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Perspectives in Disease Prevention and Health Promotion

Suicide — United States, 1970-1980

During the 11-year period 1970-1980, 287,322 suicides occurred in the United States—approximately one every 20 minutes.* The unadjusted suicide rate for this period rose from a low of 11.6 suicides per 100,000 population in 1970 to a high of 13.1/100,000 in 1977, then declined to 11.9/100,000 in 1980. Males had a markedly higher risk of suicide than females, and the differential between rates for males and females continued to widen. Between 1970 and 1980, almost three-fourths (72.8%) of suicides occurred among males, and the suicide rate increased for males while it decreased for females. In 1980, the age-adjusted suicide rate for males (18.0) was more than three times that for females (5.4) (Table 1).

*Suicide deaths for these years were compiled from death certificate information by the National Center for Health Statistics, U.S. Department of Health and Human Services. Suicide deaths of nonresident aliens and U.S. citizens living abroad are excluded from this report. Because suicide varies by age, age-adjusted suicide rates are used in some parts of this report to allow for comparison of rates between populations without concern for age. The age-adjusted rates were computed by the direct method of standardization using the 1940 U.S. population as the standard.

TABLE 1. Age-adjusted suicide rates,* by race, sex, and year — United States, 1970-1980

Year	White			Black and other			All races			Unadjusted rate
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
1970	18.2	7.2	12.4	10.3	3.3	6.5	17.3	6.8	11.8	11.6
1971	18.0	7.4	12.4	10.1	3.8	6.7	17.2	7.0	11.8	11.6
1972	18.4	7.3	12.6	11.8	3.6	7.4	17.8	6.9	12.1	11.9
1973	18.6	7.0	12.5	11.5	3.3	7.1	17.8	6.6	11.9	11.9
1974	18.9	7.0	12.7	11.6	3.2	7.1	18.1	6.6	12.1	12.0
1975	19.6	7.3	13.2	11.9	3.5	7.4	18.8	6.8	12.5	12.6
1976	19.0	7.0	12.7	12.1	3.4	7.4	18.3	6.6	12.1	12.3
1977	20.3	7.1	13.5	12.2	3.6	7.6	19.4	6.7	12.8	13.1
1978	19.0	6.6	12.5	11.9	3.2	7.2	18.2	6.1	11.9	12.3
1979	18.6	6.3	12.2	12.7	3.3	7.7	17.9	5.9	11.7	12.1
1980	18.9	5.7	12.1	11.3	2.8	6.7	18.0	5.4	11.4	11.9

*Age-adjusted rates per 100,000 population computed by the direct method of standardization using the total population for 1940 as the standard population.

Suicide – Continued

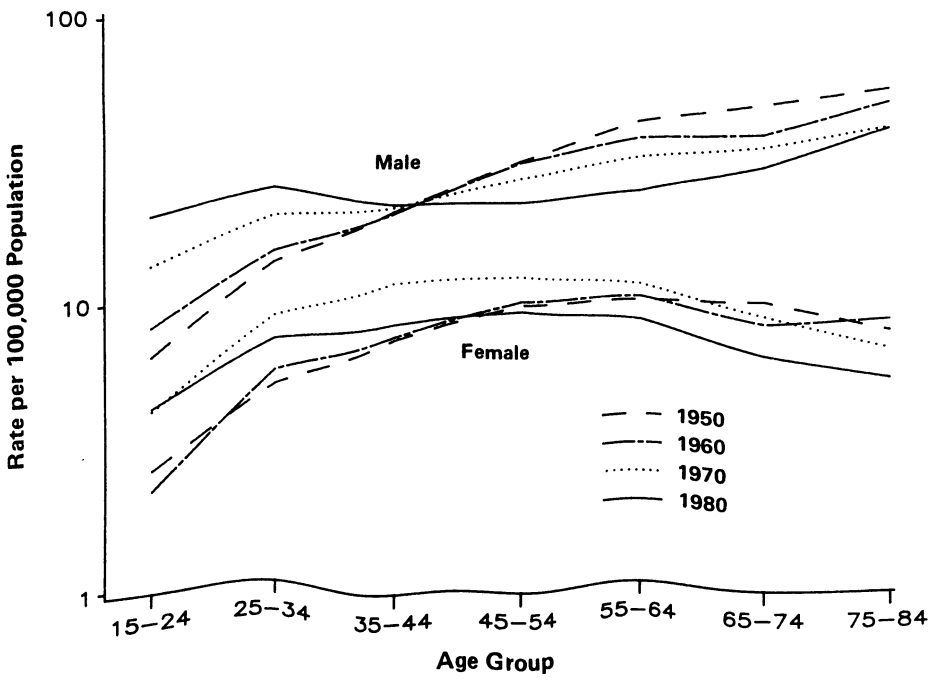
The age-adjusted suicide rate for whites (12.1) was almost twice that for blacks and other races (6.7). White males consistently had the highest suicide rates, with black and other males the second highest, followed by white females and black and other females. In terms of absolute numbers of suicides committed in the United States in 1980, 70% were among white males; 22%, among white females; 6%, among black and other males; and 2%, among black and other females.

While the overall suicide rate changed little, rates for older persons decreased, and rates for younger persons increased. In 1970, the median age of persons who committed suicide was 47.2 years of age; by 1980, the median age had decreased sharply to 39.9 years. In 1970, fewer than one-fourth (22.8%) of males who committed suicide were under age 30 years; by 1980, more than one-third (34.3%) of males who committed suicide were under age 30 years.

The most striking aspect of the change in suicide rates from 1970 to 1980 was the large percentage increase in rates for males in both the 15- to 24-year and 25- to 34-year age groups and the consistent percentage decrease in rates for females in all age groups except the youngest (15-24 years) (Figure 1). Between 1970 and 1980, suicide rates for males 15-24 years of age increased 50%, while those for females in this age group increased only slightly, the only increase for females in any age group. Again, in the 25- to 34-year age group, suicide among males increased almost 30%, while suicide among females in that age group decreased almost 20%.

Within the 15- to 24-year age group, most of the increase in the suicide rate is due to the increase in the suicide rate for white males. Suicide rates increased by 60% for white males

FIGURE 1. Suicide rates, by age group and sex — United States, selected years



Suicide — Continued

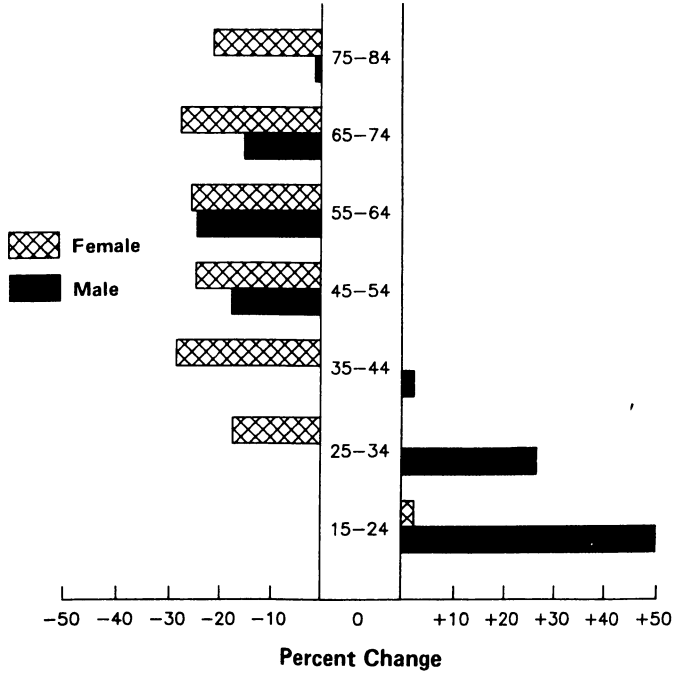
15-19 years of age, and for white males 20-24 years of age, by 44% between 1970 and 1980. As a result of these changes, even though white males had their highest suicide rates in the oldest age group, in absolute numbers, most suicides occurred among young persons. White males ages 15-39 years in 1980 represented one-half of suicides among white males and more than one-third (35.0%) of all suicide deaths in the United States. On the other hand, in both 1970 and 1980, approximately one-fifth of all suicides among white males were among those over 65 years of age.

For males, this pattern of suicide rates by age group has been changing consistently over the past 30 years (Figure 2). In 1950, suicide rates for males were lowest at the youngest ages and increased with each successive age group, attaining the highest rates at the oldest age groups. The 1980 pattern of suicide for males by age had changed so that the curve was relatively flat for all age groups before age 65 years. This change occurred, because, from 1950 to 1980, age-specific suicide rates for males increased for the youngest three age groups but decreased for the oldest four age groups. For females, the curve between 1950 and 1980 by age was unchanged, namely an inverted U-shaped curve with the lowest suicide rates in the youngest and oldest age groups and the highest rates in mid-life. However, as with the males from 1950 to 1980, rates for younger women increased, and rates for older women decreased.

