CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

December 10, 1993 / Vol. 42 / No. 48

MMWR
MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Absence of Reported Measles — United States, November 1993

For the first time since measles reporting began in 1912, no measles cases have been reported in the United States for 3 consecutive weeks (November 7–November 27 [weeks 45–47], 1993). In addition, no cases have been reported with onset since September 22 that were not directly linked with importations.

Of the provisional total of 277 measles cases reported in 1993 through November 27, a total of 57 persons had onsets of illness since July 4. Of these, 29 (51%) were imported or linked through a continuous chain of transmission to an imported case. Twelve (21%) cases resulted from continued transmission from measles outbreaks that began before July 4. Fourteen (25%) cases could not be linked to an existing outbreak, an international importation, or another reported case and were classified as sporadic index cases. Two cases were epidemiologically linked to these cases. Twelve of the 14 sporadic index cases were laboratory confirmed.

Reported by: State and local health depts. National Immunization Program, CDC.

Editorial Note: The 3-week period without reported measles cases reflects at least four factors: 1) major increases in measles vaccination coverage levels among preschool-aged children; 2) increased use of a second dose of measles vaccine among school-aged children and young adults attending college; 3) an overall increase in efforts to control measles throughout the Western Hemisphere; and 4) the usual seasonally low incidence of measles during the fall (*1,2*). Furthermore, the absence of any reported persons with sporadic index cases of measles who had onset after September 22 may reflect a cessation of endemic measles transmission in the United States during this period.

The absence of reported endemic foci of measles transmission does not indicate that measles has been eliminated in the United States. In the past, substantial numbers of measles cases were not reported to public health authorities (*3*). Therefore, surveillance must be intensified to permit the identification and elimination of any remaining foci of transmission. Any case of rash illness suspected to be measles should be reported promptly to public health authorities to enable immediate investigation and vigorous control measures to minimize spread of infection. For each case, *Measles — Continued*

laboratory confirmation should be obtained, vaccination status determined, and source of exposure ascertained.

Although current measles activity is at its lowest level ever in the United States, previous periods of low activity have been followed by resurgences (*4,5*). High vaccination coverage levels among preschool- and school-aged children need to be achieved and sustained in all communities to ensure the elimination of endemic measles transmission.

References

1. CDC. Measles—United States, first 26 weeks, 1993. MMWR 1993;42:813–6.
2. Pan American Health Organization. Central America: defeating measles. EPI Newsletter 1993;XV(5):2–3.
3. Davis SF, Strebel PM, Atkinson WL, et al. Reporting efficiency during a measles outbreak in New York City, 1991. Am J Public Health 1993;83:1011–5.
4. CDC. Measles—United States, 1982. MMWR 1983;32:49–51.
5. Atkinson WL, Orenstein WA, Krugman S. The resurgence of measles in the United States, 1989–90. Annu Rev Med 1992;43:451–63.

Current Trends

Infant Mortality — United States, 1991

The final infant (<1 year of age) mortality rate for the United States for 1991—8.9 infant deaths per 1000 live births—was the lowest rate ever recorded and represented a decrease of 3% from the rate of 9.2 for 1990 (Figure 1). Based on provisional data, the trend of declining infant mortality continued through 1992 (rate: 8.5) (*1*). Infant mortality rates varied by race; race reflected differing distributions of several risk factors for infant death (e.g., low birthweight [LBW] [<2500 g (5 lbs 9 oz) at birth]) and is useful for identifying groups at greatest risk for infant death. This report uses race-specific information from birth and death certificates compiled by CDC's National Center for Health Statistics' Vital Statistics System (*2*) to characterize infant mortality in 1991 and compares findings with those for 1990.

In this report, cause-of-death statistics are based on the underlying cause of death* reported on the death certificate by the attending physician, medical examiner, or coroner in a manner specified by the World Health Organization. Race for infants who died was tabulated by race of infant; race for live births (which comprise the denominator of infant mortality rates) was tabulated by race of mother. Rates are presented only for black and white infants because the Linked Birth/Infant Death Data Set (used to more accurately estimate infant mortality rates for other racial groups) was not available for 1990 and 1991.

*Defined by the World Health Organization's *International Classification of Diseases, Ninth Revision* (ICD-9), as "(a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury."

Infant Mortality — Continued

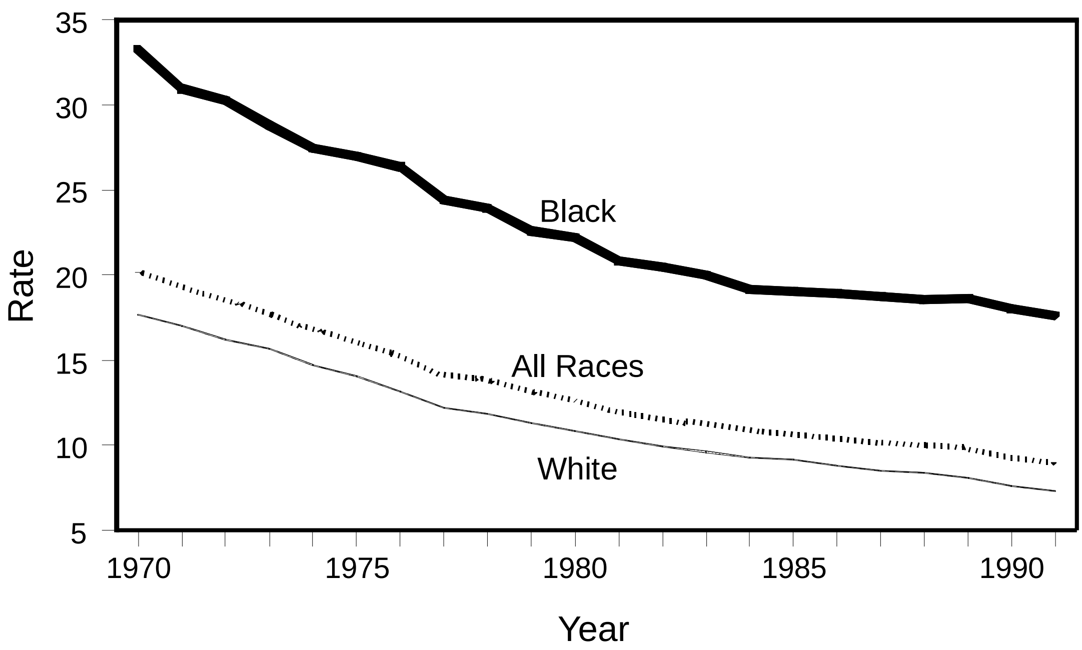
A total of 36,766 infants died during 1991, compared with 38,351 during 1990. The mortality rate for white† infants in 1991 (7.3 per 1000) decreased 4% from the rate in 1990 (7.6); for black† infants, the difference between the rates for 1990 and 1991 was not statistically significant (18.0 and 17.6, respectively). From 1990 to 1991, the neonatal (<28 days of age) mortality rate decreased 3% (5.8 to 5.6 per 1000). For white infants, the rate decreased from 4.8 to 4.5 and for black infants, from 11.6 to 11.2. The postneonatal (28 days–11 months of age) mortality rate remained constant at 3.4 in 1990 and 1991.

From 1990 to 1991, the infant mortality rate decreased for six of the 10 leading causes of infant death and increased for three causes (Table 1). The largest decreases were for intrauterine hypoxia and birth asphyxia (*International Classification of Diseases, Ninth Revision* [ICD-9], code 768) (20%), respiratory distress syndrome (RDS) (ICD-9 code 769) (9%), and congenital anomalies (ICD-9 codes 740–759) and newborn affected by maternal complications of pregnancy (ICD-9 code 761) (6% each). The increases were for disorders relating to short gestation and unspecified LBW (ICD-9 code 765) (4%), accidents§ and adverse effects (ICD-9 codes E800–E949) (4%), and infections specific to the perinatal period (ICD-9 code 771) (2%).

The rank order of the 10 leading causes of infant death differed by race (Table 1). Although the first four leading causes of death were the same for white and black infants, their rank ordering differed; these same four causes accounted for 56% and

† Includes Hispanic and non-Hispanic infants.
§ When a death occurs under "accidental" circumstances, the preferred term within the public health community is "unintentional injury."

FIGURE 1. Infant mortality rates,* by race† of mother — United States, 1970–1991



*Deaths at <1 year of age, per 1000 live births in specified group.
† Includes Hispanic and non-Hispanic infants; rates are presented only for black and white infants because the Linked Birth/Infant Death Data Set (used to more accurately estimate infant mortality rates for other racial groups) was not available for 1990 and 1991.

