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Mortality Among Children with Sickle Cell Disease Identified by Newborn Screening During 1990–1994 — California, Illinois, and New York

Sickle cell disease (SCD) is an autosomal recessive disorder characterized by production of abnormal (sickle) hemoglobin, resulting in anemia, susceptibility to pneumococcal and other infections, pain, stroke, and multiple organ dysfunctions. The most common types include hemoglobin SS (homozygous) disease, sickle cell-hemoglobin C disease, and the sickle beta-thalassemia syndromes (*1*). A randomized controlled trial published in 1986 indicated that daily oral penicillin prophylaxis reduced the incidence of serious infection in young children with SCD and led to widespread adoption of newborn screening programs for SCD (*2*). To study the effectiveness and utilization of prevention programs among large populations of infants with SCD, several newborn screening programs in the United States are now attempting to determine rates of complications and actual use of early medical interventions (e.g., penicillin prophylaxis and pneumococcal vaccination). This report focuses on recent mortality in California, Illinois, and New York. In California and Illinois, mortality from all causes among black children born during 1990–1994 with SCD was slightly less than overall mortality for all black children born in the same time period.

All newborns in California, Illinois, and New York are screened for hemoglobinopathies. Health departments implemented screening programs in New York in 1975, Illinois in 1989, and California in 1990. For this investigation, SCD was defined as any clinically significant sickle hemoglobinopathy in an infant born during 1990–1994. In California and Illinois, identifying variables from SCD databases were matched with computerized records of state-specific death certificates for 1990–1995. In New York, all SCD-related deaths among children aged <3 years listed in state vital records for 1990–1994 were matched with the state SCD database. Additional follow-up extending through 1997 was available in California and Illinois: local physicians (i.e., through surveys) and public health nurses informed the respective state health department about the circumstances of SCD-related deaths; such information was not available in New York. Mortality rates per person-year were calculated assuming complete death ascertainment through December 31, 1994, in New York and through December 31, 1995, in California and Illinois.

During 1990–1994, a total of 2487 children with presumed or confirmed SCD were identified by the three newborn screening programs. Excluding two deaths of children

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presumably born in other states, 27 deaths were reported among children with SCD; 20 death certificates provided causes that included SCD or other conditions related to SCD (Table 1). The median age at death for the 20 infants who had SCD-related deaths was 22 months (range: 2–53 months). Mortality rates for each state were similar. In California and Illinois, where mortality for all causes was ascertained, by the end of 1995 the cumulative mortality rate was 1.5 per 100 black children with SCD born during 1990–1994. The equivalent cumulative mortality rate for all black children born during this period in California and Illinois was 2.0 per 100 black newborns, based on approximate age-coded data in national multiple-cause mortality files (*3*).

Mortality data was available until the third birthday for the subgroup of 768 children with presumed or confirmed hemoglobin SS disease born during 1990–1991 in New York and during 1990–1992 in California and Illinois. Of these 768 children, 1.0% died as a result of SCD-related causes during the first 3 years of life (0.35 per

TABLE 1. Sickle cell disease (SCD)*-related deaths† among children born during 1990–1994, by state and year of birth, age at death, and cause of death — California and Illinois (1990–1997) and New York (1990–1994)

State/ Year of birth	Age at death (mos)	Other cause(s) of death§
California		
1990	48	—
1992	8	—
1993	31	Congestive heart failure, pulmonary edema/effusion
1994	2	—
1994	12	High fever and sepsis
1994	13	—
Illinois		
1990	15	Myocarditis
1990	17	Pneumococcal meningitis
1990	45	Sepsis
1991	7	Septic shock, pneumococcal meningitis
1991	23	Pneumococcal sepsis
1992	53	Sepsis
1994	39	—
New York		
1990	25	—
1990	27	—
1990	29	—
1992	13	—
1992	17	—
1992	21	HIV infection
1992	23	—

*All children had presumed hemoglobin SS (homozygous) disease, except one child with sickle cell-hemoglobin C disease who died at age 53 months.

†The following deaths were excluded: three children aged <1 month whose deaths were attributed to extreme prematurity or birth defects; one child aged 42 days who died because of pneumocystosis; one child with presumed sickle-beta thalassemia who died at 47 days of age because of pneumonia; one child with cerebral palsy and seizures whose death was attributed to aspiration pneumonia; and one child who had a traumatic death.

§In addition to SCD. For 11 children, only SCD was listed as a cause of death.

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100 person-years, based on 2258 person-years [95% confidence interval=0.15–0.70 per 100 person-years]). The rate of compliance with penicillin prophylaxis was unknown; an investigation of risk factors is being conducted to analyze this and other factors in relation to death and other serious complications. Information about risk factors will be obtained through parental and physician surveys.

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Editorial Note: The findings in this report indicate low mortality rates for children with SCD born during the early 1990s in geographic areas in which infants with the condition are identified soon after birth. Early diagnosis is an important component of comprehensive medical care for affected children (*1,4*). In a study of U.S. death certificates for 1968–1992, mortality among black children aged 1–4 years who had SCD declined significantly (*5*). This trend occurred at the same time as the establishment of newborn screening programs, more comprehensive care and parental education, widespread acceptance of penicillin prophylaxis after publication of the randomized trial in 1986, and new vaccinations.

Although the mortality rate for children with hemoglobin SS disease described in this report is lower than comparable rates in earlier studies, comparisons between these mortality rates and those from clinical studies, the Cooperative Study of SCD, and national death certificates must be interpreted cautiously because of differences in study design and ascertainment of deaths (*5–7*). One limitation of this investigation is that deaths outside the three states would not have been ascertained. Underascertainment of deaths also could have occurred through errors in matching or reporting of vital statistics. This study was population-based, and mortality rates were relatively stable because of the large number (2487) of young children with SCD.

In Maryland, the mortality rate for black children with SCD was comparable to, or lower than, the mortality rate for all black children during 1985–1994 (*8*). Underascertainment of SCD among severely ill neonates could account for this finding, but ill children in neonatal intensive-care units usually are screened for SCD. In California, Illinois, New York, and Maryland, comprehensive medical care and public health interventions may have contributed to the observed reduction in premature mortality from all causes.

Newborn screening follow-up studies are useful for evaluating the prevention effectiveness of public health programs, which is an essential component of applying genetic technology to disease prevention (*9*). Follow-up studies can determine whether public health programs that are widely implemented have the prevention impact that the randomized trials predicted. Continued evaluation over time of comparable data for hemoglobinopathies and other newborn conditions can provide epidemiologic evidence of the clinical value of screening programs for these conditions. More detailed analysis of risk factors for adverse outcomes among children who have SCD also will assist public health agencies with targeting prevention programs for specific high-risk groups.

Sickle Cell Disease — Continued

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Human Exposure to *Brucella abortus* Strain RB51 — Kansas, 1997

On May 26–27, 1997, nine persons (a farmer, four veterinary clinicians, and four veterinary students) in Manhattan, Kansas, participated in an attempted vaginal delivery, a cesarean delivery, and a necropsy on a stillborn calf that died because of *Brucella abortus* infection. The infection was confirmed by isolation of *B. abortus* from placental and fetal lung tissue cultures. The National Animal Disease Center, U.S. Department of Agriculture (USDA), identified the *B. abortus* isolate from the calf as the RB51 vaccine strain. RB51 is a live, attenuated strain that was licensed conditionally by the Veterinary Services, Animal and Plant Health Inspection Service, USDA, on February 23, 1996, for vaccination of cattle in the United States.* Before 1996, vaccine was made by using the S19 strain. This report describes occupational exposure to animals infected with the RB51 strain and emphasizes the need for surveillance of unintentional exposure of humans to RB51 to assess outcomes of such exposures.

The vaccine had caused active *B. abortus* infection because the 14-month-old heifer delivering the calf was not known to be pregnant when she was vaccinated with RB51 at approximately 8 months of age, which was within the specified age range for vaccination. The heifer was administered the RB51 vaccine dosage recommended for calves, which was 10 times the dosage recommended for adult or pregnant cattle.