The most commonly used method of suicide in the United States is firearms.† In 1970,

†The International Classification of Diseases, 9th Revision (ICD-9), category for firearms includes firearms and explosives (E955); however, less than 1% of suicide deaths classified in the category "firearms and explosives" are due to explosives.

FIGURE 2. Percent change in suicide rates, by age group and sex — United States, 1970 and 1980



Suicide – Continued

50.1% of the 23,480 suicides were caused by firearms; in 1980, 57.3% of the 26,869 suicides were caused by firearms. The pattern of suicide by method varies little by race. While the male pattern of suicide by method has changed little between 1970 and 1980, the female pattern of suicide by method has significantly changed. In 1970, as in 1980, firearms were the leading method of suicide for males (58.4% and 63.1%, respectively), followed by hanging, strangulation, and suffocation (14.6% and 14.6%, respectively). There was a shift, however, between 1970 and 1980, in the most frequent method of suicide for females. In 1970, poisoning by solids or liquids was the method most frequently used by females (36.7%), followed by firearms (30.2%); in 1980 firearms were the methods most frequently used by females (38.6%), followed by poisoning by solids and liquids (26.9%).

By geographic area, suicide rates in 1980 ranged from a low of 7.4 suicides/100,000 population in New Jersey to 22.9/100,000 in Nevada. By region of the country, suicide rates were lowest in the Northeast and highest in the West in both 1970 and 1980, but this difference diminished over this period. Rates for the Northeast, North Central, and South all increased between 1970 and 1980, while rates decreased for the West.

For the aggregate of all suicides for 1970-1980, there was a seasonal trend in the occurrence of suicide.[§] Suicides were more likely to occur during March, April, and May than other months of the year.

Reported by Violence Epidemiology Br, Center for Health Promotion and Education, CDC.

Editorial Note: Suicide is a serious public health problem in the United States. According to national vital statistics information, almost 27,000 persons took their own lives in 1980, making suicide the tenth leading cause of death for that year (Figure 3). Suicide is a special concern for adolescents and young adults for whom it is the third leading cause of death. In 1980 alone, suicide accounted for a loss of some 619,533 years of potential life lost for individuals between the ages of 1 and 65 years.[¶] Suicide ranked as the second leading cause of death for white persons 15-34 years of age. A problem of this magnitude requires priority attention on the part of public health agencies at the national, state, and local levels.

The marked increase in the percentage of suicides by firearms is also of considerable public health concern. The trend toward firearms and away from poisoning as a preferred method of suicide for females indicates a move toward more immediately lethal methods, i.e., methods with less chance of intervention or "rescue."

The number of suicides specified in the national vital statistics reflects the judgments and professional opinions of the physicians, coroners, or medical examiners who certify the medical/legal cause of death on the death certificate. Suicide statistics based on death certificates probably understate the true number of suicides for several reasons: (1) inadequate information on which to make a determination of suicide as the cause of death; (2) certifier error or bias; and (3) lack of awareness of a suicide because a body was never recovered, e.g., drowning after jumping from a bridge.

The Violence Epidemiology Branch of the Center for Health Promotion and Education, CDC, is responsible for assessing the magnitude of mortality and morbidity related to suicide and suicide attempts, identifying population groups at highest risk of suicide, and suggesting intervention and prevention strategies to be implemented by public health, social service, and education agencies (*1*).

[§]Unadjusted for the number of days in each month.

[¶]Calculated by multiplying the number of suicides in each 5-year age category by the difference between age 65 and the mid-point age for each 5-year age group from ages 15-64 years and the mid-point for the 1- to-14 year age category.

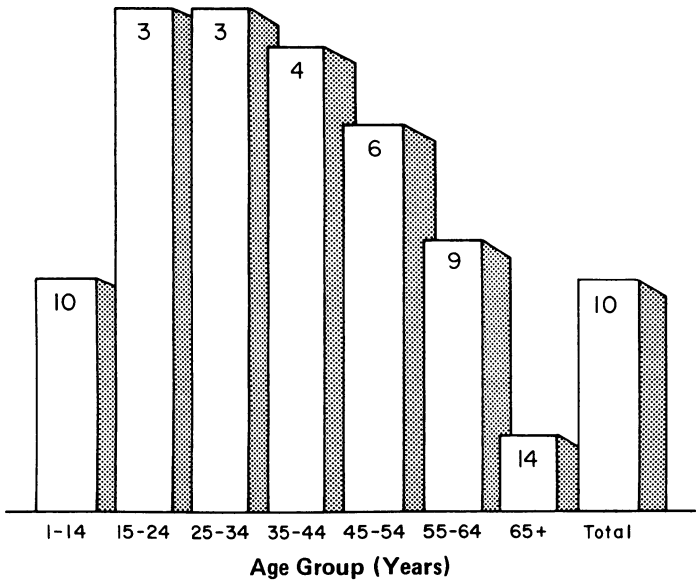
Suicide — Continued

Because of the increase in the suicide rate among young persons over the decade, the U.S. Department of Health and Human Services has established a specific health objective focusing on the problem of suicide among young persons. The federal objective states, "By 1990, the rate of suicide among people 15 to 24 should be below 11 per 100,000. (In 1978, the suicide rate for this age group was 12.4 per 100,000.)" (2). In an attempt to improve the statistical understanding of this phenomenon, CDC has begun working with appropriate professional organizations and individuals to explore the feasibility of developing and implementing a uniform set of criteria for the classification of suicide.

References

1. CDC. Suicide surveillance. Atlanta, Georgia: Centers for Disease Control, 1985.
2. U.S. Public Health Service. Promoting health/preventing disease: objectives for the nation. Washington, D.C.: U.S. Public Health Service, 1980:85.

FIGURE 3. Rank position of suicide among the 15 leading causes of death, by age group — United States, 1980



Epidemiologic Notes and Reports

Listeriosis Outbreak Associated with Mexican-Style Cheese — California

Between January 1, and June 14, 1985, 86 cases of *Listeria monocytogenes* infection were identified in Los Angeles and Orange Counties, California. Fifty-eight of the cases were among mother-infant pairs. Twenty-nine deaths have occurred: eight neonatal deaths, 13 stillbirths, and eight non-neonatal deaths. An increased occurrence of listeriosis was first noted at the Los Angeles County-University of Southern California Medical Center; all cases were in pregnant Hispanics, and all appeared to be community-acquired. A systematic review

Listeriosis – Continued

of laboratory records at hospitals in Los Angeles and Orange County identified additional cases throughout the area.

An analysis of Los Angeles County cases showed that 45 (63%) of the *Listeria* cases were among mother-newborn pairs. Most (70%) of these women had a prior febrile illness or were febrile on admission to the hospital. Forty-two of the neonatal patients had onset of disease within 24 hours of birth, and all isolates available for testing were serotype 4b. Three of the neonatal patients had late onset disease; only one of the two isolates available for testing was serotype 4b.

The mothers ranged in age from 15 years to 43 years (mean 28 years). The mean gestational age was 33 weeks. Forty-three (96%) of these pairs were Hispanic; one was white; and one was Asian. Table 2 shows the age and race data on the 26 nonperinatal cases.

A case-control study was conducted among the Los Angeles County Hispanic patients who had early onset; mothers with listeriosis were more likely to have consumed Mexican-style fresh cheeses than age-matched controls, Hispanic women who had delivered at the same hospital within 10 days of their matched case (odds ratio: 5.5; 95% confidence interval: 1.2-24.8). Consumption of cheese from one particular manufacturer, Jalisco Products, Inc., was significantly associated with risk of disease (odds ratio: 7.5; 95% confidence interval: 1.4-94.6).

Samples of Mexican-style cheeses from three different manufacturers purchased from markets in Los Angeles were cultured at CDC; four packages of Jalisco cheese products grew *L. monocytogenes* serotype 4b. The four positive cheese samples were of two varieties, queso fresco and cotija. All four contaminated samples had different expiration dates—ranging from June 28, to August 16, 1985—suggesting a continuing problem with this manufacturer's cheese products.

On June 13, the manufacturer instituted a voluntary recall of the implicated cheese products. Television, radio, and newspaper announcements were made warning the public against ingestion of Jalisco brand cheese products, as well as Guadalajara, Jimenez, and LaVaquita brands manufactured in the Jalisco plant. Currently, the California State Department of Food and Agriculture and the U.S. Food and Drug Administration are conducting studies of the dairy herds, physical plant, and cheese manufacturing processes.

Eighty percent of the cheese made by this manufacturer is distributed to Los Angeles and Orange Counties. However, Jalisco cheese products are distributed to at least 16 other states and most areas of California.

