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Progress in Chronic Disease Prevention

Chronic Disease Reports: Deaths from Nine Chronic Diseases – United States, 1986

In 1986 in the United States, 1,103,156 persons died with an underlying diagnosis of one of nine chronic diseases (stroke, coronary heart disease, diabetes, chronic obstructive pulmonary disease, lung cancer, female breast cancer, cervical cancer, colorectal cancer, or cirrhosis [*1–9*]). These deaths accounted for 52% of all deaths and for an overall age-adjusted mortality rate of 457.6 per 100,000 U.S. population (Table 1). In general, higher age-adjusted rates for chronic disease mortality occurred in states east of the Mississippi River (Figure 1, Table 1). The lowest age-adjusted mortality rate occurred in Hawaii (326.8 per 100,000 population), and the highest in Michigan (517.6 per 100,000 population).

Reported by: Div of Surveillance and Epidemiologic Studies, Epidemiology Program Office; Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: At least three alternative measures can be used as a baseline for estimating the excess burden of chronic diseases:

1. The state with the lowest age-adjusted rate.
2. A hypothetical state rate constructed by using the lowest age-adjusted state rate for each disease (*1–9*); in 1986, the sum of these nine rates (i.e., the combined achieved state minimum mortality rate) was 298.4 per 100,000 population.
3. The proportion of deaths theoretically remaining following elimination of known risk factors, estimated as the population-attributable risk (*10*). Because exposure to multiple risks is common, however, deaths attributed to different exposures cannot be added. Smoking considered alone is associated with 33% of deaths from the nine chronic diseases. The hypothetical minimum mortality rate achievable by the elimination of smoking is approximately 307.5 per 100,000 population.

Each of the three baselines provides a reference point for estimating the excess burden of chronic disease in the United States; by any of these measures, this burden is substantial. Although none of the baselines represents a rate that can be fully achieved by elimination of known risk factors, they all indicate that the potential for prevention is considerable.

Chronic Disease Deaths — Continued

CHRONIC DISEASE REPORTS: MORTALITY FROM NINE CHRONIC DISEASES, TABLE 1. Age-adjusted mortality rate from nine chronic diseases, by area — United States, 1986

Area	Deaths	Rate per 100,000
Alabama	17,641	439.6
Alaska	778	413.6
Arizona	12,787	396.2
Arkansas	11,168	407.1
California	107,317	439.9
Colorado	10,153	400.3
Connecticut	14,682	420.2
Delaware	2,972	494.2
District of Columbia	2,988	457.3
Florida	68,452	428.6
Georgia	24,040	471.5
Hawaii	2,817	326.8
Idaho	3,546	394.9
Illinois	56,247	487.9
Indiana	26,808	490.6
Iowa	14,833	420.0
Kansas	11,325	400.5
Kentucky	18,454	497.2
Louisiana	17,522	470.1
Maine	6,263	474.7
Maryland	18,391	470.7
Massachusetts	29,729	444.0
Michigan	44,618	517.6
Minnesota	17,632	386.4
Mississippi	11,988	468.9
Missouri	25,703	440.9
Montana	3,238	403.6
Nebraska	7,459	396.3
Nevada	3,635	481.5
New Hampshire	4,631	455.8
New Jersey	39,428	492.0
New Mexico	4,521	382.0
New York	97,827	508.5
North Carolina	28,580	481.7
North Dakota	2,628	361.1
Ohio	54,652	501.2
Oklahoma	15,938	471.0
Oregon	12,556	438.1
Pennsylvania	65,604	478.9
Rhode Island	5,748	491.0
South Carolina	14,127	493.2
South Dakota	3,445	409.8
Tennessee	23,139	481.1
Texas	54,005	397.6
Utah	4,014	361.7
Vermont	2,522	460.9
Virginia	23,384	467.3
Washington	18,310	429.0
West Virginia	10,615	512.5
Wisconsin	22,854	436.5
Wyoming	1,442	406.2
Total	**1,103,156**	**457.6**

Chronic Disease Deaths — Continued

One index of the public health response to the chronic disease burden is the public health expenditure to prevent and control chronic diseases reported by states (*11*). Reported expenditures include screening programs, but not public education, health promotion, or medical care. Overall, 45 states and the District of Columbia reported <2% of state public health expenditures allocated to these efforts. The mean annual per capita expenditure for prevention of chronic disease in the United States is an estimated 66¢; state expenditures range from <1¢ to $7.64 per capita per year.

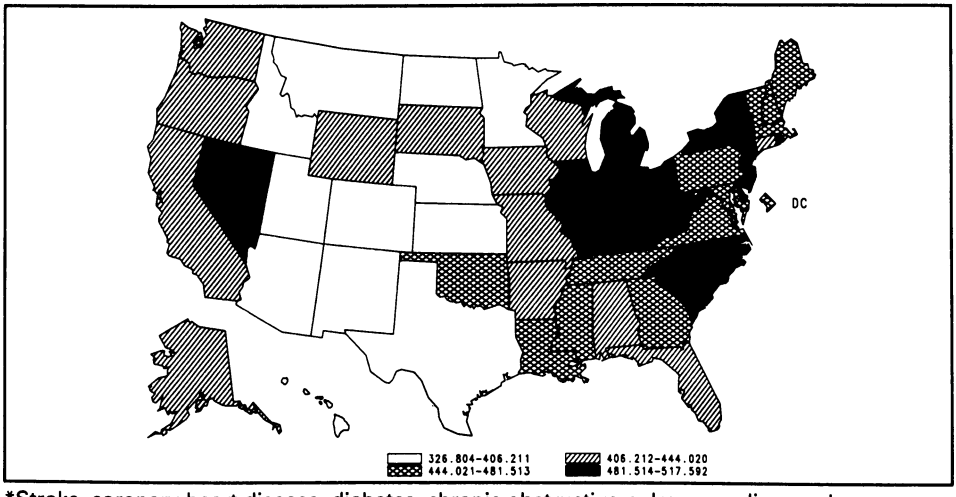
Known preventable risk factors include cigarette smoking, hypertension, overweight, high cholesterol, sedentary lifestyle, heavy consumption of alcohol, and nonuse of available screening techniques, such as mammography and Papanicolaou smears (*1–9*). In addition, failure to obtain effective medical treatment, as well as other social and environmental factors, also contribute to chronic disease mortality. For example, 31% of black/white differences in mortality may be attributable to known risk factors and an additional 38% to differences in socioeconomic characteristics such as access to health care (*12*).