The heifer was euthanized after surgery because of the poor prognosis following a uterine rupture and the poor general condition of the animal. Necropsy findings included diffuse placentitis in the heifer and fetal pneumonitis. Evidence that intrauter-

*The vaccine was licensed conditionally to allow accumulation of additional data on field use under controlled conditions.

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ine infection was caused by the RB51 vaccine strain, and not by field strains of *B. abortus* or by S19, included immunohistochemical staining specific for RB51 (negative for S19), RB51-specific titer of >1:10,000 on experimental dot-blot assay measuring antibody to RB51, and RB51-specific DNA sequences identified by polymerase chain reaction (PCR).

Persons at risk for infection with RB51 were those who contacted the calf, placenta, blood, or amniotic fluid without wearing gloves, masks, or eye protection. Six women and three men (age range: 23–45 years) were at risk for infection. None of the exposed persons reported having previously had brucellosis or being unintentionally inoculated with *Brucella* vaccine.

Within 1 week after exposure, eight of the nine persons started a prophylactic regimen of doxycycline (100 mg twice daily for 21–24 days). Three of these persons also received rifampin (600 mg once daily for 4–21 days). None of the exposed persons showed signs or symptoms consistent with brucellosis during the 6-month follow-up period.

Since conditional licensure of the RB51 vaccine, 32 instances of unintentional inoculation or conjunctival exposure to the RB51 vaccine have been reported to the vaccine manufacturer or CDC. Three of the 32 persons, all of whom were unintentionally inoculated while vaccinating cattle, reported inflammation at the inoculation site; another person reported intermittent fever, chills, headache, and myalgia and had elevated levels of serum transaminase and lactate dehydrogenase.

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Editorial Note: Brucellosis, also known as "undulant fever" or "Bangs disease," is a systemic infection caused by *Brucella* sp., small Gram-negative coccobacilli that can infect cattle (infection with *B. abortus*), goats and sheep (*B. melitensis*), pigs (*B. suis*), and dogs (*B. canis*). Worldwide, brucellosis usually occurs in geographic areas with large populations of these animal hosts (*1,2*). Disease manifestations in animals depend on age and gestational status. The primary sign of infection in female animals is abortion, and in male animals, epididymitis.

Brucellosis in humans is a systemic disease that has an acute or insidious onset; signs and symptoms of the disease include continued, intermittent, or irregular fever of variable duration; headache; weakness; profuse sweaty chills; arthralgia; depression; weight loss; and generalized aches (*3*). The disease can persist for periods ranging from days to years if not treated properly. *B. abortus* RB51 infection in humans is possible but has not been documented.

Through a cooperative state and federal effort, the United States is now approaching eradication of the field strain of *B. abortus* in domestic cattle and bison herds. In the United States, the Brucellosis Eradication Program (BEP) was established formally in 1954 to prevent the considerable economic losses caused by abortions that occurred before, or in the absence of, prophylactic vaccination and to reduce transmission of the disease to humans. Vaccination against brucellosis and testing or depopulation of affected herds have reduced the number of infected cattle herds in the United States. From 1952 to January 1998, the number of known brucellosis-

Brucella abortus — *Continued*

affected herds decreased from 124,000 to 15, and annual losses resulting from abortions, decreased milk production, and reduced breeding efficiency decreased from approximately $400 million to approximately $2.5 million (unadjusted for inflation). In 1996, approximately 5.5 million calves were vaccinated against brucellosis, 11.8 million cattle were tested, and 112 affected herds were depopulated at a total cost of approximately $20.3 million (USDA, unpublished data, 1998). Because these efforts have been successful, the BEP has set a goal of eliminating brucellosis in domestic cattle in the United States by the end of 1998. Bison and elk in the northern Rocky Mountain states are still important reservoirs of *B. abortus* and provide a potential for reintroduction of brucellosis into domestic livestock (*4*).

One element of the cooperative state and federal brucellosis eradication efforts is the use of approved *Brucella* vaccines on female cattle and female bison. The RB51 vaccine strain, a genetically stable, rough morphology mutant of *B. abortus* strain 2308 that lacks the polysaccharide O-side chain on the surface of the bacteria, replaced the S19 vaccine in 1996 (*5*). The RB51 vaccine is used in 49 states,[†] Puerto Rico, and the U.S. Virgin Islands; it was developed by serial passage in selective media, which resulted in a strain that was equally immunogenic, but less virulent, than the S19 vaccine. In mice, sheep, and cattle, RB51 protects against experimental challenge with *B. abortus* (*6*) and is less abortifacient than S19 if administered during pregnancy; abortions have been reported rarely among cattle vaccinated during midgestation (*7*).

Vaccination with RB51 does not result in measurable antibody titers to *B. abortus* using standard diagnostic tests. This is an important feature for use in efforts to eradicate brucellosis in domestic cattle. Strain 19 causes vaccinated animals to produce antibodies that are indistinguishable on standard diagnostic tests from the antibodies produced by animals infected with *Brucella*. Because the RB51 vaccine does not cause vaccinated cattle to produce interfering antibody titers, replacing the S19 vaccine with the RB51 vaccine will eliminate the costs associated with the retesting and tracebacks of false-positive reactors. The estimated combined field and laboratory gross savings from using RB51 vaccine total almost $7.45 million per year.

Detection of possible human infection with the RB51 vaccine strain and development of recommendations for chemoprophylaxis are complicated by two characteristics of the new vaccine strain. First, immunologic response to the RB51 strain is not detected on routinely available serologic tests for *Brucella*. Experimental dot-blot assay employed for serologic measurement of RB51 postvaccination titers has been evaluated under experimental and field conditions in cattle, but this assay has not been validated by using human serum (*8*). This assay and PCR are being developed by CDC's Special Bacteriology Reference Laboratory for detection of human RB51 infection. Second, RB51 was derived by selection in rifampin-enriched media and is resistant to rifampin in vitro. For postexposure prophylaxis against the previously used live *Brucella* (S19) vaccine, CDC recommended concomitant regimens of doxycycline and rifampin. Recommendations for antibiotic selection and treatment duration for postexposure prophylaxis to RB51 are difficult to make because virulence of the strain in humans is unknown, and the strain is resistant to rifampin in vitro. If the RB51 strain poses a risk for human infection, the chemoprophylaxis recommendations will require modification. A reasonable interim course of postexposure prophylaxis for adults

[†]Pending depletion of remaining stores of the previously used standard vaccine.

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would be doxycycline 100 mg orally twice daily for 21 days, with addition of other suitable antimicrobials if evidence of infection appears.

Veterinarians and other animal health-care personnel should be made aware of the possible risk for infection associated with the veterinary use of RB51. The epidemiologic conditions leading to possible infection in farmers and veterinarians are not unusual. Using the estimated rate of unintentional needlestick injuries among health-care workers in U.S. hospitals (*9*) as a surrogate for unintentional inoculations with RB51, at least 11,000 needlestick injuries per 5.5 million injections (i.e., the number of *Brucella* vaccine doses administered in 1996) can be expected during 1 year. Exposure of farm and veterinary personnel to infected calves or placentas is another potential source of human infection, especially on farms where heifers might be vaccinated mistakenly during mid-gestation (i.e., at which time the calf fetus may be at greatest risk for postvaccination brucellosis) (*7*).

CDC has established a registry of human exposures to the RB51 vaccine strain; after unintentional, conjunctival, or other suspected exposure to RB51, veterinarians, clinicians, or health department personnel should contact CDC's Meningitis and Special Pathogens Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, to report the incident and discuss additional recommendations; telephone (404) 639-3158; fax (404) 639-0817.