Reported by SM James, MPH, SL Fannin, MD, BA Agee, MD, B Hall, E Parker, J Vogt, G Run, MS, J Williams, L Lieb, MPH, Los Angeles County Dept of Health Svcs, C Salminen, Los Angeles County-University

TABLE 2. Age and race characteristics of nonperinatal *Listeria* patients — Los Angeles County, California

	Male	Female
No. cases	15	11
Age		
Mean age (yrs)	54	55
Range (yrs)	24-78	23-89
Race		
White	9 (60%)	3 (27%)
Hispanic	4 (27%)	6 (55%)
Black	1 (7%)	1 (9%)
Asian	1 (7%)	0
Other/unknown	0	1 (9%)

Listeriosis – Continued

of Southern California Medical Center, T Prendergast, MD, Orange County Health Dept; SB Werner, MD, J Chin, MD, State Epidemiologist, California State Dept of Health Svcs; U.S. Food and Drug Administration; Div of Field Svcs, Epidemiology Program Office, Respiratory and Special Pathogens Br, Div of Bacterial Diseases, Center for Infectious Diseases, CDC.

Editorial Note: Listeriosis is a bacterial disease causing meningitis and sepsis, especially in immunocompromised hosts. Pregnant women may also transmit the infection to their infants, resulting in abortion or early neonatal sepsis. The usual incidence of sporadic listeriosis is 2-3 per million population per year. Epidemics of listeriosis may also occur; recent outbreaks have been associated with ingestion of cabbage and pasteurized milk (*1,2*).

Listeriosis of the newborn may be preventable by recognition and prompt treatment of maternal listeriosis (*3,4*). Pregnant women who have consumed the implicated cheese and who develop fever or gastrointestinal symptoms should contact their physicians promptly. Because the cheese is distributed in at least 16 states, physicians throughout the country should consider listeriosis as a diagnosis in symptomatic, pregnant Hispanic women.

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2. Fleming DW, Cochi SL, MacDonald KL, et al. Pasteurized milk as a vehicle of infection in an outbreak of listeriosis. N Engl J Med 1985;312:404-7.
3. Hume OS. Maternal *Listeria monocytogenes* septicemia with sparing of the fetus. Obstet Gynecol 1976;48:33s-4s.
4. Katz VL, Weinstein L. Antepartum treatment of *Listeria monocytogenes* septicemia. South Med J 1982;75:1353-4.

Fatal Degenerative Neurologic Disease in Patients Who Received Pituitary-Derived Human Growth Hormone

Reports of rapidly progressive and fatal degenerative neurologic disorders in three recipients of human growth hormone (hGH) have been received by the U.S. Food and Drug Administration (FDA) and the National Institutes of Health (NIH). In two cases, diagnoses of Creutzfeldt-Jakob disease (CJD) were made at autopsy.

All three patients had had growth failure secondary to growth hormone deficiency. They had been treated during childhood and adolescence with hGH extracted from pooled human cadaver pituitary glands. The hormone used to treat these patients was produced and distributed by the National Hormone and Pituitary Program (NHPP, formerly the National Pituitary Agency) under an investigational exemption for the use of a new drug (IND).

Case 1. A 20-year-old man with hypopituitarism and Type I diabetes mellitus developed dysarthria and a gait disturbance in May 1984. By September, his neurologic status had deteriorated so that he was no longer able to walk, could not care for himself, and required bladder catheterization. His mental status had deteriorated, and he was unable to carry on a meaningful conversation. He died in November 1984. Examination of the brain revealed spongiform encephalopathy consistent with CJD.

This patient had grown poorly during the first year of life. Hypothyroidism was diagnosed when he was 15 months old. In September 1966, a diagnosis of growth hormone deficiency was made. The patient was treated with daily injections of hGH from September 1966 to July 1980.

Case 2. A 22-year-old man developed weakness and gait disturbance in the fall of 1983.

Neurologic Disease — Continued

During the next 6 months, he developed severe ataxia involving extremities, trunk, and head. He also had speech impairment, difficulty swallowing, and dementia. He died in April 1985. Histologic examination of the brain at the Armed Forces Institute of Pathology revealed extensive changes of spongiform encephalopathy compatible with CJD.

This patient was evaluated for growth failure at 7 years of age and was found to be growth hormone deficient. He was treated with hGH from June 1969 through October 1977.

Case 3. A 34-year-old man with hypopituitarism developed a gait disturbance in December 1983. He had received hGH from 1963 to 1969. Examination in June 1984 showed bilateral horizontal end gaze nystagmus, mild intention tremor, and wide-based gait. The symptoms worsened over the next several months, with increasing somnolence, memory loss, and urinary incontinence.

The patient's symptoms progressed to include swallowing difficulties, diplopia, and finally, dementia. He died in February 1985. No autopsy was done.

Reported by R Hintz, MD, Stanford University School of Medicine, Stanford, California; M MacGillivray

(Continued on page 365)

TABLE I. Summary—cases of specified notifiable diseases, United States

Disease	24th Week Ending			Cumulative, 24th Week Ending		
	June 15, 1985	June 16, 1984	Median 1980-1984	June 15, 1985	June 16, 1984	Median 1980-1984
Acquired Immunodeficiency Syndrome (AIDS)	195	100	N	3,286	1,766	N
Aseptic meningitis	111	123	139	1,785	1,919	1,919
Encephalitis: Primary (arthropod-borne & unspec.)	13	16	20	402	368	372
Post-infectious	5	3	2	64	53	51
Gonorrhea: Civilian	16,822	15,875	18,900	365,006	365,264	430,100
Military	355	429	450	8,366	9,454	12,389
Hepatitis: Type A	385	439	439	9,711	9,562	10,231
Type B	583	533	468	11,494	11,465	9,577
Non A, Non B	82	86	N	1,861	1,752	N
Unspecified	113	102	181	2,520	2,213	3,896
Legionellosis	22	12	N	258	251	N
Leprosy	12	3	3	151	109	103
Malaria	22	24	24	340	350	427
Measles: Total*	214	62	60	1,599	1,621	1,621
Indigenous	208	44	N	1,275	1,439	N
Imported	6	18	N	324	182	N
Meningococcal infections: Total	28	44	51	1,324	1,570	1,590
Civilian	28	44	51	1,321	1,567	1,575
Military	-	-	-	3	3	8
Mumps	58	93	93	1,806	1,783	2,676
Pertussis	46	32	30	668	929	503
Rubella (German measles)	11	28	31	268	394	1,412
Syphilis (Primary & Secondary): Civilian	392	566	566	11,297	12,764	13,764
Military	-	7	7	82	159	176
Toxic Shock syndrome	3	11	N	171	224	N
Tuberculosis	428	393	524	9,181	9,536	11,584
Tularemia	3	12	7	51	88	80
Typhoid fever	4	5	7	124	144	170
Typhus fever, tick-borne (RMSF)	14	43	49	160	223	283
Rabies, animal	71	144	144	2,294	2,367	3,052

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1985		Cum. 1985
Anthrax	-	Leptospirosis	11
Botulism: Foodborne (Utah 1)	4	Plague	3
Infant (Tex. 2)	22	Poliomyelitis: Total	2
Other	-	Paralytic	2
Brucellosis (Ohio 1, Tex. 1)	50	Psittacosis (Upstate N.Y. 1)	56
Cholera	-	Rabies, human	-
Congenital rubella syndrome	-	Tetanus (Ind. 1, Va. 1)	28
Congenital syphilis, ages < 1 year	74	Trichinosis (Pa. 1, Tex. 1)	34
Diphtheria	1	Typhus fever, flea-borne (endemic, murine) (Kans. 1, Tex. 1, Calif. 1)	5

*Three of the 214 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending June 15, 1985 and June 16, 1984 (24th Week)