Infant Mortality — Continued

TABLE 1. Number of infant deaths, mortality rate,* and percentage of deaths for each cause, by race† of mother — United States, 1991

Race/Rank order§	Cause of death (ICD-9¶ codes)	No.	Rate	% Distribution
BLACK				
1	Disorders relating to short gestation and unspecified low birthweight (765)	1,957	286.7	16.3
2	Sudden infant death syndrome (798.0)	1,589	232.8	13.2
3	Congenital anomalies (740–759)	1,524	223.3	12.7
4	Respiratory distress syndrome (769)	898	131.6	7.5
5	Newborn affected by maternal complications of pregnancy (761)	519	76.0	4.3
6	Infections specific to the perinatal period (771)	304	44.5	2.5
7	Newborn affected by complications of placenta, cord, and membranes (762)	290	42.5	2.4
8	Accidents** and adverse effects (E800–E949)	276	40.4	2.3
9	Pneumonia and influenza (480–487)	234	34.3	2.0
10	Intrauterine hypoxia and birth asphyxia (768)	190	27.8	1.6
	All other causes (residual)	4,213	617.2	35.1
All causes		**11,994**	**1,757.1**	**100.0**
WHITE				
1	Congenital anomalies (740–759)	5,864	180.9	24.8
2	Sudden infant death syndrome (798.0)	3,572	110.2	15.1
3	Disorders relating to short gestation and unspecified low birthweight (765)	2,097	64.7	8.9
4	Respiratory distress syndrome (769)	1,622	50.0	6.9
5	Newborn affected by maternal complications of pregnancy (761)	988	30.5	4.2
6	Newborn affected by complications of placenta, cord, and membranes (762)	643	19.8	2.7
7	Accidents** and adverse effects (E800–E949)	638	19.7	2.7
8	Infections specific to the perinatal period (771)	556	17.2	2.4
9	Intrauterine hypoxia and birth asphyxia (768)	397	12.2	1.7
10	Pneumonia and influenza (480–487)	346	10.7	1.5
	All other causes (residual)	6,934	213.9	29.3
All causes		**23,657**	**729.9**	**100.0**
TOTAL††				
1	Congenital anomalies (740–759)	7,685	186.9	20.9
2	Sudden infant death syndrome (798.0)	5,349	130.1	14.5
3	Disorders relating to short gestation and unspecified low birthweight (765)	4,139	100.7	11.3
4	Respiratory distress syndrome (769)	2,569	62.5	7.0
5	Newborn affected by maternal complications of pregnancy (761)	1,536	37.4	4.2
6	Newborn affected by complications of placenta, cord, and membranes (762)	962	23.4	2.6
7	Accidents** and adverse effects (E800–E949)	961	23.4	2.6
8	Infections specific to the perinatal period (771)	881	21.4	2.4
9	Pneumonia and influenza (480–487)	607	14.8	1.7
10	Intrauterine hypoxia and birth asphyxia (768)	599	14.6	1.6
	All other causes (residual)	11,478	279.2	31.2
All causes		**36,766**	**894.4**	**100.0**

*Deaths at <1 year of age, per 100,000 live births in specified group.
†Race differences are presented only for black and white infants because the Linked Birth/Infant Death Data Set (used to more accurately estimate infant mortality rates for other racial groups) was not available for 1990 and 1991.
§Based on number of deaths.
¶International Classification of Diseases, Ninth Revision.
**When a death occurs under "accidental" circumstances, the preferred term within the public health community is "unintentional injury."
††Includes races other than black and white.

Infant Mortality — Continued

50% of all deaths among white and black infants, respectively. For white infants, the leading cause of death was congenital anomalies, which accounted for 25% of all deaths among white infants; for black infants, the leading cause of death was disorders relating to short gestation and unspecified LBW, which accounted for 16% of all deaths among black infants.

In 1991, the risk for dying during the first year of life was 2.4 times greater for black than for white infants. For each of the leading causes of death, the risk for death was higher for black than for white infants, although there were large variations in the magnitude of the excess by cause. The cause-specific ratios were highest for disorders relating to short gestation and unspecified LBW (4.4:1), pneumonia and influenza (ICD-9 codes 480–487) (3.2:1), RDS (2.6:1), infections specific to the perinatal period (2.6:1), and newborn affected by maternal complications of pregnancy (2.5:1). The ratios were lowest for sudden infant death syndrome (SIDS) (ICD-9 code 798.0); newborn affected by complications of placenta, cord, and membranes (ICD-9 code 762); and accidents and adverse effects (2.1:1 each) and congenital anomalies (1.2:1). Three of the 10 leading causes of infant death accounted for 42% of the difference in infant mortality between black and white infants: disorders relating to short gestation and unspecified LBW (22%), SIDS (12%), and RDS (8%).

Reported by: Mortality Statistics Br, Div of Vital Statistics, National Center for Health Statistics, CDC.

Editorial Note: The infant mortality rate—a standard index of health—is higher in the United States than in many other developed countries. In 1989 (the most recent year for which comparative data are available), the U.S. infant mortality rate ranked 24th among countries or geographic areas with a population of at least 1 million (*3*), a decline in rank from 1980 (20th) (*4*).

The U.S. infant mortality rate declined by approximately 5% per year during the 1970s, but slowed to an annual average decrease of 3% during the 1980s. The decline of 6% from 1989 to 1990 primarily reflected a 24% decrease in mortality from RDS. From 1990 to 1991, the infant mortality rate declined by 3%; more than half of this decrease represented declines in mortality from congenital anomalies (35%) and RDS (19%). The decline in mortality from congenital anomalies (6% overall) was primarily among whites; mortality from congenital anomalies remained constant among blacks. Shifts in the age distribution of mothers between 1990 and 1991 may account for some of the decline in mortality from congenital anomalies (*5*). The decline in mortality from 1990 to 1991 from RDS may reflect improvements in medical management of this condition (*6*).

Differences in infant mortality rates by race may reflect differences in factors such as socioeconomic status, access to medical care, and the prevalence of specific risks. For example, the mortality rate is substantially higher for infants born to mothers of low socioeconomic status (*7*). In 1990, nearly three times as many black as white infants (56% versus 20%) were members of families with incomes below the poverty level (Bureau of the Census, unpublished data, 1992). In addition, because of income differentials, a lower proportion of black women have health insurance that covers the costs of adequate care for pregnancy and childbirth (*6,8*).

LBW is an important intermediate variable between some risk factors and infant mortality. In 1987 (the most recent year for which such data were available), 6.9% of infants were born with LBW; however, 61% of all infant deaths occurred among these

Infant Mortality — Continued

infants. In 1991, 13.6% of black infants were born with LBW, compared with 5.8% of white infants (*6*). Most of the causes of death for which black infants are at substantially elevated risk for death are closely associated with LBW. For three of the four causes of infant death characterized by the highest ratios of black-to-white mortality rates (i.e., disorders relating to short gestation and unspecified LBW, RDS, and newborn affected by maternal complications of pregnancy), approximately 95% of the deaths in 1987 occurred among LBW infants (CDC, unpublished data, 1992).

The 1990 national health objective to reduce the overall infant mortality rate to 9.0 deaths per 1000 live births (*9*) was achieved in 1991 (recorded rate: 8.9). A year 2000 national health objective is to reduce the overall infant mortality rate to no more than 7.0 per 1000 live births (objective 14.1) (*9*). This objective can be achieved by sustaining an average annual decrease of at least 2.4% for the total population.

Strategies to achieve the national health objective for reducing infant mortality should consider the heterogeneity of factors accounting for infant mortality in the United States. For example, reducing mortality from disorders related to short gestation and unspecified LBW will require both improved access to adequate prenatal care and understanding of etiologic risk factors for preterm delivery; reduction of deaths related to maternal complications of pregnancy will require both expansion of access to prenatal care and assessment of the adequacy of the content of care (*10*). Efforts to address these and other heterogenous risk factors may increase the likelihood of achieving the year 2000 national health objective to reduce infant mortality.

References

1. NCHS. Annual summary of births, marriages, divorces, and deaths: United States, 1992. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1993. (Monthly vital statistics report; vol 41, no. 13).
2. NCHS. Advance report of final mortality statistics, 1991.Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1993. (Monthly vital statistics report; vol 42, no. 2, suppl).
3. NCHS. Health, United States, 1992. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1993; DHHS publication no. (PHS)93-1232.
4. NCHS. Health, United States, 1988. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1989; DHHS publication no. (PHS)89-1232.
5. NCHS. Advance report of final natality statistics, 1991. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1993. (Monthly vital statistics report; vol 42, no. 3, suppl).
6. Long W, Corbet A, Cotton R, et al. A controlled trial of synthetic surfactant in infants weighing 1250 g or more with respiratory distress syndrome. N Engl J Med 1991;325:1696–703.
7. Gould JB, Davey B, LeRoy S. Socioeconomic differentials and neonatal mortality: racial comparison of California singletons. Pediatrics 1989;83:181–6.
8. Alan Guttmacher Institute. Blessed events and the bottom line: financing maternity care in the United States. New York: Alan Guttmacher Institute, 1987.
9. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives—full report, with commentary. Washington, DC: US Department of Health and Human Services, Public Health Service, 1991; DHHS publication no. (PHS)91-50212.
10. Public Health Service. Caring for our future: the content of prenatal care—a report of the Public Health Service Expert Panel on the Content of Prenatal Care. Washington, DC: US Department of Health and Human Services, Public Health Service, 1989.

