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Outbreak of Acute Gastroenteritis Attributable to *Escherichia coli* Serotype O104:H21 — Helena, Montana, 1994

During February–March, 1994, four persons in Helena, Montana (1995 population: 24,569), developed bloody diarrhea and severe abdominal cramps. Stool cultures for *Salmonella*, *Shigella*, *Campylobacter,* and *Escherichia coli* O157:H7 were negative; however, sorbitol-negative *E. coli* colonies were identified in stools from all four patients. Isolates from three patients were identified at CDC as a rare serotype—*E. coli* O104:H21 that produced Shiga-like toxin II. This report summarizes the epidemiologic and laboratory investigations of this outbreak by the Lewis and Clark County Department of Health and Environmental Sciences, the Montana Department of Health and Environmental Sciences (MDHES), and CDC.

A confirmed case was defined as acute infection with *E. coli* O104:H21 during February 20–May 25, 1994—based on stool culture or serologic evidence—in a resident of or a visitor to the Helena area. A suspected case was defined onset of bloody diarrhea or abdominal cramps during the same period in a resident of or visitor to the Helena area. MDHES and county health departments contacted clinicians, laboratories, and the public through news media reports and requested that suspected cases be reported.

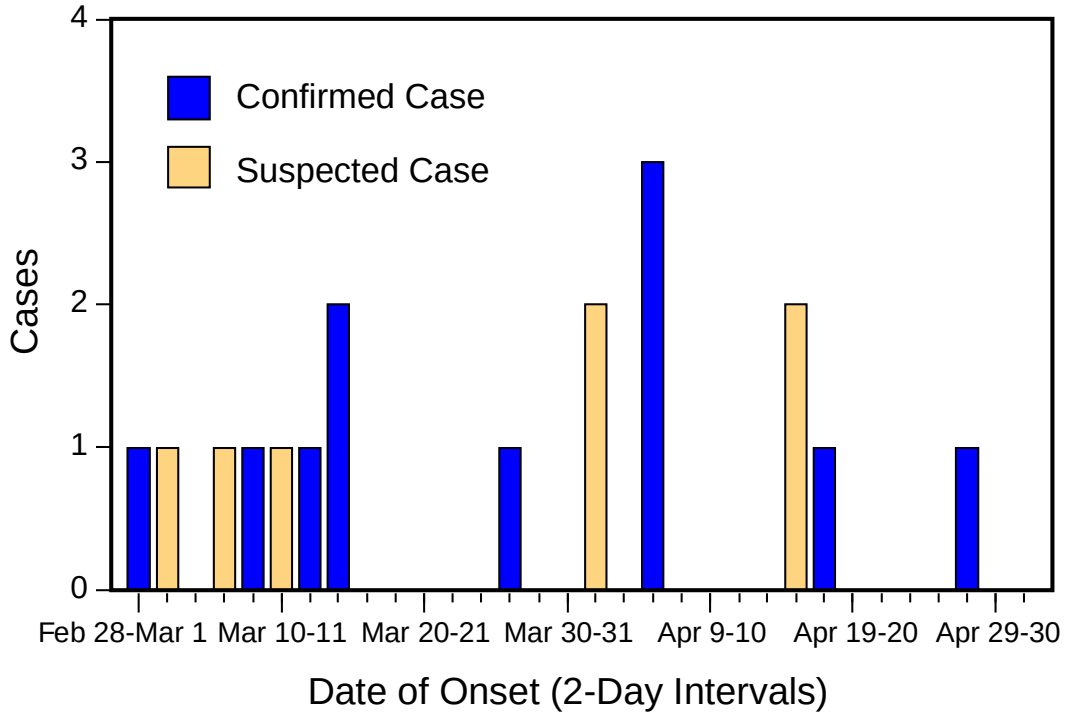
Eleven confirmed and seven suspected case-patients were identified (Figure 1). Manifestations included abdominal cramps (18 [100%]), diarrhea (17 [94%]), bloody stools (16 [89%]), vomiting (10 [56%]), and fever (six of 15 [40%] for whom information was available). The median age was 36 years (range: 8–63 years), and 12 (67%) were female. Four (22%) persons were hospitalized.

Potential sources and risk factors for illness were assessed by a case-control study that included 17 case-patients and three age-, sex-, and neighborhood-matched controls for each case-patient. A history of milk consumption during the 7 days before illness was reported by all 17 case-patients compared with 40 (83%) of 48* controls (matched odds ratio [OR]=undefined). One brand of milk (Brand A) was significantly associated with illness: of those persons who drank milk at home, 11 (92%) of 12 case-patients compared with 17 (47%) of 36 controls reported drinking Brand A (matched OR=16.0; 95% CI=1.3–492.7). Within this brand, no specific type of milk product was

*Persons who responded "Don't know" to any question were excluded from the analysis.

Gastroenteritis — Continued

FIGURE 1. Onset of illness in persons with confirmed and suspected cases of *Escherichia coli* O104:H21 infection, by 2-day intervals — Helena, Montana, February 28–May 2, 1994



associated with illness. Factors not associated with illness included consumption of other brands of milk, other foods or drinks, and dining in specific restaurants.

On May 16, the local and state health departments, the Food and Drug Administration, and CDC inspected the dairy plant where Brand A milk was produced. Based on review of the plant's records for internal microbiologic quality-control testing, on 12 days during February 1–May 13, 1994, the coliform count exceeded the state regulation limiting maximum coliform levels in milk products to ≤10 coliforms per 100 mL on at least one ready-for-sale milk product. Cultures from selected post-pasteurization piping and equipment surfaces in contact with finished milk products yielded fecal coliforms; however, *E. coli* O104:H21 was not isolated from any culture samples obtained at the dairy. Two farms provided raw milk for this dairy; rectal swabs obtained from a sample of cattle from these farms did not yield *E. coli* O104:H21.

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Editorial Note: Shiga-like toxin- producing *E. coli* (SLTEC) are well-recognized causes of gastrointestinal illness, including both bloody and nonbloody diarrhea. *E. coli* O157:H7, the most common SLTEC, was recognized as a human pathogen in 1982 during the investigation of two outbreaks of bloody diarrhea associated with consumption of commercially sold hamburgers (*1*). In addition to causing bloody diarrhea, *E. coli* O157:H7 is the most common cause of hemolytic uremic syndrome

Gastroenteritis — Continued

(HUS) in children. Although other SLTECs also have been identified in sporadic cases of diarrhea and HUS, the findings in this report document the first reported outbreak of a non-O157 SLTEC in the United States, and the first documentation of illness attributable to Shiga-like toxin-producing *E. coli* O104:H21.

The clinical manifestations of infection in this outbreak were similar to those reported for patients infected with *E. coli* O157:H7 (*2*). Although HUS is a well-recognized complication of *E. coli* O157:H7 infection, no patients developed HUS in this outbreak, possibly reflecting the limited size of the outbreak and the age distribution of patients.

Although most outbreaks of *E. coli* O157:H7 infection have been associated with consumption of ground beef, raw milk also transmits this pathogen (*3*). Healthy cattle may serve as a reservoir for *E. coli* O157:H7 and other serotypes of SLTEC (*4*). The implication of milk in the outbreak in Montana suggests that cows were the original source of this specific strain of *E. coli* O104:H21. Although the investigation documented post-pasteurization contamination of milk products with fecal coliforms, *E. coli* O104:H21 was not isolated from cultures obtained at the dairy, possibly because not all post-pasteurization equipment surfaces were sampled or because of the absence of the pathogen within the dairy at the time of the inspection.

Because the techniques used to identify non-O157 SLTEC are not available in most laboratories (*3*), infections caused by this pathogen are most likely to be unrecognized. Most clinical laboratories that test for *E. coli* O157:H7 screen stools on a special medium (sorbitol-MacConkey agar [SMAC]) because *E. coli* O157:H7 isolates do not ferment sorbitol after overnight incubation (*5*), and most laboratories routinely discard sorbitol-positive colonies and sorbitol-negative colonies that do not agglutinate in O157 antiserum. Therefore, isolates of *E. coli* O104:H21 and other non-O157 SLTEC are not recognized. The increased availability in clinical laboratories of techniques such as testing for Shiga-like toxin or the genes encoding this protein may enhance the detection of disease attributable to non-O157 SLTEC.