Reporting Area	AIDS	Aseptic Menin-gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel-losis	Leprosy
			Primary	Post-in-fectious			A	B	NA,NB	Unspeci-fied		
	Cum. 1985	1985	Cum. 1985	Cum. 1985	Cum. 1985	Cum. 1984	1985	1985	1985	1985	1985	Cum. 1985
UNITED STATES	3,286	111	402	64	365,006	365,264	385	583	82	113	22	151
NEW ENGLAND	108	1	12	-	10,886	10,438	5	54	5	3	1	3
Maine	5	-	-	-	463	421	-	1	-	-	-	-
N.H.	-	-	4	-	226	304	-	-	-	-	-	-
Vt.	-	-	-	-	128	176	-	1	-	-	-	-
Mass.	64	-	8	-	4,122	4,176	4	32	4	3	1	3
R.I.	3	-	-	-	826	669	-	13	1	-	-	-
Conn.	36	1	-	-	5,121	4,692	1	7	-	-	-	-
MID ATLANTIC	1,325	18	62	5	51,939	50,126	43	70	9	5	-	13
Upstate N.Y.	165	7	21	4	7,309	7,483	20	32	4	3	-	-
N.Y. City	879	3	3	-	23,912	21,305	-	-	-	-	-	13
N.J.	203	8	16	-	9,252	8,279	18	26	4	2	-	-
Pa.	78	-	22	1	11,466	13,059	5	12	1	-	-	-
E.N. CENTRAL	126	13	88	13	50,940	48,840	30	68	2	6	14	3
Ohio	24	2	37	4	13,260	13,034	12	21	-	1	2	2
Ind.	5	4	13	1	5,059	5,589	-	10	-	2	8	-
Ill.	59	1	10	5	13,883	10,127	3	2	-	1	-	-
Mich.	25	6	23	-	14,539	14,375	15	35	2	2	4	1
Wis.	13	-	5	3	4,199	5,715	-	-	-	-	-	-
W.N. CENTRAL	34	3	30	3	18,127	17,262	10	21	3	-	1	-
Minn.	6	-	14	1	2,723	2,535	2	3	1	-	1	-
Iowa	3	-	10	-	1,941	1,984	2	4	-	-	-	-
Mo.	19	2	-	-	8,484	8,189	1	10	2	-	-	-
N. Dak.	-	-	-	1	127	176	-	-	-	-	-	-
S. Dak.	-	1	-	-	337	462	-	-	-	-	-	-
Nebr.	2	-	1	-	1,556	1,210	-	-	-	-	-	-
Kans.	4	-	5	1	2,959	2,706	5	4	-	-	-	-
S. ATLANTIC	453	21	47	19	80,400	93,594	35	105	18	12	1	3
Del.	7	-	1	-	1,795	1,643	-	2	-	-	-	-
Md.	56	2	13	1	12,996	10,566	4	13	-	4	-	1
D.C.	59	-	-	-	6,583	6,724	-	1	-	-	-	-
Va.	27	4	13	4	8,202	8,834	1	8	6	2	-	-
W. Va.	3	-	2	-	1,112	1,134	1	2	1	-	1	-
N.C.	28	-	15	-	15,596	15,088	-	-	-	-	-	1
S.C.	6	-	3	-	9,890	8,854	1	9	1	-	-	-
Ga.	84	6	-	-	-	18,191	8	26	-	-	-	-
Fla.	183	9	-	14	24,226	22,560	20	44	10	6	-	1
E.S. CENTRAL	28	20	17	4	31,366	30,828	11	41	3	2	1	-
Ky.	11	4	4	-	3,512	3,862	5	17	-	-	-	-
Tenn.	4	1	4	-	12,507	12,791	3	15	2	1	-	-
Ala.	12	15	7	4	10,089	10,136	3	3	-	1	1	-
Miss.	1	-	2	-	5,258	4,039	-	6	1	-	-	-
W.S. CENTRAL	256	17	41	1	51,042	50,216	30	29	3	20	1	12
Ark.	2	-	1	1	4,765	4,391	-	-	-	-	-	1
La.	53	1	1	-	11,245	11,547	4	5	-	-	-	1
Okla.	5	4	11	-	5,251	5,435	1	4	-	1	1	-
Tex.	196	12	28	-	29,781	28,843	25	20	3	19	-	10
MOUNTAIN	54	1	16	3	11,901	11,779	38	51	11	15	1	4
Mont.	-	-	-	-	336	516	1	-	-	-	-	-
Idaho	-	-	-	-	392	553	-	2	-	-	-	-
Wyo.	-	-	1	-	293	353	-	-	-	-	-	-
Colo.	25	-	5	-	3,692	3,381	8	8	1	4	-	1
N. Mex.	4	-	-	-	1,350	1,319	5	9	2	1	-	-
Ariz.	18	-	2	-	3,459	3,246	17	15	6	9	-	-
Utah	4	-	6	3	488	588	1	5	2	1	1	2
Nev.	3	1	2	-	1,891	1,823	6	12	-	-	-	1
PACIFIC	902	17	89	16	58,405	52,181	183	144	28	50	2	113
Wash.	44	5	8	-	3,890	3,680	16	11	5	3	-	26
Oreg.	13	-	-	-	2,883	2,904	24	15	3	2	-	2
Calif.	827	12	79	16	49,392	43,445	143	114	20	45	2	76
Alaska	2	-	2	-	1,392	1,285	-	2	-	-	-	-
Hawaii	16	-	-	-	848	867	-	2	-	-	-	9
Guam	-	U	-	-	59	109	U	U	U	U	U	1
P.R.	33	4	4	1	1,683	1,606	10	18	-	6	-	2
V.I.	2	-	-	-	225	222	1	-	-	-	-	-
Pac. Trust Terr.	-	U	-	-	146	-	U	U	U	U	U	20