Epidemiologic Notes and Reports

Outbreaks of *Mycoplasma pneumoniae* Respiratory Infection — Ohio, Texas, and New York, 1993

From June through November 1993, three outbreaks of acute respiratory illness (ARI) occurred in institutional settings in Ohio, Texas, and New York. This report summarizes investigations by state and local public health officials, military personnel, and CDC, which indicate that *Mycoplasma pneumoniae* was the cause of these outbreaks.

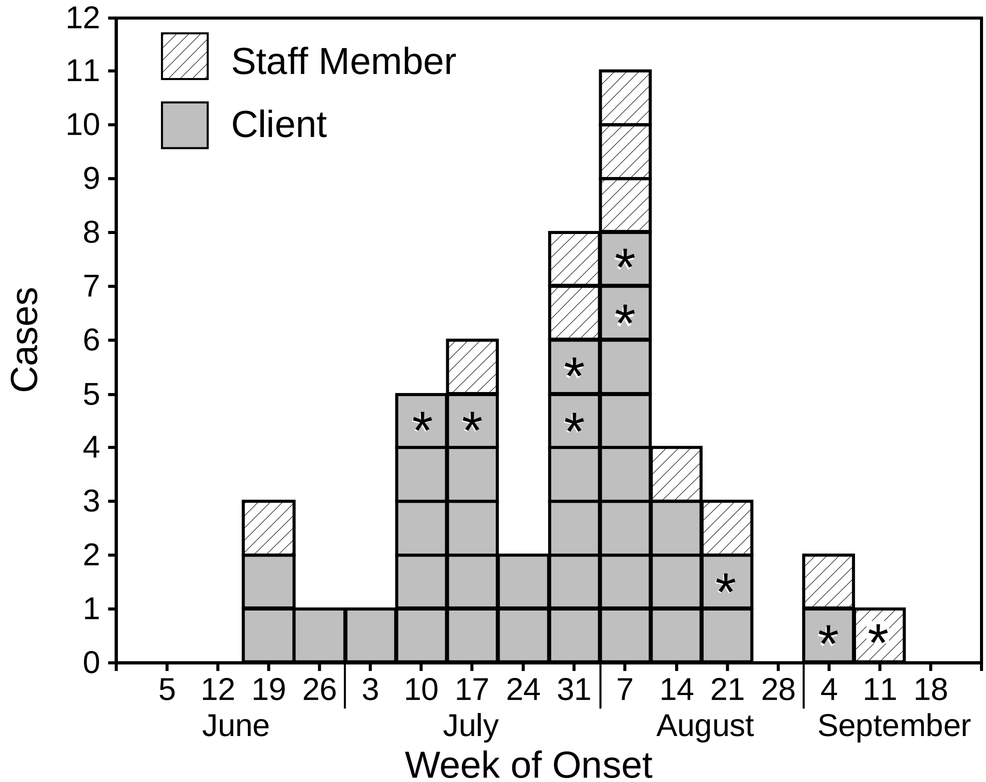
Ohio

From June 15 through September 5, ARI characterized by acute onset of cough and fever occurred among 47 (12%) of 403 staff members and clients of a sheltered workshop for developmentally disabled adults in Ohio (Figure 1). The median age of patients was 35 years (range: 20–60 years); seven (15%) required hospitalization, and 31 (66%) had radiographic evidence of pneumonia.

Thirty-eight persons had laboratory evidence of *Mycoplasma* infection: all had convalescent-phase serum antibody titers for *Mycoplasma* ≥32 by complement fixation (CF), 22 (58%) had CF titers of ≥128, and four (11%) had a fourfold rise in CF titers. *M. pneumoniae* was isolated from nasopharyngeal secretions of two of eight patients

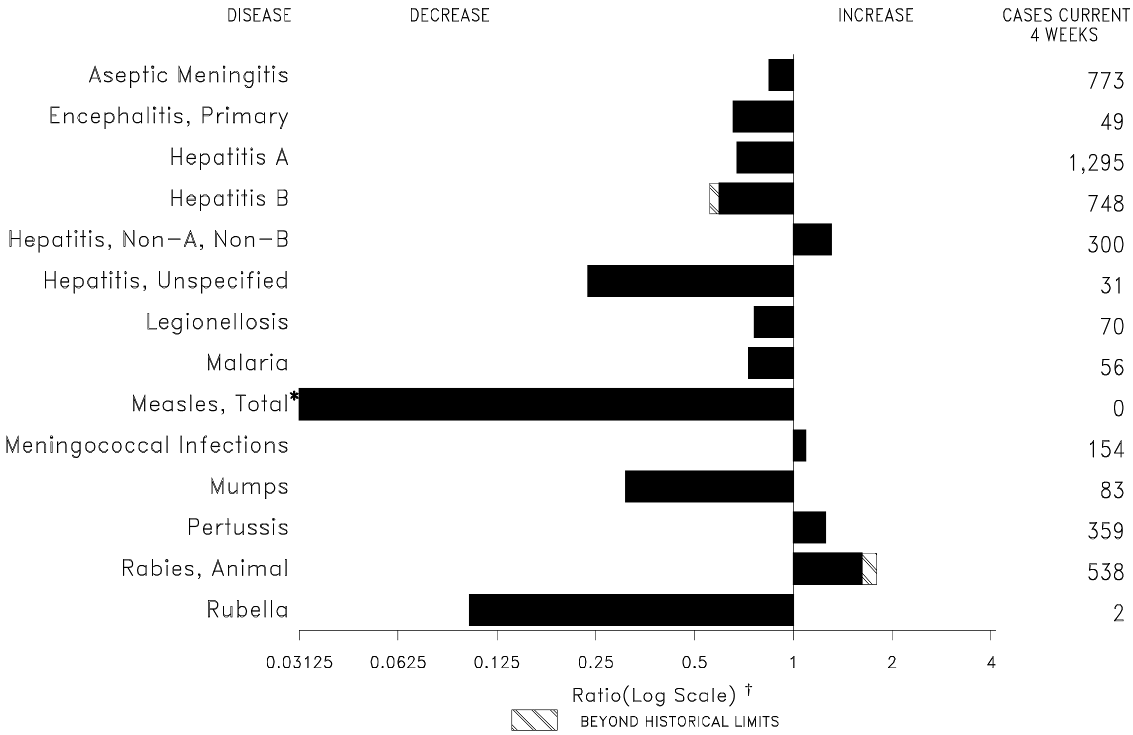
(Continued on page 937)

FIGURE 1. Cases of *Mycoplasma pneumoniae* among clients and staff members of a sheltered workshop, by week of onset — Ohio, June 15–September 5, 1993



*Case suspected but not laboratory confirmed.

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending December 4, 1993, with historical data — United States



*The large apparent decrease in reported cases of measles(total) reflects dramatic fluctuations in the historical baseline. (Ratio (log scale) for week forty-eight is 0.00000).

† 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 thehatched 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 December 4, 1993 (48th Week)

	Cum. 1993		Cum. 1993
AIDS*	92,481	Measles: imported	55
Anthrax	-	indigenous	222
Botulism: Foodborne	21	Plague	10
Infant	60	Poliomyelitis, Paralytic§	-
Other	2	Psittacosis	49
Brucellosis	86	Rabies, human	2
Cholera	17	Syphilis, primary & secondary	23,922
Congenital rubella syndrome	6	Syphilis, congenital, age < 1 year¶	1,493
Diphtheria	-	Tetanus	40
Encephalitis, post-infectious	148	Toxic shock syndrome	210
Gonorrhea	358,703	Trichinosis	15
Haemophilus influenzae (invasive disease)†	1,138	Tuberculosis	19,909
Hansen Disease	164	Tularemia	118
Leptospirosis	40	Typhoid fever	317
Lyme Disease	7,093	Typhus fever, tickborne (RMSF)	432

*Updated monthly; last update November 27, 1993.
†Of 1086 cases of known age, 357 (33%) were reported among children less than 5 years of age.
§Two (2) 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.
¶Reports through second quarter of 1993.