When evaluating clusters of patients with bloody diarrhea and other severe diarrheal illness, health-care providers also should consider the potential roles of *E. coli* O104:H21 or another non-O157 SLTEC. When cultures of stool are negative for specific pathogens, the state health department can be contacted to determine whether specimens should be examined further for SLTEC. When advised, health-care providers should freeze fecal specimens and store isolates from patients with bloody diarrhea; such specimens may assist in a subsequent investigation.

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Statewide Surveillance for Antibiotic-Resistant Bacteria — New Jersey, 1992–1994

The increasing occurrence of infection with antibiotic-resistant microorganisms and other emerging infectious diseases has required the development of flexible and timely surveillance systems for monitoring these problems (*1,2*). To determine the extent of antibiotic resistance in New Jersey, in 1991 the New Jersey State Department of Health (NJSDOH) initiated a hospital laboratory isolate-based surveillance system for antimicrobial-resistant bacteria. This report describes the surveillance system and summarizes findings during 1992–1994 for vancomycin-resistant enterococci (VRE)—the most rapidly increasing antibiotic-resistant bacteria reported by New Jersey hospitals.

The surveillance system includes the 95 acute-care hospitals licensed by the state of New Jersey. Organisms targeted for surveillance include gram-positive cocci resistant to vancomycin, including VRE; methicillin-resistant *Staphylococcus aureus* (MRSA); gram-negative rod-shaped bacteria (GNRs) resistant to imipenem; GNRs resistant to amikacin; and pneumococcal and other streptococcal isolates resistant to penicillin. Hospitals submit to NJSDOH monthly a surveillance report form, which includes the number of in-patient bloodstream isolates of these organisms and MRSA isolates from any body site. The New Jersey Administrative Code, which addresses communicable diseases, and state hospital licensure standards were modified in 1990 to require hospitals to submit these data to NJSDOH. Hospitals are contacted by the surveillance system coordinator to ensure monthly reporting; since the surveillance system was initiated, all hospitals have submitted monthly reports (*3*).

During 1992–1994, a total of 5916 (81%) bloodstream isolates reported to this system were MRSA. Of the 1398 non-MRSA bloodstream isolates, 663 (47%) were VRE. During this period, both the number of hospitals reporting VRE blood isolates and the number of VRE isolates increased steadily: in 1992, 33 hospitals reported 99 isolates, while in 1994, 54 hospitals reported 278 isolates (Figure 1). Most of the monthly reports (73%) represent only one reported isolate per hospital. In 1992, hospitals in 13 of the 21 counties reported VRE isolates, compared with 20 of 21 counties in 1994.

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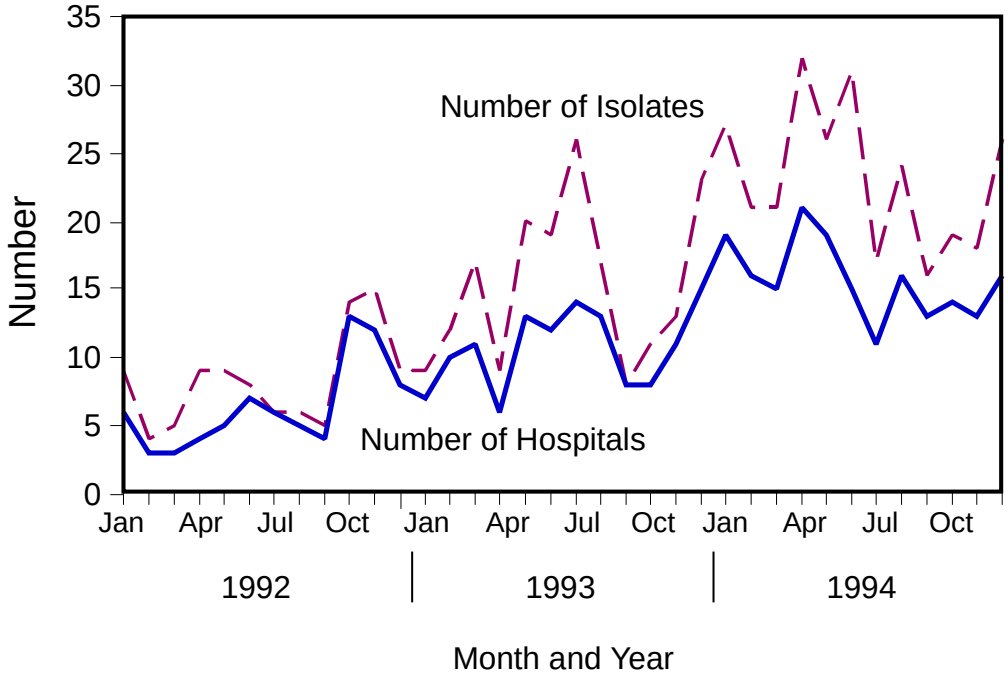
Editorial Note: The recent national emphasis on emerging infectious diseases has underscored the problem of antibiotic resistance involving a variety of nosocomial and community-acquired infections and has focused attention on the importance of microbiology laboratories as sources of surveillance information for antibiotic resistance (*1,2*). For example, in New Jersey, the increase in both the number of VRE blood isolates and the number of hospitals reporting VRE blood isolates from 1992 through 1994 suggests the emergence of the problem of VRE in that state. Careful monitoring of such trends in antibiotic resistance in enterococci and other organisms assists clinicians in selecting antibiotics for their patients and public health agencies in the development and implementation of prevention efforts.

In New Jersey, laboratory-based surveillance for VRE and other antibiotic-resistant isolates has been developed through collaboration between the NJSDOH, hospitals, and infectious disease professionals in the state and because of modification of reporting regulations. The New Jersey system uses data that are routinely collected and

Antibiotic-Resistant Bacteria — Continued

FIGURE 1. Number of vancomycin-resistant enterococci (VRE) isolates reported from hospitals and number of hospitals reporting VRE blood isolates — New Jersey, 1992–1994



collated by hospital laboratories and requires few additional resources. Because this surveillance system is isolate-based, it does not directly measure changes in the rate of infection in persons, and NJSDOH has used this system primarily for sentinel purposes to guide further investigation. For example, early detection and geographic tracking of VRE in New Jersey through this system have facilitated collaborative efforts involving public and private sector and academic organizations to evaluate risk factors for VRE, treatment options, VRE in vitro susceptibility to antimicrobial agents before clinical trials, and the effectiveness of infection-control practices (*4–7*). These efforts have, in turn, enabled the NJSDOH to collaborate with professional organizations (the Infectious Diseases Society of New Jersey and the New Jersey chapters of the Association for Professionals in Infection Control and Epidemiology) to develop recommendations to prevent VRE transmission and have provided a source of bacterial isolates to assist in research efforts to develop effective antimicrobial agents against VRE.

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Influenza and Pneumococcal Vaccination Coverage Levels Among Persons Aged ≥65 Years — United States, 1973–1993

Recommendations to provide annual influenza vaccination and one dose of pneumococcal vaccine to all persons aged ≥65 years (*1,2*) are intended to reduce the high morbidity and mortality associated with influenza and pneumococcal disease. One of the national health objectives for the year 2000 is to increase influenza and pneumococcal vaccination levels to ≥60% for persons at high risk for influenza and pneumococcal disease, including those aged ≥65 years (objective 20.11) (*3*). This report summarizes 1) estimates of influenza vaccination coverage levels among persons aged ≥65 years during 1973–1985 and pneumococcal vaccination coverage levels for 1984–1985 based on data from the United States Immunization Survey (USIS) and 2) influenza and pneumococcal vaccination coverage levels among persons aged ≥65 years and for selected population subgroups during 1989–1993 based on data from the National Health Interview Survey (NHIS).