N: Not notifiable U: Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending June 15, 1985 and June 16, 1984 (24th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1985	1985	Cum. 1985	1985	Cum. 1985	Cum. 1984	Cum. 1985	1985	Cum. 1985	1985	Cum. 1985	Cum. 1984	1985	Cum. 1985	Cum. 1984
UNITED STATES	340	208	1,275	6	324	1,621	1,324	58	1,806	46	668	929	11	268	394
NEW ENGLAND	19	14	30	2	87	91	63	1	36	1	35	21	-	9	17
Maine	2	-	-	-	-	-	2	-	6	-	2	-	-	-	1
N.H.	2	-	-	-	-	36	5	-	6	-	18	4	-	2	-
Vt.	-	-	-	-	-	4	11	-	2	-	2	11	-	-	-
Mass.	10	12	26	2§	84	38	11	-	13	-	5	5	-	6	16
R.I.	2	-	-	-	-	-	10	1	5	-	4	1	-	-	-
Conn.	3	2	4	-	3	13	24	-	4	1	4	-	-	1	-
MID ATLANTIC	54	11	121	1	22	91	217	12	201	2	59	67	5	74	131
Upstate N.Y.	19	4	57	-	9	23	92	6	112	2	26	44	2	11	93
N.Y. City	15	4	34	-	5	58	25	-	14	-	9	3	2	42	27
N.J.	6	3	7	1§	8	6	36	-	25	-	2	5	1	9	10
Pa.	14	-	23	-	-	4	64	6	50	-	22	15	-	12	1
E.N. CENTRAL	17	36	277	-	124	576	236	15	702	1	74	256	-	20	62
Ohio	3	-	-	-	42	6	75	3	204	-	15	47	-	-	2
Ind.	1	-	-	-	1	3	36	1	30	-	11	168	-	-	2
Ill.	1	36	191	-	66	162	49	6	139	-	12	18	-	5	35
Mich.	11	-	35	-	15	385	53	5	269	1	14	12	-	14	16
Wis.	1	-	51	-	-	20	23	-	60	-	22	11	-	1	7
W.N. CENTRAL	7	-	1	-	6	4	73	2	61	-	60	77	-	16	27
Minn.	1	-	-	-	4	2	17	-	1	-	13	7	-	2	1
Iowa	1	-	-	-	-	-	7	1	8	-	3	3	-	-	-
Mo.	2	-	-	-	2	1	32	1	10	-	12	14	-	5	-
N. Dak.	1	-	-	-	-	-	2	-	2	-	6	-	-	2	3
S. Dak.	1	-	-	-	-	-	1	-	-	-	1	3	-	-	-
Nebr.	-	-	-	-	-	-	4	-	2	-	3	2	-	-	-
Kans.	1	-	1	-	-	1	10	-	38	-	22	48	-	7	23
S. ATLANTIC	44	3	166	-	6	27	255	10	147	6	120	69	2	34	20
Del.	-	-	-	-	-	-	6	-	1	-	-	-	-	1	-
Md.	11	2	25	-	4	9	30	1	19	-	30	7	-	1	1
D.C.	3	-	-	-	1	5	6	-	-	-	-	-	-	-	-
Va.	10	-	18	-	1	2	33	4	25	1	4	8	-	1	-
W. Va.	1	-	31	-	-	-	5	3	49	-	-	7	-	9	-
N.C.	4	-	3	-	-	-	35	-	9	-	8	17	-	-	-
S.C.	-	-	-	-	-	-	28	1	7	-	-	2	1	3	-
Ga.	3	-	8	-	-	-	44	-	13	4	46	6	-	4	2
Fla.	12	1	81	-	-	11	68	1	24	1	32	22	1	15	17
E.S. CENTRAL	5	-	-	-	1	3	58	-	13	-	6	5	-	1	7
Ky.	1	-	-	-	-	1	4	-	1	-	1	1	-	1	3
Tenn.	-	-	-	-	-	2	20	-	10	-	1	2	-	-	-
Ala.	3	-	-	-	-	-	20	-	-	-	2	-	-	-	1
Miss.	1	-	-	-	1	-	14	-	2	-	2	2	-	-	3
W.S. CENTRAL	27	99	189	-	7	335	115	-	194	25	114	222	1	21	6
Ark.	-	-	-	-	-	1	10	-	4	-	10	10	-	1	3
La.	-	8	18	-	-	-	18	-	2	-	5	3	-	-	-
Okla.	1	-	-	-	-	5	24	N	N	1	62	200	-	1	-
Tex.	26	91	171	-	7	329	63	-	188	24	37	9	1	19	3
MOUNTAIN	20	31	385	-	43	138	63	4	182	1	35	67	-	4	11
Mont.	-	-	124	-	17	-	4	-	7	-	3	17	-	-	-
Idaho	1	3	78	-	18	23	2	-	5	-	-	2	-	1	1
Wyo.	-	-	-	-	-	-	5	-	2	-	-	3	-	-	2
Colo.	5	-	-	-	6	-	17	-	15	-	10	25	-	-	2
N. Mex.	8	-	1	-	2	88	8	N	N	-	4	5	-	2	-
Ariz.	3	28	182	-	-	-	18	4	88	1	10	9	-	1	-
Utah	2	-	-	-	-	27	7	-	5	-	8	4	-	-	6
Nev.	1	-	-	-	-	-	2	-	60	-	-	2	-	-	-
PACIFIC	147	14	106	3	28	356	244	14	270	10	165	145	3	89	113
Wash.	11	-	1	-	-	90	41	4	21	-	24	20	-	2	1
Oreg.	8	-	3	-	-	-	25	N	N	2	19	9	-	2	-
Calif.	111	13	92	3†	24	252	170	10	237	8	110	50	2	55	110
Alaska	2	-	-	-	-	-	5	-	3	-	9	-	-	1	-
Hawaii	15	1	10	-	4	14	3	-	9	-	3	66	1	29	2
Guam	-	U	10	U	-	87	-	U	4	U	-	-	U	1	4
P.R.	-	-	46	-	-	1	9	6	100	1	4	-	-	19	5
V.I.	-	-	4	-	6	-	-	-	3	-	-	-	-	-	-
Pac. Trust Terr.	-	U	-	U	-	-	-	U	3	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable †International §Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending June 15, 1985 and June 16, 1984 (24th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1985	Cum. 1984	1985	Cum. 1985	Cum. 1984	Cum. 1985	Cum. 1985	Cum. 1985	Cum. 1985
UNITED STATES	11,297	12,764	3	9,181	9,536	51	124	160 +18	2,294
NEW ENGLAND	249	253	-	306	267	-	6	1	8
Maine	7	2	-	23	13	-	-	-	-
N.H.	5	3	-	8	17	-	-	-	-
Vt.	2	1	-	4	3	-	-	-	-
Mass.	131	151	-	188	146	-	5	1	5
R.I.	7	8	-	27	23	-	-	-	-
Conn.	97	88	-	56	65	-	1	-	3
MID ATLANTIC	1,525	1,771	-	1,652	1,716	1	18	-	179
Upstate N.Y.	112	148	-	279	276	-	7	-	42
N.Y. City	920	1,085	-	814	719	1	5	-	-
N.J.	331	320	-	197	370	-	5	-	9
Pa.	162	218	-	362	351	-	1	-	128
E.N. CENTRAL	524	568	2	1,143	1,239	-	12	14	71
Ohio	65	121	-	209	250	-	3	13	14
Ind.	51	64	-	138	132	-	3	-	8
Ill.	267	154	-	497	509	-	1	-	13
Mich.	114	191	2	240	271	-	4	1	7
Wis.	27	38	-	59	77	-	1	-	29
W.N. CENTRAL	114	210	-	237	282	19	4	12 +2	412
Minn.	27	59	-	42	45	1	3	-	70
Iowa	14	10	-	36	34	-	-	-	83
Mo.	51	113	-	110	134	15	-	1	20
N. Dak.	1	4	-	2	7	-	-	1	55
S. Dak.	4	-	-	13	11	2	-	-	134
Nebr.	5	8	-	10	16	1	1	1	21
Kans.	12	16	-	24	35	-	-	9 2	29
S. ATLANTIC	2,794	3,799	-	1,932	2,019	5	12	67 +9	623
Del.	17	10	-	16	26	1	-	-	-
Md.	172	253	-	184	226	-	2	6	315
D.C.	175	144	-	80	77	-	-	-	-
Va.	144	203	-	173	190	-	2	6 3	79
W. Va.	4	11	-	48	71	-	-	1	13
N.C.	312	376	-	236	307	4	1	27	3
S.C.	347	353	-	231	244	-	-	20 2	36
Ga.	-	658	-	309	261	-	-	5 3	95
Fla.	1,623	1,791	-	655	617	-	7	2 1	82
E.S. CENTRAL	998	812	-	870	888	3	3	14 +2	113
Ky.	33	52	-	183	201	-	1	-	17
Tenn.	284	218	-	268	273	3	-	7 2	25
Ala.	305	273	-	273	271	-	2	4	69
Miss.	376	269	-	146	143	-	-	3	2
W.S. CENTRAL	2,823	3,020	-	931	1,057	13	6	45 +4	457
Ark.	143	89	-	104	116	4	-	7	72
La.	481	574	-	158	141	-	-	-	10
Okla.	82	79	-	126	111	7	-	33 4	58
Tex.	2,117	2,278	-	543	689	2	6	5	317
MOUNTAIN	349	299	-	229	234	8	5	6 +1	193
Mont.	2	1	-	29	11	2	-	3 1	101
Idaho	3	13	-	11	14	-	-	1	-
Wyo.	5	5	-	5	-	-	-	2	11
Colo.	87	68	-	29	25	1	4	-	6
N. Mex.	45	39	-	42	45	2	1	-	2
Ariz.	186	122	-	101	105	1	-	-	72
Utah	3	10	-	6	19	2	-	-	-
Nev.	18	41	-	6	15	-	-	-	1
PACIFIC	1,921	2,032	1	1,881	1,834	2	58	1	238
Wash.	51	66	-	101	92	-	-	-	1
Oreg.	42	63	-	69	71	1	-	-	1
Calif.	1,789	1,864	1	1,577	1,544	1	56	1	236
Alaska	1	3	-	51	28	-	-	-	-
Hawaii	38	36	-	83	99	-	2	-	-
Guam	2	-	U	12	24	-	-	-	-
P.R.	387	410	-	164	205	-	1	-	16
V.I.	1	7	-	1	3	-	47	-	-
Pac. Trust Terr.	13	-	U	16	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending June 15, 1985 (24th Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	632	431	128	34	15	24	42
Boston, Mass.	162	99	36	13	5	9	17
Bridgeport, Conn.	41	31	10	-	-	-	3
Cambridge, Mass.	14	9	5	-	-	-	-
Fall River, Mass.	34	29	4	-	-	1	-
Hartford, Conn.	37	23	10	2	1	1	-
Lowell, Mass.	27	20	4	2	1	-	2
Lynn, Mass.	14	10	3	1	-	-	2
New Bedford, Mass.	24	20	3	-	1	-	-
New Haven, Conn.	51	32	9	4	5	1	2
Providence, R.I.	77	52	14	4	1	6	5
Somerville, Mass.	15	11	3	1	-	-	-
Springfield, Mass.	53	38	9	3	1	2	4
Waterbury, Conn.	39	25	10	3	-	1	4
Worcester, Mass.	44	32	8	1	-	3	3
MID ATLANTIC	2,633	1,693	553	252	78	57	109
Albany, N.Y.	66	43	7	5	8	3	2
Allentown, Pa.	21	19	1	1	-	-	-
Buffalo, N.Y.	116	77	23	9	3	4	6
Camden, N.J.	41	29	8	4	-	-	1
Elizabeth, N.J.	18	10	5	2	1	-	-
Erie, Pa.†	42	32	5	3	-	2	4
Jersey City, N.J.	48	31	8	7	1	1	-
N.Y. City, N.Y.	1,275	798	279	145	30	23	49
Newark, N.J.	64	33	11	16	1	3	7
Paterson, N.J.	47	31	12	2	2	-	2
Philadelphia, Pa.	420	256	98	37	19	10	20
Pittsburgh, Pa.†	65	48	14	1	1	1	1
Reading, Pa.	35	27	6	-	2	-	1
Rochester, N.Y.	120	81	26	4	6	3	7
Schenectady, N.Y.	19	13	4	1	-	1	1
Scranton, Pa.†	26	22	2	1	-	1	-
Syracuse, N.Y.	130	88	26	9	3	4	3
Trenton, N.J.	27	17	8	2	-	-	1
Utica, N.Y.	24	15	6	2	1	-	2
Yonkers, N.Y.	29	23	4	1	-	1	2
E.N. CENTRAL	2,260	1,569	386	135	73	96	83
Akron, Ohio	57	45	7	2	1	2	-
Canton, Ohio	33	26	4	1	-	2	1
Chicago, Ill.§	553	462	11	26	16	37	16
Cincinnati, Ohio	159	100	39	13	6	1	19
Cleveland, Ohio	160	101	43	6	2	8	2
Columbus, Ohio	126	78	28	11	5	4	1
Dayton, Ohio	100	62	24	7	3	4	1
Detroit, Mich.	256	147	58	30	11	10	6
Evansville, Ind.	49	36	12	1	-	-	-
Fort Wayne, Ind.	55	40	10	3	1	1	2
Gary, Ind.	17	7	5	1	4	-	-
Grand Rapids, Mich.	64	52	5	1	4	2	2
Indianapolis, Ind.	161	96	33	14	10	8	4
Madison, Wis.	25	18	5	1	1	-	2
Milwaukee, Wis.	159	105	37	7	3	7	7
Peoria, Ill.	54	35	14	1	2	2	6
Rockford, Ill.	54	42	7	1	-	4	6
South Bend, Ind.	43	30	7	3	2	1	1
Toledo, Ohio	71	49	17	4	-	1	6
Youngstown, Ohio	64	38	20	2	2	2	1
W.N. CENTRAL	734	512	143	35	14	30	27
Des Moines, Iowa	63	44	15	-	-	4	3
Duluth, Minn.	36	27	5	2	-	2	-
Kansas City, Kans.	36	22	8	4	2	-	1
Kansas City, Mo.	126	81	32	5	5	3	6
Lincoln, Nebr.	29	22	5	1	1	-	-
Minneapolis, Minn.	87	58	14	8	-	7	1
Omaha, Nebr.	84	61	18	2	1	2	8
St. Louis, Mo.	141	103	24	6	3	5	3
St. Paul, Minn.	71	58	7	2	-	4	1
Wichita, Kans.	61	36	15	5	2	3	4
S. ATLANTIC	1,312	816	303	95	42	56	60
Atlanta, Ga.	175	107	36	19	6	7	9
Baltimore, Md.	286	168	71	24	8	15	5
Charlotte, N.C.	69	39	18	6	3	3	2
Jacksonville, Fla.	119	72	40	2	2	3	8
Miami, Fla.	122	72	37	5	3	5	2
Norfolk, Va.	49	31	10	2	-	6	6
Richmond, Va.	82	43	24	6	2	7	9
Savannah, Ga.	38	24	7	1	5	1	1
St. Petersburg, Fla.	122	106	8	5	2	1	6
Tampa, Fla.	79	46	20	4	5	4	6
Washington, D.C.	150	93	28	21	5	3	6
Wilmington, Del.	21	15	4	-	1	1	-
E.S. CENTRAL	668	443	146	39	26	14	34
Birmingham, Ala.	112	64	27	11	6	4	2
Chattanooga, Tenn.	54	38	10	4	1	1	5
Knoxville, Tenn.	64	44	16	1	3	-	5
Louisville, Ky.	83	53	21	3	3	3	-
Memphis, Tenn.	162	114	32	11	5	-	12
Mobile, Ala.	35	22	10	1	1	1	3
Montgomery, Ala.	42	31	8	1	1	1	2
Nashville, Tenn.	116	77	22	7	6	4	5
W.S. CENTRAL	1,257	748	308	117	50	34	48
Austin, Tex.	45	22	12	5	2	4	3
Baton Rouge, La.	51	33	15	2	-	1	2
Corpus Christi, Tex.	38	26	10	1	-	1	1
Dallas, Tex.	194	119	46	19	4	6	4
El Paso, Tex.	50	33	10	3	2	2	3
Fort Worth, Tex.	86	53	16	10	5	2	4
Houston, Tex.	235	129	53	31	13	9	4
Little Rock, Ark.	76	43	25	4	2	2	7
New Orleans, La.	149	81	41	20	6	1	-
San Antonio, Tex.	157	98	39	9	7	4	13
Shreveport, La.	51	30	16	3	2	-	1
Tulsa, Okla.	125	81	25	10	7	2	6
MOUNTAIN	578	346	129	43	30	30	26
Albuquerque, N.Mex.	48	29	10	2	5	2	3
Colo. Springs, Colo.	29	16	7	3	-	3	6
Denver, Colo.	121	76	20	8	7	10	-
Las Vegas, Nev.	75	41	24	5	5	-	6
Ogden, Utah	20	10	6	3	1	-	3
Phoenix, Ariz.	130	72	32	13	6	7	3
Pueblo, Colo.	20	14	3	2	-	1	-
Salt Lake City, Utah	52	30	12	4	2	4	-
Tucson, Ariz.	83	58	15	3	4	3	5
PACIFIC	1,999	1,283	416	158	68	67	97
Berkeley, Calif.	21	14	3	3	-	1	-
Fresno, Calif.	91	52	21	7	3	8	7
Glendale, Calif.	43	39	3	-	1	-	3
Honolulu, Hawaii	58	35	11	8	1	3	3
Long Beach, Calif.	99	65	18	6	2	8	4
Los Angeles, Calif.	616	393	132	43	27	15	20
Oakland, Calif.	89	59	20	3	3	4	5
Pasadena, Calif.	32	24	3	1	1	3	2
Portland, Oreg.	112	78	25	8	1	-	6
Sacramento, Calif.	134	80	32	13	4	4	11
San Diego, Calif.	132	82	27	15	5	3	8
San Francisco, Calif.	189	106	49	23	4	7	10
San Jose, Calif.	143	89	37	7	8	2	11
Seattle, Wash.	137	98	19	12	4	4	3
Spokane, Wash.	48	31	9	3	2	3	2
Tacoma, Wash.	55	38	7	6	2	2	2
TOTAL	12,073††	7,841	2,512	908	396	408	526