Reduction of exposure to known risks and increased use of proven screening methods remain important measures for the control of chronic disease, particularly in underserved populations. Surveillance of risk factors, incidence, prevalence, and mortality has been used to design and monitor a cervical cancer prevention program in Kentucky (*13*), county and state chronic disease programs in Ohio (*14*), and smoking-related chronic disease prevention programs in many states (*15*).

References

1. CDC. Chronic disease reports: deaths from stroke—United States, 1986. MMWR 1989;38: 191–3.

CHRONIC DISEASE REPORTS: MORTALITY FROM NINE CHRONIC DISEASES*, FIGURE 1. Mortality rates per 100,000 population for nine chronic diseases — United States, 1986†



*Stroke, coronary heart disease, diabetes, chronic obstructive pulmonary disease, lung cancer, female breast cancer, cervical cancer, colorectal cancer, and cirrhosis.
†U.S. standard age distribution. See *MMWR* 1989;38:191.

Chronic Disease Deaths — Continued

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14. Ohio Department of Health. Chronic disease mortality data. Columbus, Ohio: Ohio Department of Health, Division of Chronic Diseases and Division of Epidemiology, 1988.
15. CDC. State-based chronic disease control: the Rocky Mountain Tobacco-Free Challenge. MMWR 1989;38:749–52.

Current Trends

Years of Potential Life Lost Before Ages 65 and 85 — United States, 1987 and 1988

Based on final mortality data from CDC's National Center for Health Statistics, there were 12,074,193 years of potential life lost (YPLL) before age 65 in the United States in 1987 (Table 1)—approximately the same as that previously reported on the basis of provisional data (12,045,778 YPLL before age 65) (*1*). YPLL before age 65 is a measure of mortality that reflects only deaths occurring before age 65 (*2*). Provisional mortality data for 1988 show 12,281,741 YPLL before age 65—an increase of 1.7% over final data for 1987. As in previous *MMWR* reports, YPLL before age 65 for 1987 and 1988 are calculated for the 15 leading causes of death (*3*) and certain additional conditions of infancy.

In 1988, unintentional injuries remained the leading cause of YPLL before age 65 (18.9%), followed by cancers at all sites (14.7%), diseases of the heart (11.9%), suicide and homicide (11.1%), and congenital anomalies (5.5%). From 1987 to 1988, YPLL before age 65 caused by human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) increased by 30% to become the sixth leading cause of YPLL before age 65 (Table 1). YPLL before age 65 attributable to diabetes and to homicide increased by 6% each, while YPLL before age 65 attributable to sudden infant death syndrome (SIDS) decreased by 12%.

YPLL — Continued

YPLL before age 85 reflect deaths occurring before age 85. In 1988, of the 23,398,098 YPLL before age 85, diseases of the heart were the leading cause (22.9%), followed by cancers (20.1%), unintentional injuries (16.7%), suicide and homicide (6.2%), and cerebrovascular diseases (3.9%). From 1987 to 1988, YPLL before age 85 associated with HIV/AIDS increased 30% to become the ninth leading cause of YPLL before age 85. Suicide and pneumonia/influenza increased by 6%, diabetes by 5%, and congenital anomalies by 4%; YPLL before age 85 associated with SIDS declined by 12%.

Reported by: Div of Surveillance and Epidemiologic Studies, Epidemiology Program Office, CDC.

TABLE 1. Estimated years of potential life lost before age 65 (YPLL-65)* and mortality rates per 100,000 persons, by cause of death — United States, 1987 and 1988

Cause of death (ICD-9)	YPLL-65 for persons dying in 1987	YPLL-65 for persons dying in 1988	Cause-specific crude mortality rate, 1988†
All causes (Total)	**12,074,193**	**12,281,741**	**883.0**
Unintentional injuries (E800–E949)	2,305,508	2,319,400	39.7
Malignant neoplasms (140–208)	1,816,927	1,809,289	198.6
Diseases of the heart (390–398, 402, 404–429)	1,519,962	1,466,629	312.2
Suicide/Homicide (E950–E978)	1,326,968	1,361,473	21.3
Congenital anomalies (740–759)	641,827	671,709	5.2
Human immunodeficiency virus infection (042–044 for 1987)§	363,494	472,800	6.6
Prematurity¶ (765, 769)	428,087	432,342	2.7
Sudden infant death syndrome (798)	337,335	296,304	1.9
Cerebrovascular disease (430–438)	248,026	245,722	61.1
Chronic liver disease and cirrhosis (571)	235,135	236,944	10.6
Pneumonia/Influenza (480–487)	172,009	172,712	31.5
Diabetes mellitus (250)	122,837	130,666	16.1
Chronic obstructive pulmonary disease (490–496)	131,880	128,126	33.3

*For details of calculation, see footnotes to Table V, *MMWR* 1988;37:45.
†Cause-specific mortality rates as reported by CDC's National Center for Health Statistics (NCHS) are compiled from a 10% sample of all deaths.
§Sources: CDC, unpublished data; NCHS. Annual summary of births, marriages, divorces, and deaths: United States, 1988. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1989:1–31. (Monthly vital statistics report; vol 37, no. 13).
¶Category derived from disorders relating to short gestation and respiratory distress syndrome.

YPLL — Continued

Editorial Note: Crude mortality rates weight all deaths equally; in comparison, YPLL before age 65 and YPLL before age 85 emphasize deaths among younger persons. Measures of YPLL emphasize deaths among younger persons in two ways: 1) deaths occurring beyond a specific cutoff age are not counted, and 2) deaths occurring at younger ages are weighted more heavily. YPLL before age 85 emphasize deaths among younger persons less than does YPLL before age 65. In 1988, 28.6% of deaths occurred before age 65 and an additional 50.3% occurred before age 85.