The USIS was initiated in 1959 and conducted through 1985 (*4*) using a weighted random sample of the U.S. civilian households that was representative of the civilian noninstitutionalized population based on the preceding decennial census. During 1973–1985, approximately 37,500–57,000 households were surveyed; participants were asked whether they had been vaccinated against influenza during the previous year. During 1984–1985, participants were asked whether they had ever received pneumococcal vaccine. Persons aged ≥15 years who were most knowledgeable about the health status of household members were interviewed regarding the vaccination histories of all members. The NHIS, conducted annually since 1957, is a multistage cluster survey of U.S. civilian households that obtains a representative sample of the civilian noninstitutionalized population (*5*). Interviews are conducted with all available family members aged ≥18 years. Respondents are asked whether they were vaccinated against influenza during the previous year and whether they ever received pneumococcal vaccine. Each year, approximately 8000 respondents aged ≥65 years participated in the survey. Responses were analyzed using SUDAAN and weighted to

P&I Vaccination Coverage — Continued

reflect the age, sex, and race/ethnicity of the U.S. noninstitutionalized population. To assist in targeting ongoing vaccination efforts, NHIS data sets also were analyzed by age, sex, race/ethnicity, income, and reported number of physician visits during the previous year. Data are presented for white, black, and Hispanic populations; data for other groups were too small for meaningful analysis.

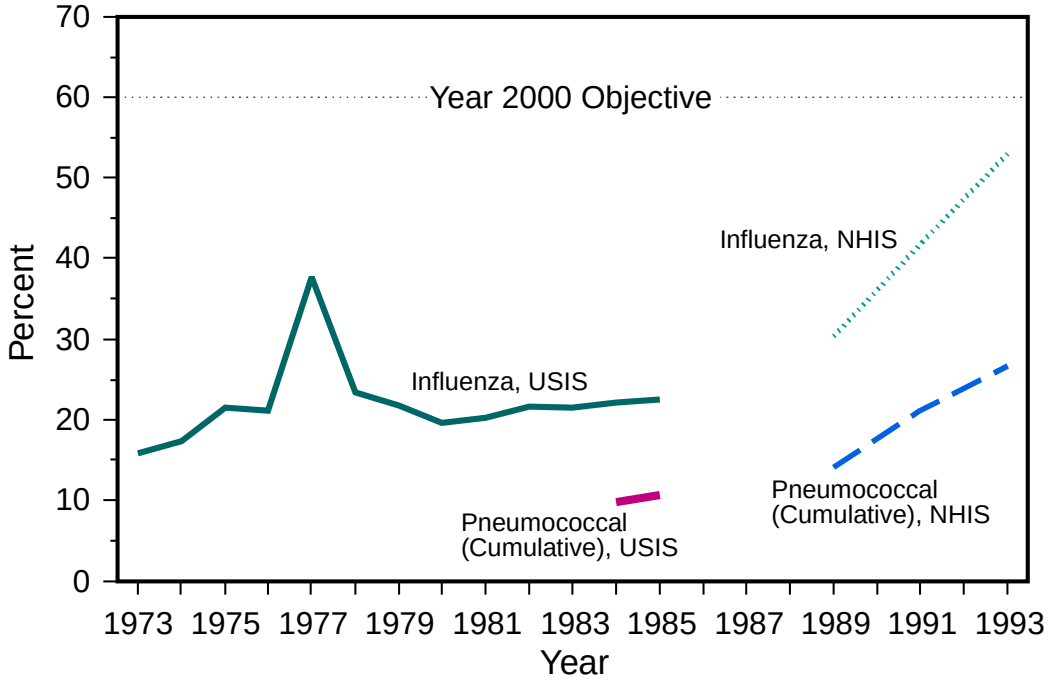
Based on USIS data, during 1973–1985, influenza vaccination levels among persons aged ≥65 years ranged from 22% to 30%, except for an increase (to 38%) during the 1976–1977 "swine flu" National Influenza Immunization Program (Figure 1). Pneumococcal vaccination levels were 9.8% and 10.7% in 1984 and 1985, respectively. Based on NHIS data, from 1989 through 1993, influenza vaccination coverage levels increased by 19.1%, from 32.9% to 52.0%, and the cumulative pneumococcal vaccination coverage level increased by 13.5% from 14.7% to 28.2%.

There was no statistical difference in coverage rates by sex for either vaccine during any year (Table 1, page 513). However, vaccination levels for both vaccines were lower among blacks and Hispanics when compared with whites. In addition, coverage levels were higher among persons at or above the poverty level* and those who had visited a physician during the previous year.

(Continued on page 513)

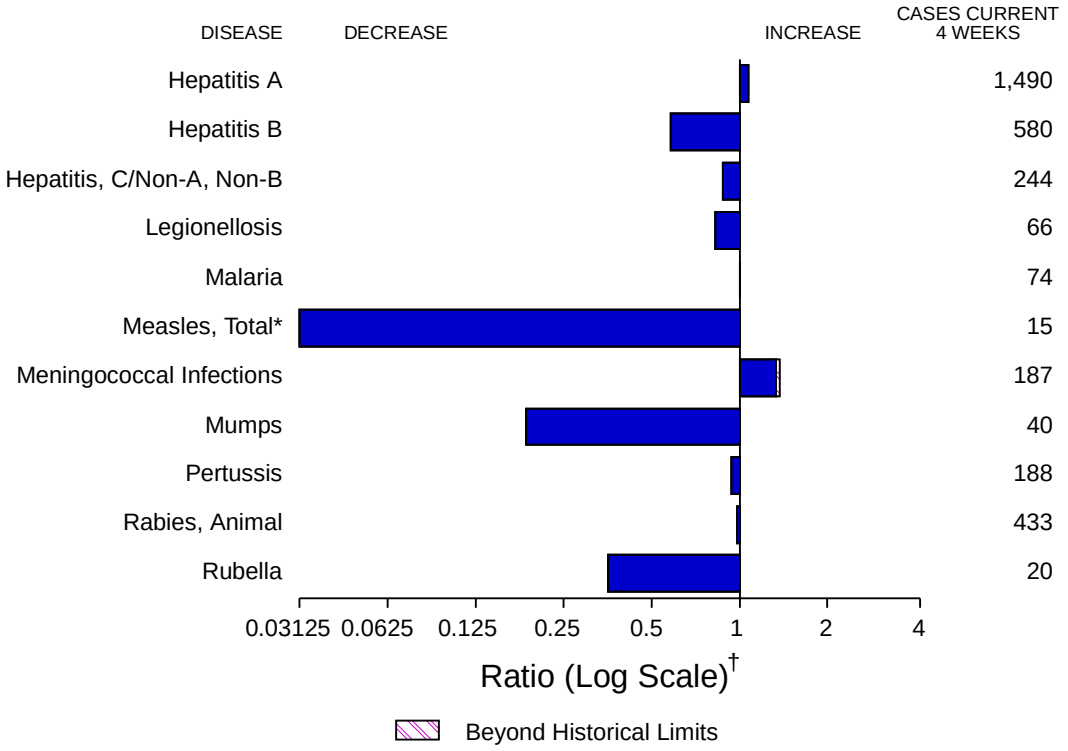
*Poverty statistics are based on a definition originated by the Social Security Administration in 1964, subsequently modified by federal interagency committees in 1969 and 1980, and prescribed by the Office of Management and Budget as the standard to be used by federal agencies for statistical purposes.

FIGURE 1. Percentage of influenza and pneumococcal vaccine coverage among persons aged ≥65 years, by year, and national health objective for the year 2000 for vaccine coverage — United States, 1973–1993*



*Source: United States Immunization Survey (USIS) for influenza vaccine for 1973–1985 and for pneumococcal vaccine for 1984–1985; National Health Interview Survey (NHIS) for influenza and pneumococcal vaccine for 1989–1993.