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Self-Assessed Health Status and Selected Behavioral Risk Factors Among Persons With and Without Health-Care Coverage — United States, 1994–1995

Persons without health-care coverage are more likely to have poor health and be at greater risk for chronic disease outcomes than persons who have health-care coverage (*1*). In the United States, the number of persons and the proportion of the population without health-care coverage has increased each year since 1987 (*2*). State-specific surveillance of health-care coverage can be used to identify subgroups of the population who lack such coverage and may be at increased risk for poor health. To determine state-specific estimates of the prevalence of self-assessed health status and risk factors for chronic disease by health-care coverage status among adults aged 18–64 years, CDC analyzed data from the 1994 and 1995 Behavioral Risk Factor Surveillance System (BRFSS). This report summarizes the results of that analysis and indicates that adults without health-care coverage were more likely than those with health-care coverage to have poor health status, to be current smokers, and to be less physically active.

BRFSS is a state-based, random-digit–dialed telephone survey of the noninstitutionalized U.S. population aged ≥18 years. The 1995 BRFSS was conducted in the 50 states and the District of Columbia and was used to determine self-reported health-care coverage status and the selected risk factors of cigarette smoking, physical inactivity, and self-assessed health status among adults aged 18–64 years. To assess health-care coverage status, respondents were asked "Do you have any kind of health-care coverage, including health insurance, prepaid plans such as HMOs, or governmental plans such as Medicare?" Smoking was assessed by asking "Have you smoked at least 100 cigarettes in your entire life?" and "Do you smoke cigarettes now?" Current smokers were persons who reported having smoked ≥100 cigarettes during their lifetimes and who smoke now. Physical inactivity was assessed by asking the respondent "During the past month, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?" Persons were considered inactive during their leisure time if they answered no to this question. For the purpose of this report, the estimates for health status reflect the proportion of persons indicating either fair or poor health status. Data from the 50 states were weighted to represent state populations and used to produce point estimates; 95% confidence intervals were calculated using SUDAAN.

During 1995, the prevalence of health-care coverage varied among states and ranged from 76.9% (Louisiana) to 93.3% (Hawaii) (median: 87.0%). The median prevalence of fair-to-poor self-assessed health status was 9.0% among persons with health-care coverage and 13.8% among those without coverage; state-specific prevalences among those with coverage ranged from 5.3% (Nebraska) to 17.3% (West Virginia), and among those without coverage, from 5.0% (New Jersey) to 27.9% (Kentucky) (Table 1).

The median prevalence of smoking among those with health-care coverage was 22.8%, compared with 39.3% among those without coverage (Table 2). The median prevalence of physical inactivity was 25.1% among those with health-care coverage, compared with 31.2% among those without coverage.

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TABLE 1. Prevalence of fair-to-poor self-assessed health status among adults, by state and health-care coverage (HCC) status — United States, Behavioral Risk Factor Surveillance System, 1995

	HCC		No HCC	
State*	**%**	**(95% CI†)**	**%**	**(95% CI)**
Alabama	11.5	(±2.2%)	22.2	(±5.7%)
Alaska	6.5	(±1.8%)	9.7	(±4.4%)
Arizona	10.6	(±4.5%)	18.9	(±7.1%)
Arkansas	11.5	(±1.9%)	18.2	(±4.9%)
California	10.5	(±2.2%)	18.6	(±5.2%)
Colorado	7.8	(±1.5%)	13.4	(±5.6%)
Connecticut	6.8	(±1.7%)	12.5	(±6.3%)
Delaware	10.8	(±1.7%)	11.8	(±4.3%)
Florida	10.1	(±1.4%)	13.9	(±3.5%)
Georgia	7.6	(±1.5%)	16.8	(±5.9%)
Hawaii	9.2	(±1.7%)	6.8	(±4.8%)
Idaho	7.5	(±1.3%)	10.8	(±3.3%)
Illinois	9.6	(±1.5%)	18.6	(±5.2%)
Indiana	10.4	(±1.6%)	15.9	(±5.5%)
Iowa	7.1	(±1.1%)	11.0	(±3.8%)
Kansas	7.4	(±1.5%)	11.8	(±4.4%)
Kentucky	14.5	(±2.1%)	27.9	(±5.7%)
Louisiana	10.3	(±2.1%)	18.5	(±4.6%)
Maine	8.3	(±1.9%)	13.7	(±3.5%)
Maryland	7.4	(±0.9%)	13.0	(±3.4%)
Massachusetts	8.9	(±1.8%)	11.7	(±5.4%)
Michigan	10.5	(±1.5%)	13.2	(±4.9%)
Minnesota	6.1	(±0.9%)	9.0	(±3.3%)
Mississippi	13.9	(±2.4%)	25.2	(±6.7%)
Missouri	8.0	(±1.8%)	17.2	(±5.8%)
Montana	9.0	(±2.3%)	13.6	(±5.4%)
Nebraska	5.3	(±3.4%)	19.3	(±2.5%)
Nevada	10.3	(±2.1%)	19.8	(+6.7%)
New Hampshire	6.3	(±1.5%)	15.3	(±6.9%)
New Jersey	9.3	(±2.2%)	5.0	(±6.9%)
New Mexico	11.8	(±2.5%)	25.9	(±7.2%)
New York	8.5	(±1.4%)	7.4	(±3.1%)
North Carolina	13.5	(±1.6%)	21.2	(±4.9%)
North Dakota	8.7	(±1.8%)	13.9	(±5.6%)
Ohio	10.5	(±2.2%)	12.2	(±6.0%)
Oklahoma	8.1	(±1.8%)	18.9	(±6.3%)
Oregon	7.7	(±1.3%)	11.8	(±4.1%)
Pennsylvania	9.1	(±1.7%)	10.6	(±3.5%)
Rhode Island	9.2	(±1.7%)	17.5	(±6.7%)
South Carolina	10.3	(±1.8%)	17.2	(±5.2%)
South Dakota	7.7	(±1.7%)	13.4	(±5.8%)
Tennessee	13.1	(±1.9%)	15.1	(±5.6%)
Texas	11.4	(±2.2%)	26.0	(±6.4%)
Utah	7.5	(±1.5%)	12.6	(±5.0%)
Vermont	8.1	(±1.4%)	11.2	(±4.2%)
Virginia	7.7	(±1.7%)	17.9	(±5.7%)
Washington	7.5	(±1.1%)	12.7	(±3.8%)
West Virginia	17.3	(±2.1%)	21.7	(±4.8%)
Wisconsin	6.2	(±1.5%)	9.6	(±5.2%)
Wyoming	8.4	(±1.4%)	10.3	(±3.6%)
Range	*5.3–17.3*		*5.0–27.9*	
Median	*9.0*		*13.8*	

* No data were available for the District of Columbia.
† Confidence interval.

Self-Assessed Health Status — Continued

TABLE 2. Prevalence of cigarette smoking and physical inactivity, by state and health-care coverage (HCC) status — United States, Behavioral Risk Factor Surveillance System, 1994–1995

