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Epidemiologic Notes and Reports

Outbreak of Hepatitis C Associated with Intravenous Immunoglobulin Administration — United States, October 1993–June 1994

On February 21, 1994, the Food and Drug Administration (FDA) was notified of 14 possible cases from three different countries of acute hepatitis C among persons who had received Gammagard®*, an intravenous immunoglobulin (IGIV) product manufactured by Baxter Healthcare Corporation (Glendale, California). The company removed Gammagard® from the worldwide market on February 23, 1994. The American Red Cross removed Polygam® (IGIV manufactured by Baxter Healthcare from American Red Cross plasma) from the market on the same date. This report presents preliminary findings of an evaluation of transmission of hepatitis C virus (HCV) infection from these products and guidelines for monitoring patients who may have received them.†

As of July 19, 1994, CDC had received 112 reports from 24 states and Puerto Rico of possible cases of acute HCV infection in recipients of IGIV; 111 were in persons who received Gammagard®, and one was in a person who received Polygam®. Medical and epidemiologic information and serum samples for HCV serologic testing are being collected from each person. The dates of onset (defined by occurrence of symptoms or first abnormal alanine aminotransferase [ALT] value) for suspected cases were from October 1993 through June 1994 (Figure 1). Of 74 reported persons with possible HCV infection for whom risk factor data (e.g., blood transfusion or injecting-drug use) were available, 68 (92%) had receipt of IGIV as the only risk factor for infection.

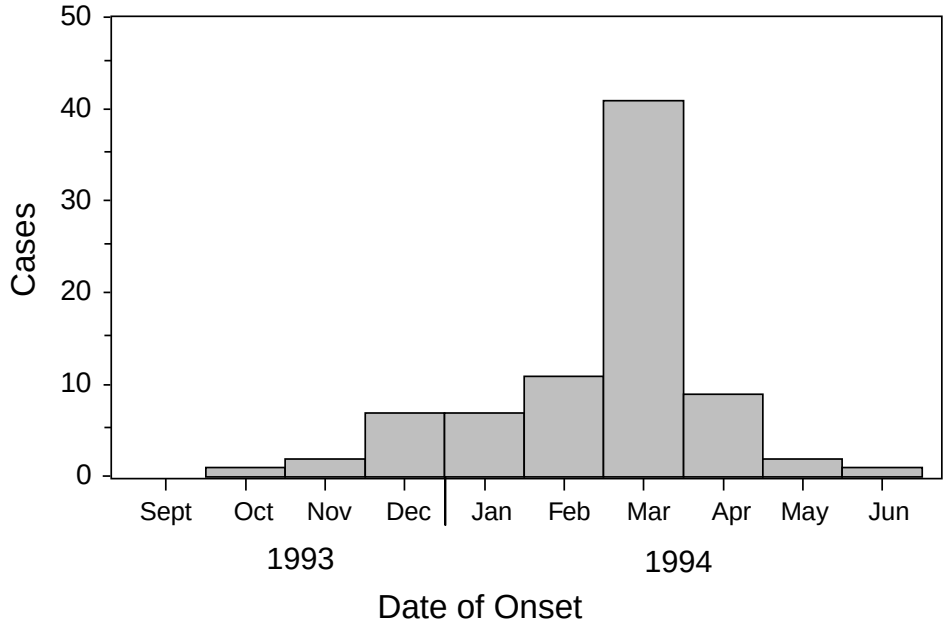
The median age of persons with reported cases was 37 years (range: 2–84 years); 52% were female, and 63% received IGIV for treatment of a primary immuno-

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

†Copies of this report and the Public Health Service recommendations for medical evaluation and counseling of patients with hepatitis C (*1*) are available from CDC's Hepatitis Branch, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases, Mailstop G-37, 1600 Clifton Road, NE, Atlanta, GA 30333; or from CDC's Voice Information System, telephone (404) 332-2553.

Hepatitis C — Continued

FIGURE 1. Possible cases* of hepatitis C virus infection reported among persons receiving Gammagard® or Polygam® — United States, October 1993–June 1994



*Of 112 reported possible cases, the date of illness onset or date of first abnormal alanine aminotransferase level was available for 81 cases.

deficiency disorder (e.g., hypogammaglobulinemia). Of 62 persons tested at CDC for serologic markers of viral hepatitis, 42 (68%) were positive for antibody to HCV (anti-HCV), and none were positive for serologic markers of acute hepatitis A or hepatitis B virus infection. Anti-HCV was detected in 20 (53%) of 38 patients with a diagnosis of primary immunodeficiency and in 21 (95%) of 22 patients with other diagnoses. In blinded testing of serum specimens from 36 persons with suspected cases, none were positive for antibody to human immunodeficiency virus (HIV)-1 or HIV-2.

To assess the risk for HCV infection among persons who received IGIV and to identify risk factors for infection, a cohort study among persons exposed to different IGIV products at one hospital and a case-control study of persons from throughout the United States have been initiated. Lot-specific denominator data needed to complete these analyses are not yet available from the manufacturer. Preliminary analysis of the cohort study found 16 (7%) cases of HCV infection among 245 recipients of Gammagard® (three persons with HCV infection had also received other IGIV products within 6 months of onset). However, no cases of HCV infection were found among 55 recipients who had received only other IGIV products ($p<0.05$, two-tailed Fisher exact test). Additional laboratory testing for HCV will be performed on serum samples from infected persons and on samples of implicated and nonimplicated lots of IGIV. Other cohort studies will examine any association between HCV infection and receipt of other IGIV products or intramuscular immune globulin (IGIM). In one of these studies

Hepatitis C — Continued

involving persons who received IGIM in 1993, no anti-HCV seroconversions were found among 513 persons tested at least 6 months after IGIM administration (95% confidence interval=0–0.7%).

Reported by: L Schneider, R Geha, Harvard Medical School, Boston. Walter Reed Army Institute of Research, Washington, DC. Div of Transfusion Transmitted Diseases and Div of Hematology, Office of Blood Research and Review, Center for Biologics Evaluation and Research, Food and Drug Administration. Div of Digestive Diseases and Nutrition, National Institute of Diabetes and Digestive and Kidney Diseases; Dept of Transfusion Medicine, Warren G. Magnuson Clinical Center, National Heart, Lung, and Blood Institute, National Institutes of Health. Hepatitis Br and Epidemiology Activity, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: The temporal association of acute hepatitis C with Gammagard® administration and the absence of other risk factors among these patients indicate that HCV was most likely transmitted by administration of Gammagard®. The report of one possible case in a person who received only Polygam® and had no other risk factors suggests that Polygam® also may be associated with transmission of HCV. Preliminary analysis of data from epidemiologic studies suggests that HCV transmission is not related to the administration of other IGIV products or IGIM, and there is no need for change in the use of these products.

Since the 1940s, immune globulin products licensed in the United States have been safely administered; these products previously have not been known to be associated with the transmission of bloodborne agents, including HIV. Cases of non-A, non-B hepatitis (of which HCV is the primary etiologic agent) have been previously associated with an unlicensed IGIV product used in a clinical trial in the United States and with IGIV products manufactured and distributed abroad; however, reasons for these episodes of transmission (*2*) and the episodes described in this report have not been determined. Since mid-May 1994, the approved manufacturing process for both Gammagard® and Polygam® includes a solvent-detergent treatment designed to inactivate contaminating viruses. Products manufactured with this treatment should not pose a risk for HCV transmission to recipients.

Chronic hepatitis develops in more than 60% of persons infected with HCV (*3*). All patients who received Gammagard® or Polygam® since April 1, 1993 (6 months before the first reported case), should be screened for evidence of HCV infection and the results interpreted according to the algorithm established by the Public Health Service (PHS) (Table 1). Initial screening of these patients should include a test for ALT activity and an FDA-licensed enzyme immunoassay (EIA) for anti-HCV. All specimens repeatedly (two or more times) reactive for anti-HCV should be tested using an FDA-licensed supplemental anti-HCV assay to reduce the likelihood of false-positive EIA results.