Based on both crude mortality and YPLL measures, the largest change from 1987 to 1988 was the increase in HIV/AIDS-associated mortality. Although HIV/AIDS deaths accounted for only 3.8% of YPLL before age 65, they accounted for more than one half the 1.7% increase in YPLL before age 65 from 1987 to 1988.

References

1. CDC. Years of potential life lost before age 65—United States. MMWR 1987;38:27–9.
2. CDC. Premature mortality in the United States. MMWR 1986;35(no. 2S).
3. NCHS. Annual summary of births, marriages, divorces, and deaths: United States, 1988. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1989. (Monthly vital statistics report; vol 37, no. 13).

Epidemiologic Notes and Reports

Update: Ebola-Related Filovirus Infection in Nonhuman Primates and Interim Guidelines for Handling Nonhuman Primates during Transit and Quarantine

In November 1989, infections caused by a filovirus closely related to Ebola virus were detected in cynomolgus (*Macaca fascicularis*) monkeys imported from the Philippines and held in a primate quarantine facility in Virginia (*1*). One hundred forty-nine persons who came in contact with infected animals or the blood or tissues of these animals were placed under surveillance for 21 days after their last known exposure, and all were tested for Ebola virus antibody. Active surveillance was discontinued December 25. No illness compatible with that known to be caused by Ebola virus has occurred among these persons, and none had antibody to Ebola virus. Twelve nonhuman primates in two of 12 holding rooms in the Virginia facility were infected; these and all remaining animals in the facility were euthanized, and the building was decontaminated. Extensive investigation at transit points in Amsterdam and New York did not implicate cross-infection of the monkeys by African primates.

In December, a telephone survey of 40 other U.S. primate importers identified another shipment of cynomolgus monkeys that had arrived in Pennsylvania from the Philippines on November 28 and in which a number of unexplained deaths had occurred shortly after arrival. An Ebola-related filovirus was isolated from liver tissue of one of these animals. The specific geographic origin within the Philippines of these animals is being identified, and active surveillance has been initiated at the facility in Pennsylvania to establish whether the virus has spread to other groups of monkeys or to human contacts. No unusual illnesses in staff of the facility have been reported. Animals currently quarantined are being tested for serologic evidence of Ebola virus infection.

Filovirus Infection — Continued

Inspection of the four major holding facilities in the Philippines, including the facility that had supplied the monkeys in Virginia, did not identify unusual illness compatible with Ebola virus disease in either workers or nonhuman primates. The infected animals had been captured from widely separated remote areas. Serologic and virologic studies of animals and workers are under way in these and other facilities in the Philippines.

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Editorial Note: The episodes documented in Virginia and Pennsylvania are the first known instances of Ebola-related filovirus infection in imported primates in the United States. Numerous infectious agents, including other filoviruses, with a range of pathogenic potential may be circulating in Africa, Asia, and other parts of the world.

The ecology, natural history, and mode of transmission in nature of Ebola virus and the related Marburg virus are unknown. Humans have acquired the disease from nosocomial transmission (often by contaminated needles) and from person-to-person transmission to those in close contact with blood or secretions from seriously ill patients. The only known episode of the transmission of a filovirus from monkeys to humans resulted from direct handling, without protective measures, of blood and tissues from monkeys infected in the wild by Marburg virus. Animal caretakers did not become infected (*2*).

The lack of human infection in these incidents suggests the effectiveness of the quarantine measures instituted in 1975. Nonetheless, CDC has developed the following interim guidelines that update and modify the procedures used in the transportation and quarantine of nonhuman primates. These guidelines are intended for interim use. A comprehensive set of guidelines will be developed by CDC, with input from organizations and institutions involved in the transport, quarantine, care, and regulation of nonhuman primates.

INTERIM GUIDELINES FOR HANDLING NONHUMAN PRIMATES DURING TRANSIT AND QUARANTINE

All imported nonhuman primates are quarantined for the first 31 days after arrival, including transit time. Nonhuman primates, particularly those recently captured in the wild, may harbor viruses infectious for humans. Although such viruses are usually present in the animal's blood, they may be detected in urine, feces, or saliva. Those at risk for infection include persons working in temporary or long-term holding facilities and persons who transport animals to these facilities (e.g., cargo handlers and inspectors). Although the risk for human infection from these activities is low, guidelines are useful to minimize such risk in persons exposed to nonhuman primates during transport and quarantine.

General Guidelines for Handling Nonhuman Primates during Transit and Quarantine

1. Management of transportation and quarantine facilities should ensure that personnel are instructed as to the hazards of handling nonhuman primates, that

Filovirus Infection — Continued

protective apparel is available, and that the need for its use is understood. Management should provide periodic retraining as well as reinforcement of these procedures.

2. Persons working with nonhuman primates should not drink, eat, or smoke while handling animals, cages, crates, or materials from such animals.
3. Access to animal holding areas should be restricted to essential personnel. The number of persons involved in the care, transport, and inspection of nonhuman primates should be the minimum necessary to expedite efficient and humane handling.
4. All staff in direct contact with animals should wear protective clothing (i.e., gloves and surgical masks and gowns) when opening crates, removing foreign materials from crates, feeding the animals, removing dead animals, or handling bedding materials. These persons should remove disposable protective clothing before leaving the animal holding facilities; this clothing should be autoclaved or

(Continued on page 29)