	Smoking*				Physical inactivity†			
	HCC		No HCC		HCC		No HCC	
State§	%	(95% CI¶)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Alabama	24.8	(±2.8%)	36.8	(± 6.9%)	38.5	(±3.3%)	56.0	(± 6.7%)
Alaska	23.9	(±3.5%)	35.5	(± 9.3%)	20.3	(±3.2%)	26.9	(± 8.5%)
Arizona	21.9	(±3.5%)	39.8	(± 7.9%)	20.2	(±3.0%)	29.4	(± 9.3%)
Arkansas	25.7	(±2.8%)	43.9	(± 6.7%)	30.7	(±3.2%)	39.0	(± 6.7%)
California	15.0	(±1.7%)	22.2	(± 5.4%)	18.2	(±1.7%)	32.9	(± 4.2%)
Colorado	21.5	(±2.4%)	35.1	(± 6.9%)	14.3	(±2.1%)	19.9	(± 6.0%)
Connecticut	21.2	(±2.5%)	35.4	(± 8.7%)	18.1	(±2.4%)	22.6	(± 7.2%)
Delaware	26.1	(±2.4%)	45.0	(± 7.7%)	32.0	(±2.8%)	42.9	(± 7.2%)
Florida	25.4	(±2.2%)	36.3	(± 5.0%)	25.2	(±2.1%)	32.6	(± 4.2%)
Georgia	20.8	(±2.1%)	32.3	(± 7.3%)	28.1	(±2.5%)	38.3	(± 7.0%)
Hawaii	18.8	(±2.4%)	30.6	(±11.1%)	20.3	(±2.4%)	22.1	(± 9.1%)
Idaho	18.0	(±1.9%)	38.7	(± 5.3%)	18.6	(±2.5%)	23.0	(± 5.9%)
Illinois	23.7	(±2.1%)	39.3	(± 7.0%)	30.0	(±2.7%)	41.6	(± 8.2%)
Indiana	28.2	(±2.3%)	49.4	(± 7.0%)	26.4	(±2.4%)	30.5	(± 6.3%)
Iowa	24.0	(±1.8%)	45.4	(± 6.3%)	29.9	(±2.4%)	36.1	(± 7.7%)
Kansas	22.7	(±2.4%)	45.9	(± 7.5%)	30.7	(±3.2%)	41.1	(± 9.6%)
Kentucky	27.6	(±2.6%)	44.2	(± 6.0%)	40.0	(±2.9%)	54.9	(± 5.9%)
Louisiana	24.2	(±2.9%)	39.7	(± 6.2%)	28.8	(±3.1%)	40.3	(± 6.5%)
Maine	25.9	(±3.3%)	40.0	(± 8.1%)	35.8	(±3.4%)	46.9	(± 8.8%)
Maryland	21.3	(±1.5%)	38.6	(± 5.4%)	26.8	(±1.8%)	32.6	(± 5.5%)
Massachusetts	22.0	(±2.6%)	38.3	(± 8.6%)	20.9	(±2.6%)	21.1	(± 7.2%)
Michigan	26.4	(±2.2%)	49.5	(± 7.7%)	20.8	(±2.1%)	23.6	(± 6.8%)
Minnesota	21.4	(±1.6%)	35.8	(± 6.2%)	17.8	(±1.5%)	28.1	(± 5.5%)
Mississippi	22.9	(±2.9%)	42.3	(± 8.0%)	34.2	(±3.3%)	44.3	(± 8.8%)
Missouri	24.8	(±2.8%)	39.7	(± 8.1%)	28.8	(±3.2%)	31.2	(± 7.5%)
Montana	21.0	(±3.0%)	32.9	(± 7.6%)	15.3	(±2.6%)	25.7	(± 7.3%)
Nebraska	22.1	(±2.4%)	53.0	(± 9.6%)	21.0	(±2.5%)	22.5	(± 7.3%)
Nevada	25.5	(±2.8%)	39.4	(± 7.6%)	20.1	(±2.5%)	21.2	(± 5.3%)
New Hampshire	20.0	(±2.6%)	40.8	(± 8.7%)	22.2	(±2.8%)	23.1	(± 6.8%)
New Jersey	19.6	(±2.9%)	39.2	(±12.7%)	26.3	(±3.1%)	33.5	(± 8.7%)
New Mexico	20.2	(±3.4%)	32.7	(± 7.4%)	15.9	(±2.8%)	24.4	(± 6.8%)
New York	21.9	(±2.3%)	38.2	(± 7.1%)	31.2	(±2.6%)	48.8	(± 7.5%)
North Carolina	26.6	(±2.1%)	41.7	(± 5.9%)	38.0	(±2.9%)	49.2	(± 7.0%)
North Dakota	23.3	(±2.6%)	41.2	(± 8.2%)	26.9	(±2.7%)	39.2	(± 7.5%)
Ohio	27.9	(±3.5%)	43.7	(±10.2%)	37.1	(±3.6%)	34.6	(± 9.9%)
Oklahoma	22.8	(±3.0%)	34.6	(± 7.1%)	25.1	(±2.9%)	32.1	(± 6.1%)
Oregon	22.0	(±2.2%)	35.7	(± 5.8%)	18.4	(±1.8%)	24.3	(± 4.7%)
Pennsylvania	25.4	(±2.3%)	43.9	(± 6.9%)	22.8	(±1.8%)	25.9	(± 5.9%)
Rhode Island	25.5	(±2.8%)	43.4	(± 8.4%)	25.0	(±1.3%)	26.8	(± 3.6%)
South Carolina	24.2	(±2.6%)	39.6	(± 7.1%)	28.7	(±2.6%)	29.5	(± 6.2%)
South Dakota	22.9	(±2.4%)	34.8	(± 7.9%)	26.6	(±2.8%)	30.4	(± 7.9%)
Tennessee	28.3	(±2.5%)	35.9	(± 7.4%)	36.1	(±2.4%)	42.9	(± 5.9%)
Texas	22.4	(±2.8%)	35.6	(± 6.9%)	24.1	(±3.1%)	37.2	(± 6.7%)
Utah	13.0	(±1.9%)	21.9	(± 6.6%)	17.3	(±2.3%)	22.2	(± 6.4%)
Vermont	22.3	(±2.3%)	43.5	(± 6.8%)	19.8	(±2.1%)	27.9	(± 6.0%)
Virginia	22.1	(±2.6%)	37.7	(± 7.6%)	18.7	(±2.5%)	27.0	(± 7.3%)
Washington	20.5	(±1.8%)	34.5	(± 5.5%)	17.0	(±1.6%)	19.9	(± 4.3%)
West Virginia	26.3	(±2.6%)	39.6	(± 5.6%)	40.7	(±2.7%)	47.5	(± 6.0%)
Wisconsin	23.6	(±2.6%)	40.3	(±10.5%)	22.5	(±2.9%)	33.4	(±11.3%)
Wyoming	19.4	(±2.1%)	39.6	(± 5.6%)	19.2	(±2.9%)	20.8	(± 7.5%)
Range	*13.0–28.3*		21.9–53.0		*14.3–40.7*		19.9–56.0	
Median	*22.8*		*39.3*		*25.1*		*31.2*	

* Persons who reported having smoked ≥100 cigarettes during their lifetimes and who smoke now.
† During the preceding 12 months.
§ No data were available for the District of Columbia.
¶ Confidence interval.

Self-Assessed Health Status — Continued

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Editorial Note: The findings in this report indicate that, in most states, more persons who are without health-care coverage consider themselves to be in poor or fair health than those with health-care coverage. In addition, persons without health-care coverage reported higher levels of physical inactivity and current tobacco use than did persons who have health-care coverage. Higher levels of smoking and physical inactivity are both important risk factors for many chronic disease outcomes (*3*).

Although the wide variation in prevalence of self-assessed health status, smoking, and physical inactivity by state may reflect, in part, differences in sociodemographic characteristics (e.g., age, race/ethnicity, income, and educational level), previous reports indicate that this variation persisted even after estimates were standardized to adjust for these differences (*4*). Differences in self-reported health between persons with and without coverage also may reflect factors that influence the perception of ill health (e.g., subclinical illness, lack of access to providers, and the negative effects of smoking and physical inactivity).

The findings in this report are subject to at least two limitations. First, the study excluded households without telephones; previous studies indicate substantial differences in the characteristics of persons who reside in households without a telephone compared with those who reside in households with a telephone (*5*). Second, these estimates were only for adults and did not include persons aged <18 years. To adequately assess the impact of the lack of health-care coverage, information about the health status of children and young persons also should be considered (*6*).

The BRFSS enables each state to document the proportion of its population without health-care coverage and the risk factor profile of this group. This information can be used to target subgroups for specific disease-prevention or health-promotion intervention efforts as well as for policy makers seeking to evaluate health-care changes at the state level. This information also can assist local and state health officials in anticipating the need for and planning of health-care and preventive-care services. The findings of this report and the results of previous studies that indicate that the number of insured in the United States increases annually and the uninsured are less likely to receive preventive-care services (*7*) underscore the need for state and national policies that facilitate the broadening of health-care coverage.