Because some patients will have a prolonged interval between exposure and seroconversion to anti-HCV, patients who are anti-HCV–negative but have abnormal ALT levels should be retested for anti-HCV 3–6 months later. In most patients with normal immune status, seroconversion occurs within 6 months after infection (*3,4*). However, approximately 10% of HCV-infected patients with normal immune status will be persistently negative for anti-HCV, even after prolonged follow-up (*3*). Persons with immunodeficiency disorders may be less likely to seroconvert or may have longer intervals between infection and seroconversion than persons with normal immune function.

Hepatitis C — Continued

TABLE 1. Algorithm for screening and management of patients who received Gammagard®* or Polygam®* since April 1, 1993

Screening results			
ALT†	**Anti-HCV§**	**Interpretation**	**Patient management**
Abnormal	Positive¶	Hepatitis C	Serial ALTs—if abnormal for ≥6 months, refer for evaluation of chronic liver disease.
Abnormal	Negative**	Possible hepatitis C	Consider other liver diagnoses; repeat anti-HCV in 3–6 months; serial ALTs—if abnormal for ≥6 months, refer for evaluation of chronic liver disease.
Normal	Positive¶	Possible hepatitis C	Serial ALTs—if becomes abnormal and remains abnormal for ≥6 months, refer for evaluation of chronic liver disease.
Normal	Negative**	No evidence of hepatitis C	No further testing.

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†Alanine aminotransferase.
§Antibody to hepatitis C virus.
¶Repeatedly (two or more times) reactive by enzyme immunoassay and positive by supplemental anti-HCV testing.
**Nonreactive by enzyme immunoassay or negative by supplemental anti-HCV testing.

For anti-HCV–negative persons with elevated ALT levels, the diagnosis of hepatitis C is possible with the use of polymerase chain reaction (PCR) for the detection of HCV RNA. However, PCR assays, which are difficult and expensive to perform, should be done only by experienced laboratories using specimens that have been properly collected, stored, and handled. These assays are not licensed by FDA.

Patients aged ≥18 years with chronic hepatitis C (abnormal ALT levels for more than 6 months) should be evaluated for possible therapy with alpha interferon by a physician experienced in its use (*5*). Patients should be informed that the proportion of adults with chronic hepatitis C who sustain a long-term response to alpha interferon is low (approximately 20%). Although FDA has not licensed alpha interferon for patients aged <18 years, they can be considered for therapy if entered into an approved study protocol.

All patients with hepatitis C should be considered potentially infectious. However, because of limited data on the risk of household, sexual, and perinatal transmission and because testing cannot determine infectivity, PHS does not recommend substantial changes in behavior based on knowledge of infection status (*1*). PHS recommends that household articles such as toothbrushes and razors that could become contaminated with blood should not be shared, and cuts or skin lesions should be covered to prevent the spread of infectious secretions or blood (*1*). HCV transmission by sexual contact appears to occur, but this route of transmission is much less efficient than that for other bloodborne sexually transmitted diseases (*3*). Although anti-HCV–positive persons should be informed of the potential for sexual transmis-

Hepatitis C — Continued

sion, there are insufficient data to recommend changes in current sex practices for persons with one steady sex partner. To prevent many sexually transmitted diseases, including hepatitis and HIV infection, persons with multiple partners should follow safer sexual practices, including reducing the number of sex partners and using barriers (e.g., latex condoms) to prevent contact with body fluids. No evidence supports advising against pregnancy based on anti-HCV status or using any special treatments or precautions for pregnant women or their offspring.

References

1. CDC. Public Health Service inter-agency guidelines for screening donors of blood, plasma, organs, tissues, and semen for evidence of hepatitis B and hepatitis C. MMWR 1991;40(no. RR-4):6–17.
2. Lever AML, Webster ADB, Brown D, Thomas HC. Non-A, non-B hepatitis occurring in agammaglobulinaemic patients after intravenous immunoglobulin. Lancet 1984;2:1062–4.
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4. Vallari DS, Jett BW, Alter HJ, Mimms LT, Holzman R, Shih JW. Serological markers of post-transfusion hepatitis C viral infection. J Clin Microbiol 1992;30:552–6.
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Health Objectives for the Nation

Adults Taking Action to Control Their Blood Pressure — United States, 1990

Approximately 50 million persons in the United States have high blood pressure (*1*). Despite substantial increases in the awareness and treatment of hypertension, 79% of persons with hypertension do not have their blood pressure under control (*1*). A national health objective for the year 2000 is to increase to at least 90% the proportion of persons with hypertension who are "taking action" to help control their blood pressure (objective 15.5) (*2*). This report summarizes data from CDC's National Health Interview Survey (NHIS) on the proportion of persons with hypertension who are taking action to control their blood pressure and on factors associated with taking action.

In 1990, the NHIS Health Promotion and Disease Prevention Supplement included 36,610 respondents aged ≥18 years. This survey included 8697 persons who reported having been told by a physician that they had high blood pressure. Persons were asked whether a physician had advised them to take antihypertensive medication, limit their intake of dietary salt, reduce weight, and/or exercise to control their blood pressure. They were asked whether they were currently following any of these recommendations; persons who answered "yes" were defined as taking action to control their blood pressure. The results were statistically weighted for national representation. SESUDAAN (*3*) and RTILOGIT (*4*) were used to calculate standard errors for the prevalence estimates and odds ratios.

Of the 8697 respondents with hypertension, 7714 (89%) reported receiving some type of advice from a physician to control blood pressure (Table 1). The most commonly received advice was using antihypertensive medication (73%) and limiting salt intake (68%). Less than half of the respondents reported receiving advice to exercise (48%) or lose weight (46%).

Hypertension — Continued

TABLE 1. Percentage of adults with hypertension advised and taking action to control blood pressure — United States, National Health Interview Survey, 1990

Physician recommendation	Advised		Taking action		Compliance*
	No.	(%)	No.	(%)	(%)
Antihypertensive medication	6349	(73.0)	4862	(55.9)	(76.6)
Decrease salt intake	5905	(67.9)	5270	(60.6)	(89.2)
Decrease weight	3966	(45.6)	2670	(30.7)	(67.3)
Exercise	4166	(47.9)	2853	(32.8)	(68.5)
Any†	7714	(88.7)	6958	(80.0)	(90.2)

*The number of persons who are currently taking action divided by the total number of persons advised to take action, multiplied by 100.
†Defined as antihypertensive medication, decrease salt intake, decrease weight, or exercise.

Overall, 80% of persons with hypertension reported currently taking at least one action to control their blood pressure (Table 1). Most frequently reported actions were limiting salt intake (61%) and taking antihypertensive medication (56%); one third (33%) reported engaging in exercise.

Almost all respondents (90%) who were advised to take some form of action reported complying with at least one recommendation. Compliance with specific advice ranged from decreasing weight (67%) to limiting salt intake (89%).

Persons aged ≥65 years were five times more likely than persons aged 18–34 years to report having taken action (Table 2). Among men aged 18–34 years, 55% of blacks and 51% of whites reported taking some action to control blood pressure. As the length of time since a respondent's last visit to a physician increased, the likelihood of taking action decreased. Persons who had not visited a physician within the preceding 2 years were 60% less likely to take action than persons who had visited a physician within the preceding year. Persons who reported their health status as good, fair, or poor were substantially more likely to take action than were persons who reported their health status as excellent.

Reported by: Cardiovascular Health Studies Br, Div of Chronic Disease Control and Community Intervention, National Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: Persons with hypertension are at increased risk for coronary artery disease, congestive heart failure, transient ischemic attacks, stroke, renal failure, and retinopathy (*1*). The findings in this report indicate that the proportion of persons taking action to control their blood pressure is lower than the national health objective.