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

Disease	2nd Week Ending			Cumulative, 2nd Week Ending		
	Jan. 13, 1990	Jan. 14, 1989	Median 1985-1989	Jan. 13, 1990	Jan. 14, 1989	Median 1985-1989
Acquired Immunodeficiency Syndrome (AIDS)	849	U*	322	2,670	1,347	497
Aseptic meningitis	62	60	81	133	123	137
Encephalitis: Primary (arthropod-borne & unspec)	3	11	12	14	20	29
Post-infectious	1	3	-	4	4	1
Gonorrhea: Civilian	12,043	10,274	15,137	24,693	21,194	27,263
Military	97	131	239	239	276	458
Hepatitis: Type A	269	458	341	551	855	623
Type B	210	318	345	395	581	612
Non A, Non B	29	39	56	54	91	108
Unspecified	21	22	59	47	65	95
Legionellosis	9	11	12	21	21	21
Leprosy	3	-	4	3	7	7
Malaria	17	18	9	26	26	15
Measles: Total†	97	51	12	193	91	33
Indigenous	20	47	12	108	87	31
Imported	77	4	2	85	4	2
Meningococcal infections	46	34	55	65	66	86
Mumps	76	75	67	109	147	126
Pertussis	30	34	33	48	83	58
Rubella (German measles)	4	3	3	15	6	6
Syphilis (Primary & Secondary): Civilian	454	508	508	921	969	969
Military	4	4	4	4	11	6
Toxic Shock syndrome	4	4	5	7	8	9
Tuberculosis	197	208	234	451	541	401
Tularemia	2	1	3	3	3	3
Typhoid Fever	5	7	2	9	10	6
Typhus fever, tick-borne (RMSF)	2	1	1	2	3	3
Rabies, animal	28	49	57	56	96	122

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1990		Cum. 1990
Anthrax	-	Leptospirosis	-
Botulism: Foodborne	-	Plague	-
Infant (Va. 1)	1	Poliomyelitis, Paralytic,§	-
Other	-	Psittacosis (Upstate N.Y. 1, Mich. 1)	4
Brucellosis	2	Rabies, human	-
Cholera	-	Tetanus (Pa. 1)	1
Congenital rubella syndrome	-	Trichinosis (Maine 1, Upstate N.Y 1)	3
Congenital syphilis, ages < 1 year	-		
Diphtheria	-		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.
†There were no cases of internationally imported measles reported for this week.
§No cases of suspected poliomyelitis have been reported in 1990; none of the 13 suspected cases in 1989 have been confirmed to date. Nine of 14 suspected cases in 1988 were confirmed and all were vaccine-associated.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending January 13, 1990 and January 14, 1989 (2nd Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990
UNITED STATES	2,670	133	14	4	24,693	21,194	551	395	54	47	21	3
NEW ENGLAND	61	21	1	-	811	867	14	41	2	4	-	-
Maine	8	-	-	-	9	14	-	-	-	1	-	-
N.H.	16	1	-	-	239	2	-	-	-	-	-	-
Vt.	-	-	-	-	4	2	-	-	-	-	-	-
Mass.	3	8	1	-	206	335	12	38	2	3	-	-
R.I.	1	12	-	-	53	52	2	3	-	-	-	-
Conn.	33	-	-	-	300	462	-	-	-	-	-	-
MID. ATLANTIC	1,310	5	1	-	1,955	2,513	17	20	2	-	6	-
Upstate N.Y.	244	5	1	-	229	-	8	10	2	-	3	-
N.Y. City	819	-	-	-	824	1,050	-	-	-	-	-	-
N.J.	134	-	-	-	571	215	9	10	-	-	3	-
Pa.	113	-	-	-	331	1,248	-	-	-	-	-	-
E.N. CENTRAL	132	22	1	1	6,092	3,297	27	46	8	4	5	-
Ohio	26	4	-	1	2,605	428	10	12	4	1	3	-
Ind.	22	-	-	-	375	522	-	-	-	-	-	-
Ill.	73	2	-	-	1,813	747	-	-	-	-	-	-
Mich.	1	16	1	-	1,235	1,147	17	30	4	3	2	-
Wis.	10	-	-	-	64	453	-	4	-	-	-	-
W.N. CENTRAL	70	7	-	-	995	804	11	7	1	-	-	-
Minn.	-	-	-	-	176	73	-	-	-	-	-	-
Iowa	-	-	-	-	188	66	6	3	-	-	-	-
Mo.	67	-	-	-	622	406	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	7	-	-	-	-	-	-
S. Dak.	-	-	-	-	5	9	1	-	1	-	-	-
Nebr.	3	7	-	-	4	127	4	4	-	-	-	-
Kans.	-	-	-	-	-	116	-	-	-	-	-	-
S. ATLANTIC	388	19	4	-	8,097	6,432	78	88	9	-	-	-
Del.	11	2	-	-	72	109	3	1	-	-	-	-
Md.	108	10	1	-	818	325	49	21	1	-	-	-
D.C.	45	1	-	-	365	320	2	1	1	-	-	-
Va.	124	1	1	-	836	400	1	5	-	-	-	-
W. Va.	1	-	-	-	63	80	1	3	-	-	-	-
N.C.	54	4	1	-	1,095	1,115	17	29	6	-	-	-
S.C.	25	-	-	-	1,032	1,044	5	28	1	-	-	-
Ga.	11	-	1	-	1,678	1,010	-	-	-	-	-	-
Fla.	9	1	-	-	2,138	2,029	-	-	-	-	-	-
E.S. CENTRAL	39	10	1	-	1,911	2,032	12	40	4	1	4	-
Ky.	10	1	-	-	174	184	6	14	2	1	1	-
Tenn.	25	-	-	-	281	575	1	16	1	-	2	-
Ala.	4	6	1	-	1,030	660	5	10	1	-	1	-
Miss.	-	3	-	-	426	613	-	-	-	-	-	-
W.S. CENTRAL	83	3	-	-	1,886	1,888	35	20	-	-	3	3
Ark.	-	-	-	-	401	237	8	-	-	-	-	-
La.	48	1	-	-	437	208	6	14	-	-	1	-
Okla.	27	2	-	-	176	290	20	6	-	-	2	-
Tex.	8	-	-	-	872	1,153	1	-	-	-	-	3
MOUNTAIN	73	5	1	-	374	306	44	33	1	7	1	-
Mont.	-	-	-	-	6	6	1	2	-	-	-	-
Idaho	1	-	-	-	2	12	4	5	-	-	-	-
Wyo.	-	-	-	-	6	1	-	-	-	-	-	-
Colo.	23	-	-	-	48	-	-	-	-	2	-	-
N. Mex.	-	1	-	-	31	43	12	9	-	-	-	-
Ariz.	33	-	1	-	133	114	18	7	-	-	-	-
Utah	8	1	-	-	20	34	1	1	-	2	-	-
Nev.	8	3	-	-	128	96	8	9	1	3	1	-
PACIFIC	514	41	5	3	2,572	3,055	313	100	27	31	2	-
Wash.	79	-	-	-	96	262	-	-	-	-	-	-
Oreg.	14	-	-	-	125	129	22	7	2	-	-	-
Calif.	409	36	5	2	2,285	2,603	269	91	25	31	2	-
Alaska	-	-	-	-	60	47	1	1	-	-	-	-
Hawaii	12	5	-	1	6	14	21	1	-	-	-	-
Guam	1	-	-	-	2	5	1	-	-	1	-	-
P.R.	106	8	-	-	-	22	1	1	-	-	-	-
V.I.	-	-	-	-	16	16	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	1	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	1	-	-	-	-	-	-