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending July 8, 1995, with historical data — United States



*The large apparent decrease in the number of reported cases of measles (total) reflects dramatic fluctuations in the historical baseline.
†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 — cases of specified notifiable diseases, United States, cumulative, week ending July 8, 1995 (27th Week)

	Cum. 1995		Cum. 1995
Anthrax	-	Psittacosis	34
Brucellosis	46	Rabies, human	1
Cholera	8	Rocky Mountain Spotted Fever	155
Congenital rubella syndrome	4	Syphilis, congenital, age < 1 year§	132
Diphtheria*	-	Tetanus	12
Haemophilus influenzae†	656	Toxic shock syndrome	103
Hansen Disease	71	Trichinosis	22
Plague	5	Typhoid fever	154
Poliomyelitis, Paralytic	-		

*The case previously reported in 1995 had onset of illness in October 1994. It will now be included in 1994 data.
†Of 642 cases of known age, 160 (25%) were reported among children less than 5 years of age.
§Updated quarterly from reports to the Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services. This total through first quarter 1995.
-: no reported cases

TABLE II. Cases of selected notifiable diseases, United States, weeks ending July 8, 1995, and July 9, 1994 (27th Week)

Reporting Area	AIDS*	Gonorrhea		Hepatitis (Viral), by type						Legionellosis	
				A		B		C/NA,NB			
	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	35,614	180,875	200,500	12,967	11,553	4,963	5,925	2,181	2,141	651	735
NEW ENGLAND	1,797	2,400	4,113	126	166	92	208	54	79	15	13
Maine	71	40	49	16	16	6	9	-	-	4	-
N.H.	56	64	43	6	9	12	16	7	7	1	-
Vt.	15	26	14	4	2	1	6	1	6	-	-
Mass.	812	1,413	1,514	48	70	39	127	45	54	9	7
R.I.	137	257	238	16	14	8	4	1	12	1	6
Conn.	706	600	2,255	36	55	26	46	-	-	N	N
MID. ATLANTIC	9,135	17,840	22,460	760	815	597	775	199	260	72	105
Upstate N.Y.	1,133	2,612	5,147	196	304	187	211	105	115	23	21
N.Y. City	4,481	6,128	8,503	373	268	173	159	1	1	1	-
N.J.	2,225	2,077	2,759	105	161	142	208	76	118	14	17
Pa.	1,296	7,023	6,051	86	82	95	197	17	26	34	67
E.N. CENTRAL	2,897	38,467	40,341	1,570	1,127	498	628	147	191	180	209
Ohio	607	12,247	11,770	982	368	66	96	5	13	87	96
Ind.	261	3,667	4,336	77	199	115	115	-	5	41	24
Ill.	1,284	10,459	11,826	217	304	94	171	33	51	13	21
Mich.	572	9,298	8,760	200	139	200	205	109	122	21	40
Wis.	173	2,796	3,649	94	117	23	41	-	-	18	28
W.N. CENTRAL	867	9,378	11,067	843	559	315	331	54	44	64	51
Minn.	204	1,435	1,621	88	112	26	39	2	10	-	1
Iowa	44	716	698	41	28	23	16	5	7	14	22
Mo.	346	5,728	6,052	590	244	228	239	35	8	36	15
N. Dak.	5	13	21	14	2	3	-	3	1	3	4
S. Dak.	9	92	101	21	17	2	-	1	-	-	-
Nebr.	71	-	701	25	85	16	18	5	8	7	7
Kans.	188	1,394	1,873	64	71	17	19	3	10	4	2
S. ATLANTIC	9,055	52,936	52,979	611	599	706	1,195	157	270	111	182
Del.	165	1,047	950	7	14	2	8	1	1	1	-
Md.	1,313	6,232	9,853	101	92	119	184	5	16	20	48
D.C.	579	2,372	3,779	9	13	12	26	-	-	4	5
Va.	645	5,375	6,432	98	74	47	62	5	18	7	5
W. Va.	44	430	364	11	7	29	18	26	20	3	1
N.C.	490	12,306	13,192	61	64	153	150	27	35	20	12
S.C.	449	6,148	6,399	20	25	28	22	12	3	22	9
Ga.	1,090	8,376	U	50	23	62	493	15	148	14	78
Fla.	4,280	10,650	12,010	254	287	254	232	66	29	20	24
E.S. CENTRAL	1,109	22,541	22,935	782	258	478	581	593	456	17	61
Ky.	155	2,441	2,329	24	98	38	55	11	17	2	6
Tenn.	437	6,954	7,393	676	96	374	488	580	431	10	31
Ala.	298	9,410	7,928	49	40	66	38	2	8	4	9
Miss.	219	3,736	5,285	33	24	-	-	-	-	1	15
W.S. CENTRAL	3,137	19,079	23,852	1,575	1,429	724	545	315	144	8	21
Ark.	137	1,968	3,530	160	32	26	13	3	4	1	4
La.	502	6,217	6,321	46	76	98	94	88	73	2	4
Okla.	154	1,303	2,365	346	128	234	63	204	33	3	9
Tex.	2,344	9,591	11,636	1,023	1,193	366	375	20	34	2	4
MOUNTAIN	1,119	4,313	4,909	2,106	2,217	440	320	252	226	109	54
Mont.	9	38	44	51	15	14	11	9	4	4	14
Idaho	26	68	44	194	169	46	48	30	48	2	1
Wyo.	6	26	38	75	13	14	13	111	69	5	3
Colo.	372	1,540	1,686	274	271	65	54	34	39	31	11
N. Mex.	107	443	513	384	567	159	106	30	34	3	1
Ariz.	299	1,437	1,550	615	824	77	28	24	12	44	3
Utah	69	83	159	457	218	50	31	6	10	7	5
Nev.	231	678	875	56	140	15	29	8	10	13	16
PACIFIC	6,498	13,921	17,844	4,594	4,383	1,113	1,342	410	471	75	39
Wash.	495	1,299	1,530	384	601	92	123	116	134	7	8
Oreg.	223	202	476	897	469	46	79	25	21	-	-
Calif.	5,594	11,772	14,989	3,192	3,162	959	1,110	259	312	63	29
Alaska	46	381	460	24	120	5	7	1	-	-	-
Hawaii	140	267	389	97	31	11	23	9	4	5	2
Guam	-	42	72	2	12	-	4	-	-	-	1
P.R.	1,514	291	283	59	34	369	184	208	92	-	-
V.I.	21	6	11	-	2	2	4	-	1	-	-
Amer. Samoa	-	13	18	5	5	-	-	-	-	-	-
C.N.M.I.	-	13	25	15	3	7	-	-	-	-	-

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, National Center for Prevention Services, last update June 29, 1995.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending July 8, 1995, and July 9, 1994 (27th Week)