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Self-Assessed Health Status — Continued

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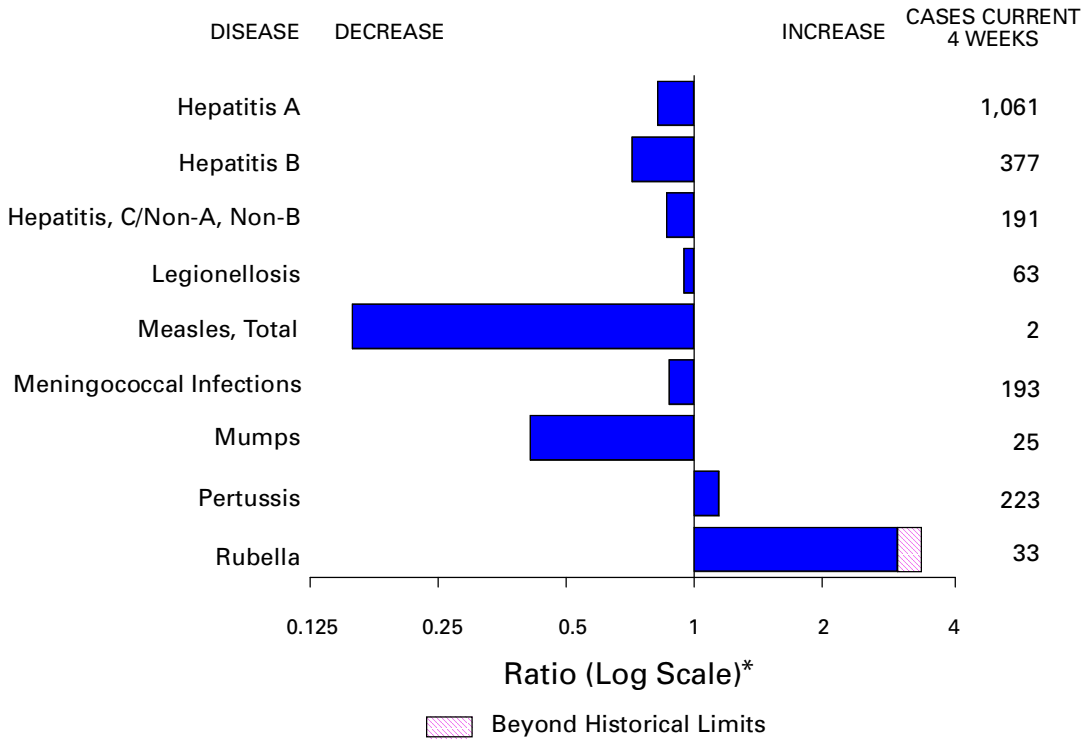
FIGURE I. Selected notifiable disease reports, comparison of provisional 4-week totals ending March 7, 1998, with historical data — United States



*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 7, 1998 (9th Week)

	Cum. 1998		Cum. 1998
Anthrax	-	Plague	-
Brucellosis	3	Poliomyelitis, paralytic[¶]	-
Cholera	-	Psittacosis	7
Congenital rubella syndrome	-	Rabies, human	-
Cryptosporidiosis*	246	Rocky Mountain spotted fever (RMSF)	10
Diphtheria	-	Streptococcal disease, invasive Group A	300
Encephalitis: California*	2	Streptococcal toxic-shock syndrome*	13
eastern equine*	-	Syphilis, congenital**	-
St. Louis*	-	Tetanus	2
western equine*	-	Toxic-shock syndrome	17
Hansen Disease	17	Trichinosis	1
Hantavirus pulmonary syndrome*[†]	-	Typhoid fever	39
Hemolytic uremic syndrome, post-diarrheal*	1	Yellow fever	-
HIV infection, pediatric*[§]	39		

-: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 February 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 7, 1998, and March 1, 1997 (9th 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	7,421	10,995	70,446	72,903	118	43	45,621	47,608	446	448
NEW ENGLAND	202	259	3,224	2,941	18	8	907	1,046	4	8
Maine	4	16	160	141	-	-	8	8	-	-
N.H.	11	2	140	145	5	2	18	40	-	-
Vt.	8	10	55	71	-	-	1	10	-	-
Mass.	73	122	1,518	1,234	9	6	385	402	4	8
R.I.	21	29	430	337	1	-	59	95	-	-
Conn.	85	80	921	1,013	3	-	436	491	-	-
MID. ATLANTIC	2,112	3,537	8,843	9,345	4	1	5,228	6,072	51	31
Upstate N.Y.	299	541	N	N	4	-	523	1,089	49	21
N.Y. City	1,160	1,785	5,342	5,092	-	1	2,496	2,426	-	-
N.J.	287	776	496	1,742	-	-	644	1,253	-	-
Pa.	366	435	3,005	2,511	N	-	1,565	1,304	2	10
E.N. CENTRAL	512	727	13,543	11,457	22	6	9,926	7,230	76	114
Ohio	93	167	4,231	3,670	8	-	2,631	2,410	4	5
Ind.	81	87	1,261	1,474	5	3	889	1,101	1	1
Ill.	249	250	3,679	1,880	8	-	3,130	935	3	18
Mich.	57	178	3,713	2,501	1	-	3,018	1,974	68	90
Wis.	32	45	659	1,932	N	3	258	810	-	-
W.N. CENTRAL	152	264	5,016	5,045	9	6	2,010	2,230	69	21
Minn.	22	38	868	1,258	3	2	315	430	-	-
Iowa	9	45	650	752	1	-	182	183	3	1
Mo.	76	140	1,624	1,692	1	3	791	1,157	66	15
N. Dak.	3	2	1	164	-	1	1	11	-	1
S. Dak.	5	2	306	174	-	-	52	24	-	-
Nebr.	15	20	523	252	2	-	190	80	-	-
Kans.	22	17	1,044	753	2	-	479	345	-	4
S. ATLANTIC	1,890	2,791	16,968	13,581	18	6	14,256	14,282	25	34
Del.	36	38	400	-	-	-	265	190	-	-
Md.	239	316	1,311	957	9	4	1,397	2,110	3	5
D.C.	192	192	N	N	-	-	596	836	-	-
Va.	114	245	2,083	1,893	N	2	1,272	1,544	1	3
W. Va.	19	17	524	600	N	-	151	187	-	1
N.C.	107	153	3,606	3,035	4	-	3,140	2,729	5	11
S.C.	129	156	2,983	2,074	1	-	2,037	2,047	-	11
Ga.	229	374	3,262	1,186	2	-	3,050	1,825	6	-
Fla.	825	1,300	2,799	3,836	2	-	2,348	2,814	10	3
E.S. CENTRAL	291	318	6,026	5,454	5	2	6,004	5,890	13	48
Ky.	39	32	1,063	1,070	1	-	673	764	-	-
Tenn.	107	135	2,332	1,937	2	2	2,046	1,722	11	20
Ala.	86	89	1,698	1,355	2	-	2,239	1,963	2	3
Miss.	59	62	933	1,092	-	-	1,046	1,441	-	25
W.S. CENTRAL	896	942	4,184	8,853	1	-	3,812	6,258	-	37
Ark.	33	41	676	453	-	-	1,167	770	-	-
La.	153	169	2,133	1,016	-	-	1,872	1,105	-	28
Okla.	52	47	1,375	937	1	-	773	760	-	-
Tex.	658	685	-	6,447	-	-	-	3,623	-	9
MOUNTAIN	205	314	3,352	3,689	10	5	1,256	1,341	117	56
Mont.	9	8	158	109	-	-	8	8	4	3
Idaho	5	4	316	249	2	-	25	19	31	12
Wyo.	-	5	143	86	-	-	9	9	52	19
Colo.	39	96	-	246	2	1	479	343	7	7
N. Mex.	38	26	735	675	2	2	140	252	9	7
Ariz.	60	71	1,645	1,623	N	2	522	546	-	5
Utah	26	23	215	225	3	-	25	28	8	1
Nev.	28	81	140	476	1	-	48	136	6	2
PACIFIC	1,161	1,843	9,290	12,538	31	9	2,222	3,259	91	99
Wash.	77	92	1,863	1,564	9	3	323	395	2	3
Oreg.	31	74	456	827	5	2	78	117	1	1
Calif.	1,038	1,651	6,388	9,685	17	3	1,709	2,581	54	59
Alaska	-	16	293	233	-	-	52	91	-	-
Hawaii	15	10	290	229	N	1	60	75	34	36
Guam	-	-	8	60	N	-	2	8	-	-
P.R.	273	264	U	U	1	U	59	103	2	10
V.I.	8	11	N	N	N	U	-	-	-	-
Amer. Samoa	-	-	-	-	N	U	-	-	-	-
C.N.M.I.	-	-	N	N	N	U	7	4	-	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 January 25, 1998.