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

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending January 13, 1990 and January 14, 1989 (2nd Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1990	1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	Cum. 1990	1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	1990	Cum. 1990	Cum. 1989
UNITED STATES	26	20	108	77	85	91	65	76	109	30	48	83	4	15	6
NEW ENGLAND	5	-	-	-	-	-	7	1	1	12	12	7	-	-	-
Maine	-	-	-	-	-	-	1	-	-	1	1	2	-	-	-
N.H.	-	-	-	-	-	-	-	1	1	-	-	3	-	-	-
Vt.	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mass.	3	-	-	-	-	-	5	-	-	11	11	-	-	-	-
R.I.	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
Conn.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
MID. ATLANTIC	2	-	11	1	5	-	2	7	8	-	2	14	-	-	-
Upstate N.Y.	2	-	-	-	-	-	-	3	3	-	-	-	-	-	-
N.Y. City	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N.J.	-	-	-	-	-	-	2	-	-	-	-	13	-	-	-
Pa.	-	-	11	1§	5	-	-	4	5	-	2	1	-	-	-
E.N. CENTRAL	2	-	3	76	76	-	10	3	6	1	3	8	-	-	-
Ohio	1	-	-	-	-	-	4	-	-	-	-	1	-	-	-
Ind.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
Ill.	-	-	-	-	-	-	1	-	-	-	-	3	-	-	-
Mich.	1	-	-	76§	76	-	5	3	6	1	2	-	-	-	-
Wis.	-	-	3	-	-	-	-	-	-	-	1	4	-	-	-
W.N. CENTRAL	-	8	18	-	-	62	1	-	-	1	1	2	-	-	1
Minn.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iowa	-	8	18	-	-	-	-	-	-	-	-	2	-	-	-
Mo.	-	-	-	-	-	62	-	-	-	-	-	-	-	-	1
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Kans.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S. ATLANTIC	6	2	3	-	3	3	7	21	34	4	5	2	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Md.	3	2	3	-	2	2	2	10	15	-	-	-	-	-	-
D.C.	2	-	-	-	-	1	-	2	2	1	1	-	-	-	-
Va.	1	-	-	-	1	-	1	-	3	-	1	1	-	-	-
W. Va.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N.C.	-	-	-	-	-	-	1	1	5	3	3	1	-	-	-
S.C.	-	-	-	-	-	-	1	7	8	-	-	-	-	-	-
Ga.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Fla.	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-
E.S. CENTRAL	1	-	5	-	-	1	3	6	6	4	7	1	-	-	-
Ky.	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Tenn.	-	-	-	-	-	-	1	3	3	1	1	-	-	-	-
Ala.	1	-	-	-	-	1	-	1	1	3	6	1	-	-	-
Miss.	-	-	5	-	-	-	-	N	N	-	-	-	-	-	-
W.S. CENTRAL	-	-	-	-	-	-	2	27	28	1	1	-	-	-	-
Ark.	-	-	-	-	-	-	-	6	7	-	-	-	-	-	-
La.	-	-	-	-	-	-	-	8	8	1	1	-	-	-	-
Okla.	-	-	-	-	-	-	2	11	11	-	-	-	-	-	-
Tex.	-	-	-	-	-	-	-	2	2	-	-	-	-	-	-
MOUNTAIN	-	-	-	-	-	14	1	7	10	-	1	29	-	-	-
Mont.	-	-	-	-	-	13	1	-	-	-	-	-	-	-	-
Idaho	-	-	-	-	-	-	-	6	8	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colo.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
N. Mex.	-	-	-	-	-	-	-	N	N	-	-	-	-	-	-
Ariz.	-	-	-	-	-	1	-	-	1	-	1	27	-	-	-
Utah	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Nev.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
PACIFIC	10	10	68	-	1	11	32	4	16	7	16	20	4	15	5
Wash.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oreg.	1	-	-	-	-	-	4	N	N	-	1	-	-	-	-
Calif.	9	10	68	-	1	10	27	3	15	7	15	20	2	13	5
Alaska	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Hawaii	-	-	-	-	-	1	-	1	1	-	-	-	2	2	-
Guam	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
P.R.	-	-	-	-	-	24	-	-	2	-	-	-	-	-	-
V.I.	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	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 January 13, 1990 and January 14, 1989 (2nd Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990
UNITED STATES	921	969	7	451	541	3	9	2	56
NEW ENGLAND	53	77	1	1	5	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
N.H.	23	-	-	1	-	-	-	-	-
Vt.	-	-	-	-	-	-	-	-	-
Mass.	16	29	1	-	-	-	-	-	-
R.I.	-	1	-	-	-	-	-	-	-
Conn.	14	47	-	-	5	-	-	-	-
MID. ATLANTIC	148	176	-	166	114	1	3	-	10
Upstate N.Y.	3	-	-	-	-	-	1	-	1
N.Y. City	74	39	-	147	90	-	-	-	-
N.J.	66	52	-	4	10	1	2	-	9
Pa.	5	85	-	15	14	-	-	-	-
E.N. CENTRAL	57	19	1	49	35	-	1	-	-
Ohio	12	-	-	-	7	-	1	-	-