Reporting Area	Lyme Disease		Malaria		Measles (Rubeola)						Meningococcal Infections		Mumps	
					Indigenous		Imported*		Total					
	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	1995	Cum. 1995	1995	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	2,406	3,515	504	487	-	198	1	8	206	764	1,780	1,646	461	761
NEW ENGLAND	439	661	22	30	-	4	-	-	4	23	91	69	8	14
Maine	3	2	2	2	-	-	-	-	-	4	6	13	4	3
N.H.	14	11	1	3	-	-	-	-	-	1	17	7	1	4
Vt.	5	5	-	1	-	-	-	-	-	2	6	2	-	-
Mass.	55	50	7	12	-	2	-	-	2	7	32	28	1	-
R.I.	91	77	2	5	-	2	-	-	2	6	-	-	-	1
Conn.	271	516	10	7	-	-	-	-	-	3	30	19	2	6
MID. ATLANTIC	1,551	2,113	114	78	-	3	-	2	5	206	213	167	66	72
Upstate N.Y.	876	1,529	24	24	U	-	U	-	-	15	70	56	16	20
N.Y. City	55	5	53	25	-	1	-	2	3	13	23	23	5	1
N.J.	204	365	25	17	-	2	-	-	2	171	62	37	6	13
Pa.	416	214	12	12	-	-	-	-	-	7	58	51	39	38
E.N. CENTRAL	34	272	64	54	-	7	1	2	9	100	244	238	78	141
Ohio	25	16	5	7	-	1	-	-	1	16	79	67	26	41
Ind.	5	8	9	9	U	-	U	-	-	1	35	35	1	6
Ill.	3	13	32	24	-	-	1	1	1	56	71	82	23	59
Mich.	1	5	12	12	-	4	-	1	5	24	50	29	28	30
Wis.	-	230	6	2	-	2	-	-	2	3	9	25	-	5
W.N. CENTRAL	37	56	11	24	-	1	-	-	1	169	109	109	31	41
Minn.	-	1	3	7	-	-	-	-	-	-	16	9	2	3
Iowa	5	1	1	4	-	-	-	-	-	7	20	13	8	10
Mo.	15	49	4	9	-	1	-	-	1	159	43	53	17	25
N. Dak.	-	-	-	1	-	-	-	-	-	-	1	1	-	2
S. Dak.	-	-	1	-	-	-	-	-	-	-	5	7	-	-
Nebr.	1	2	2	2	U	-	U	-	-	2	9	8	4	1
Kans.	16	3	-	1	-	-	-	-	-	1	15	18	-	-
S. ATLANTIC	234	299	106	97	-	5	-	-	5	12	299	241	49	116
Del.	7	35	1	3	-	-	-	-	-	-	3	2	-	-
Md.	158	96	27	42	-	-	-	-	-	2	24	18	-	34
D.C.	-	2	9	8	-	-	-	-	-	-	1	2	-	-
Va.	18	33	22	10	-	-	-	-	-	2	34	45	14	26
W. Va.	13	9	1	-	-	-	-	-	-	1	5	10	-	3
N.C.	22	40	8	2	-	-	-	-	-	-	49	40	16	24
S.C.	8	5	-	2	-	-	-	-	-	-	39	11	7	6
Ga.	6	73	13	17	-	2	-	-	2	2	62	54	2	7
Fla.	2	6	25	13	-	3	-	-	3	5	82	59	10	16
E.S. CENTRAL	17	24	10	13	-	-	-	-	-	28	110	129	13	15
Ky.	3	15	1	4	-	-	-	-	-	-	33	28	-	-
Tenn.	11	6	3	6	-	-	-	-	-	28	34	24	-	5
Ala.	1	3	5	2	-	-	-	-	-	-	26	50	4	3
Miss.	2	-	1	1	-	-	-	-	-	-	17	27	9	7
W.S. CENTRAL	49	49	14	21	-	19	-	-	19	16	225	193	32	162
Ark.	3	3	3	2	-	2	-	-	2	1	19	33	2	5
La.	1	-	1	4	-	17	-	-	17	1	32	24	8	18
Okla.	19	24	-	2	-	-	-	-	-	-	22	19	-	23
Tex.	26	22	10	13	-	-	-	-	-	14	152	117	22	116
MOUNTAIN	5	2	33	21	-	48	-	-	48	154	133	119	27	25
Mont.	-	-	2	-	-	-	-	-	-	-	2	3	1	-
Idaho	-	1	1	2	-	-	-	-	-	-	5	15	2	5
Wyo.	3	1	-	1	-	-	-	-	-	-	5	5	-	1
Colo.	1	-	16	9	-	8	-	-	8	19	35	23	1	2
N. Mex.	-	-	3	3	-	29	-	-	29	-	27	11	N	N
Ariz.	-	-	6	1	-	10	-	-	10	-	43	40	6	2
Utah	-	-	4	4	-	-	-	-	-	126	9	15	10	8
Nev.	1	-	1	1	-	1	-	-	1	9	7	7	6	7
PACIFIC	40	39	130	149	-	111	-	4	115	56	356	381	157	175
Wash.	4	-	11	14	-	13	-	2	15	3	59	60	10	12
Oreg.	3	5	4	11	-	1	-	-	1	-	60	84	N	N
Calif.	33	34	106	116	-	97	-	1	98	47	229	231	134	152
Alaska	-	-	1	-	-	-	-	-	-	4	6	2	9	2
Hawaii	-	-	8	8	-	-	-	1	1	2	2	4	4	9
Guam	-	-	-	-	U	-	U	-	-	227	3	-	3	4
P.R.	-	-	1	2	-	10	-	-	10	11	12	5	-	2
V.I.	-	-	-	-	-	-	-	-	-	-	-	-	2	3
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-	-	-	2
C.N.M.I.	-	-	1	1	U	-	U	-	-	29	-	-	-	2

*For imported measles, cases include only those resulting from importation from other countries.
N: Not notifiable U: Unavailable -: no reported cases

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending July 8, 1995, and July 9, 1994 (27th Week)

Reporting Area	Pertussis			Rubella			Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	1995	Cum. 1995	Cum. 1994	1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	52	1,498	1,811	7	73	189	7,891	11,135	9,343	10,927	3,304	3,713
NEW ENGLAND	1	190	191	-	15	124	94	119	205	211	841	960
Maine	-	20	2	-	1	-	2	4	-	-	-	-
N.H.	1	21	39	-	1	-	1	1	8	10	96	101
Vt.	-	6	27	-	-	-	-	-	2	3	111	83
Mass.	-	133	102	-	3	122	34	47	104	106	297	369
R.I.	-	-	4	-	-	1	1	9	22	18	152	5
Conn.	-	10	17	-	10	1	56	58	69	74	185	402
MID. ATLANTIC	4	128	311	-	6	6	453	689	1,848	2,094	715	877
Upstate N.Y.	U	65	121	U	3	5	24	94	185	277	261	626
N.Y. City	-	22	66	-	3	-	217	324	990	1,276	-	-
N.J.	-	5	9	-	-	1	99	111	362	376	203	153
Pa.	4	36	115	-	-	-	113	160	311	165	251	98
E.N. CENTRAL	2	144	285	1	2	9	1,322	1,609	946	1,041	20	21
Ohio	1	52	76	-	-	-	461	611	154	168	2	-
Ind.	U	13	36	U	-	-	118	122	21	88	3	4
Ill.	1	26	59	-	-	1	502	541	539	521	3	4
Mich.	-	41	23	1	2	8	155	162	202	229	11	7
Wis.	-	12	91	-	-	-	86	173	30	35	1	6
W.N. CENTRAL	1	77	79	-	-	2	413	653	294	268	165	113
Minn.	-	28	39	-	-	-	28	25	64	56	6	13
Iowa	1	3	6	-	-	-	28	29	38	20	60	47
Mo.	-	18	18	-	-	2	348	559	114	124	18	10
N. Dak.	-	6	4	-	-	-	-	1	1	4	19	6
S. Dak.	-	7	-	-	-	-	-	1	13	16	35	15
Nebr.	U	4	5	U	-	-	-	8	10	8	-	-
Kans.	-	11	7	-	-	-	9	30	54	40	27	22
S. ATLANTIC	5	135	179	5	21	12	1,898	2,871	1,797	2,044	1,126	1,050
Del.	-	6	-	-	-	-	8	16	12	20	33	21
Md.	-	15	55	-	-	-	104	119	216	161	228	313
D.C.	-	3	4	-	-	-	62	134	56	55	10	2
Va.	-	8	17	-	-	-	311	396	136	185	217	207
W. Va.	-	-	2	-	-	-	8	8	49	45	56	42
N.C.	-	55	44	-	-	-	599	916	192	245	240	91
S.C.	-	13	10	-	-	-	329	388	174	202	74	90
Ga.	-	5	14	-	-	-	272	459	280	389	158	198
Fla.	5	30	33	5	21	12	205	435	682	742	110	86
E.S. CENTRAL	2	34	94	-	-	-	2,042	1,943	541	771	86	107
Ky.	-	-	53	-	-	-	108	111	53	167	11	8
Tenn.	-	7	17	-	-	-	435	515	162	265	-	34
Ala.	2	27	15	-	-	-	320	363	200	213	72	63
Miss.	-	-	9	-	-	-	1,179	954	126	126	3	2
W.S. CENTRAL	5	80	53	-	3	12	1,232	2,538	1,281	1,339	128	365
Ark.	-	-	11	-	-	-	160	269	92	121	18	15
La.	-	7	6	-	-	-	563	931	6	7	23	43
Okla.	5	20	20	-	-	4	42	89	105	129	22	21
Tex.	-	53	16	-	3	8	467	1,249	1,078	1,082	65	286
MOUNTAIN	5	460	215	-	5	3	127	159	344	265	74	72
Mont.	-	3	3	-	-	-	3	2	3	9	25	10
Idaho	-	74	23	-	-	-	-	1	7	6	-	1
Wyo.	-	1	-	-	-	-	2	-	1	2	18	12
Colo.	-	21	122	-	-	-	71	77	22	26	-	6
N. Mex.	5	38	9	-	-	-	8	9	86	37	3	2
Ariz.	-	305	44	-	4	-	19	36	148	102	22	34
Utah	-	13	12	-	1	2	3	8	19	23	5	5
Nev.	-	5	2	-	-	1	21	26	58	60	1	2
PACIFIC	27	250	404	1	21	21	310	554	2,087	2,894	149	148
Wash.	-	44	53	-	1	-	9	23	133	140	2	4
Oreg.	-	9	50	-	1	1	6	20	23	81	-	-
Calif.	22	172	293	1	17	18	294	508	1,802	2,500	143	113
Alaska	-	-	-	-	-	-	1	2	44	34	4	31
Hawaii	5	25	8	-	2	2	-	1	85	139	-	-
Guam	U	-	2	U	-	1	1	3	5	38	-	-
P.R.	-	6	2	-	-	-	145	174	89	62	23	48
V.I.	-	-	-	-	-	-	2	22	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	1	3	3	-	-
C.N.M.I.	U	-	-	U	-	-	3	-	13	16	-	-