*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.

§ Data not available. Figures are estimates based on average of past 4 weeks.

TABLE V. Years of potential life lost, deaths, and death rates, by cause of death, and estimated number of physician contacts, by principal diagnosis, United States

Cause of morbidity or mortality (Ninth Revision ICD, 1975)	Years of potential life lost before age 65 by persons dying in 1983*†	Estimated mortality January 1985		Estimated number of physician contacts January 1985*¶
		Number*§	Annual Rate/100,000*§	
ALL CAUSES (TOTAL)	9,170,000	192,530	955.3	113,100,000
Accidents and adverse effects (E800-E949)	2,219,000	7,030	34.9	5,200,000
Malignant neoplasms (140-208)	1,808,000	40,110	199.0	1,700,000
Diseases of heart (390-398, 402, 404-429)	1,559,000	74,230	368.3	5,800,000
Suicides, homicides (E950-E978)	1,218,000	3,450	17.1	—
Chronic liver disease and cirrhosis (571)	248,000	2,540	12.6	100,000
Cerebrovascular diseases (430-438)	226,000	15,120	75.0	900,000
Congenital anomalies (740-759)	134,000	1,170	5.8	400,000
Chronic obstructive pulmonary diseases and allied conditions (490-496)	123,000	7,220	35.8	3,000,000
Diabetes mellitus (250)	115,000	3,510	17.4	3,100,000
Pneumonia and influenza (480-487)	106,000	6,710	33.3	2,300,000
Prenatal care*				2,900,000
Infant mortality*††		3,500	11.0 /1,000 live births	

*For details of calculation, see footnotes for Table V, *MMWR* 1985;34:2.

†Years of potential life lost for persons between 1 year and 65 years old at the time of death are derived from the number of deaths in each age category as reported by the National Center for Health Statistics, *Monthly Vital Statistics Report* (MVSR), Vol. 32, No. 13, September 21, 1984.

§National Center for Health Statistics, *Monthly Vital Statistics Report* (MVSR), Vol. 34, No. 2, May 28, 1985, pp. 8-9.

¶IMS America *National Disease and Therapeutic Index* (NDTI), Monthly Report, January 1985, Section III.

††MVSR Vol. 34, No. 1, April 18, 1985, p. 1.

Neurologic Disease — Continued

MD, A Joy, MD, Children's Hospital of Buffalo, New York; R Tintner, MD, University of Texas Health Science Center, Dallas; Center for Drugs and Biologics, U.S. Food and Drug Administration; National Institute for Arthritis, Diabetes, and Digestive and Kidney Diseases.

Editorial Note: CJD occurs with a frequency of approximately one case per million population per year in the United States and Europe (*1*). Most cases occur sporadically and involve patients over 50 years of age. Innoculation of chimpanzees with brain tissue from affected patients results in a similar neurodegenerative disease in the animals within 18-36 months (*2*). Iatrogenic CJD has been reported in a patient who received a corneal transplant from an af-

Neurologic Disease — Continued

fected donor (*3*) and in two patients exposed to intracranial electrodes that had previously been used in a patient with CJD (*4*).

The CJD pathogen is resistant to chemical and physical methods commonly used for decontamination or sterilization (*5*). There is evidence suggesting that procedures used recently to extract and purify hGH from cadaver pituitary glands may eliminate experimental contamination by scrapie, an agent similar to the CJD pathogen. The methods used by the NHPP were changed in 1977, but there is no assurance that current procedures eliminate the risk of transmitting the CJD pathogen.