Ind.	1	3	-	-	1	-	-	-	-
Ill.	32	8	-	44	14	-	-	-	-
Mich.	4	6	1	-	11	-	-	-	-
Wis.	8	2	-	5	2	-	-	-	-
W.N. CENTRAL	14	8	1	14	17	-	-	-	10
Minn.	5	1	-	6	3	-	-	-	9
Iowa	1	1	-	1	2	-	-	-	-
Mo.	8	6	-	2	7	-	-	-	-
N. Dak.	-	-	-	1	2	-	-	-	-
S. Dak.	-	-	-	2	3	-	-	-	-
Nebr.	-	-	1	2	-	-	-	-	-
Kans.	-	-	-	-	-	-	-	-	1
S. ATLANTIC	354	369	-	45	81	1	-	-	21
Del.	7	3	-	1	-	-	-	-	-
Md.	45	28	-	7	-	-	-	-	6
D.C.	-	27	-	-	5	-	-	-	-
Va.	46	16	-	9	18	-	-	-	6
W. Va.	-	-	-	2	3	-	-	-	-
N.C.	43	15	-	-	11	1	-	-	1
S.C.	54	23	-	19	21	-	-	-	6
Ga.	-	71	-	-	-	-	-	-	2
Fla.	159	186	-	7	23	-	-	-	-
E.S. CENTRAL	79	68	1	15	23	-	-	1	2
Ky.	-	-	-	9	9	-	-	-	1
Tenn.	-	-	-	-	-	-	-	1	-
Ala.	47	41	1	6	13	-	-	-	1
Miss.	32	27	-	-	1	-	-	-	-
W.S. CENTRAL	96	105	-	19	14	-	-	-	8
Ark.	14	-	-	19	-	-	-	-	1
La.	61	24	-	-	7	-	-	-	-
Okla.	5	1	-	-	-	-	-	-	1
Tex.	16	80	-	-	7	-	-	-	6
MOUNTAIN	7	7	1	3	11	1	-	-	1
Mont.	-	-	-	-	-	-	-	-	-
Idaho	1	-	-	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-
Colo.	2	-	-	-	-	-	-	-	-
N. Mex.	-	-	1	1	-	1	-	-	1
Ariz.	3	4	-	-	10	-	-	-	-
Utah	1	3	-	-	-	-	-	-	-
Nev.	-	-	-	2	1	-	-	-	-
PACIFIC	113	140	2	139	241	-	5	1	4
Wash.	-	12	-	11	10	-	-	-	-
Oreg.	1	7	-	4	1	-	-	-	-
Calif.	112	121	2	117	227	-	5	1	1
Alaska	-	-	-	-	1	-	-	-	3
Hawaii	-	-	-	7	2	-	-	-	-
Guam	-	1	-	1	-	-	-	-	-
P.R.	-	-	-	-	-	-	-	-	9
V.I.	-	-	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	1	-	-	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending January 13, 1990 (2nd Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	837	589	158	46	19	25	97
Boston, Mass.	235	142	51	16	11	15	39
Bridgeport, Conn.	79	56	19	2	1	1	7
Cambridge, Mass.	39	30	8	1	-	-	5
Fall River, Mass.	28	21	5	2	-	-	1
Hartford, Conn.	61	48	5	4	2	2	4
Lowell, Mass.	33	22	8	3	-	-	2
Lynn, Mass.	23	18	4	1	-	-	4
New Bedford, Mass.	28	24	3	1	-	-	1
New Haven, Conn.	67	45	10	9	1	2	8
Providence, R.I.	60	41	14	3	-	2	3
Somerville, Mass.	12	12	-	-	-	-	-
Springfield, Mass.	63	42	16	1	2	2	15
Waterbury, Conn.	36	31	4	-	1	-	4
Worcester, Mass.	73	57	11	3	1	1	4
MID. ATLANTIC	3,296	2,170	612	346	86	82	253
Albany, N.Y.	51	32	13	3	1	2	2
Allentown, Pa.	21	16	4	-	1	-	2
Buffalo, N.Y.	102	75	24	1	-	2	6
Camden, N.J.	51	32	15	-	-	4	-
Elizabeth, N.J.	23	16	5	1	1	-	2
Erie, Pa.†	43	36	4	2	-	1	4
Jersey City, N.J.	65	46	13	2	2	2	3
N.Y. City, N.Y.	1,846	1,191	327	240	46	42	110
Newark, N.J.	107	35	31	25	9	7	17
Paterson, N.J.	27	16	6	5	-	-	4
Philadelphia, Pa.	412	272	80	31	16	13	39
Pittsburgh, Pa.†	72	50	14	7	-	1	7
Reading, Pa.	43	32	10	1	-	-	10
Rochester, N.Y.	152	121	15	8	4	4	28
Schenectady, N.Y.	36	30	3	2	-	1	4
Scranton, Pa.†	38	27	11	-	-	-	3
Syracuse, N.Y.	97	71	16	6	2	2	6
Trenton, N.J.	42	25	7	8	2	-	2
Utica, N.Y.	31	22	8	1	-	-	2
Yonkers, N.Y.	37	25	6	3	2	1	2
E.N. CENTRAL	2,961	2,020	568	196	68	108	170
Akron, Ohio	79	50	17	7	1	4	-
Canton, Ohio	67	56	6	2	2	1	3
Chicago, Ill.§	564	362	125	45	10	22	16
Cincinnati, Ohio	181	127	40	5	5	4	32
Cleveland, Ohio	181	115	36	17	4	9	4
Columbus, Ohio	288	205	47	16	7	13	17
Dayton, Ohio	134	94	23	6	6	5	3
Detroit, Mich.	369	210	84	38	17	20	15
Evansville, Ind.	30	24	4	2	-	-	4
Fort Wayne, Ind.	70	56	11	2	1	-	8
Gary, Ind.§	17	11	4	2	-	-	-
Grand Rapids, Mich.	73	54	12	3	1	3	8
Indianapolis, Ind.	282	185	61	22	6	8	7
Madison, Wis.	56	38	6	7	2	3	5
Milwaukee, Wis.	191	148	31	6	2	4	9
Peoria, Ill.	73	58	8	3	2	2	10
Rockford, Ill.	49	32	11	2	1	2	5
South Bend, Ind.	52	41	8	2	-	1	8
Toledo, Ohio	127	91	25	7	-	4	12
Youngstown, Ohio	78	63	9	2	1	3	4
W.N. CENTRAL	1,110	817	171	64	29	28	80
Des Moines, Iowa	110	80	20	6	2	2	10
Duluth, Minn.	44	40	3	1	-	-	9
Kansas City, Kans.	35	25	5	2	2	1	1
Kansas City, Mo.	144	98	27	14	3	2	17
Lincoln, Nebr.	44	39	-	4	1	-	7
Minneapolis, Minn.	232	184	30	9	6	3	20
Omaha, Nebr.	111	72	21	7	7	4	8
St. Louis, Mo.	235	173	36	11	4	11	2
St. Paul, Minn.	91	67	15	4	3	2	3
Wichita, Kans.	64	39	14	6	1	3	3