†National Electronic Telecommunications System for Surveillance.

§Public Health Laboratory Information System.

TABLE II. (Cont'd.) Provisional cases of selected notifiable diseases, United States, weeks ending March 7, 1998, and March 1, 1997 (9th 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	147	146	425	544	138	210	1,079	1,545	770	2,101	1,004
NEW ENGLAND	6	10	55	115	5	7	12	22	31	40	184
Maine	-	-	-	-	-	-	-	-	U	5	27
N.H.	1	2	1	4	-	1	-	-	-	1	14
Vt.	-	2	-	2	-	-	-	-	-	-	3
Mass.	2	3	18	19	5	5	11	13	23	15	56
R.I.	3	-	9	11	-	1	-	-	8	4	15
Conn.	-	3	27	79	-	-	1	9	U	15	69
MID. ATLANTIC	28	26	252	353	41	47	41	67	47	304	258
Upstate N.Y.	10	5	120	28	17	5	2	12	U	30	168
N.Y. City	1	-	-	21	20	26	7	12	U	173	U
N.J.	-	5	-	87	-	14	10	31	47	64	35
Pa.	17	16	132	217	4	2	22	12	U	37	55
E.N. CENTRAL	42	59	16	3	9	19	174	132	42	285	7
Ohio	20	31	15	-	1	1	35	44	5	61	7
Ind.	4	5	1	2	1	2	38	29	U	23	-
Ill.	3	1	-	1	1	8	56	16	37	171	-
Mich.	12	19	-	-	6	7	38	14	U	18	-
Wis.	3	3	U	U	-	1	7	29	U	12	-
W.N. CENTRAL	10	10	2	1	2	3	20	33	28	57	69
Minn.	-	-	-	-	-	-	-	7	U	18	12
Iowa	-	-	2	-	1	1	-	1	U	8	21
Mo.	8	6	-	-	1	2	10	14	28	20	4
N. Dak.	-	-	-	-	-	-	-	-	U	2	17
S. Dak.	-	-	-	-	-	-	-	-	-	1	6
Nebr.	2	3	-	1	-	-	4	-	-	-	-
Kans.	-	1	-	-	-	-	6	11	U	8	9
S. ATLANTIC	33	16	77	53	43	45	458	607	167	274	399
Del.	4	1	-	9	1	2	5	3	-	7	-
Md.	6	9	69	35	17	16	99	179	39	27	95
D.C.	2	1	4	4	3	3	14	25	19	13	-
Va.	4	-	-	-	4	9	39	41	30	40	101
W. Va.	N	N	-	-	-	-	-	-	12	7	9
N.C.	3	3	-	2	4	2	128	122	67	40	103
S.C.	3	-	-	1	-	3	47	79	U	16	15
Ga.	-	-	2	1	9	8	83	113	U	50	36
Fla.	11	2	2	1	5	2	43	45	U	74	40
E.S. CENTRAL	2	7	6	14	4	5	211	342	-	156	31
Ky.	-	-	-	1	-	1	24	23	U	25	4
Tenn.	2	2	5	2	3	1	114	141	U	48	15
Ala.	-	2	1	-	1	1	49	87	U	61	12
Miss.	-	3	-	11	-	2	24	91	U	22	-
W.S. CENTRAL	-	1	-	-	2	3	100	255	5	324	28
Ark.	-	-	-	-	-	1	24	34	5	20	1
La.	-	-	-	-	2	2	66	95	-	13	-
Okla.	-	1	-	-	-	-	10	24	U	26	27
Tex.	-	-	-	-	-	-	-	102	U	265	-
MOUNTAIN	11	10	1	-	10	11	40	32	37	51	13
Mont.	1	-	-	-	-	1	-	-	2	-	4
Idaho	-	-	-	-	1	-	-	-	-	-	-
Wyo.	-	-	-	-	-	1	-	-	1	1	9
Colo.	4	3	-	-	3	6	3	-	U	10	-
N. Mex.	1	-	-	-	3	-	-	-	7	-	-
Ariz.	-	3	-	-	2	-	34	27	21	23	-
Utah	4	3	-	-	1	-	2	1	6	1	-
Nev.	1	1	1	-	-	3	1	4	U	16	-
PACIFIC	15	7	16	5	22	70	23	55	413	610	15
Wash.	-	1	-	-	-	-	4	3	U	42	-
Oreg.	-	-	-	2	5	3	1	1	U	20	-
Calif.	15	5	16	3	17	67	18	51	391	499	11
Alaska	-	-	-	-	-	-	-	-	5	17	4
Hawaii	-	1	-	-	-	-	-	-	17	32	-
Guam	-	-	-	-	-	-	-	2	-	11	-
P.R.	-	-	-	-	-	2	50	42	-	-	12
V.I.	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	-	1	-	8	-	-