TABLE II. Cases of selected notifiable diseases, United States, weeks ending December 4, 1993, and November 28, 1992 (48th Week)

Reporting Area	AIDS*	Aseptic Menin-gitis	Encephalitis		Gonorrhea		Hepatitis (Viral), by type				Legionel-losis	Lyme Disease
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993
UNITED STATES	92,481	11,583	841	148	358,703	450,916	20,023	11,112	4,678	558	1,158	7,093
NEW ENGLAND	4,708	393	19	8	7,766	9,418	440	442	514	14	78	1,700
Maine	119	41	2	-	78	88	15	10	4	-	6	11
N.H.	101	52	-	2	66	106	36	117	420	3	7	68
Vt.	68	43	6	-	23	25	8	8	4	-	3	5
Mass.	2,542	160	7	4	2,914	3,342	208	228	78	11	43	173
R.I.	299	97	4	2	392	607	69	20	8	-	19	262
Conn.	1,579	-	-	-	4,293	5,250	104	59	-	-	-	1,181
MID. ATLANTIC	23,325	890	61	11	41,739	52,190	992	1,205	369	7	231	3,957
Upstate N.Y.	3,353	520	43	6	7,819	10,877	412	400	247	1	83	2,454
N.Y. City	12,872	104	1	-	11,403	18,402	177	121	1	-	3	3
N.J.	4,738	-	-	-	5,569	7,221	260	363	86	-	33	693
Pa.	2,362	266	17	5	16,948	15,690	143	321	35	6	112	807
E.N. CENTRAL	7,423	2,035	194	29	76,553	85,774	2,261	1,299	541	13	305	101
Ohio	1,490	698	67	4	20,819	25,668	300	173	36	-	154	44
Ind.	857	206	20	11	7,608	8,370	585	215	16	1	51	27
Ill.	2,645	473	45	3	26,030	28,543	795	258	71	5	18	13
Mich.	1,736	603	46	11	16,561	19,212	194	366	378	7	59	17
Wis.	695	55	16	-	5,535	3,981	387	287	40	-	23	-
W.N. CENTRAL	2,762	754	44	11	19,306	23,886	2,148	610	184	16	93	251
Minn.	602	110	15	-	2,386	2,818	430	72	12	4	2	118
Iowa	172	151	5	2	1,508	1,527	58	33	9	4	17	8
Mo.	1,468	224	6	9	11,287	13,439	1,304	425	133	8	26	71
N. Dak.	2	21	4	-	40	68	79	1	3	-	2	2
S. Dak.	25	22	7	-	243	160	16	-	-	-	-	-
Nebr.	169	27	1	-	476	1,499	184	20	12	-	39	5
Kans.	324	199	6	-	3,366	4,375	77	59	15	-	7	47
S. ATLANTIC	19,540	2,435	223	57	92,433	132,257	1,160	2,103	757	87	202	855
Del.	343	77	3	-	1,417	1,625	10	151	148	-	12	403
Md.	2,043	220	23	-	15,670	14,993	147	254	32	4	47	152
D.C.	1,334	33	-	-	4,669	6,143	11	39	1	-	14	2
Va.	1,381	316	39	7	10,799	14,049	138	134	47	42	9	74
W. Va.	96	56	116	-	606	776	26	42	37	-	4	50
N.C.	1,096	243	31	-	23,213	22,963	84	284	69	-	25	83
S.C.	1,375	29	-	-	9,800	10,267	18	50	5	1	19	9
Ga.	2,432	156	1	-	4,660	35,742	100	260	174	1	36	46
Fla.	9,440	1,305	10	50	21,599	25,699	626	889	244	39	36	36
E.S. CENTRAL	2,454	706	42	7	40,914	45,418	298	1,248	932	4	40	34
Ky.	318	304	14	6	4,632	4,385	118	79	16	-	15	11
Tenn.	1,045	160	8	-	11,949	14,404	89	1,066	901	3	17	19
Ala.	691	169	3	-	14,796	15,821	55	97	5	1	2	4
Miss.	400	73	17	1	9,537	10,808	36	6	10	-	6	-
W.S. CENTRAL	9,093	1,332	71	2	42,622	50,257	2,430	1,599	344	158	34	65
Ark.	372	66	2	-	8,619	7,319	48	53	4	2	4	2
La.	1,200	81	6	-	11,139	13,740	79	198	137	4	4	2
Okla.	676	1	8	-	4,015	5,164	207	276	133	9	16	20
Tex.	6,845	1,184	55	2	18,849	24,034	2,096	1,072	70	143	10	41
MOUNTAIN	3,705	670	29	5	10,100	11,472	3,690	646	328	74	67	20
Mont.	30	-	-	1	84	102	71	7	3	-	5	-
Idaho	69	11	-	-	152	112	263	75	-	3	1	2
Wyo.	48	7	-	-	75	54	14	29	103	-	6	9
Colo.	1,244	216	15	-	3,236	4,188	803	69	51	41	9	-
N. Mex.	292	119	4	2	890	852	365	216	105	4	6	2
Ariz.	1,207	172	8	-	3,591	3,926	1,274	81	13	12	14	-
Utah	236	66	1	1	326	303	738	53	34	13	11	2
Nev.	579	79	1	1	1,746	1,935	162	116	19	1	15	5
PACIFIC	19,471	2,368	158	18	27,270	40,244	6,604	1,960	709	185	108	110
Wash.	1,479	-	1	-	3,432	3,663	767	208	167	9	10	4
Oreg.	726	-	-	-	1,090	1,516	87	31	14	1	-	2
Calif.	16,819	2,222	150	18	21,618	33,986	4,965	1,691	515	172	90	103
Alaska	96	21	6	-	566	603	724	11	10	-	-	-
Hawaii	351	125	1	-	564	476	61	19	3	3	8	1
Guam	-	2	-	-	48	51	2	2	-	3	-	-
P.R.	2,871	60	-	-	474	209	78	380	93	2	-	-
V.I.	42	-	-	-	90	99	-	5	-	-	-	-
Amer. Samoa	-	-	-	-	40	48	19	-	-	-	-	-
C.N.M.I.	-	3	1	-	70	73	-	2	-	1	-	-

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

*Updated monthly; last update November 27, 1993.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending December 4, 1993, and November 28, 1992 (48th Week)

Reporting Area	Malaria	Measles (Rubeola) Indigenous		Measles (Rubeola) Imported*		Measles (Rubeola) Total	Meningococcal Infections	Mumps		Pertussis			Rubella		
	Cum. 1993	1993	Cum. 1993	1993	Cum. 1993	Cum. 1992	Cum. 1993	1993	Cum. 1993	1993	Cum. 1993	Cum. 1992	1993	Cum. 1993	Cum. 1992
UNITED STATES	1,105	-	222	-	55	2,206	2,182	32	1,492	94	5,457	3,004	2	186	148
NEW ENGLAND	92	-	58	-	6	65	124	-	10	7	747	224	-	2	6
Maine	6	-	2	-	-	4	12	-	-	3	22	11	-	1	1
N.H.	6	-	2	-	-	13	14	-	-	2	247	54	-	-	-
Vt.	2	-	30	-	1	-	7	-	-	-	86	10	-	-	-
Mass.	45	-	14	-	4	21	64	-	2	-	307	103	-	1	-
R.I.	6	-	1	-	1	21	1	-	2	-	10	6	-	-	4
Conn.	27	-	9	-	-	6	26	-	6	2	75	40	-	-	1
MID. ATLANTIC	211	-	11	-	7	213	261	6	118	17	831	190	-	62	10
Upstate N.Y.	117	-	-	-	2	111	114	2	40	5	324	110	-	17	7
N.Y. City	24	-	5	-	2	60	19	-	2	-	78	22	-	22	-
N.J.	45	-	6	-	3	42	43	-	12	-	64	58	-	17	3
Pa.	25	-	-	-	-	-	85	4	64	12	365	131	-	6	-
E.N. CENTRAL	74	-	22	-	5	61	349	1	226	14	1,258	681	-	8	10
Ohio	15	-	8	-	1	6	99	-	71	10	450	107	-	1	-
Ind.	3	-	1	-	-	20	53	-	5	1	155	52	-	3	-
Ill.	33	-	5	-	-	18	94	-	62	-	290	49	-	1	9
Mich.	18	-	5	-	1	13	58	1	73	3	109	14	-	2	1
Wis.	5	-	3	-	3	4	45	-	15	-	254	459	-	1	-
W.N. CENTRAL	31	-	1	-	2	14	156	1	50	3	534	299	-	1	8
Minn.	9	-	-	-	-	12	18	-	2	3	313	105	-	-	-
Iowa	4	-	-	-	-	1	27	1	10	-	37	10	-	-	3
Mo.	7	-	1	-	-	-	56	-	30	-	135	109	-	1	1
N. Dak.	2	-	-	-	-	-	3	-	5	-	5	15	-	-	-
S. Dak.	2	-	-	-	-	-	6	-	-	-	8	14	-	-	-
Nebr.	4	-	-	-	-	-	14	-	2	-	16	13	-	-	-
Kans.	3	-	-	-	2	1	32	-	1	-	20	33	-	-	4
S. ATLANTIC	289	-	17	-	13	130	394	3	442	19	589	176	1	10	20
Del.	2	-	1	-	-	1	13	-	7	-	16	7	-	2	-
Md.	49	-	-	-	4	16	50	1	79	5	137	35	1	3	5
D.C.	11	-	-	-	-	2	5	-	1	-	13	1	-	-	-
Va.	34	-	-	-	4	16	45	-	36	-	59	15	-	-	-
W. Va.	2	-	-	-	-	-	14	1	22	-	8	9	-	-	1
N.C.	98	-	-	-	-	24	63	-	224	-	152	43	-	-	-
S.C.	7	-	-	-	-	29	31	-	16	-	70	10	-	-	7
Ga.	20	-	-	-	-	3	90	-	16	2	38	17	-	-	-
Fla.	66	-	16	-	5	39	83	1	41	12	96	39	-	5	7
E.S. CENTRAL	28	-	1	-	-	467	136	-	49	-	266	29	-	1	1
Ky.	5	-	-	-	-	450	24	-	-	-	29	1	-	-	-
Tenn.	11	-	-	-	-	-	37	-	14	-	167	8	-	1	1
Ala.	7	-	1	-	-	-	44	-	22	-	59	17	-	-	-
Miss.	5	-	-	-	-	17	31	-	13	-	11	3	-	-	-
W.S. CENTRAL	32	-	7	-	3	1,106	202	11	228	10	172	231	1	18	7
Ark.	3	-	-	-	-	-	20	-	4	-	12	16	-	-	-
La.	6	-	1	-	-	-	35	1	18	-	12	12	-	1	-
Okla.	6	-	-	-	-	12	22	-	11	-	96	48	-	1	-
Tex.	17	-	6	-	3	1,094	125	10	195	10	52	155	1	16	7
MOUNTAIN	34	-	5	-	1	35	163	2	65	6	392	401	-	10	8
Mont.	2	-	-	-	-	-	13	-	-	-	11	9	-	-	-
Idaho	1	-	-	-	-	-	13	-	5	4	118	42	-	2	1
Wyo.	-	-	-	-	-	1	5	-	2	-	1	-	-	-	-
Colo.	20	-	2	-	1	29	34	-	16	1	133	88	-	1	2
N. Mex.	5	-	-	-	-	2	5	N	N	-	39	101	-	-	-
Ariz.	1	-	2	-	-	3	72	-	13	-	48	121	-	2	2
Utah	2	-	-	-	-	-	14	-	5	-	37	38	-	4	1
Nev.	3	-	1	-	-	-	7	2	24	1	5	2	-	1	2
PACIFIC	314	-	100	-	18	115	397	8	304	18	668	773	-	74	78
Wash.	28	-	-	-	-	11	69	-	10	6	73	212	-	-	8
Oreg.	5	-	-	-	-	3	25	N	N	3	37	42	-	3	1
Calif.	272	-	89	-	7	60	280	6	260	8	537	450	-	43	46
Alaska	3	-	-	-	2	9	13	1	11	-	5	14	-	1	-
Hawaii	6	-	11	-	9	32	10	1	23	1	16	55	-	27	23
Guam	1	U	2	U	-	10	2	U	8	U	-	-	U	-	3
P.R.	-	-	241	-	-	463	9	1	4	-	10	12	-	-	1
V.I.	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
Amer. Samoa	-	-	1	-	-	-	-	-	1	-	2	6	-	-	-
C.N.M.I.	-	18	42	-	1	2	-	-	13	-	1	2	-	-	-