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
S. ATLANTIC	1,537	967	279	185	51	51	105
Atlanta, Ga.	256	173	33	31	9	10	15
Baltimore, Md.	123	76	27	14	5	1	9
Charlotte, N.C.	114	73	32	4	3	1	10
Jacksonville, Fla.	187	116	40	24	4	3	20
Miami, Fla.	146	82	35	19	6	4	1
Norfolk, Va.	113	76	13	6	4	14	13
Richmond, Va.	111	71	23	11	5	1	6
Savannah, Ga.	52	37	9	2	3	1	2
St. Petersburg, Fla.	116	94	8	6	1	7	10
Tampa, Fla.	124	78	24	11	4	4	14
Washington, D.C.	174	73	32	57	7	5	4
Wilmington, Del.	21	18	3	-	-	-	1
E.S. CENTRAL	1,053	725	205	68	37	18	75
Birmingham, Ala.	144	96	27	13	4	4	9
Chattanooga, Tenn.	99	76	12	9	2	-	11
Knoxville, Tenn.	57	44	10	2	1	-	3
Louisville, Ky.	138	86	38	6	6	2	8
Memphis, Tenn.	228	143	53	17	9	6	15
Mobile, Ala.	126	88	19	9	7	3	2
Montgomery, Ala.	65	55	7	2	1	-	5
Nashville, Tenn.	196	137	39	10	7	3	22
W.S. CENTRAL	2,223	1,462	450	194	63	53	158
Austin, Tex.	114	84	20	5	3	2	20
Baton Rouge, La.	57	41	10	3	1	2	3
Corpus Christi, Tex.	98	74	17	4	1	2	7
Dallas, Tex.	319	214	67	21	9	8	22
El Paso, Tex.	100	58	20	7	6	9	6
Fort Worth, Tex	145	97	30	10	5	2	16
Houston, Tex.§	734	436	169	89	24	16	18
Little Rock, Ark.	75	53	12	6	3	1	6
New Orleans, La.§	98	60	22	12	2	2	-
San Antonio, Tex.	284	197	46	28	5	8	35
Shreveport, La.	56	39	11	3	2	1	7
Tulsa, Okla.	143	109	26	6	2	-	18
MOUNTAIN	957	655	173	87	24	17	106
Albuquerque, N. Mex.	159	113	21	20	2	2	19
Colo. Springs, Colo.	55	44	5	2	2	2	11
Denver, Colo.	121	85	22	12	2	-	11
Las Vegas, Nev.	155	94	38	16	6	1	10
Ogden, Utah	21	17	1	2	1	-	-
Phoenix, Ariz.	188	128	36	14	3	7	18
Pueblo, Colo.	31	27	3	1	-	-	12
Salt Lake City, Utah	59	36	12	8	2	1	5
Tucson, Ariz.	168	111	35	12	6	4	20
PACIFIC	2,354	1,589	411	212	65	63	199
Berkeley, Calif.	13	12	1	-	-	-	3
Fresno, Calif.	106	77	21	6	2	-	13
Glendale, Calif.	30	25	2	2	1	-	5
Honolulu, Hawaii	81	54	14	3	4	6	14
Long Beach, Calif.	86	57	15	10	1	3	10
Los Angeles Calif.	558	349	95	77	20	5	25
Oakland, Calif.	102	68	20	6	4	4	6
Pasadena, Calif.	46	32	6	4	-	4	7
Portland, Oreg.	204	151	34	8	7	4	6
Sacramento, Calif.	184	128	30	13	3	10	34
San Diego, Calif.	241	160	39	27	6	8	30
San Francisco, Calif.	197	117	42	28	1	8	10
San Jose, Calif.	212	155	38	10	6	3	20
Seattle, Wash.	178	123	31	12	8	4	6
Spokane, Wash.	65	50	11	2	-	2	7
Tacoma, Wash.	51	31	12	4	2	2	3
TOTAL	16,328††	10,994	3,027	1,398	442	445	1,243

*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 available 4 weeks.

Filovirus Infection — Continued

incinerated. Nondisposable contaminated clothing should be disinfected on site before laundering.

5. Separate nonglass water bottles should be provided for each nonhuman primate during transit and quarantine. Reusable items should be adequately decontaminated between uses.
6. All animal waste, bedding, uneaten food, and other possibly contaminated items should be treated with appropriate disinfectant before removal from the animal holding facilities. All cages, feeding bottles, and other possibly contaminated items should be disinfected between each use or before disposal. Glass items should not be used.
7. A separate disposable needle and syringe (and, if required, infusion equipment) should be used for each animal, then autoclaved or incinerated. A clean needle should be used for any access to multidose vials (e.g., of ketamine) to avoid contamination. After each use on a group of quarantined animals, multidose vials must be autoclaved and discarded. Disposable supplies should be used whenever possible and must not be reused. Nondisposable equipment should be thoroughly disinfected.
8. Caution must be used to prevent infection from potentially contaminated needles, scalpels, or other sharp instruments, particularly during disposal of needles. Used needles should not be recapped by hand; removed from disposable syringes by hand; or bent, broken, or otherwise manipulated. Only one set of disposable syringes, needles, and scalpels should be used per animal. Used disposable syringes and needles, scalpel blades, and other sharp items should be placed in puncture-resistant containers kept as close to the work site as practical.
9. Nonquarantined animals should never be placed in, or permitted access to, areas with quarantined animals. This includes unrestrained pets, feral animals, and animals temporarily boarded for overseas travelers or destined for export.
10. Management should keep records of all serious febrile illnesses (fever >101.3 F [>38.5 C] for >2 days) in persons having direct contact with nonhuman primates in transit or in quarantine and should promptly notify CDC* if such an illness occurs. Management should ensure that the physician providing care is informed that the patient works with and/or has been exposed to nonhuman primates.