From 1963 to early 1985, approximately 10,000 U.S. patients received hGH through the NHPP. The average duration of therapy was 4 years. Each patient received hormone from two or three batches per year. Each batch was derived from a pool of approximately 16,000 cadaver pituitary glands.

The three patients described here received hGH for 14, 8, and 6 years, respectively. Records of the NHPP indicate that patients 1 and 2 received several common lots. Patients 1 and 3 received one lot in common. No single lot was administered to all three patients; however, all three received hormone during 1969. The occurrence of fatal neurodegenerative disorders consistent with CJD in three of 10,000 patients exposed to hGH between 1963 and 1985 strongly suggests that the hormone, a product of pooled human tissue, may have been the vehicle for transmission of the CJD pathogen. It is not yet known how many other members of this cohort may have developed similar neurodegenerative disorders. Epidemiologic studies will be undertaken to determine the status of recipients of hGH.

Patients under 40 years of age with progressive dementing neurodegenerative disorders who may have received pituitary derived human growth hormone either through the NHPP or from commercial sources should be reported to: E Rappaport, MD, HFN-810, Center for Drugs and Biologics, U.S. Food and Drug Administration, 5600 Fishers Lane, Rockville, Maryland 20857; telephone (301)443-3520.

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Current Trends

Measles — North America, 1984

Since the introduction of measles vaccine in North America, Canada, Mexico, and the United States have made great strides in reducing morbidity and mortality associated with measles illness.

In Canada,* live attenuated measles vaccine came into limited use in 1964, and more broadly based vaccination programs were instituted in each province over the next 4-5 years. The incidence rate fell from 358 cases per 100,000 population during 1948-1958 to

*Estimated 1984 population: 25,127,900.

Measles – Continued

51/100,000 during 1969-1978, an 86% reduction (*1*). In 1981 and 1982, two of the 10 provinces (Ontario and New Brunswick, representing 39% of Canada's population) adopted school immunization laws requiring immunization against measles and five other vaccine-preventable diseases for school entry. In 1985, a third province (Manitoba) has also made measles vaccination a condition of school entry. Other provinces maintain a voluntary approach. All have achieved a vaccination coverage in excess of 90% at school entry (*2*). In 1981, the Canadian National Advisory Committee on Immunization has recommended a compulsory school measles vaccination policy for all provinces (*3*).

In Mexico,† measles vaccine became available in 1970, and the country's National Program of Vaccination against the disease formally began in 1973. By the early 1980s, the program's routine immunization in health centers and clinics and intensive house-to-house campaigns had afforded a coverage of approximately 70% of susceptible preschool-aged children. The reported incidence rate of measles has fallen from an average of 90 cases/100,000 population in the early 1970s to 10-20 cases/100,000 in the 1980s. Reported measles mortality has also fallen, from 2,609 deaths in 1973 (4.8/100,000 population) to 824 in 1981 (1.1/100,000) (*4*).

Measles vaccine was licensed in the United States§ in 1963, and in October 1978, a goal was established to eliminate indigenous measles from the United States. The annual number of reported measles cases has declined from about 500,000 cases in the prevaccine era to fewer than 5,000 cases since 1981. The reported incidence rate has also fallen from 315 cases/100,000 population in the prevaccine era to less than 1.5/100,000 since 1981. By the 1981-1982 school year, 96% of school enterers were vaccinated against measles (*5*).

In 1984, the number of reported measles cases increased for the first time in several years in Canada, Mexico, and the United States.

In Canada, provisional data indicate that 4,125 cases were reported during 1984, an incidence rate of approximately 16/100,000 population. This was the first significant increase in measles activity since the epidemic of 1980 (Figure 4), and represents a fourfold increase compared to 1983. Three of the 10 provinces accounted for almost all cases: Ontario (36%), Quebec (32%), and British Columbia (28%). More than 75% of cases occurred among children 5-19 years of age (Table 3). From 1983 to 1984, the greatest rise in the age-specific incidence rates was also in the school-aged population, with approximately fivefold, tenfold, and eightfold increases in the age groups 5-9 years, 10-14 years, and 15-19 years, respectively (*2*).

In Mexico, 5,158 cases were reported during 1984, an incidence rate of 6.6/100,000 population. This compares with the 3,368 reported cases for 1983 (Figure 5) and the incidence rate of 4.6/100,000. Five of the 32 districts accounted for 53.7% of cases: Jalisco (684), Nayarit (675), Distrito Federal (602), Michoacan (598), and Oaxaca (212). Fifty-six percent of patients were preschool-aged; 36% were 5-14 years old; and 8% were 15 years of age or older (Table 3). The highest age-specific incidence rate was 27.7/100,000 for children under 1 year of age, who accounted for 16% of total cases. The age distributions for 1983 and 1984 were similar.

Measles data for the United States in 1984 were recently reported in detail (*6*). Briefly, a provisional total of 2,534 cases was reported. This is a 69% increase from the 1,497 cases reported in 1983 (Figure 6). The incidence rate during this period rose from 0.6/100,000

†Estimated 1984 population: 77,589,500.

§Estimated 1984 population: 236,158,000.

Measles — Continued

population to 1.1/100,000. Eighty-two percent of cases were reported from seven states: Texas (602), Michigan (465), California (330), Illinois (182), Washington (172), New York (165), and Hawaii (163). The greatest increase in age-specific incidence rate from 1983 to 1984 occurred in the 10- to 14-year age group, from 1.1/100,000 to 3.8/100,000 (Table 3).

Reported by P Varughese, Bureau of Epidemiology, Laboratory Centre for Disease Control, Ottawa, Ontario, Canada; JH Burguete, MD, Director of Epidemiologic Surveillance, Ministry of Health, Mexico; Div of Immunization, Center for Prevention Services, CDC.

FIGURE 4. Reported measles cases, by 4-week periods — Canada, 1980-October 1984

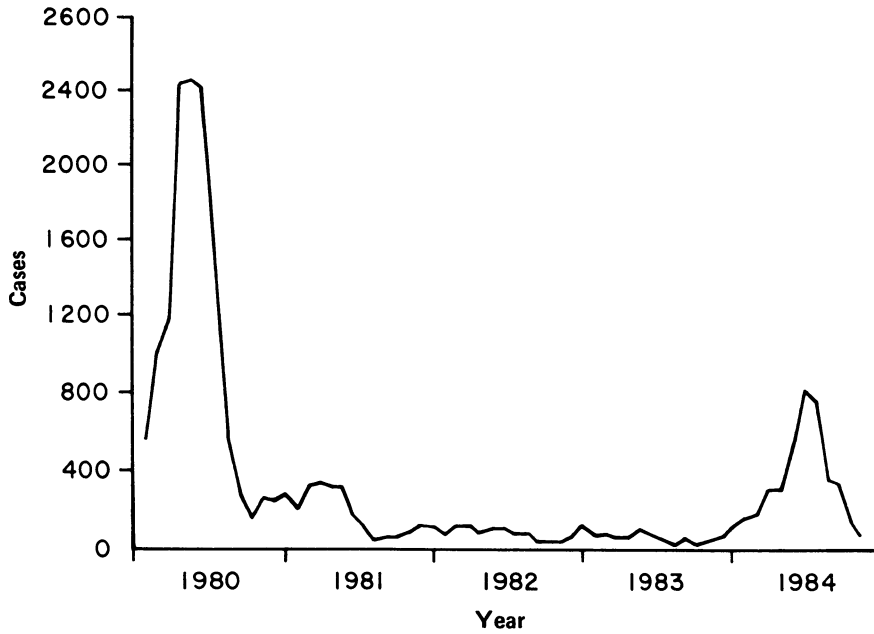


TABLE 3. Age distribution of reported measles cases with known ages — Canada, Mexico, United States, 1984

Age (yrs)	Canada (%)	United States* (%)	Mexico (%)
0-4	**17.6**	**24.5**	**56.2**
5-14	**62.3**	**37.8**	**35.6**
5-9	38.0	11.1	†
10-14	24.3	26.7	†
≥ 15	**20.0**	**37.8**	**8.1**
15-19	15.8	25.6	†
≥ 20	4.2	12.2	†
Total cases	**3,864**	**2,543**	**4,763**

*Provisional data.

†Age data not available.