*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 December 4, 1993, and November 28, 1992 (48th Week)

Reporting Area	Syphilis (Primary & Secondary)		Toxic-Shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1992	Cum. 1993	Cum. 1993	Cum. 1993	Cum. 1993
UNITED STATES	23,922	31,071	210	19,909	21,322	118	317	432	8,070
NEW ENGLAND	366	613	16	481	475	-	29	4	1,535
Maine	7	8	3	35	19	-	-	-	-
N.H.	29	37	6	9	17	-	2	-	132
Vt.	1	1	1	5	6	-	-	-	34
Mass.	117	303	5	264	270	-	21	4	645
R.I.	16	37	1	50	35	-	-	-	-
Conn.	196	227	-	118	128	-	6	-	724
MID. ATLANTIC	2,197	4,233	32	4,295	4,989	1	67	27	2,882
Upstate N.Y.	189	329	16	513	665	1	19	7	2,114
N.Y. City	1,116	2,349	1	2,442	2,883	-	26	-	-
N.J.	288	522	-	762	852	-	16	10	426
Pa.	604	1,033	15	578	589	-	6	10	342
E.N. CENTRAL	3,847	4,774	44	2,162	2,045	4	38	13	108
Ohio	1,101	779	11	291	291	-	7	8	6
Ind.	316	261	2	212	185	1	2	1	11
Ill.	1,464	2,168	8	1,136	1,052	2	21	2	23
Mich.	533	884	23	435	432	1	7	2	18
Wis.	433	682	-	88	85	-	1	-	50
W.N. CENTRAL	1,472	1,394	13	455	511	38	2	25	331
Minn.	63	91	2	62	148	-	-	1	42
Iowa	64	52	6	53	41	-	-	7	72
Mo.	1,221	1,065	2	227	222	15	2	11	24
N. Dak.	2	1	-	7	9	-	-	-	60
S. Dak.	2	-	-	14	20	17	-	3	45
Nebr.	10	24	-	18	22	3	-	2	11
Kans.	110	161	3	74	49	3	-	1	77
S. ATLANTIC	6,150	8,346	24	3,857	3,956	4	48	209	1,944
Del.	90	189	1	47	48	-	1	1	131
Md.	350	573	1	366	362	-	8	11	581
D.C.	305	364	-	149	103	-	-	-	16
Va.	623	672	7	402	312	-	6	12	370
W. Va.	13	17	-	70	83	-	-	6	87
N.C.	1,721	2,296	4	499	536	2	3	125	102
S.C.	869	1,131	-	360	380	-	-	10	154
Ga.	1,014	1,612	2	708	809	-	3	37	450
Fla.	1,165	1,492	9	1,256	1,323	2	27	7	53
E.S. CENTRAL	3,702	3,923	11	1,448	1,388	4	7	57	198
Ky.	322	161	3	345	356	1	2	11	19
Tenn.	989	1,106	4	424	425	2	2	32	72
Ala.	793	1,315	2	462	369	1	3	4	107
Miss.	1,598	1,341	2	217	238	-	-	10	-
W.S. CENTRAL	5,383	5,800	2	2,151	2,591	47	7	82	581
Ark.	683	843	-	167	199	27	-	9	40
La.	2,399	2,404	-	-	198	-	1	1	9
Okla.	390	415	2	146	150	16	1	67	66
Tex.	1,911	2,138	-	1,838	2,044	4	5	5	466
MOUNTAIN	219	321	14	487	533	14	10	15	166
Mont.	1	7	-	15	-	5	-	2	23
Idaho	-	1	2	13	22	-	-	-	6
Wyo.	8	7	-	6	-	3	-	10	24
Colo.	70	61	2	54	60	1	5	3	26
N. Mex.	24	40	1	59	71	2	2	-	9
Ariz.	93	156	1	222	237	-	2	-	59
Utah	11	8	6	28	65	2	1	-	4
Nev.	12	41	2	90	78	1	-	-	15
PACIFIC	586	1,667	54	4,573	4,834	6	109	-	325
Wash.	55	74	7	246	281	1	7	-	-
Oreg.	39	47	-	92	119	2	1	-	-
Calif.	478	1,534	47	3,953	4,127	3	98	-	304
Alaska	8	4	-	49	57	-	-	-	21
Hawaii	6	8	-	233	250	-	3	-	-
Guam	2	3	-	31	60	-	1	-	-
P.R.	468	308	-	233	200	-	-	-	43
V.I.	39	65	-	2	3	-	-	-	-
Amer. Samoa	-	-	-	2	-	-	1	-	-
C.N.M.I.	7	6	-	39	52	-	-	-	-

U: Unavailable

TABLE III. Deaths in 121 U.S. cities,* week ending December 4, 1993 (48th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
NEW ENGLAND	702	518	102	53	17	11	66
Boston, Mass.	165	108	32	11	9	4	19
Bridgeport, Conn.	37	27	5	4	1	-	3
Cambridge, Mass.	36	31	3	2	-	-	4
Fall River, Mass.	36	30	4	1	1	-	1
Hartford, Conn.	65	46	9	6	2	2	4
Lowell, Mass.	18	17	1	-	-	-	3
Lynn, Mass.	18	17	1	-	-	-	3
New Bedford, Mass.	43	31	8	4	-	-	4
New Haven, Conn.	55	32	15	5	2	1	2
Providence, R.I.	68	55	5	6	2	-	10
Somerville, Mass.	8	8	-	-	-	-	-
Springfield, Mass.	45	29	7	7	-	2	1
Waterbury, Conn.	43	34	5	4	-	-	3
Worcester, Mass.	65	53	7	3	-	2	9
MID. ATLANTIC	2,630	1,775	463	294	48	50	114
Albany, N.Y.	61	41	9	6	2	3	3
Allentown, Pa.	47	37	4	5	1	-	-
Buffalo, N.Y.	100	71	20	5	3	1	3
Camden, N.J.	52	33	13	2	4	-	2
Elizabeth, N.J.	39	26	7	4	2	-	2
Erie, Pa.§	54	44	7	1	1	1	3
Jersey City, N.J.	65	44	9	9	-	3	1
New York City, N.Y.	1,413	899	284	184	23	23	49
Newark, N.J.	43	19	12	11	-	1	2
Paterson, N.J.	35	21	1	8	1	4	-
Philadelphia, Pa.	300	217	45	29	8	1	19
Pittsburgh, Pa.§	88	62	13	7	2	4	6
Reading, Pa.	U	U	U	U	U	U	U
Rochester, N.Y.	145	117	18	6	-	4	15
Schenectady, N.Y.	25	22	-	3	-	-	1
Scranton, Pa.§	17	13	2	1	-	1	1
Syracuse, N.Y.	87	66	12	6	-	3	3
Trenton, N.J.	41	28	5	6	1	1	4
Utica, N.Y.	18	15	2	1	-	-	-
Yonkers, N.Y.	U	U	U	U	U	U	U
E.N. CENTRAL	2,426	1,602	425	211	120	67	143
Akron, Ohio	58	40	14	2	1	1	-
Canton, Ohio	50	43	5	1	1	-	4
Chicago, Ill.	371	161	72	68	58	12	19
Cincinnati, Ohio	143	98	26	10	2	7	9
Cleveland, Ohio	129	86	23	10	3	7	-
Columbus, Ohio	198	125	40	17	10	6	12
Dayton, Ohio	174	126	29	12	4	3	12
Detroit, Mich.	289	162	51	42	19	14	7
Evansville, Ind.	46	33	9	2	1	1	3
Fort Wayne, Ind.	89	69	16	1	3	-	5
Gary, Ind.	23	14	5	2	1	1	-
Grand Rapids, Mich.	74	46	12	9	3	4	14
Indianapolis, Ind.	208	155	41	7	2	3	16
Madison, Wis.	U	U	U	U	U	U	U
Milwaukee, Wis.	182	137	31	10	2	2	12
Peoria, Ill.	60	41	12	3	1	3	4
Rockford, Ill.	75	52	17	3	3	-	9
South Bend, Ind.	69	62	3	2	2	-	5
Toledo, Ohio	110	90	13	3	1	3	10
Youngstown, Ohio	78	62	6	7	3	-	2
W.N. CENTRAL	854	633	136	36	19	30	58
Des Moines, Iowa	61	43	14	1	3	-	1
Duluth, Minn.	38	29	5	3	1	-	5
Kansas City, Kans.	32	26	1	2	1	2	-
Kansas City, Mo.	101	75	16	4	1	5	4
Lincoln, Nebr.	44	35	6	1	1	1	5
Minneapolis, Minn.	221	164	36	9	5	7	26
Omaha, Nebr.	78	61	11	1	1	4	5
St. Louis, Mo.	148	109	19	9	4	7	8
St. Paul, Minn.	70	53	12	3	-	2	2
Wichita, Kans.	61	38	16	3	2	2	2