Specific national health objectives have been established to narrow the disparities in health between the total population and certain groups at increased risk for disease, disability, and death. One health objective for the year 2000 is to increase to at least 80% the proportion of young (aged 18–34 years) white and black men* with hypertension who are taking action to control their blood pressure (objectives 15.5a and 15.5b) (*2*). The findings in this report indicate that substantial progress will be needed to achieve this objective. Health-care providers may have to make special efforts to convince younger adults of the importance of controlling hypertension. Findings from this

*Objectives for this subpopulation of young men were established only for whites and blacks because data were not available for other racial/ethnic groups.

Hypertension — Continued

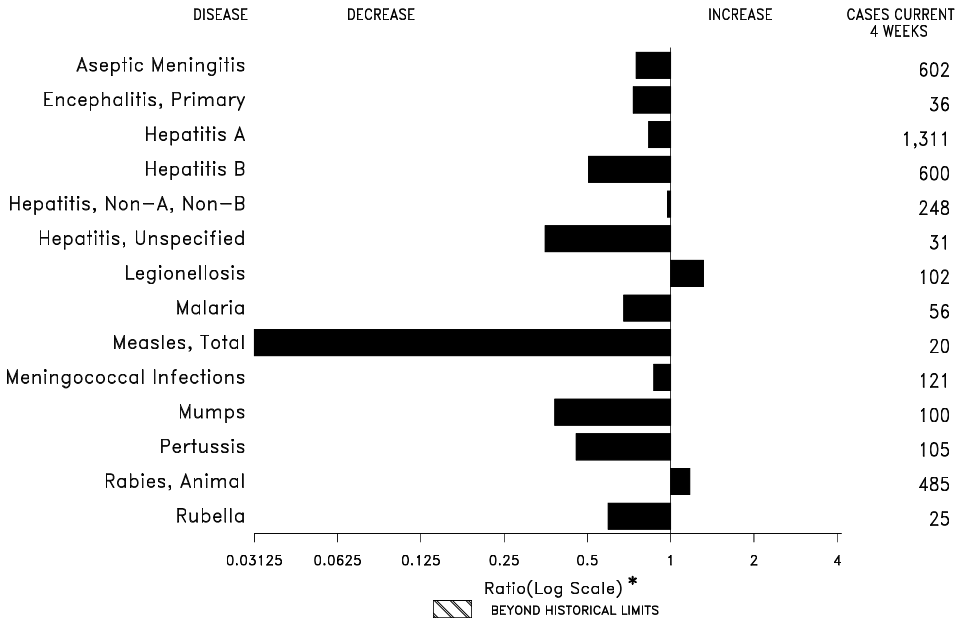
TABLE 2. Factors associated with taking action* to control blood pressure — United States, National Health Interview Survey, 1990

Category	Sample size	Prevalence	OR†	95% CI§
Age group (yrs)				
18–34	1127	56.0%	1.0	Referent
35–49	1848	72.6%	1.8	(1.5–2.2)
50–64	2363	86.4%	3.9	(3.2–4.8)
≥65	3359	89.7%	5.0	(4.1–6.1)
Sex				
Women	5179	83.2%	1.0	Referent
Men	3518	76.5%	0.9	(0.8–1.0)
Race¶				
White	7030	79.6%	1.0	Referent
Black	1667	82.5%	1.4	(1.2–1.7)
Education (yrs)				
<12	2673	83.7%	1.0	Referent
12	3258	79.6%	1.1	(0.9–1.4)
>12	2766	77.3%	1.1	(0.9–1.4)
Region**				
Northeast	1744	82.2%	1.0	Referent
Midwest	2375	78.6%	0.8	(0.7–1.0)
South	3141	80.0%	0.9	(0.7–1.0)
West	1437	79.5%	0.9	(0.7–1.2)
Have regular source of medical care				
No	904	68.4%	1.0	Referent
Yes	7793	82.7%	1.9	(1.5–2.3)
Last physician visit (yrs)				
<1	7713	83.0%	1.0	Referent
1–2	441	66.3%	0.6	(0.5–0.8)
>2	543	54.2%	0.4	(0.3–0.5)
Self-reported health status				
Excellent	1601	68.3%	1.0	Referent
Very good	2199	77.2%	1.3	(1.1–1.5)
Good	2789	84.1%	1.8	(1.4–2.1)
Fair	1460	86.2%	1.7	(1.4–2.2)
Poor	648	89.4%	2.1	(1.5–3.0)
Total	**8697**	**80.0%**	—	—

*Action is defined as currently taking antihypertensive medication, limiting salt intake, reducing weight, and/or exercising as a means to control blood pressure.
†Odds ratio. Model is adjusted for age, sex, race, education, region, regular source of medical care, last physician visit, and self-reported health status.
§Confidence interval.
¶Numbers for other racial/ethnic groups were too small for meaningful analysis.
**Northeast=Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; Midwest=Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South=Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; West=Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

(Continued on page 517)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending July 16, 1994, 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 — cases of specified notifiable diseases, United States, cumulative, week ending July 16, 1994 (28th Week)

	Cum. 1994		Cum. 1994
AIDS*	37,529	Measles: imported	143
Anthrax	-	indigenous	581
Botulism: Foodborne	35	Plague	7
Infant	39	Poliomyelitis, Paralytic[§]	-
Other	7	Psittacosis	20
Brucellosis	46	Rabies, human	-
Cholera	9	Syphilis, primary & secondary	11,503
Congenital rubella syndrome	3	Syphilis, congenital, age < 1 year	-
Diphtheria	-	Tetanus	19
Encephalitis, post-infectious	62	Toxic shock syndrome	114
Gonorrhea	198,054	Trichinosis	26
Haemophilus influenzae (invasive disease)[†]	644	Tuberculosis	11,207
Hansen Disease	56	Tularemia	33
Leptospirosis	14	Typhoid fever	197
Lyme Disease	3,038	Typhus fever, tickborne (RMSF)	161

*Updated monthly; last update June 28, 1994.
[†]Of 604 cases of known age, 169 (28%) were reported among children less than 5 years of age.
[§]No cases of suspected poliomyelitis have been reported in 1994; 3 cases of suspected poliomyelitis have been reported in 1993; 4 of the 5 suspected cases with onset in 1992 were confirmed; the confirmed cases were vaccine associated.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending July 16, 1994, and July 17, 1993 (28th Week)