Measles — Continued

FIGURE 5. Reported measles cases by month, 1983-1984, and year, 1980-1984 — Mexico

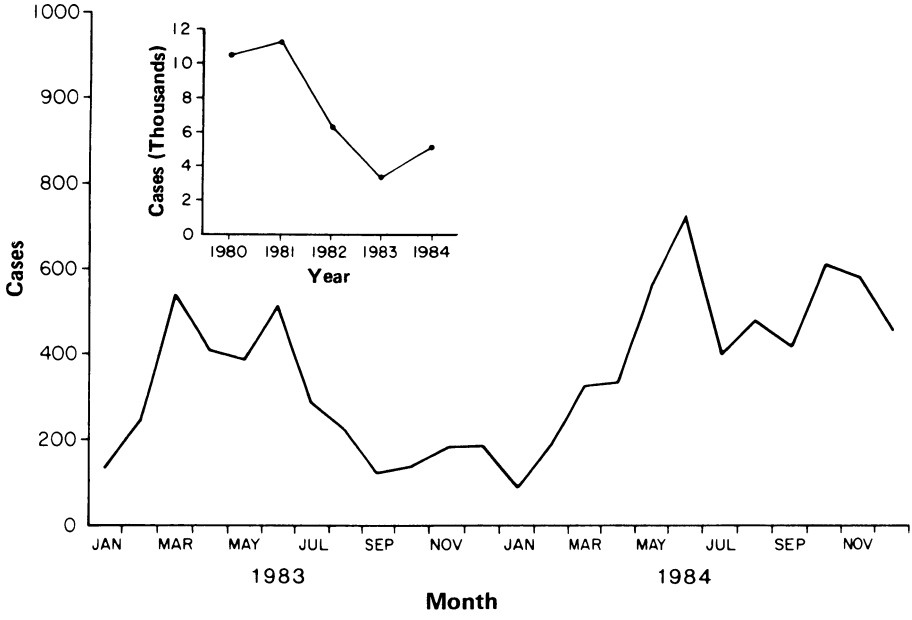
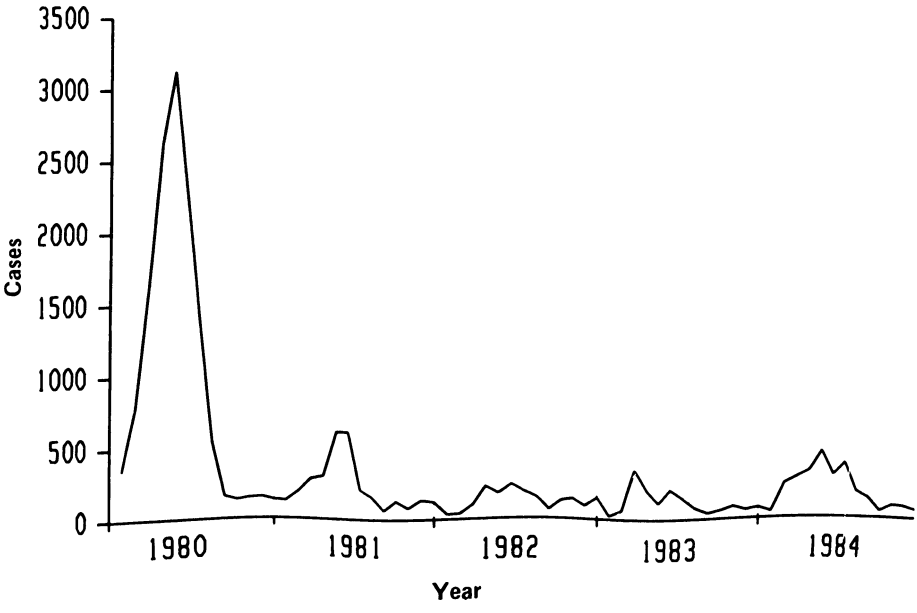


FIGURE 6. Reported measles cases by 4-week periods — United States, 1980-1984



Measles — Continued

Editorial Note: In 1984, the United States, Canada, and Mexico experienced substantial increases in the number of reported measles cases compared to 1983. The increases ranged from 53% in Mexico to a fourfold increase in Canada. The absolute figures for these countries may not be comparable with one another because reporting efficiencies vary. Nevertheless, they demonstrate a common trend toward measles control in the continent in spite of some increase in measles activity throughout North America in 1984.

Canadian health officials have attributed the increase in that country to clusters of measles cases in individuals who are susceptible for a variety of reasons, including the earlier practice of vaccination below the age of 12 months, the use of killed measles virus vaccine in some of the older children, unimmunized populations refusing vaccination for religious reasons, and the importation of measles cases (*2*). The high proportion of patients 5-9 years of age in Canada (38%), compared to the United States (11%), suggests that lower vaccination levels in the first few grades of school may also be an important factor.

In contrast to Canada and the United States, where the greatest number of measles cases is seen among school-aged children, the measles problem in Mexico primarily involves infants and children under 5 years of age. Therefore, the current measles control strategy in Mexico focuses on young children and is based on routine vaccination throughout the year of children brought to health centers and clinics, reinforced by intensive house-to-house programs of immunization. The large number of small villages with scattered populations and shortages of vaccine have been identified as obstacles to improving coverage (*4*).

In the United States, 66% of cases are considered nonpreventable,¶ reflecting coverage levels in excess of 90%. Most cases classified as preventable are among school-aged children, although the highest proportion of preventable cases occurs among preschool-aged children above the age of 15 months and in young adults. This illustrates the need for additional emphasis on: (1) age-appropriate vaccination of preschool-aged children; (2) continued vigorous enforcement of school immunization laws; and (3) vaccination of susceptible postschool-aged persons (particularly those in congregate settings, such as colleges) (*6*).

While increases in the measles incidence rate were seen in all three countries in 1984, the reported occurrence was still substantially less than in recent years. As recently as 1979, each of the three countries reported more than 10,000 measles cases. All three countries have made substantial progress in controlling measles by vaccination. Continued application of the current strategies should result in further decreases. Recent concurrent establishment of measles elimination goals in Europe provides reason to hope that Europe and North America will be the first two continents to eliminate indigenous measles transmission.

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¶A case is considered preventable if measles illness occurs in a U.S. citizen: (1) at least 16 months of age; (2) born after 1956; (3) lacking adequate evidence of immunity to measles (documented receipt of live measles vaccine on or after the first birthday and at least 2 weeks before onset of illness or a physician-diagnosed measles disease or laboratory evidence of immunity); (4) without a medical contraindication to receiving vaccine; and (5) with no religious or philosophical exemption under state law.

Intravenous Quinidine Gluconate in the Treatment of Severe *Plasmodium falciparum* Infections

Because of its rapid schizontocidal action, quinine has been the drug of choice in treating severe *Plasmodium falciparum* infections. While quinine sulfate for oral use is readily available in the United States, oral therapy is often not practical for patients with severe infections from high parasite densities complicated by gastrointestinal upset, an abnormal sensorium, or endotracheal intubation. Quinine dihydrochloride for intravenous use, the usually recommended drug for such infections, is no longer commercially available in the United States because of extremely limited demand. Rather, it must be shipped from CDC, which can lead to delays in the institution of therapy that may adversely affect the outcome.

Recent studies from Thailand, where there is renewed interest in the use of quinidine as an antimalarial because of increasing insensitivity to quinine, have shown both oral and intravenous quinidine to be as effective as quinine in clearing parasitemia (*1,2*). In 14 patients with severe *P. falciparum* infections treated with intravenous quinidine gluconate, toxicity was limited to electrocardiographic effects in all patients (QT interval prolongation, QRS complex widening, and T-wave flattening) without dysrhythmia; hypotension occurred in two patients who responded to saline infusion and temporary discontinuation of the drug. The safety of intravenous quinidine gluconate when appropriately administered under closely monitored conditions has been further demonstrated in patients with heart disease undergoing electrophysiologic study and in healthy normal volunteers (*3-5*).

Quinidine gluconate is an attractive alternative to quinine dihydrochloride in the treatment of *P. falciparum* infections when intravenous therapy is indicated because of its ready availability in most U.S. acute-care facilities. Because it is an unlabeled use of the drug, the Malaria Branch, Division of Parasitic Diseases, Center for Infectious Diseases, CDC, has filed an Investigational New Drug notice (IND) with the U.S. Food and Drug Administration for the treatment of severe *P. falciparum* malaria with intravenous quinidine gluconate. The protocol involves a trial of treating patients with high-density parasitemia or any evidence of cerebral malaria, with continuous infusion quinidine gluconate under closely monitored conditions in an intensive-care setting.

Physicians who treat patients with such infections are encouraged to contact CDC's Malaria Branch (telephone [404] 452-4046 weekdays; [404] 329-2888 evenings, weekends, and holidays) for protocol instructions, including dose recommendations, evaluation procedures, and reporting requirements. It is hoped that information collected from such patients will corroborate the encouraging experience in Thailand and establish quinidine gluconate as a safe and effective antimalarial when used in acute-care facilities in the United States.

Reported by Malaria Br, Div of Parasitic Diseases, Center for Infectious Diseases, CDC.

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Epidemiologic Notes and Reports

Reported Measles Cases — United States, Past 4 Weeks

The following states have reported measles during the past 4 weeks: Arizona, California, Colorado, Connecticut, Florida, Hawaii, Idaho, Illinois, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, Montana, New Jersey, upstate New York, North Carolina, Pennsylvania, Texas, Virginia, and West Virginia; New York City has also reported measles.

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The data in this report 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.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: ATTN: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

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