	U	U	U	U	U	U
Tampa, Fla.	132	90	29	7	5	1	10
Washington, D.C.	44	19	15	6	2	2	2
Wilmington, Del.	13	9	4	-	-	-	-
E.S. CENTRAL	799	522	161	70	28	17	65
Birmingham, Ala.	155	97	30	15	7	5	10
Chattanooga, Tenn.	62	45	8	6	2	1	3
Knoxville, Tenn.	59	35	13	5	5	1	10
Lexington, Ky.	46	26	17	3	-	-	1
Memphis, Tenn.	207	141	35	18	6	7	16
Mobile, Ala.	73	51	11	8	3	-	-
Montgomery, Ala.	77	56	14	5	-	2	9
Nashville, Tenn.	120	71	33	10	5	1	16
W.S. CENTRAL	1,429	895	311	140	49	34	82
Austin, Tex.	105	67	23	6	6	3	6
Baton Rouge, La.	1	1	-	-	-	-	-
Corpus Christi, Tex.	45	31	9	3	2	-	2
Dallas, Tex.	192	118	40	24	5	5	5
El Paso, Tex.	54	39	9	5	1	-	1
Ft. Worth, Tex.	94	63	15	8	1	7	3
Houston, Tex.	469	272	107	61	21	8	29
Little Rock, Ark.	63	37	15	7	2	2	2
New Orleans, La.	70	45	12	9	2	2	5
San Antonio, Tex.	158	111	35	8	3	1	19
Shreveport, La.	73	41	25	3	2	2	8
Tulsa, Okla.	105	70	21	6	4	4	2
MOUNTAIN	801	537	146	79	23	15	36
Albuquerque, N.M.	83	63	9	8	2	1	4
Boise, Idaho	44	27	10	3	2	1	3
Colo. Springs, Colo.	46	29	6	8	1	2	3
Denver, Colo.	102	66	17	13	4	2	4
Las Vegas, Nev.	187	113	48	17	7	2	9
Ogden, Utah	21	17	3	1	-	-	2
Phoenix, Ariz.	71	45	15	7	2	2	2
Pueblo, Colo.	25	15	8	1	1	-	2
Salt Lake City, Utah	100	72	14	8	3	3	5
Tucson, Ariz.	122	90	16	13	1	2	2
PACIFIC	1,438	1,011	268	100	20	37	95
Berkeley, Calif.	15	12	1	1	-	1	1
Fresno, Calif.	101	64	23	10	4	-	7
Glendale, Calif.	14	11	3	-	-	-	2
Honolulu, Hawaii	70	58	5	3	-	4	7
Long Beach, Calif.	70	53	15	1	1	-	11
Los Angeles, Calif.	309	221	49	24	7	8	11
Pasadena, Calif.	25	20	5	-	-	-	2
Portland, Oreg.	92	68	12	6	3	3	8
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	148	88	35	18	1	4	13
San Francisco, Calif.	137	93	32	8	-	4	16
San Jose, Calif.	151	101	34	11	1	4	6
Santa Cruz, Calif.	26	22	1	2	-	1	2
Seattle, Wash.	134	93	28	7	1	5	2
Spokane, Wash.	57	43	8	2	2	2	6
Tacoma, Wash.	89	64	17	7	-	1	1
TOTAL	10,551¶	7,145	2,034	849	283	233	575

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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