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	>65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,263	800	265	132	47	18	74
Atlanta, Ga.	165	95	34	25	7	4	6
Baltimore, Md.	188	117	37	22	10	2	15
Charlotte, N.C.	51	30	10	8	3	-	5
Jacksonville, Fla.	141	91	37	10	2	1	16
Miami, Fla.	107	59	27	14	5	2	1
Norfolk, Va.	66	36	16	6	6	2	5
Richmond, Va.	110	73	27	9	1	-	7
Savannah, Ga.	52	35	8	6	3	-	6
St. Petersburg, Fla.	60	49	8	3	-	-	1
Tampa, Fla.	173	133	22	12	2	3	10
Washington, D.C.	116	59	30	15	8	4	2
Wilmington, Del.	34	23	9	2	-	-	-
E.S. CENTRAL	653	439	128	60	15	11	39
Birmingham, Ala.	107	66	21	13	4	3	2
Chattanooga, Tenn.	43	33	6	1	3	-	-
Knoxville, Tenn.	76	49	13	9	4	1	6
Lexington, Ky.	81	60	14	5	2	-	10
Memphis, Tenn.	105	73	24	7	1	-	7
Mobile, Ala.	45	36	7	2	-	-	4
Montgomery, Ala.	42	32	6	3	-	1	-
Nashville, Tenn.	154	90	37	20	1	6	10
W.S. CENTRAL	1,655	1,013	320	187	84	48	86
Austin, Tex.	89	55	15	11	3	5	5
Baton Rouge, La.	48	32	11	2	2	1	3
Corpus Christi, Tex.	48	36	8	3	-	1	-
Dallas, Tex.	272	161	58	37	11	5	1
El Paso, Tex.	75	42	18	8	5	2	3
Ft. Worth, Tex.	101	71	17	11	2	-	10
Houston, Tex.	393	227	79	57	19	10	40
Little Rock, Ark.	88	56	22	4	3	3	8
New Orleans, La.	108	42	13	17	24	10	-
San Antonio, Tex.	257	169	48	21	9	10	5
Shreveport, La.	28	20	3	5	-	-	1
Tulsa, Okla.	148	102	28	11	6	1	10
MOUNTAIN	942	632	175	85	27	23	81
Albuquerque, N.M.	125	79	30	13	1	2	9
Colo. Springs, Colo.	44	26	9	8	1	-	2
Denver, Colo.	122	85	23	10	2	2	22
Las Vegas, Nev.	161	106	35	9	7	4	11
Ogden, Utah	28	23	4	1	-	-	2
Phoenix, Ariz.	191	124	34	19	3	11	18
Pueblo, Colo.	22	15	4	3	-	-	-
Salt Lake City, Utah	115	77	16	13	8	1	12
Tucson, Ariz.	134	97	20	9	5	3	5
PACIFIC	2,251	1,476	396	256	66	49	132
Berkeley, Calif.	24	17	4	3	-	-	2
Fresno, Calif.	50	33	9	3	3	2	7
Glendale, Calif.	26	22	2	2	-	-	-
Honolulu, Hawaii	84	57	17	7	2	1	5
Long Beach, Calif.	93	57	20	9	6	1	5
Los Angeles, Calif.	551	335	103	72	24	11	21
Pasadena, Calif.	50	37	5	3	-	5	4
Portland, Oreg.	102	70	18	10	1	3	4
Sacramento, Calif.	234	156	38	25	8	5	19
San Diego, Calif.	222	135	33	44	7	3	15
San Francisco, Calif.	210	122	45	36	2	5	7
San Jose, Calif.	200	143	36	14	2	5	21
Santa Cruz, Calif.	43	32	9	2	-	-	4
Seattle, Wash.	190	128	28	20	9	5	4
Spokane, Wash.	74	58	10	3	2	1	8
Tacoma, Wash.	98	74	19	3	-	2	6
TOTAL	13,376¶	8,888	2,410	1,314	443	307	793

*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.

with available specimens. Serologic and microbiologic studies were negative for acute viral and non-*Mycoplasma* bacterial infections.

Although no deaths occurred among persons with laboratory-confirmed cases, one workshop participant who had not been evaluated for *Mycoplasma* infection died on June 30 from complications of pneumonia.

Beginning August 6, persons with ARI were excluded from work until completion of at least 3 days of antimicrobial therapy. No cases of *M. pneumoniae* have been identified since September 5.

Texas

From August 1 through November 14, a total of 215 cases of ARI occurred among staff members at a 4500-employee tertiary-care center in southern Texas. Illnesses were characterized by abrupt onset of headache, shaking chills, and severe myalgias, followed by fever and cough. The median age of patients was 32 years (range: 19–70 years); 43 (20%) had radiographic evidence of pneumonia, and five (2%) required hospitalization.

Of 58 patients for whom paired serum specimens were available, convalescent-phase antibody titers by CF for *Mycoplasma* were ≥32 for 47 (81%); fourfold rises in CF antibody titers occurred in 12 (21%). Immunoblot studies in five patients demonstrated antibody to *M. pneumoniae* in convalescent-phase serum specimens. Serologic and microbiologic tests were negative for acute viral and non-*Mycoplasma* bacterial infections.

The most recent radiographically confirmed case of pneumonia occurred on November 8. Laboratory confirmation of other ARI cases is pending.

New York

On October 6, the New York State Department of Health initiated an investigation of ARI among clients and employees of an autism program in a residential developmental center in upstate New York. From August 1 through October 26, 48 cases (25%) of ARI or acute otitis media were identified among the 189 employees and clients of the program. The median age of affected persons was 33 years (range: 12–61 years). Three patients (6%) were hospitalized, 11 (23%) had radiographic evidence of pneumonia, and two (4%) had bullous myringitis.

M. pneumoniae was isolated from oropharyngeal secretions of two of five patients with available specimens. Of six patients with serum specimens available, CF convalescent-phase antibody titers were ≥64 in two. Serologic and microbiologic tests were negative for acute viral and non-*Mycoplasma* bacterial infections.

From October 7 through November 10, contact between clients and employees of the autism program and the other sections of the center was restricted. The most recent patient had onset of illness on October 26.

Reported by: L Smyth, S Swope, DO, L Wiser, GT Reed, DVM, Warren County Combined Health District, Lebanon; ED Peterson, RA French, MPA, FW Smith, MD, TJ Halpin, MD, State Epidemiologist, PJ Somani, MD, Director of Health, Ohio Dept of Health. M Emig, MD, RR Liu, MD, K Storms, GP Melcher, MD, MJ Dolan, MD, United States Air Force; J Schuermann, DM Simpson, MD, State Epidemiologist, Texas Dept of Health. SF Kondracki, CK Csiza, PhD, RA Duncan, MS, GS Birkhead, MD, DL Morse, MD, State Epidemiologist, New York State Dept of Health. Div of Field Epidemiology, Epidemiology Program Office; Childhood and Respiratory Diseases Br, Div of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC.