Reporting Area	AIDS*	Aseptic Meningitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionellosis	Lyme Disease
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	37,529	3,190	295	62	198,054	210,307	10,920	5,982	2,292	241	788	3,038
NEW ENGLAND	1,590	103	9	4	4,260	3,774	166	196	77	15	20	826
Maine	49	14	1	-	49	44	16	9	-	-	-	2
N.H.	32	8	-	2	48	33	8	18	6	-	-	11
Vt.	21	9	-	-	14	14	2	-	-	-	-	2
Mass.	812	36	6	1	1,564	1,547	71	143	59	14	14	104
R.I.	122	36	2	1	248	202	14	5	12	1	6	107
Conn.	554	-	-	-	2,337	1,934	55	21	-	-	-	600
MID. ATLANTIC	8,992	225	25	8	21,385	24,217	630	589	264	4	111	1,680
Upstate N.Y.	1,052	113	14	1	5,156	4,461	321	224	128	2	27	1,067
N.Y. City	4,639	20	1	-	6,997	7,880	79	45	-	-	-	3
N.J.	2,357	-	-	-	2,637	3,041	160	201	112	-	15	326
Pa.	944	92	10	7	6,595	8,835	70	119	24	2	69	284
E.N. CENTRAL	3,249	469	75	13	38,811	42,399	1,061	640	181	5	228	43
Ohio	580	117	20	1	12,748	11,255	384	98	13	-	106	29
Ind.	360	76	2	1	4,450	4,291	200	109	7	-	58	6
Ill.	1,602	85	27	4	9,277	14,661	249	123	36	2	10	3
Mich.	527	184	22	7	9,032	8,832	138	213	122	3	38	5
Wis.	180	7	4	-	3,304	3,360	90	97	3	-	16	-
W.N. CENTRAL	830	176	16	3	10,161	11,472	534	336	97	7	78	50
Minn.	213	15	2	-	1,679	1,231	111	39	12	1	1	9
Iowa	29	50	-	-	749	883	28	16	7	5	22	2
Mo.	363	65	5	2	5,827	6,751	229	245	62	1	38	28
N. Dak.	18	1	2	-	18	27	1	-	-	-	4	-
S. Dak.	9	-	2	-	102	151	17	-	-	-	-	-
Nebr.	48	6	3	1	-	484	77	18	5	-	11	8
Kans.	150	39	2	-	1,786	1,945	71	18	11	-	2	3
S. ATLANTIC	8,992	744	58	23	54,586	55,081	742	1,403	372	22	194	319
Del.	122	14	-	-	815	743	11	4	1	-	-	6
Md.	1,079	94	13	2	9,853	8,424	101	183	20	5	55	143
D.C.	763	20	-	1	3,909	2,672	15	30	-	-	8	2
Va.	656	97	14	5	6,887	6,327	78	63	18	2	5	41
W. Va.	23	10	1	-	387	317	6	21	20	-	1	9
N.C.	663	110	29	1	13,428	13,531	67	157	36	-	12	43
S.C.	612	17	-	-	6,704	5,498	25	22	3	-	9	5
Ga.	1,056	32	1	-	-	4,660	23	498	148	-	73	63
Fla.	4,018	350	-	14	12,603	12,909	416	425	126	15	31	7
E.S. CENTRAL	1,031	217	22	1	23,544	23,806	263	582	430	2	37	20
Ky.	161	71	9	1	2,479	2,440	96	47	13	-	5	10
Tenn.	315	34	9	-	7,174	7,198	99	495	409	1	20	7
Ala.	315	89	4	-	8,362	8,740	45	40	8	1	9	3
Miss.	240	23	-	-	5,529	5,428	23	-	-	-	3	-
W.S. CENTRAL	3,972	363	21	1	24,836	23,357	1,559	699	275	49	24	53
Ark.	134	24	-	-	3,785	3,256	36	14	4	1	5	3
La.	614	16	3	-	6,674	6,446	77	103	77	1	6	-
Okla.	156	-	-	-	1,969	2,464	135	168	161	1	9	26
Tex.	3,068	323	18	1	12,408	11,191	1,311	414	33	46	4	24
MOUNTAIN	1,242	97	6	3	4,683	5,954	2,164	308	229	32	53	5
Mont.	15	-	-	-	44	31	15	17	5	-	14	-
Idaho	30	3	-	-	44	109	184	54	54	1	1	1
Wyo.	12	2	1	2	38	51	14	14	79	-	3	1
Colo.	472	29	1	-	1,520	2,008	216	20	21	10	9	-
N. Mex.	92	6	-	-	523	496	630	116	36	8	2	3
Ariz.	349	34	-	-	1,746	2,194	730	21	8	8	3	-
Utah	69	9	-	1	156	71	243	36	16	1	7	-
Nev.	203	14	4	-	612	994	132	30	10	4	14	-
PACIFIC	7,631	796	63	6	15,788	20,247	3,801	1,229	367	105	43	42
Wash.	489	-	-	-	1,480	2,046	194	39	38	1	5	-
Oreg.	324	-	-	-	486	705	212	25	6	1	-	-
Calif.	6,697	710	62	5	12,988	16,898	3,237	1,135	318	101	35	42
Alaska	26	13	1	-	452	278	124	7	-	-	-	-
Hawaii	95	73	-	1	382	320	34	23	5	2	3	-
Guam	1	7	-	-	67	63	12	-	-	4	2	-
P.R.	1,012	21	-	3	272	270	38	192	82	6	-	-
V.I.	12	-	-	-	11	63	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	18	30	4	-	-	-	-	-
C.N.M.I.	-	-	-	-	23	47	3	-	-	-	-	-

N: Not notifiable U: Unavailable C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly; last update June 28, 1994.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending July 16, 1994, and July 17, 1993 (28th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	Cum. 1994	1994	Cum. 1994	1994	Cum. 1994	Cum. 1993	1994	Cum. 1994	Cum. 1993
UNITED STATES	465	2	581	1	143	208	1,601	24	793	27	1,576	1,890	5	203	136
NEW ENGLAND	33	-	12	-	10	57	79	-	14	-	163	367	3	125	1
Maine	2	-	1	-	3	-	13	-	3	-	2	6	-	-	1
N.H.	3	-	1	-	-	-	6	-	4	-	38	101	-	-	-
Vt.	1	-	1	-	1	31	2	-	-	-	27	45	-	-	-
Mass.	13	-	2	-	4	16	31	-	-	-	75	175	2	122	-
R.I.	5	-	4	-	2	1	-	-	1	-	4	4	1	2	-
Conn.	9	-	3	-	-	9	27	-	6	-	17	36	-	1	-
MID. ATLANTIC	65	-	165	1	22	13	152	1	68	6	316	244	-	11	44
Upstate N.Y.	25	-	25	-	3	1	58	-	18	1	123	87	-	8	11
N.Y. City	11	-	14	-	2	4	10	-	5	-	65	21	-	1	16
N.J.	17	-	122	-	14	8	37	-	6	-	8	42	-	2	9
Pa.	12	-	4	1	3	-	47	1	39	5	120	94	-	-	8
E.N. CENTRAL	49	-	58	-	40	15	247	1	133	5	232	428	-	11	3
Ohio	7	-	15	-	-	6	71	-	41	2	80	115	-	-	1
Ind.	11	-	-	-	1	-	43	-	6	3	40	33	-	-	1
Ill.	16	-	17	-	38	9	85	-	51	-	45	108	-	3	-
Mich.	13	-	23	-	1	-	30	1	31	-	22	19	-	8	-
Wis.	2	-	3	-	-	-	18	-	4	-	45	153	-	-	1
W.N. CENTRAL	24	-	116	-	42	3	114	1	38	-	79	116	-	2	1
Minn.	7	-	-	-	-	-	9	-	4	-	39	51	-	-	-
Iowa	4	-	6	-	1	-	13	-	10	-	6	1	-	-	-
Mo.	10	-	108	-	40	1	56	1	20	-	19	42	-	2	1
N. Dak.	1	-	-	-	-	-	1	-	2	-	3	3	-	-	-
S. Dak.	-	-	-	-	-	-	7	-	-	-	-	2	-	-	-
Nebr.	1	-	1	-	1	-	8	-	2	-	5	6	-	-	-
Kans.	1	-	1	-	-	2	20	-	-	-	7	11	-	-	-
S. ATLANTIC	100	-	7	-	2	22	276	3	119	5	179	168	-	9	6
Del.	3	-	-	-	-	-	4	-	-	-	-	3	-	-	-
Md.	47	-	1	-	1	4	22	-	35	-	56	63	-	-	2
D.C.	8	-	-	-	-	-	2	-	-	-	4	2	-	-	-
Va.	11	-	1	-	1	1	46	1	27	-	17	17	-	-	-
W. Va.	-	-	-	-	-	-	10	-	3	-	2	4	-	-	-
N.C.	2	-	-	-	-	-	41	-	26	-	44	25	-	-	-
S.C.	2	-	-	-	-	-	11	-	6	-	10	5	-	-	-
Ga.	12	-	2	-	-	-	54	1	8	-	13	12	-	-	-
Fla.	15	-	3	-	-	17	86	1	14	5	33	37	-	9	4
E.S. CENTRAL	13	-	28	-	-	1	106	-	15	-	86	82	-	-	-
Ky.	3	-	-	-	-	-	29	-	-	-	52	13	-	-	-
Tenn.	6	-	28	-	-	-	24	-	6	-	17	35	-	-	-
Ala.	3	-	-	-	-	1	47	-	3	-	14	27	-	-	-
Miss.	1	-	-	-	-	-	6	-	6	-	3	7	-	-	-
W.S. CENTRAL	24	-	9	-	7	1	203	6	176	2	55	44	-	12	16
Ark.	2	-	-	-	1	-	33	-	1	1	12	3	-	-	-
La.	4	-	-	-	1	1	24	1	19	-	6	6	-	-	1
Okla.	2	-	-	-	-	-	19	-	23	1	21	22	-	4	1
Tex.	16	-	9	-	5	-	127	5	133	-	16	13	-	8	14
MOUNTAIN	18	2	141	-	12	2	106	5	52	6	119	148	2	6	6
Mont.	-	-	-	-	-	-	3	-	-	-	3	1	-	-	-
Idaho	2	-	-	-	-	-	15	2	7	-	23	25	-	1	1
Wyo.	1	-	-	-	-	-	5	-	1	-	-	1	-	-	-
Colo.	6	-	13	-	1	2	16	-	2	4	38	59	-	-	1
N. Mex.	3	-	-	-	-	-	11	N	N	1	10	22	1	1	-
Ariz.	1	-	-	-	-	-	39	-	24	-	33	24	-	-	1
Utah	4	2	128	-	-	-	12	3	10	1	10	16	1	3	2
Nev.	1	-	-	-	11	-	5	-	7	-	2	-	-	1	1
PACIFIC	139	-	45	-	8	94	318	7	178	3	347	293	-	27	59
Wash.	4	-	-	-	-	-	23	1	6	1	17	23	-	-	-
Oreg.	7	-	-	-	-	-	48	N	N	-	27	3	-	-	1
Calif.	116	-	44	-	6	78	240	5	160	1	294	261	-	24	34
Alaska	-	-	1	-	-	-	2	-	2	-	-	3	-	1	1
Hawaii	12	-	-	-	2	16	5	1	10	1	9	3	-	2	23
Guam	1	U	211	U	-	2	1	U	4	U	-	-	U	1	-
P.R.	2	-	13	-	-	309	6	-	2	-	1	1	-	-	-
V.I.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	1	-	-	1	-	1	2	-	-	-
C.N.M.I.	1	U	26	U	-	1	-	U	2	U	-	-	U	-	-