U: Unavailable -: no reported cases

TABLE III. Deaths in 121 U.S. cities,* week ending July 8, 1995 (27th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	553	369	97	44	16	25	32
Boston, Mass.	151	87	29	17	9	9	9
Bridgeport, Conn.	33	26	3	3	1	-	-
Cambridge, Mass.	18	14	2	2	-	-	1
Fall River, Mass.	24	18	6	-	-	-	-
Hartford, Conn.	48	20	8	6	-	14	-
Lowell, Mass.	22	19	1	2	-	-	-
Lynn, Mass.	4	4	-	-	-	-	-
New Bedford, Mass.	18	14	3	1	-	-	-
New Haven, Conn.	50	36	9	3	1	1	6
Providence, R.I.	45	35	5	3	1	1	3
Somerville, Mass.	5	3	-	-	-	-	-
Springfield, Mass.	42	29	10	2	1	-	2
Waterbury, Conn.	37	25	10	1	1	-	2
Worcester, Mass.	56	39	11	4	2	-	9
MID. ATLANTIC	1,820	1,143	383	209	45	40	61
Albany, N.Y.	50	35	10	2	2	1	5
Allentown, Pa.	22	16	5	1	-	-	-
Buffalo, N.Y.	97	66	12	10	6	3	-
Camden, N.J.	30	16	8	2	2	2	1
Elizabeth, N.J.	14	11	1	2	-	-	-
Erie, Pa.§	43	29	10	2	2	-	2
Jersey City, N.J.	30	21	6	3	-	-	-
New York City, N.Y.	1,122	679	248	144	26	25	26
Newark, N.J.	60	18	25	16	1	-	3
Paterson, N.J.	21	13	4	3	-	1	-
Philadelphia, Pa.	U	U	U	U	U	U	U
Pittsburgh, Pa.§	37	26	8	1	-	2	1
Reading, Pa.	13	10	2	-	1	-	1
Rochester, N.Y.	99	73	9	12	4	1	11
Schenectady, N.Y.	23	16	5	2	-	-	-
Scranton, Pa.§	48	36	8	2	1	1	3
Syracuse, N.Y.	63	42	14	3	-	4	4
Trenton, N.J.	25	18	4	3	-	-	3
Utica, N.Y.	U	U	U	U	U	U	U
Yonkers, N.Y.	23	18	4	1	-	-	1
E.N. CENTRAL	1,821	1,235	335	140	67	44	112
Akron, Ohio	17	11	3	-	-	3	-
Canton, Ohio	43	34	5	2	-	2	1
Chicago, Ill.	403	248	85	45	18	7	35
Cincinnati, Ohio	119	73	22	13	9	2	6
Cleveland, Ohio	113	77	23	6	4	3	3
Columbus, Ohio	129	90	18	6	6	9	9
Dayton, Ohio	100	63	25	7	3	2	9
Detroit, Mich.	178	103	38	23	9	5	5
Evansville, Ind.	33	22	6	2	1	2	3
Fort Wayne, Ind.	39	27	2	4	4	2	2
Gary, Ind.	12	11	1	-	-	-	-
Grand Rapids, Mich.	71	56	10	3	1	1	9
Indianapolis, Ind.	147	102	29	10	5	1	8
Madison, Wis.	51	43	6	-	1	1	1
Milwaukee, Wis.	95	75	13	7	-	-	5
Peoria, Ill.	28	20	8	-	-	-	4
Rockford, Ill.	46	30	12	2	2	-	2
South Bend, Ind.	41	35	3	1	1	1	1
Toledo, Ohio	104	74	19	6	2	3	8
Youngstown, Ohio	52	41	7	3	1	-	1
W.N. CENTRAL	573	379	96	63	8	15	44
Des Moines, Iowa	68	54	9	1	1	3	7
Duluth, Minn.	36	22	6	8	-	-	-
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	92	53	18	5	2	2	4
Lincoln, Nebr.	11	9	1	1	-	-	2
Minneapolis, Minn.	155	100	27	22	1	5	15
Omaha, Nebr.	58	38	7	10	3	-	3
St. Louis, Mo.	116	79	21	10	1	5	9
St. Paul, Minn.	37	24	7	6	-	-	4
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	1,012	584	211	134	56	27	57
Atlanta, Ga.	128	68	33	19	4	4	-
Baltimore, Md.	153	83	35	18	16	1	15
Charlotte, N.C.	68	51	10	4	2	1	9
Jacksonville, Fla.	108	65	21	16	4	2	4
Miami, Fla.	119	64	23	17	10	5	2
Norfolk, Va.	52	32	6	6	4	4	5
Richmond, Va.	50	36	8	4	1	1	-
Savannah, Ga.	45	29	10	4	1	1	6
St. Petersburg, Fla.	U	U	U	U	U	U	U
Tampa, Fla.	134	82	26	16	5	5	12
Washington, D.C.	140	63	38	27	9	3	2
Wilmington, Del.	15	11	1	3	-	-	2
E.S. CENTRAL	548	360	109	50	23	6	40
Birmingham, Ala.	U	U	U	U	U	U	U
Chattanooga, Tenn.	62	42	13	4	3	-	7
Knoxville, Tenn.	81	55	14	7	3	2	7
Lexington, Ky.	30	24	3	2	1	-	1
Memphis, Tenn.	172	111	40	13	7	1	14
Mobile, Ala.	48	34	6	6	1	1	1
Montgomery, Ala.	38	23	12	1	2	-	1
Nashville, Tenn.	117	71	21	17	6	2	9
W.S. CENTRAL	1,208	747	242	145	48	25	64
Austin, Tex.	54	31	15	6	2	-	6
Baton Rouge, La.	53	33	12	7	-	1	-
Corpus Christi, Tex.	30	21	3	6	-	-	-
Dallas, Tex.	148	83	34	26	2	3	1
El Paso, Tex.	56	31	15	8	2	-	5
Ft. Worth, Tex.	74	41	16	8	6	3	3
Houston, Tex.	332	193	74	44	14	6	28
Little Rock, Ark.	61	40	11	8	1	1	4
New Orleans, La.	140	83	27	15	11	4	-
San Antonio, Tex.	121	93	13	6	4	5	7
Shreveport, La.	54	39	12	2	1	-	2
Tulsa, Okla.	85	59	10	9	5	2	8
MOUNTAIN	701	447	136	70	30	18	42
Albuquerque, N.M.	90	52	18	14	5	1	1
Colo. Springs, Colo.	U	U	U	U	U	U	U
Denver, Colo.	89	50	23	8	2	6	5
Las Vegas, Nev.	176	111	43	16	3	3	10
Ogden, Utah	21	18	2	1	-	-	1
Phoenix, Ariz.	112	66	17	14	13	2	8
Pueblo, Colo.	27	21	4	2	-	-	3
Salt Lake City, Utah	92	56	20	6	5	5	12
Tucson, Ariz.	94	73	9	9	2	1	2
PACIFIC	1,576	1,033	275	171	51	34	127
Berkeley, Calif.	22	14	3	1	1	3	1
Fresno, Calif.	79	49	14	11	3	2	3
Glendale, Calif.	20	15	3	1	1	-	2
Honolulu, Hawaii	73	49	11	8	3	2	5
Long Beach, Calif.	61	43	10	4	2	2	10
Los Angeles, Calif.	427	261	79	56	21	5	18
Pasadena, Calif.	28	15	6	6	-	1	1
Portland, Oreg.	83	60	12	5	4	2	2
Sacramento, Calif.	129	93	21	11	2	2	15
San Diego, Calif.	113	78	23	8	1	3	16
San Francisco, Calif.	112	64	22	17	-	2	20
San Jose, Calif.	168	120	26	11	5	6	23
Santa Cruz, Calif.	25	20	2	2	-	1	2
Seattle, Wash.	107	67	17	20	1	2	1
Spokane, Wash.	50	39	9	1	1	-	5
Tacoma, Wash.	79	46	17	9	6	1	3
TOTAL	9,812¶	6,297	1,884	1,026	344	234	579