Mycoplasma pneumoniae — *Continued*

Editorial Note: *M. pneumoniae* is a common cause of acute upper and lower respiratory infection in children and young adults. Infections with *M. pneumoniae* occur sporadically throughout the year, and outbreaks are most common during the fall, typically in 4–7-year cycles (*1*). However, the findings in this report suggest a potential increase in the occurrence of *M. pneumoniae* infections this winter.

Transmission of *M. pneumoniae* infections probably occurs through close contact with contaminated respiratory droplets (*2*). The investigations in Ohio, Texas, and New York indicate that epidemics spanning several months may occur in institutional settings where prolonged contact is common (*2,3*). The incubation period for this pathogen (16–32 days) (*4*) may contribute to protracted duration of epidemics and may limit the effectiveness of cohorting as a measure for controlling outbreaks.

The precise incidence of *Mycoplasma* infection is unknown because surveillance is not conducted, and laboratory confirmation is usually not obtained. However, prospective studies suggest that *M. pneumoniae* accounts for 15%–20% of community-acquired lower respiratory infection in adults (*1,5*). Approximately 20% of infections are asymptomatic; symptomatic disease is typically mild and is characterized by nonproductive cough, fever, malaise, and pharyngitis (*6*). Other features include myalgias (45%) and otalgia (31%); 3%–13% of patients infected with *M. pneumoniae* develop pneumonia (*4,6*). Less common complications include adult respiratory distress syndrome, pericarditis, myocarditis, hemolytic anemia, and encephalitis (*1*). Macrolides or tetracycline are the antimicrobials of choice for *M. pneumoniae* infections; however, treatment does not eradicate carriage of the organism (*7*). The efficacy of prophylactic antimicrobial use in outbreak settings is undetermined.

Distinguishing *M. pneumoniae* from other causes of acute respiratory infection is difficult because of a lack of reliable, widely available, rapid diagnostic tests. Definitive diagnosis requires isolation of *Mycoplasma* or a fourfold rise in CF antibody titers between acute- and convalescent-phase serum specimens, ideally obtained 2–3 weeks apart (*8*). Isolation of this organism can be difficult and may require up to 6 weeks (*9*). Although single, elevated CF titers can be useful in identifying cases in epidemiologic investigations, they are of limited usefulness for clinical diagnosis. Cold agglutinins may be present in the acute serum of 30%–60% of patients; however, this finding is nonspecific and is not useful for diagnostic purposes (*8*). Rapid, direct assays of respiratory secretions are being evaluated but are not widely available commercially (*9*).

M. pneumoniae should be considered in patients with acute respiratory illnesses, especially if associated with failure to improve when patients are treated with β-lactam antibiotics. Persistence of the organism in respiratory secretions, despite appropriate antimicrobial therapy, may limit the usefulness of short-term cohorting during outbreaks. Prompt recognition of outbreaks in institutional settings, combined with cohorting of symptomatic patients when feasible, may avert morbidity.

References

1. Foy HM. Infections caused by *Mycoplasma pneumoniae* and possible carrier state in a different population of patients. Clin Infect Dis 1993;17(suppl):S37–S46.
2. Steinberg P, White RJ, Fuld SL, Gutekunst RR, Chanock RM, Senterfit LB. Ecology of *Mycoplasma pneumoniae* infections in Marine recruits at Parris Island, South Carolina. Am J Epidemiol 1969;89:62–73.

Mycoplasma pneumoniae — *Continued*

3. Fernald GW, Clyde WA Jr. Epidemic pneumonia in university students. J Adolesc Health Care 1989;10:520–6.
4. Foy HM, Grayston JT, Kenny G, et al. Epidemiology of *Mycoplasma pneumoniae* infection in families. JAMA 1966;197:859–66.
5. Marston BJ, Plouffe JF, Breiman RF, et al. Preliminary findings of a community-based pneumonia incidence study. In: Barbaree JM, Breiman RF, Dufour AP, eds. Legionella: current status and emerging perspectives. Washington, DC: American Society for Microbiology, 1993:36–7.
6. Clyde WA Jr. Clinical overview of typical *Mycoplasma pneumoniae* infections. Clin Infect Dis 1993;17(suppl):S32–S36.
7. McCormick WM. Susceptibility of *Mycoplasmas* to antimicrobial agents: clinical implications. Clin Infect Dis 1993;17(suppl):S200–S201.
8. Jacobs E. Serological diagnosis of *Mycoplasma pneumoniae* infections: a critical review of current procedures. Clin Infect Dis 1993;17(suppl):S79–S82.
9. Marmion BP, Williamson J, Worswick DA, Kok T-W, Harris RJ. Experience with newer techniques for the laboratory detection of *Mycoplasma pneumoniae* infection: Adelaide 1978–1992. Clin Infect Dis 1993;17(suppl):S90–S99.

International Notes

Driver Safety-Belt Use — Budapest, Hungary, 1993

An estimated 300,000 persons die and 10–15 million persons are injured each year in traffic crashes throughout the world (*1*). Safety-belt use is one of the most effective means of reducing the number and severity of injuries in motor-vehicle crashes (*2*). In Hungary, front-seat occupants of all motor vehicles have been required to use safety belts since 1976. Since March 1993, rear-seat passengers have been required to wear safety belts in nonurban areas. Drivers in violation of the law are subject to fines and potential suspension of driving privileges. To evaluate driver compliance with the safety-belt use law, on May 10, 1993, CDC conducted an observational prevalence survey of safety-belt use in Budapest in conjunction with the U.S. Department of State and the American International School of Budapest; this survey was performed in collaboration with the Hungarian Ministry of Transport, Communication, and Water Management and the Budapest Police Department. This report presents findings of the study.

Driver lap/shoulder safety-belt use was observed at seven moderate- to high-volume traffic sites in Budapest (1993 estimated population: 2,009,000). Sites were selected to reduce repetitive counting of observed vehicles. Pairs of pretrained high school students from the American International School collected information between 4:30 p.m. and 6 p.m. by observing vehicles at intersections convenient and safe for the students and by using a standardized form to record driver's safety-belt use, sex, and the type of vehicle (Eastern European or non-Eastern European [i.e., any cars not manufactured in the former Warsaw Pact countries]). Drivers of taxis (who are not required to wear safety belts) were included; drivers of buses, trucks, farm machinery, and motorcycles were excluded. Data differentiating taxis from other vehicles were not systematically recorded.

A total of 4894 eligible vehicles were included in the survey. Of the drivers, 3850 (79%) were male. The overall belt-use rate was 61%; however, the percentage of drivers using safety belts varied by observation site (range: 58%–65%). The

Safety-Belt Use — Continued

prevalence of safety-belt use was higher among female (64%) than male (60%) drivers (prevalence ratio [PR]=1.03; 95% confidence interval [CI]=1.00–1.06). Fifty percent of the vehicles were non-Eastern European models; drivers of Eastern European vehicles were more likely to use safety belts than drivers of non-Eastern European vehicles (65% versus 57%) (PR=1.2; 95% CI=1.1–1.3). Safety-belt use was higher among both female and male drivers of Eastern European vehicles (68% [95% CI=64%–72%] and 64% [95% CI=62%–66%], respectively) than among female and male drivers of non-Eastern European vehicles (59% [95% CI=55%–63%] and 56% [95% CI=54%–58%], respectively).

Reported by: LE Cohen, Environment, Science, and Technology Attaché, MD Laude, Fascell Fellow, US Embassy, Dept of State, Budapest; G Császár, Div of Roads and Road Transport, Ministry of Transport, Communication, and Water Management; E Komáromi, Dept of Prevention, Budapest Police Dept; FL Wassersug, Student Services, American International School of Budapest. Air Pollution and Respiratory Health Br, Div of Environmental Hazards and Health Effects, National Center for Environmental Health; National Center for Injury Prevention and Control, CDC.

Editorial Note: Safety-belt use legislation, first introduced in Australia in 1970, is the most effective means of increasing safety-belt use in many countries (*3*). At least 35 countries require safety-belt use (*4*). In the United States, safety-belt use is mandatory in 44 states. The only U.S. jurisdictions that have enacted legislation similar to that in Hungary—allowing primary enforcement of safety-belt use in all seating positions—are Oregon, California, American Samoa, and the Mariana Islands. When compared with secondary enforcement laws, implementation of primary enforcement laws appears to result in greater and more rapid and sustained increases in safety-belt use (*5*).

Observations in this study indicate that by May 1993, the prevalence of safety-belt use by drivers had increased from that documented by the Ministry of Transport, Communication, and Water Management in October 1992 (*6*). In that study, 31% of front-seat occupants (both drivers and passengers) were belted (*6*); however, only 40% of cars had a front-seat passenger. Although recent changes in the safety-belt use law in Hungary have targeted persons in rear-seat positions, increased use of safety belts among drivers may reflect three factors: 1) recent increases in fines, 2) stricter police enforcement of the law since April 1, 1993, and 3) increased public awareness generated by the media, which during April 1993 routinely broadcast information about the changes in the law.