*For measles only, imported cases include both out-of-state and international importations.
N: Not notifiable U: Unavailable † International § Out-of-state

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending July 16, 1994, and July 17, 1993 (28th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1993	Cum. 1994	Cum. 1994	Cum. 1994	Cum. 1994
UNITED STATES	11,503	14,432	114	11,207	11,495	33	197	161	3,247
NEW ENGLAND	121	199	2	227	248	-	15	8	972
Maine	4	3	-	-	5	-	-	-	-
N.H.	1	21	-	11	10	-	-	-	98
Vt.	-	1	1	3	3	-	-	-	87
Mass.	48	86	1	117	140	-	11	7	382
R.I.	11	8	-	18	34	-	1	-	5
Conn.	57	80	-	78	56	-	3	1	400
MID. ATLANTIC	728	1,386	19	2,039	2,390	1	49	-	339
Upstate N.Y.	92	119	9	112	347	1	6	-	79
N.Y. City	324	703	-	1,346	1,451	-	29	-	-
N.J.	104	202	-	407	230	-	14	-	160
Pa.	208	362	10	174	362	-	-	-	100
E.N. CENTRAL	1,498	2,406	25	1,127	1,232	2	34	23	22
Ohio	631	649	9	174	171	-	4	14	-
Ind.	125	208	2	92	126	-	3	2	6
Ill.	413	944	5	581	651	-	17	5	3
Mich.	163	340	9	244	235	1	3	2	7
Wis.	166	265	-	36	49	1	7	-	6
W.N. CENTRAL	630	930	17	280	246	14	-	13	113
Minn.	28	42	1	61	30	1	-	-	13
Iowa	33	44	7	20	31	-	-	1	48
Mo.	539	746	5	129	125	9	-	5	9
N. Dak.	-	2	-	4	5	-	-	-	5
S. Dak.	-	1	-	16	10	1	-	6	14
Nebr.	-	10	2	10	14	1	-	1	-
Kans.	30	85	2	40	31	2	-	-	24
S. ATLANTIC	3,340	3,738	6	2,135	2,233	1	33	78	1,112
Del.	13	73	-	-	21	-	1	-	21
Md.	119	209	-	162	199	-	5	6	313
D.C.	137	200	-	61	87	-	1	-	2
Va.	401	343	1	185	237	-	5	6	209
W. Va.	8	4	-	46	44	-	-	2	43
N.C.	946	1,053	1	248	277	-	-	30	93
S.C.	402	566	-	209	231	-	-	2	99
Ga.	837	632	-	481	415	1	1	29	207
Fla.	477	658	4	743	722	-	20	3	125
E.S. CENTRAL	1,993	2,039	2	691	812	-	2	10	97
Ky.	112	168	1	174	199	-	1	-	4
Tenn.	514	586	1	207	236	-	1	7	34
Ala.	372	453	-	229	251	-	-	1	59
Miss.	995	832	-	81	126	-	-	2	-
W.S. CENTRAL	2,615	2,815	1	1,453	1,131	9	9	20	413
Ark.	277	327	-	145	93	8	-	3	15
La.	968	1,342	-	14	83	-	4	-	43
Okla.	83	198	1	155	81	1	1	14	21
Tex.	1,287	948	-	1,139	874	-	4	3	334
MOUNTAIN	153	133	4	248	286	5	6	9	49
Mont.	3	1	-	9	5	3	-	4	-
Idaho	6	-	1	9	7	-	-	-	2
Wyo.	-	4	-	3	2	-	-	2	12
Colo.	77	38	1	1	42	-	2	2	-
N. Mex.	9	19	-	37	35	1	-	-	2
Ariz.	30	56	-	122	126	-	1	1	25
Utah	5	1	2	23	11	1	1	-	6
Nev.	23	14	-	44	58	-	2	-	2
PACIFIC	425	786	38	3,007	2,917	1	49	-	130
Wash.	34	28	-	156	133	-	3	-	-
Oreg.	20	30	-	86	57	1	-	-	-
Calif.	367	722	35	2,580	2,546	-	44	-	101
Alaska	3	4	-	33	34	-	-	-	29
Hawaii	1	2	3	152	147	-	2	-	-
Guam	4	2	-	18	39	-	1	-	-
P.R.	166	304	-	73	111	-	-	-	48
V.I.	22	31	-	-	2	-	-	-	-
Amer. Samoa	1	-	-	3	2	-	1	-	-
C.N.M.I.	1	3	-	22	19	-	1	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending July 16, 1994 (28th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	544	385	78	51	14	16	38
Boston, Mass.	152	92	25	22	4	9	13
Bridgeport, Conn.	42	36	3	3	-	-	2
Cambridge, Mass.	19	16	2	1	-	-	-
Fall River, Mass.	24	20	3	1	-	-	-
Hartford, Conn.	41	27	7	2	4	1	1
Lowell, Mass.	21	18	1	1	1	-	1
Lynn, Mass.	10	9	-	1	-	-	-
New Bedford, Mass.	23	16	5	2	-	-	2
New Haven, Conn.	35	26	4	3	2	-	4
Providence, R.I.	40	26	8	6	-	-	1
Somerville, Mass.	5	4	1	-	-	-	-
Springfield, Mass.	33	23	2	3	2	3	7
Waterbury, Conn.	32	22	5	3	1	1	1
Worcester, Mass.	67	50	12	3	-	2	6
MID. ATLANTIC	2,474	1,554	456	351	59	53	81
Albany, N.Y.	28	20	2	5	-	1	1
Allentown, Pa.	18	13	4	1	-	-	-
Buffalo, N.Y.	100	72	18	5	3	2	1
Camden, N.J.	34	17	8	5	4	-	3
Elizabeth, N.J.	15	6	4	4	-	1	1
Erie, Pa.§	33	26	6	-	-	1	1
Jersey City, N.J.	60	27	16	11	1	5	-
New York City, N.Y.	1,470	891	271	245	30	32	21
Newark, N.J.	74	29	19	18	5	3	1
Paterson, N.J.	24	10	8	5	1	-	-
Philadelphia, Pa.	210	132	37	29	7	5	22
Pittsburgh, Pa.§	61	46	11	3	1	-	4
Reading, Pa.	U	U	U	U	U	U	U
Rochester, N.Y.	136	104	17	11	4	-	13
Schenectady, N.Y.	20	19	1	-	-	-	-
Scranton, Pa.§	29	20	6	2	1	-	-
Syracuse, N.Y.	103	78	16	5	2	2	9
Trenton, N.J.	19	12	4	2	-	1	2
Utica, N.Y.	13	12	1	-	-	-	1
Yonkers, N.Y.	27	20	7	-	-	-	1
E.N. CENTRAL	2,329	1,418	450	276	126	59	136
Akron, Ohio	70	46	14	3	1	6	-
Canton, Ohio	45	34	5	4	-	2	3
Chicago, Ill.	507	207	93	121	81	5	33
Cincinnati, Ohio	203	137	40	14	6	6	21
Cleveland, Ohio	147	89	36	16	-	6	3
Columbus, Ohio	171	105	40	20	3	3	9
Dayton, Ohio	104	77	11	7	6	3	4
Detroit, Mich.	266	155	52	38	8	13	11
Evansville, Ind.	40	30	7	2	-	1	2
Fort Wayne, Ind.	71	51	11	4	4	1	3
Gary, Ind.	22	10	6	4	2	-	2
Grand Rapids, Mich.	44	28	8	3	2	3	3
Indianapolis, Ind.	187	123	45	15	2	2	17
Madison, Wis.	47	31	9	5	-	2	4
Milwaukee, Wis.	125	90	22	8	4	1	8
Peoria, Ill.	43	31	8	1	2	1	2
Rockford, Ill.	33	22	7	3	-	1	3
South Bend, Ind.	50	39	8	2	-	1	2
Toledo, Ohio	87	63	14	5	3	2	3
Youngstown, Ohio	67	50	14	1	2	-	3
W.N. CENTRAL	781	550	128	56	27	20	43