*Mortality data in this table are voluntarily reported from 121 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 these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.
¶Total includes unknown ages.
U: Unavailable -: no reported cases

P&I Vaccination Coverage — Continued

Reported by: Adult Vaccine Preventable Disease Br, Epidemiology and Surveillance Div, National Immunization Program; Div of Health Interview Statistics, National Center for Health Statistics, CDC.

Editorial Note: Although the USIS and NHIS employed different methods, both provided national estimates of vaccination rates based on the weighted response of household-based surveys of the noninstitutionalized U.S. population. Analysis of data

TABLE 1. Vaccination coverage levels with influenza and pneumococcal vaccines among persons aged ≥65 years, by selected characteristics — United States, selected years 1989–1993

	1989		1991		1993	
Vaccine/Characteristic	**%**	**(95% CI*)**	**%**	**(95% CI)**	**%**	**(95% CI)**
INFLUENZA						
Sex						
Male	34.4%	(31.5%–37.3%)	41.9%	(39.8%–44.0%)	54.1%	(51.5%–56.7%)
Female	31.9%	(29.9%–33.9%)	41.5%	(39.6%–43.4%)	50.4%	(48.3%–52.5%)
Race/Ethnicity†						
White, non-Hispanic	34.5%	(32.6%–36.4%)	43.5%	(41.8%–45.2%)	54.0%	(52.3%–55.7%)
Black, non-Hispanic	19.6%	(14.7%–24.5%)	27.3%	(23.2%–31.5%)	32.2%	(27.3%–37.2%)
Hispanic	27.7%	(19.6%–35.7%)	34.9%	(26.6%–43.1%)	46.8%	(35.0%–58.6%)
Socioeconomic status						
At or above poverty level§	34.6%	(32.7%–36.6%)	42.7%	(40.9%–44.5%)	54.0%	(52.1%–55.9%)
Below poverty level	26.2%	(22.3%–30.1%)	36.1%	(31.9%–40.3%)	40.9%	(35.4%–46.4%)
No. physician visits						
≥1 Physician visit during previous year	36.7%	(34.7%–38.6%)	45.4%	(43.7%–47.1%)	55.8%	(54.0%–57.6%)
0 Physician visits during previous year	11.9%	(8.9%–14.9%)	17.5%	(14.6%–20.3%)	22.0%	(17.9%–26.1%)
Total	**32.9%**	**(31.2%–34.7%)**	**41.7%**	**(40.1%–43.2%)**	**52.0%**	**(50.4%–53.6%)**
PNEUMOCOCCAL						
Sex						
Male	14.0%	(12.1%–15.9%)	21.4%	(19.6%–23.1%)	30.3%	(27.7%–32.8%)
Female	15.2%	(13.5%–17.0%)	21.0%	(19.4%–22.6%)	26.7%	(24.4%–28.9%)
Race/Ethnicity						
White, non-Hispanic	15.7%	(14.3%–17.2%)	22.2%	(20.8%–23.6%)	30.4%	(28.6%–32.2%)
Black, non-Hispanic	6.3%	(3.5%– 9.1%)	14.1%	(10.8%–17.4%)	14.3%	(10.4%–18.2%)
Hispanic	11.1%	(6.0%–16.1%)	13.7%	(8.6%–18.8%)	11.5%	(5.4%–17.6%)
Socioeconomic status						
At or above poverty level	15.4%	(13.9%–16.9%)	22.1%	(20.6%–23.5%)	29.7%	(27.8%–31.6%)
Below poverty level	10.2%	(7.1%–13.2%)	16.8%	(12.3%–21.2%)	17.5%	(13.4%–21.7%)
No. physician visits						
≥1 Physician visit during previous year	16.6%	(15.0%–18.1%)	23.2%	(21.7%–24.6%)	30.0%	(28.1%–31.9%)
0 Physician visits during previous year	4.3%	(2.4%– 6.2%)	8.9%	(6.8%–10.9%)	14.4%	(10.8%–18.0%)
Total	**14.7%**	**(13.4%–16.0%)**	**21.2%**	**(19.9%–22.4%)**	**28.2%**	**(26.4%–29.9%)**

*Confidence interval.
†Data for other racial/ethnic groups were too small for meaningful analysis.
§Poverty statistics are based on a definition originated by the Social Security Administration in 1964, subsequently modified by federal interagency committees in 1969 and 1980, and prescribed by the Office of Management and Budget as the standard to be used by federal agencies for statistical purposes.

Source: National Health Interview Survey, 1989–1993.

P&I Vaccination Coverage — Continued

from these surveys indicate that, during 1973–1993, vaccination coverage levels for influenza and pneumococcal vaccines increased among persons aged ≥65 years. These findings suggest a substantial impact on coverage levels as the result of efforts by public- and private-sector health providers and advocates; however, among some groups levels remain low and are substantially less than the national health objective for the year 2000, particularly for pneumococcal vaccination.

Increases in influenza vaccination levels may reflect 1) greater acceptance of preventive medical services by practitioners and 2) increased delivery and administration of vaccine by health-care providers and sources other than physicians (e.g., visiting-nurse and home-health agencies). In addition, the initiation of Medicare reimbursement for influenza vaccination in 1993 also may have contributed to increased rates (*6*).

Although pneumococcal vaccine is ≥57% effective against invasive pneumococcal disease (*7*), some physicians have expressed persistent uncertainty regarding the effectiveness of this vaccine against pneumococcal pneumonia (*8*). In addition, while campaigns for influenza vaccine occur annually before the influenza season, many providers and patients may not be routinely reminded about the need for pneumococcal vaccination among persons aged ≥65 years, underscoring the need to educate providers and patients about the benefits of pneumococcal vaccination and current recommendations.

The findings in this report are consistent with previous surveys that have documented lower vaccination coverage levels among blacks than whites (*9*). These variations may reflect differences in factors such as socioeconomic status, access to medical care, and prevalence of specific risks. However, preliminary analysis indicates that differences by race/ethnicity persisted when the data were adjusted for socioeconomic status.

Achievement of national health objectives for the year 2000 will require the continued collaboration of public and private organizations to improve awareness and vaccine delivery; changes in clinical practice; delivery mechanisms that limit cost and remove accessibility constraints; and surveillance data, such as those provided by NHIS, to assess the progress of current and future programs. The report of the National Vaccine Advisory Committee regarding adult vaccination (*10*) has described these strategies, which include improvements in education of health-care providers and the public; major changes in clinical practice; increased financial support by public and private health insurers; improvements in surveillance for vaccine-preventable diseases and vaccine production and delivery; development of new and improved vaccines; research on and improvements in vaccination practices; and collaboration on international programs for adult vaccination.