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

*Additional information about areas displaying "U" (e.g., Tuberculosis) can be found in Notices 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 7, 1998, and March 1, 1997 (9th 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	158	192	2,580	4,247	985	1,272	-	1	1	4	5	13
NEW ENGLAND	9	13	58	94	6	33	-	-	-	1	1	-
Maine	-	2	8	3	-	1	-	-	-	-	-	-
N.H.	1	2	2	5	2	2	-	-	-	-	-	-
Vt.	-	-	3	4	-	1	-	-	-	-	-	-
Mass.	8	8	8	47	2	21	-	-	-	1	1	-
R.I.	-	1	5	3	2	2	-	-	-	-	-	-
Conn.	-	-	32	32	-	6	-	-	-	-	-	-
MID. ATLANTIC	21	28	119	369	133	227	-	-	-	1	1	5
Upstate N.Y.	11	1	59	15	51	29	-	-	-	1	1	3
N.Y. City	3	13	29	202	34	95	-	-	-	-	-	1
N.J.	7	10	2	61	-	48	-	-	-	-	-	1
Pa.	-	4	29	91	48	55	-	-	-	-	-	-
E.N. CENTRAL	18	33	393	470	122	218	-	-	-	1	1	2
Ohio	15	18	71	90	13	16	-	-	-	-	-	-
Ind.	2	3	48	40	10	24	-	-	-	-	-	-
Ill.	-	8	34	162	8	63	-	-	-	-	-	1
Mich.	-	3	226	140	87	102	-	-	-	1	1	1
Wis.	1	1	14	38	4	13	-	-	-	-	-	-
W.N. CENTRAL	-	5	280	291	66	97	-	-	-	-	-	-
Minn.	-	2	5	1	2	-	-	-	-	-	-	-
Iowa	-	1	114	38	10	6	-	-	-	-	-	-
Mo.	-	2	145	185	49	80	-	-	-	-	-	-
N. Dak.	-	-	1	2	-	-	-	-	-	-	-	-
S. Dak.	-	-	1	5	1	-	-	-	-	-	-	-
Nebr.	-	-	3	12	2	4	-	-	-	-	-	-
Kans.	-	-	11	48	2	7	-	-	-	-	-	-
S. ATLANTIC	49	31	298	268	175	121	-	1	1	1	2	-
Del.	-	-	-	7	-	1	-	-	-	-	-	-
Md.	13	11	61	80	25	31	-	-	1	1	1	-
D.C.	-	-	10	7	2	7	-	-	-	-	-	-
Va.	4	2	32	30	13	15	-	-	-	-	-	-
W. Va.	1	2	-	3	-	3	-	-	-	-	-	-
N.C.	3	7	14	45	49	26	-	-	-	-	-	-
S.C.	-	3	7	16	-	8	-	-	-	-	-	-
Ga.	13	3	81	28	41	6	-	-	-	-	-	-
Fla.	15	3	93	52	45	24	-	1	-	-	1	-
E.S. CENTRAL	7	14	79	110	72	99	-	-	-	-	-	1
Ky.	-	1	-	18	-	5	-	-	-	-	-	-
Tenn.	7	8	55	47	59	63	-	-	-	-	-	-
Ala.	-	5	24	26	13	14	-	-	-	-	-	1
Miss.	-	-	-	19	-	17	-	-	-	-	-	-
W.S. CENTRAL	9	7	104	513	24	53	-	-	-	-	-	-
Ark.	-	-	8	38	14	9	-	-	-	-	-	-
La.	4	1	4	21	3	6	-	-	-	-	-	-
Okla.	4	5	85	265	7	2	-	-	-	-	-	-
Tex.	1	1	7	189	-	36	-	-	-	-	-	-
MOUNTAIN	31	15	558	733	138	143	-	-	-	-	-	-
Mont.	-	-	6	23	1	1	-	-	-	-	-	-
Idaho	-	-	40	35	4	3	-	-	-	-	-	-
Wyo.	-	-	12	4	2	4	-	-	-	-	-	-
Colo.	5	1	50	92	13	35	-	-	-	-	-	-
N. Mex.	-	1	37	55	50	47	-	-	-	-	-	-
Ariz.	19	4	347	299	37	29	-	-	-	-	-	-
Utah	2	2	37	167	16	14	-	-	-	-	-	-
Nev.	5	7	29	58	15	10	-	-	-	-	-	-
PACIFIC	14	46	691	1,399	249	281	-	-	-	-	-	5
Wash.	1	-	80	80	16	8	-	-	-	-	-	-
Oreg.	11	7	55	83	18	22	-	-	-	-	-	-
Calif.	-	37	549	1,195	210	243	-	-	-	-	-	2
Alaska	1	-	1	8	2	4	-	-	-	-	-	-
Hawaii	1	2	6	33	3	4	-	-	-	-	-	3
Guam	-	-	-	-	-	1	U	-	U	-	-	-
P.R.	-	-	-	39	39	142	-	-	-	-	-	-
V.I.	-	-	-	-	-	-	U	-	U	-	-	-
Amer. Samoa	-	-	-	-	-	-	U	-	U	-	-	-
C.N.M.I.	-	2	-	1	7	7	U	-	U	-	-	-