Des Moines, Iowa	48	37	1	7	1	2	4
Duluth, Minn.	U	U	U	U	U	U	U
Kansas City, Kans.	13	6	4	1	2	-	1
Kansas City, Mo.	99	70	16	10	1	2	5
Lincoln, Nebr.	32	24	7	1	-	-	1
Minneapolis, Minn.	258	189	41	14	5	9	18
Omaha, Nebr.	94	67	15	2	5	5	4
St. Louis, Mo.	155	102	29	13	9	2	6
St. Paul, Minn.	47	30	9	6	2	-	2
Wichita, Kans.	35	25	6	2	2	-	2
S. ATLANTIC	1,317	781	277	173	53	33	64
Atlanta, Ga.	164	89	41	25	7	2	3
Baltimore, Md.	220	118	46	41	12	3	20
Charlotte, N.C.	97	56	18	18	3	2	2
Jacksonville, Fla.	124	83	23	13	3	2	4
Miami, Fla.	114	61	25	17	8	3	-
Norfolk, Va.	58	33	11	9	-	5	1
Richmond, Va.	80	44	23	8	-	5	3
Savannah, Ga.	33	26	7	-	-	-	4
St. Petersburg, Fla.	62	47	8	4	2	1	5
Tampa, Fla.	165	112	30	15	4	4	11
Washington, D.C.	174	92	43	20	13	6	8
Wilmington, Del.	26	20	2	3	1	-	3
E.S. CENTRAL	705	462	133	66	21	23	48
Birmingham, Ala.	128	85	21	10	5	7	4
Chattanooga, Tenn.	70	45	13	7	5	-	3
Knoxville, Tenn.	64	43	11	6	1	3	4
Lexington, Ky.	79	56	15	5	1	2	12
Memphis, Tenn.	108	61	26	16	3	2	12
Mobile, Ala.	75	49	10	9	4	3	6
Montgomery, Ala.	29	20	7	2	-	-	1
Nashville, Tenn.	152	103	30	11	2	6	6
W.S. CENTRAL	1,542	967	315	159	64	36	77
Austin, Tex.	78	50	13	10	2	3	9
Baton Rouge, La.	26	16	9	-	-	1	-
Corpus Christi, Tex.	53	29	9	9	4	2	-
Dallas, Tex.	222	142	40	22	10	7	7
El Paso, Tex.	89	62	16	6	4	1	5
Ft. Worth, Tex.	100	72	10	12	3	3	11
Houston, Tex.	347	192	92	42	15	6	30
Little Rock, Ark.	75	49	15	8	2	1	5
New Orleans, La.	161	102	29	18	10	2	-
San Antonio, Tex.	241	152	49	22	12	6	5
Shreveport, La.	31	24	6	1	-	-	1
Tulsa, Okla.	119	77	27	9	2	4	4
MOUNTAIN	879	575	158	95	30	21	39
Albuquerque, N.M.	101	64	19	9	5	4	2
Colo. Springs, Colo.	38	29	3	3	2	1	1
Denver, Colo.	146	92	26	22	2	4	9
Las Vegas, Nev.	174	111	36	17	9	1	7
Ogden, Utah	26	20	3	3	-	-	2
Phoenix, Ariz.	137	88	22	15	7	5	14
Pueblo, Colo.	26	20	5	1	-	-	-
Salt Lake City, Utah	95	54	22	10	4	5	3
Tucson, Ariz.	136	97	22	15	1	1	1
PACIFIC	2,352	1,557	407	260	63	56	166
Berkeley, Calif.	25	17	4	1	1	2	-
Fresno, Calif.	67	47	11	2	2	5	3
Glendale, Calif.	32	29	3	-	-	-	1
Honolulu, Hawaii	73	53	8	7	2	3	3
Long Beach, Calif.	83	55	14	11	1	2	13
Los Angeles, Calif.	625	387	122	79	22	11	23
Pasadena, Calif.	33	20	5	4	2	2	5
Portland, Oreg.	148	97	28	14	4	5	3
Sacramento, Calif.	198	127	40	25	1	5	14
San Diego, Calif.	413	296	60	34	9	9	60
San Francisco, Calif.	145	69	41	29	1	5	6
San Jose, Calif.	174	128	24	15	5	2	17
Santa Cruz, Calif.	35	24	5	3	3	-	-
Seattle, Wash.	165	108	25	23	7	2	7
Spokane, Wash.	57	46	7	1	1	2	8
Tacoma, Wash.	79	54	10	12	2	1	3
TOTAL	12,923¶	8,249	2,402	1,487	457	317	692

*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.

Hypertension — Continued

study also suggest that similar efforts may be needed for persons with hypertension who perceive that they are generally in excellent or very good health.

Having a regular source of medical care and having seen a physician within the preceding year were strongly associated with taking action to control blood pressure. Lack of access to preventive health care also has been associated with an increased frequency of hypertensive emergencies and uncontrolled hypertension (*5*). These findings underscore the importance of increasing access to health care for all persons in the United States.

Lifestyle modifications (e.g., limiting salt intake, reducing weight, and increasing physical activity) are effective in lowering blood pressure (*6,7*). However, most persons with hypertension in this study did not recall being advised by a physician to exercise. The low proportion of persons who recalled having received advice about physical activity may reflect insufficient training of many health-care providers in counseling patients about physical activity (*8*). Compared with medication costs, physical activity is a less costly means of lowering blood pressure and decreasing the risk for cardiovascular disease. Medication costs, which can account for 80% of the expenses associated with treating hypertension, may be a barrier to persons who want to control their blood pressure (*1*).

To achieve the year 2000 objective for taking action to control blood pressure, additional public health efforts should target young men with hypertension and persons without access to preventive health care. Use of data from national surveys, such as the NHIS, will help measure progress toward this objective. Additional information about high blood pressure is available from the American Heart Association, telephone (214) 373-6300, or the National High Blood Pressure Education Program, telephone (800) 575-9355 ([301] 251-1222).