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Adult Blood Lead Epidemiology and Surveillance — United States, 1994 and First Quarter 1995

CDC's National Institute for Occupational Safety and Health (NIOSH) Adult Blood Lead Epidemiology and Surveillance program (ABLES) monitors elevated blood lead levels (BLLs) among adults in the United States (*1*). Twenty-three states currently report surveillance results to ABLES. Maine is the 23rd state, and its data (beginning in 1994) are included for the first time in this report. This report presents ABLES data for the first quarter of 1995 compared with the first quarter of 1994 and annual data for 1994 compared with 1993.

First Quarter Reports 1995. During January–March 1995, the number of reports of elevated BLLs increased by 10% over those reported for the same period in 1994 (Table 1). The number of reports increased at the lowest reporting level (25–39 μg/dL), but decreased at all higher reporting levels (40–49 μg/dL, 50–59 μg/dL, and ≥60 μg/dL). The trend of increasing reports at the lower levels and decreasing reports at the higher levels is consistent with the 1994 fourth quarter report (*2*).

Annual Reports 1994. The reported number of adults with elevated BLLs increased from 11,240 in 1993 to 12,137 in 1994 (Table 2); this increase resulted, in part, from the addition of three reporting states in 1994. A total of 5619 new cases accounted for 46% of the cases reported in 1994, compared with 59% new cases in 1993 (Table 2). Compared with 1993, the proportion of new cases declined in the 25–39 μg/dL, 40–49 μg/dL, and 50–59 μg/dL categories and increased in the ≥60 μg/dL category. Even with additional states reporting, the number of new cases decreased 15% from 1993 through 1994 (Table 2). This decrease may be explained in part by the definition of a new case, which is an elevated BLL (≥25 μg/dL) in an adult reported in state surveillance data in the current year but which was not recorded in the immediately preceding year. By this definition, all persons reported represent new cases in the year a state begins surveillance.

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Blood Lead Epidemiology — Continued

TABLE 1. Number of reports of elevated blood lead levels (BLLs) among adults, number of adults with elevated BLLs, and percentage change in number of reports — 23 states,* first quarter, 1994–1995

Reported BLL (μg/dL)	First quarter, 1995		No. reports, first quarter, 1994†	% Change first quarter, 1994 to 1995
	No. reports	No. persons§		
25–39	4914	3635	4102	+20%
40–49	1197	878	1371	–13%
50–59	245	204	278	–12%
≥60	82	58	117	–30%
Total	**6438**	**4775**	**5868**	**+10%**

*Alabama, Arizona, California, Connecticut, Illinois, Iowa, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin.

†Data for Maine are included. These data only recently became available for 1994 and were not included in previous reports.

§Individual reports for persons are categorized according to the highest reported BLL for the person during the given quarter. Pennsylvania provides the number of reports but not number of persons; the number of persons for Pennsylvania in this table are estimates based on the proportions from the other 22 states combined and the number of reports received from Pennsylvania. Data for South Carolina were missing; first quarter 1994 data were used as an estimate.

TABLE 2. Number of reports of elevated blood lead levels (BLLS) among adults, number of adults with elevated BLLS, and new cases of elevated BLLs — United States, 1993 and 1994

Reported BLL (μg/dL)	1994 (23 states)*				1993 (20 states)†			
	No. reports	No. persons§	New cases¶		No. reports	No. persons	New cases**	
			No.	(%)			No.	(%)
25–39	19,420	8,651	4,254	(49)	18,529	8,041	4,693	(58)
40–49	5,821	2,562	887	(35)	5,398	2,293	1,288	(56)
50–59	1,132	644	269	(42)	1,311	627	419	(67)
≥60§	459	280	209	(75)	633	279	184	(66)
Total	**26,832**	**12,137**	**5,619**	**(46)**	**25,871**	**11,240**	**6,584**	**(59)**

*Alabama, Arizona, California, Connecticut, Illinois, Iowa, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin. Data for Maine were not included in previous reports. Data for South Carolina were missing for fourth quarter 1994; fourth quarter 1993 data were used as an estimate.

†Same states as 1994 except Maine, North Carolina, and Oklahoma.

§Individual reports are categorized according to the highest reported BLL for the person during the given year. Pennsylvania provides the number of reports but not number of persons; the number of persons for Pennsylvania in this table are estimates based on the proportions from the other 22 states combined and the number of reports received from Pennsylvania. Data for South Carolina were missing for the fourth quarter 1994; fourth quarter 1993 data were used as an estimate.

¶Illinois, Michigan, Pennsylvania and South Carolina did not report new cases for 1994. New cases for those four states are estimates based on the proportions from the other 19 states combined and the number of reports, persons, or unassigned new cases reported from these four states.

**New cases for 1993 were not reported from Michigan, New Hampshire, and Pennsylvania. No estimates are included in the 1993 data.

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Editorial Note: Approximately 54% of the persons reported to ABLES in 1993 were reported again to the system in 1994. Reasons for these repeat reports include 1) recurring exposure resulting from inadequate control measures and worker-protection practices; 2) routine tracking of elevated employee BLLs that remain below levels requiring medical removal; and 3) increased employer monitoring during medical removal. Increased testing of workers in construction trades—as new workplace medical monitoring programs are established to comply with new OSHA regulations (*3*)—also has contributed to the increases.

Reporting of adults with elevated BLLs reflects monitoring practices by employers. Variation in national quarterly reporting totals, especially first quarter totals, may result from 1) changes in the number of participating states, 2) timing of receipt of laboratory BLL reports by state-based surveillance programs, and 3) interstate differences in worker BLL testing by lead-using industries.

The data in this report underscore that work-related lead exposures are an ongoing occupational health problem in the United States. ABLES can further enhance surveillance for this preventable condition by expanding the number of participating states, reducing variability in reporting, and distinguishing between new and recurring elevated BLLs in adults. The Council of State and Territorial Epidemiologists, at its annual meeting in May 1995, designated elevated BLLs among adults as a condition reportable to the National Public Health Surveillance System (formerly the National Notifiable Diseases Surveillance System) (*4*).

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Erratum: Vol. 44, No. 17

In the article, "Prevalence and Impact of Arthritis Among Women—United States, 1989–1991," a programming error led to incorrect estimates for nonarthritis conditions listed in Table 2. The corrected table follows.

The error does not change statements in the text on the relative ranking of arthritis compared with other chronic conditions but does change the following: 1) under the

Erratum — Continued

subheading "Comparison With Other Chronic Conditions Affecting Women" on page 332, the first sentence of the second paragraph should read "Arthritis was the most common self-reported chronic condition affecting women (Table 2), ranking ahead of self-reported hypertension (15.7 million), ischemic heart disease (2.4 million), and other chronic conditions ..."; and 2) the second sentence of the same paragraph should read "Among the conditions reported responsible for activity limitations, women most frequently mentioned arthritis (4.6 million), followed by orthopedic deformity (3.7 million) and hypertension (1.9 million)."

TABLE 2. Estimated average annual prevalence of self-reported chronic conditions and activity limitations among women aged ≥15 years, by condition — National Health Interview Survey (NHIS), United States, 1989–1991

Condition	Overall no.*	No. with activity limitation*
Arthritis	22,755	4,597
Chronic sinusitis	17,511	80
Hypertension	15,720	1,875
Orthopedic deformity	14,536	3,689
"Hay fever," rhinitis	10,700	127
Hearing impairment	9,199	479
Ischemic heart disease	2,421	874
Other selected conditions†	11,825	2,356

*In thousands. To generate national estimates, NHIS rates were applied to the U.S. civilian, noninstitutionalized population.

†Diabetes, thyroid disorder, bladder disorder, cerebrovascular disease, breast neoplasm, and female reproductive malignancy.

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