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

*Of 33 cases among children aged <5 years, serotype was reported for 12 and of those, 6 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 7, 1998, and March 1, 1997 (9th 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	521	749	6	61	79	64	566	793	27	55	6
NEW ENGLAND	35	46	-	-	3	7	119	255	-	9	-
Maine	3	4	-	-	-	-	4	4	-	-	-
N.H.	1	4	-	-	-	-	11	31	-	-	-
Vt.	1	2	-	-	-	1	16	85	-	-	-
Mass.	14	29	-	-	1	6	85	127	-	-	-
R.I.	3	1	-	-	1	-	-	7	-	-	-
Conn.	13	6	-	-	1	-	3	1	-	9	-
MID. ATLANTIC	38	63	1	2	9	9	47	54	25	37	2
Upstate N.Y.	16	12	1	2	1	9	47	22	25	37	-
N.Y. City	7	15	-	-	1	-	-	15	-	-	2
N.J.	15	10	-	-	2	-	-	5	-	-	-
Pa.	-	26	-	-	5	-	-	12	-	-	-
E.N. CENTRAL	67	100	-	9	10	4	58	89	-	-	3
Ohio	40	39	-	6	3	2	31	40	-	-	-
Ind.	8	10	-	-	2	-	4	2	-	-	-
Ill.	-	32	-	-	2	1	1	12	-	-	-
Mich.	10	7	-	3	2	1	14	18	-	-	-
Wis.	9	12	-	-	1	-	8	17	-	-	3
W.N. CENTRAL	41	62	4	5	3	6	43	31	-	-	-
Minn.	-	2	3	4	1	4	27	18	-	-	-
Iowa	8	11	1	1	2	1	9	6	-	-	-
Mo.	21	34	-	-	-	1	5	-	-	-	-
N. Dak.	-	-	-	-	-	-	-	1	-	-	-
S. Dak.	4	3	-	-	-	-	-	1	-	-	-
Nebr.	1	3	-	-	-	-	2	2	-	-	-
Kans.	7	9	-	-	-	-	-	3	-	-	-
S. ATLANTIC	118	135	-	15	11	7	54	70	-	2	-
Del.	1	3	-	-	-	-	-	-	-	-	-
Md.	14	12	-	2	-	1	8	42	-	-	-
D.C.	-	3	-	-	-	-	-	2	-	-	-
Va.	11	8	-	2	1	-	-	7	-	-	-
W. Va.	3	5	-	-	-	-	-	3	-	-	-
N.C.	18	28	-	5	4	5	30	10	-	1	-
S.C.	10	28	-	3	1	-	5	3	-	1	-
Ga.	31	19	-	-	2	-	-	2	-	-	-
Fla.	30	29	-	3	3	1	11	1	-	-	-
E.S. CENTRAL	19	63	-	-	7	1	13	21	-	-	-
Ky.	-	14	-	-	-	-	-	6	-	-	-
Tenn.	19	22	-	-	2	1	4	4	-	-	-
Ala.	-	20	-	-	2	-	9	6	-	-	-
Miss.	-	7	-	-	3	-	-	5	-	-	-
W.S. CENTRAL	30	50	-	11	7	2	17	11	1	2	-
Ark.	5	11	-	-	-	-	8	2	-	-	-
La.	10	13	-	-	-	-	-	1	-	-	-
Okla.	15	7	-	-	-	-	-	-	-	-	-
Tex.	-	19	-	11	7	2	9	8	1	2	-
MOUNTAIN	43	44	-	4	4	10	160	149	1	5	-
Mont.	2	3	-	-	-	-	1	-	-	-	-
Idaho	1	3	-	-	-	3	93	88	-	-	-
Wyo.	3	-	-	1	-	-	-	3	-	-	-
Colo.	11	4	-	-	1	2	14	44	-	-	-
N. Mex.	7	10	N	N	N	1	39	8	-	1	-
Ariz.	16	12	-	1	-	3	6	5	1	1	-
Utah	2	6	-	-	1	1	5	-	-	2	-
Nev.	1	6	-	2	2	-	2	1	-	1	-
PACIFIC	130	186	1	15	25	18	55	113	-	-	1
Wash.	20	17	1	1	3	18	47	35	-	-	-
Oreg.	30	47	N	N	N	-	8	4	-	-	-
Calif.	77	121	-	8	18	-	-	69	-	-	1
Alaska	1	-	-	2	-	-	-	1	-	-	-
Hawaii	2	1	-	4	4	-	-	4	-	-	-
Guam	-	1	U	-	1	U	-	-	U	-	-
P.R.	-	3	-	-	3	-	-	-	-	-	-
V.I.	-	-	U	-	-	U	-	-	U	-	-
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 7, 1998 (9th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	659	488	107	45	7	12	60
Boston, Mass.	170	117	30	17	3	3	23
Bridgeport, Conn.	50	34	10	4	-	2	-
Cambridge, Mass.	17	14	3	-	-	-	1
Fall River, Mass.	37	31	4	2	-	-	1
Hartford, Conn.	59	42	12	4	-	1	-
Lowell, Mass.	35	25	6	3	-	1	3
Lynn, Mass.	13	10	2	1	-	-	-
New Bedford, Mass.	35	32	1	2	-	-	8
New Haven, Conn.	25	16	3	4	1	1	1
Providence, R.I.	70	59	5	3	1	2	4
Somerville, Mass.	2	2	-	-	-	-	-
Springfield, Mass.	37	26	9	1	1	-	4
Waterbury, Conn.	37	29	7	1	-	-	4
Worcester, Mass.	72	51	15	3	1	2	11
MID. ATLANTIC	2,439	1,756	432	176	38	37	188
Albany, N.Y.	51	40	11	-	-	-	4
Allentown, Pa.	26	18	5	3	-	-	-
Buffalo, N.Y.	U	U	U	U	U	U	U
Camden, N.J.	47	26	11	4	3	3	4
Elizabeth, N.J.	U	U	U	U	U	U	U
Erie, Pa.	44	38	6	-	-	-	3
Jersey City, N.J.	38	29	6	1	-	2	2
New York City, N.Y.	1,322	907	261	118	20	16	73
Newark, N.J.	47	28	8	9	1	1	4
Paterson, N.J.	18	14	1	3	-	-	-
Philadelphia, Pa.	300	220	48	17	6	9	25
Pittsburgh, Pa.§	87	66	17	2	-	2	11
Reading, Pa.	28	21	4	3	-	-	5
Rochester, N.Y.	168	130	21	8	6	3	24
Schenectady, N.Y.	24	18	5	1	-	-	2
Scranton, Pa.	29	26	3	-	-	-	2
Syracuse, N.Y.	166	136	21	6	2	1	25
Trenton, N.J.	21	17	3	1	-	-	3
Utica, N.Y.	23	22	1	-	-	-	1
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,280	1,576	451	137	55	60	180
Akron, Ohio	64	48	11	2	1	2	-
Canton, Ohio	33	26	4	1	1	1	5
Chicago, Ill.	442	279	97	32	17	16	43
Cincinnati, Ohio	158	102	38	8	3	7	19
Cleveland, Ohio	137	94	28	8	3	4	2
Columbus, Ohio	185	122	42	10	3	8	18
Dayton, Ohio	145	111	23	7	1	3	13
Detroit, Mich.	252	153	69	21	3	6	10
Evansville, Ind.	43	31	5	4	3	-	2
Fort Wayne, Ind.	55	43	11	1	-	-	7
Gary, Ind.	U	U	U	U	U	U	U
Grand Rapids, Mich.	69	51	13	2	1	2	8
Indianapolis, Ind.	243	179	36	18	5	5	-
Lansing, Mich.	31	24	5	2	-	-	4
Milwaukee, Wis.	166	120	30	9	4	3	21
Peoria, Ill.	37	29	4	1	3	-	8
Rockford, Ill.	58	42	13	3	-	-	5
South Bend, Ind.	42	32	4	2	3	1	-
Toledo, Ohio	120	90	18	6	4	2	15
Youngstown, Ohio	U	U	U	U	U	U	U
W.N. CENTRAL	786	566	131	38	25	12	77
Des Moines, Iowa	U	U	U	U	U	U	U
Duluth, Minn.	24	19	3	2	-	-	1
Kansas City, Kans.	43	23	14	4	1	1	1
Kansas City, Mo.	133	86	17	6	7	3	7
Lincoln, Nebr.	33	27	4	-	2	-	3
Minneapolis, Minn.	179	134	28	10	4	3	25
Omaha, Nebr.	102	74	16	4	5	3	7
St. Louis, Mo.	59	45	7	2	3	2	8
St. Paul, Minn.	108	81	19	6	2	-	19
Wichita, Kans.	105	77	23	4	1	-	6
S. ATLANTIC	1,265	829	257	118	37	22	91
Atlanta, Ga.	U	U	U	U	U	U	U
Baltimore, Md.	213	128	48	28	4	4	25
Charlotte, N.C.	123	88	19	10	4	2	15
Jacksonville, Fla.	149	92	34	11	5	6	4
Miami, Fla.	102	64	24	9	5	-	1
Norfolk, Va.	67	39	16	3	3	6	6
Richmond, Va.	90	59	18	11	2	-	4
Savannah, Ga.	47	32	9	5	1	-	6
St. Petersburg, Fla.	68	52	6	7	3	-	3
Tampa, Fla.	217	158	44	10	3	2	19
Washington, D.C.	189	117	39	24	7	2	8
Wilmington, Del.	U	U	U	U	U	U	U
E.S. CENTRAL	946	642	188	63	31	15	85
Birmingham, Ala.	227	158	41	14	6	1	25
Chattanooga, Tenn.	68	50	10	6	2	-	3
Knoxville, Tenn.	115	74	29	8	3	1	12
Lexington, Ky.	88	63	20	2	-	3	9
Memphis, Tenn.	169	115	34	10	8	2	17
Mobile, Ala.	49	36	8	4	1	-	1
Montgomery, Ala.	49	31	10	4	1	3	14
Nashville, Tenn.	181	115	36	15	10	5	4
W.S. CENTRAL	1,675	1,109	348	136	45	37	125
Austin, Tex.	61	38	11	8	3	1	8
Baton Rouge, La.	62	36	14	5	5	2	4
Corpus Christi, Tex.	79	59	12	4	1	3	5
Dallas, Tex.	190	125	39	19	5	2	7
El Paso, Tex.	100	67	22	4	2	5	8
Ft. Worth, Tex.	127	80	29	10	3	5	6
Houston, Tex.	422	254	113	36	13	6	29
Little Rock, Ark.	74	53	9	4	1	7	5
New Orleans, La.	103	61	24	15	2	1	-
San Antonio, Tex.	230	167	39	15	6	3	20
Shreveport, La.	83	64	11	6	2	-	14
Tulsa, Okla.	144	105	25	10	2	2	19
MOUNTAIN	982	695	169	70	28	19	88
Albuquerque, N.M.	98	75	13	6	2	2	7
Boise, Idaho	35	23	5	1	4	2	-
Colo. Springs, Colo.	54	44	5	5	-	-	4
Denver, Colo.	128	79	27	11	6	5	17
Las Vegas, Nev.	234	157	46	22	5	4	11
Ogden, Utah	28	20	6	1	-	1	1
Phoenix, Ariz.	61	44	7	6	2	1	4
Pueblo, Colo.	34	30	1	3	-	-	4
Salt Lake City, Utah	131	89	29	5	6	2	16
Tucson, Ariz.	179	134	30	10	3	2	24
PACIFIC	2,171	1,619	348	137	31	35	217
Berkeley, Calif.	12	11	1	-	-	-	-
Fresno, Calif.	104	81	16	3	1	3	6
Glendale, Calif.	39	36	1	2	-	-	2
Honolulu, Hawaii	90	66	15	6	-	3	9
Long Beach, Calif.	101	71	17	7	2	4	11
Los Angeles, Calif.	603	452	97	36	10	8	70
Pasadena, Calif.	26	18	5	3	-	-	4
Portland, Oreg.	156	116	24	14	1	1	7
Sacramento, Calif.	188	130	37	15	3	3	31
San Diego, Calif.	180	130	30	15	1	3	12
San Francisco, Calif.	138	103	21	9	2	3	17
San Jose, Calif.	211	145	46	11	6	3	22
Santa Cruz, Calif.	32	29	1	2	-	-	6
Seattle, Wash.	130	100	17	9	2	2	5
Spokane, Wash.	57	46	9	-	2	-	5
Tacoma, Wash.	104	85	11	5	1	2	10
TOTAL	13,203¶	9,280	2,431	920	297	249	1,111

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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