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International Notes

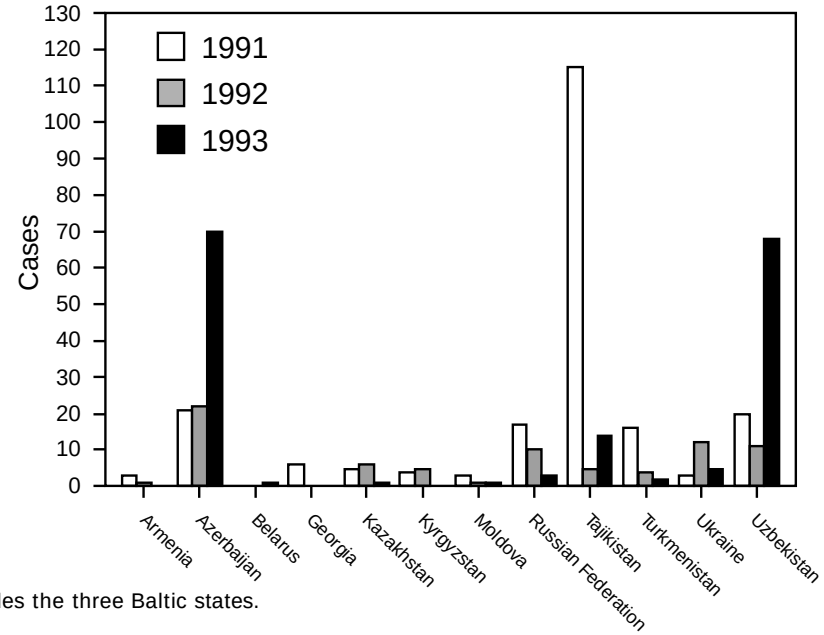
Status of Poliomyelitis Eradication — Europe and the Central Asian Republics, 1993

In 1989, the World Health Organization (WHO) Regional Office for Europe adopted a resolution to eradicate poliomyelitis from the European Region by the year 2000. This report summarizes progress toward that goal.

In 1993, countries in the European Region of WHO (which includes the central Asian republics of the New Independent States (NIS) of the former Soviet Union) reported 198 cases of polio (presumed or known to be attributable to wild poliovirus), including one case classified as imported. In addition, 21 cases of vaccine-associated polio were reported. Each year during 1990–1992, a total of 373, 318, and 181 indigenous cases of polio, respectively, were reported in Europe. In 1993, outbreaks of polio occurred in Azerbaijan (70 cases) and Uzbekistan (68 cases).

Polio was reported from 12 (24%) of the 50 countries in the European Region in 1993. Excluding the Netherlands, Romania, and Turkey, all these countries are republics of the NIS, located in Eastern Europe (Belarus, Moldova, Russian Federation, and Ukraine), the Transcaucasus Region (Azerbaijan), or in Central Asia (Kazakhstan, Tajikistan, Turkmenistan, and Uzbekistan). During 1991–1993, four countries (Azerbaijan, Tajikistan, Turkey, and Uzbekistan) consistently reported more than five cases of polio each year; each republic of the NIS reported at least one case (Figure 1). In 1980, the Soviet Union, Turkey, and the remaining European countries reported approximately

FIGURE 1. Reported cases of poliomyelitis — New Independent States of the former Soviet Union,* 1991–1993



*Excludes the three Baltic states.

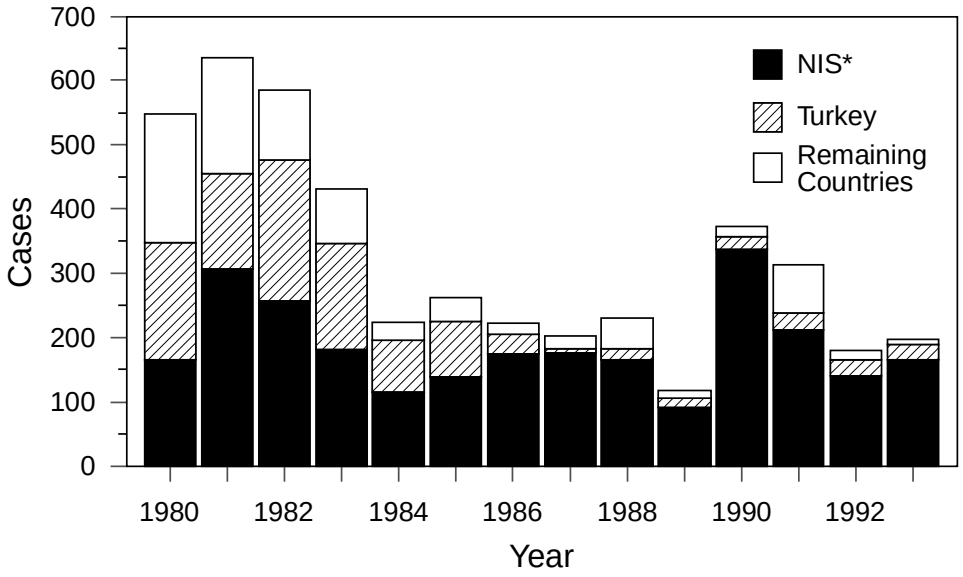
Poliomyelitis — Continued

one third of polio cases each. However, in 1993, the republics of the NIS reported 83% of cases (Figure 2). A recent analysis of geopolitical units (districts and oblasts) in the European Region that continue to report polio indicated a substantial decrease (50%) from 1992 to 1993 in the number of districts and oblasts in which wild poliovirus circulated (from 105 in 1992 to 52 in 1993).

Individual countries in the region continue to refine and implement strategies to eradicate polio. In addition to strengthening routine vaccination-delivery systems, all polio-endemic countries (except the Federal Republic of Yugoslavia [Serbia and Montenegro] and Turkey) have adopted supplemental vaccination activities with oral poliovirus vaccine (OPV). Surveillance continues to be strengthened, with monitoring for acute flaccid paralysis (AFP) recently adopted in 11 additional countries (Bulgaria, Czech Republic, Hungary, Ireland, Poland, Romania, Russian Federation [some areas], Slovakia, Turkey, Ukraine, and the United Kingdom).

In the European Region, progress toward polio eradication was made despite civil unrest and war in some countries and the recent large-scale reemergence of diphtheria in Azerbaijan, Russian Federation, and Ukraine (*1*). In some areas, lack of financial resources resulted in insufficient supplies of OPV and other vaccines. In particular, the polio outbreaks in Azerbaijan and Uzbekistan can be attributed to shortages of OPV. However, countries with sufficient supplies of OPV also experienced endemic poliovirus transmission. For example, during 1989–1993, Turkey reported 14–27 cases of polio annually; the primary reason for the ongoing endemic spread of poliovirus in this country may be attributed to low OPV coverage among children aged <1 year (69% with three doses of OPV in 1992 versus 65% in 1993). Other countries with ongoing endemic poliovirus transmission and relatively low vaccination coverage levels during 1992 and 1993 include Azerbaijan (70% in 1992 versus 40% in 1993), Russian

FIGURE 2. Reported cases of poliomyelitis, by area — European Region, World Health Organization, 1980–1993



*New Independent States of the former Soviet Union.

Poliomyelitis — Continued

Federation (69% in 1992 versus 82% in 1993), Uzbekistan (85% in 1992 versus 46% in 1993), and Tajikistan (precise data are not available).

Reported by: Regional Office for Europe, Copenhagen, Denmark; Expanded Program on Immunization, Global Program for Vaccines, World Health Organization, Geneva. Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases; Polio Eradication Activity, National Immunization Program, CDC.