The findings in this report are subject to at least three limitations. First, because many Eastern European vehicles have nonretractable lap/shoulder belts, some drivers of these vehicles may have been categorized as belted when they may have placed the belts across their shoulders and laps without buckling them. Second, this survey also included taxi drivers, who are not required to wear safety belts, and data differentiating taxis from other vehicles were not systematically gathered. Therefore, the percentage of drivers subject to the law who were in compliance was greater than 61%. Third, other potential sources of bias in the interpretation of the data from this study include lack of random selection of observation sites, restriction of observations to the commuting hour on a single day, and the highly urbanized environment in which the observations were made.

In Hungary, traffic crashes were the second leading cause of violent deaths (after suicide) in 1992, resulting in 2346 deaths (*7*). Although the number of deaths that

Safety-Belt Use — Continued

could have been prevented by safety-belt use has not been determined, the crude mortality rate for motor-vehicle crashes decreased 9% in the month after the safety-belt use law was expanded (Ministry of Transport, Communication, and Water Management, unpublished data, 1993). To increase safety-belt use, law enforcement officials in Budapest plan to widely disseminate the results of this study on television and are considering a campaign of expanded and long-term enforcement of the safety-belt law, with initial emphasis on low safety-belt use locations identified by this study.

References

1. Ross A, Baguley C, Hills B, McDonald M, Silcock D. Towards safer roads in developing countries: a guide for planners and engineers. Crowthorne, England: Transport and Road Research Laboratory, 1991.
2. Chorba TL. Assessing technology for preventing injuries in motor vehicle crashes. Int J Technol Assess Health Care 1991;7:296–314.
3. Vaaje T. Safety belt usage laws in various countries. In:Effectiveness of safety belt use laws: a multinational examination. Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration, 1986:13–23; publication no. DOT-HS-807-018.
4. El-Nour S, Mufti MH. Seat belt legislation and the experience of the world. Journal of Traffic Medicine 1992;20:83–90.
5. Escobedo LG, Chorba TL, Remington PL, Anda RF, Sanderson L, Zaidi AA. The influence of safety belt laws on self-reported safety belt use in the United States. Accid Anal Prev 1992;24:643–53.
6. Közlekedési Hirközlési és Vizügyi Minisztérium [Ministry of Transport, Communication, and Water Management]. Személygépkocsik biztonsági öveinek viselési arányai [Frequency of safety belt use in passenger cars]. Budapest: Technischer Überwachungs Verein Hannover Kft., 1992.
7. Központi Statisztikai Hivatal [Central Statistical Office]. Közlekedési balesetek [Transport accidents]. Budapest: Agria Kiadó Kft., 1991.

Epidemiologic Notes and Reports

Flood-Related Mortality — Missouri, 1993

Public health surveillance documented the impact of flood-related morbidity following the floods in the midwestern United States during the summer of 1993 (*1,2*). Because of extensive flooding of the Missouri and Mississippi rivers and their tributaries, the Missouri Department of Health (MDH) initiated surveillance to monitor flood-related mortality. This report summarizes epidemiologic information about deaths in Missouri that resulted from riverine flooding and flash flooding during the summer and fall of 1993.

To identify flood-related deaths, CDC and MDH telephoned and obtained epidemiologic information from medical examiners and coroners (ME/Cs) in the 71 disaster-declared counties and in St. Louis (1990 combined population: 4,166,122) and contacted coroners of 24 counties adjacent to disaster-affected areas (1990 combined population: 435,127). A flood-related death was defined as a death resulting from an event that occurred after June 28 (when flash floods began to occur and the potential threat of riverine flooding was recognized by the State Emergency

Flood-Related Mortality — Continued

Management Agency) and would not have happened—given the information provided by ME/Cs—had the floods not occurred.

Summer Flood-Related Mortality

From July 1 through August 31, ME/Cs from disaster-declared counties classified 27 deaths as flood-related. Decedents' ages ranged from 9 years to 88 years (mean: 37.8 years); 18 (67%) were male. No flood-related deaths were reported in adjacent counties.

Of the 27 deaths, 21 were directly related to the floods and resulted from drowning; six were indirectly related to the floods (i.e., flood-related activity with no direct physical contact with flood water). Thirteen of the 27 deaths were motor-vehicle–related (i.e., associated with operating or riding in a motor vehicle). Of the 16 (59%) deaths directly related to flash flooding, 14 resulted from drowning; of these, eight deaths occurred in four separate motor-vehicle–related incidents. Of the 11 (41%) deaths directly related to riverine flooding, seven resulted from drowning; of these, three deaths occurred in separate motor-vehicle–related incidents. Of the six deaths indirectly related to the floods, two each were attributed to electrocutions that occurred during cleaning efforts in or while reentering a flooded residence or business, stress-induced cardiac arrests, and trauma from motor-vehicle crashes in which usual traffic patterns were diverted because of rising water.

Of the 21 drownings, 10 were associated with recreational activities. Six drownings occurred in one incident when a flash flood inundated a cave in which the victims were exploring, and four drownings occurred in separate incidents associated with riverine flooding.

Fall Flood-Related Mortality

Flooding from heavy rains that occurred periodically from late September through early November contributed to 16 additional deaths: 14 were motor-vehicle–related, and two occurred when rising waters from the Missouri River flooded homes. Four deaths were associated with the Missouri River and 12 with smaller rivers or creeks.

Reported by: HD Donnell, Jr, MD, State Epidemiologist, R Hamm, MD, Office of Epidemiology, Missouri Dept of Health. Emergency Response and Coordination Group, and Disaster Assessment and Epidemiology Section, Health Studies Br, Div of Environmental Hazards and Health Effects, National Center for Environmental Health, CDC.

Editorial Note: Patterns of flood-related mortality vary according to flood type as determined by hydrologic characteristics (*3*). Flash floods, characterized by high-velocity streamflow and short warning and response times, have the greatest potential for causing death. In contrast, because riverine floods usually are caused by gradual accumulation of heavy rainfall, warning times are sufficient to allow safe evacuation of nearby communities. In Missouri, both flash flooding and riverine flooding occurred almost simultaneously on two major rivers and on other smaller rivers and creeks.

During the summer and fall floods of 1993 in Missouri, drowning was the leading cause of flood-related deaths—similar to other hydrologic disasters (*3–6*). Furthermore, a large proportion of flood-related drownings have been attributed to operating or occupying motor vehicles, particularly during flash floods. This may reflect motorists' misconception that motor vehicles can provide adequate protection from rising

Flood-Related Mortality — Continued

or swiftly moving flood waters. In this report, 75% (27/36) of the drownings that occurred during the summer and fall floods in Missouri were motor-vehicle–related.

The findings in this report underscore the importance of two strategies for preventing flood-related injuries and death. First, information about flood and post-flood hazards must be disseminated rapidly and widely to groups at increased risk for injury. For example, motorists should be warned not to drive through areas inundated by flash floods, not to enter swiftly moving water, and that only 2 feet of water can carry away most automobiles (*7*). In addition, recreational activities, such as wading or bicycling, in flooded areas should be discouraged. Second, hydrologic studies and hazard analyses should address potentially flood-prone tributaries. The hazard potential of such areas during flash floods should be identified, and appropriate warning signs should be posted. MDH is continuing surveillance of flood-related mortality to monitor circumstances of death.

References

1. CDC. Public health consequences of a flood disaster—Iowa, 1993. MMWR 1993;42:653–6.
2. CDC. Morbidity surveillance following the Midwest flood—Missouri, 1993. MMWR 1993;42:797–8.
3. French JG. Floods. In: Gregg MB, ed. The public health consequences of disasters. Atlanta: US Department of Health and Human Services, Public Health Service, CDC, 1989:39–49.
4. French JG, Ing R, Von Allmen S, Wood R. Mortality from flash floods: a review of National Weather Service reports, 1969–81. Public Health Rep 1983;98:584–8.
5. Duclos P, Vidonne O, Beuf P, Perray P, Stoebner A. Flash flood disaster—Nîmes, France, 1988. Eur J Epidemiol 1991;7:365–71.
6. Wintemute GJ, Kraus JF, Teret SP, Wright MA. Death resulting from motor vehicle immersions: the nature of the injuries, personal and environmental contributing factors, and potential interventions. Am J Public Health 1990;80:1068–70.
7. National Weather Service/American Red Cross/Federal Emergency Management Agency. Flash floods and floods...the awesome power!: a preparedness guide. Washington, DC: US Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service/American Red Cross, 1992; report no. NOAA/PA 92050, ARC 4493.

Notice to Readers

Workers' Family Protection Act

On November 15, 1993, CDC's National Institute for Occupational Safety and Health (NIOSH) published in the *Federal Register* * a request for existing information relevant to implementing the Workers' Family Protection Act†. NIOSH is requesting information on incidents of family poisonings or home contaminations by substances inadvertently carried home by workers on their clothing, equipment, or person and on regulations and methods for dealing with such incidents. Copies of the *Federal Register* announcement are available from the Docket Office Manager, Division of Standards Development and Technology Transfer (DSDTT), NIOSH; telephone (513) 533-8304. Additional information is available from the Deputy Director, DSDTT, NIOSH; telephone (513) 533-8302.

*58 FR 60202–60204.

†29 U.S.C. §671a.

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.

☆**U.S. Government Printing Office: 1993-733-131/83048 Region IV**