Editorial Note: Rapid progress toward global eradication of polio has been demonstrated through regional elimination of polio in the Western Hemisphere (*2,3*); steady movement toward elimination in countries of East Asia, including China (*4*), Philippines (*5*), and Vietnam (*6*); and development of polio-free zones in northern and southern Africa and on the Arabian Peninsula. However, increased efforts are needed in other areas, including the Indian subcontinent, sub-Saharan Africa, the Transcaucasus Region, and the central Asian republics (*7*). Many of the poliovirus genotypes responsible for recent epidemics in Europe (including the outbreak of 71 cases caused by poliovirus type 3 in the Netherlands during 1992–1993) probably originated from the Indian subcontinent (*8*).

Countries in the European Region are categorized into three major areas with distinct epidemiologic characteristics. The western and central European countries, which have achieved high vaccination coverage and good sanitation, have eliminated polio as an indigenous disease; however, this area remains subject to importations of poliovirus, particularly among groups that routinely object to vaccination (e.g., members of religious groups in the Netherlands) or groups with suboptimal coverage (e.g., migrant or hard-to-reach populations [*9*]). The Balkan and Asia Minor countries (excluding Turkey) have controlled polio well, even though small outbreaks have occurred periodically—most recently during 1990–1991 in Bulgaria (*10*) and Romania (CDC, unpublished data, 1993). In the NIS, two major geographic reservoirs of poliovirus have emerged—the Transcaucasus Region and the central Asian republics.

Increased efforts to eliminate polio in Europe must be aimed at the two geographic poliovirus reservoirs and the remaining polio-endemic countries. In all polio-endemic geopolitical units, routine vaccination coverage with three doses of OPV must be increased to more than 90% of children aged <1 year, and an additional dose of OPV should be administered at birth. In all polio-endemic countries, supplemental OPV vaccination activities (e.g., National Immunization Days*) should be implemented. Because the number of districts and oblasts in the European Region that reported cases of polio in 1993 has declined substantially, "mopping up"† has become a feasible strategy.

Nongovernmental organizations, particularly Rotary International, have been instrumental in raising funds to support the initiative to eradicate polio worldwide. Political commitment and funding by member countries of the European Region will be needed to eradicate polio from the area by the year 2000.

References

1. CDC. Diphtheria outbreak—Russian Federation, 1990–1993. MMWR 1993;42:840–1,847.

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

† House-to house administration of two doses of OPV to all young children with an interval of 4–6 weeks between doses. This supplemental activity aims to reach primarily infants and children not covered by existing routine vaccination programs.

Poliomyelitis — Continued

2. CDC. Update: eradication of paralytic poliomyelitis in the Americas. MMWR 1992;41:681–3.
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5. CDC. National Immunization Days and status of poliomyelitis eradication—Philippines, 1993. MMWR 1994;43:6–7,13.
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7. Hull HF, Ward NA, Hull BP, Milstien JB, de Quadros CA. Paralytic poliomyelitis: seasoned strategies, disappearing disease. Lancet 1994;343:1331–7.
8. CDC. Progress toward global eradication of poliomyelitis, 1988–1993. MMWR 1994;43:499–503.
9. Bernal A, Garcia-Saiz A, Liacerc A, de Ory F, Pello O, Najera R. Poliomyelitis in Spain, 1982–1984: virologic and epidemiologic studies. Am J Epidemiol 1987;126:69–76.
10. Expanded Program on Immunization. Poliomyelitis outbreak—Bulgaria. Wkly Epidemiol Rec 1992;45:336–7.

Epidemiologic Notes and Reports

Outbreak of Pneumonia Associated with a Cruise Ship, 1994

On July 15, 1994, the New Jersey State Department of Health notified CDC of six persons hospitalized with pneumonia. An investigation was initiated to determine the etiology and potential sources and modes of transmission of the illness. These persons traveled between New York City and Bermuda aboard the cruise ship *Horizon* (Celebrity Cruise Line, port of origin: New York City) from June 25 through July 2. Subsequent investigations have identified 16 additional persons with pneumonia who had traveled on the vessel since May 28, 1994. Initial laboratory tests indicate *Legionella* sp. infection (Legionnaires' disease) has been confirmed in four of the 22 patients; specimens for laboratory testing are being collected from the other patients.

Physicians evaluating persons who developed pneumonia within 2 weeks after travel aboard the *Horizon* are encouraged to report these cases immediately to CDC through local or state health departments. Updated information is available from CDC's Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, telephone (404) 639-3057.

Reported by: C Genese, MJ Hung, S Paul, MD, J Brook, MD, L Finelli, KC Spitalny, MD, State Epidemiologist, New Jersey State Dept of Health. BA Mojica, MD, KJ Mohoney, MSW, RT Hefferman, MPH, Div of Disease Intervention, New York City Dept of Health; SF Kondracki, DL Morse, MD, State Epidemiologist, New York State Dept of Health. JT Rankin, Jr, DVM, State Epidemiologist, Pennsylvania Dept of Health. JL Hadler, MD, State Epidemiologist, Connecticut Dept of Public Health and Addiction Svcs. Child and Respiratory Diseases Br, Div of Bacterial and Mycotic Diseases, National Center for Infectious Diseases; Div of Quarantine, National Center for Prevention Svcs; Office of the Director, National Center for Environmental Health; Div of Field Epidemiology, Epidemiology Program Office, CDC.

Notice to Readers

NIOSH Alert: Request for Assistance in Controlling Exposures to Nitrous Oxide During Anesthetic Administration

CDC's National Institute for Occupational Safety and Health (NIOSH) periodically issues alerts on workplace hazards that have caused death, serious injury, or illness to workers. One such alert, *Request for Assistance in Controlling Exposures to Nitrous Oxide During Anesthetic Administration* (*1*), was published recently and is available to the public.*

Nitrous oxide is used as an anesthetic agent in medical, dental, and veterinary operatories. Occupational exposures in dental operatories may be excessive and tend to be more difficult to control than in general operating theaters. Approximately 424,000 workers (i.e., dentists, dental assistants, and dental hygienists) practice dentistry in the United States; in a 1991 survey by the American Dental Association, 58% of dentists reported having nitrous oxide anesthetic equipment.

Workers exposed to nitrous oxide may suffer adverse reproductive effects and decreases in mental performance, audiovisual ability, and manual dexterity. This alert presents control measures for preventing or substantially reducing exposure to nitrous oxide during administration of anesthetic gas. These control measures should be part of a written comprehensive safety and health plan for workers.

Reference

1. NIOSH. NIOSH alert: NIOSH request for assistance in controlling exposures to nitrous oxide during anesthetic administration. Cincinnati: US Department of Health and Human Services, Public Health Service, CDC, 1994; DHHS publication no. (NIOSH)94-100.

*Single copies of this document are available without charge from the Publications Office, Division of Standards Development and Technology Transfer, NIOSH, CDC, Mailstop C-13, 4676 Columbia Parkway, Cincinnati, OH 45226-1998; telephone (800) 356-4674 ([513] 533-8328 for persons outside of the United States); fax (513) 533-8573.

Notice to Readers

Course in Hospital Epidemiology

CDC, the Society for Healthcare Epidemiology of America (SHEA), and the American Hospital Association will cosponsor a hospital epidemiology training course September 17–20, 1994, in Chicago. The course, designed for infectious disease fellows, new hospital epidemiologists, and infection-control practitioners, provides hands-on exercises to improve skills in detection, investigation, and control of epidemiologic problems encountered in the hospital setting and lectures and seminars on fundamental aspects of hospital epidemiology.

Additional information is available from SHEA Meetings Department, 875 Kings Highway, Suite 200, Woodbury, NJ 08096-3172; telephone (609) 845-1720; fax (609) 853-0411.

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone (202) 783-3238.

The data in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. Inquiries about the *MMWR* Series, including material to be considered for publication, should be directed to: Editor, *MMWR* Series, Mailstop C-08, Centers for Disease Control and Prevention, Atlanta, GA 30333; telephone (404) 332-4555.

I **U.S. Government Printing Office: 1994-533-178/05018 Region IV**