Additional Guidelines for Handling Nonhuman Primates during Transit

1. Persons who handle crates or pallets containing nonhuman primates should be protected with elbow-length reinforced leather gloves, long-sleeved shirts and trousers of sufficient thickness to resist minor tears, and sturdy waterproof shoes or boots. The gloves should be of a thickness that prevents penetration of splinters or other crating debris. During warm weather, garments may be of lightweight materials to minimize discomfort. Disposable coverall suits can be used for added protection.
2. Crates should be free of sharp projections that can cause scratches or wounds to workers. Handles should be present on the sides of crates, and mechanical lifting and transporting devices should be used whenever possible.

*Program Operations Branch, Division of Quarantine, Center for Prevention Services, telephone (404) 639-1437; Special Pathogens Branch, Division of Viral and Rickettsial Diseases (DVRD), Center for Infectious Diseases (CID), telephone (404) 639-1115; Epidemiology Activity Branch, DVRD, CID, telephone (404) 639-3091; and the Animal Resources Branch, Scientific Resources Program, CID, telephone (404) 639-1320.

Filovirus Infection — Continued

3. Crates containing nonhuman primates should be separated by a physical or spatial barrier from all other animals and cargo at all times.
4. Wherever possible, nonhuman primates should not be handled directly. Live animals should be removed from cages only when staff can be supervised by a qualified veterinarian. Procedures that may result in bites or scratches should be avoided.
5. Management of holding facilities should maintain records to document the removal of dead animals; documentation should include the date, shipment number, country of origin, species, importer, and disposition of the removed animal. The carcass must be placed in waterproof double bags and incinerated. The Division of Quarantine, Center for Prevention Services (CPS), CDC, should be notified.
6. Temporary holding facilities should document all injections or parenteral infusions administered to nonhuman primates.
7. If animals are removed from a shipment while in transit, facilities retaining these animals should ensure full compliance with these guidelines and should maintain records on the care and disposition of animals. Temporary facilities holding animals in this way must be registered as importers of nonhuman primates.

Additional Guidelines for Care of Nonhuman Primates during Quarantine

1. Quarantine facilities should be secure, with access limited to authorized, trained, and informed personnel.
2. Quarantine facilities should be designed to be adequately disinfected. Management and staff should refer to the *Guide for the Care and Use of Laboratory Animals* (*3*) and the CDC/National Institutes of Health *Biosafety in Microbiological and Biomedical Laboratories*, second edition (Animal biosafety level 2, p. 52) (*4*), for information on design and operation of animal holding facilities.
3. Staff should use protective clothing, gloves, and masks at all times when in the animal holding facilities; these items should be disinfected or disposed of properly. Staff should use fresh clothing when going from room to room.
4. Adequate equipment and space should be available for discarding and disinfecting all equipment, clothing, and caging.
5. Care should be taken to avoid scratches and bites of animals. All handling of individual animals should be done while the animals are anesthetized or tranquilized, and animals should be maintained in squeeze-back cages wherever possible.
6. Different lots of primates should not be mixed while in quarantine (minimum 31 days).
7. Management should notify the Division of Quarantine, CPS, CDC, of severe illnesses and deaths in recently imported primates. CDC will advise management on collection of specimens for investigation of cause of death.

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Current Trends

Increase in National Hospital Discharge Survey Rates for Septicemia — United States, 1979–1987

Septicemia* is the 13th leading cause of death in the United States (*1*) and accounts for $5–$10 billion of health-care expenditures annually in the United States (*2*). This report compares hospital discharge rates for septicemia from 1979 to 1987.

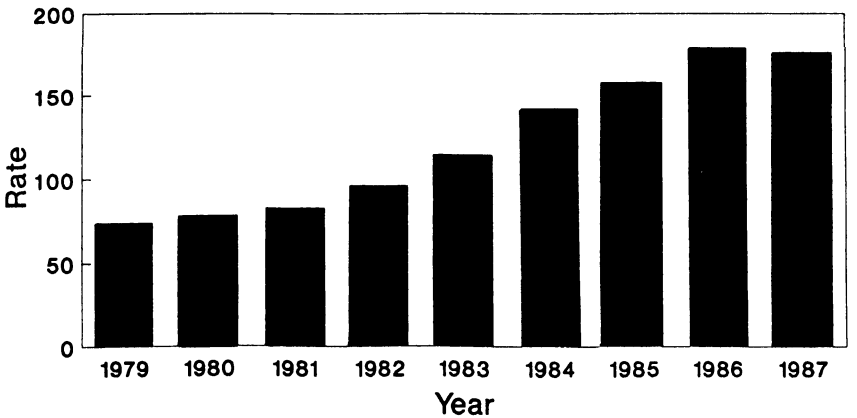
Data were obtained from the National Hospital Discharge Survey (NHDS) of CDC's National Center for Health Statistics (NCHS) (*3*). NHDS obtains abstracted medical record data from a two-stage, stratified sample of nonfederal short-stay hospitals in the 50 states and the District of Columbia; these data are weighted to produce national estimates of hospital use. The analysis in this report included all discharge records for persons ≥1 year of age in which a discharge diagnosis of septicemia (community- or hospital-acquired) (*International Classification of Diseases, Ninth Revision, Clinical Modification* [ICD-9-CM] codes 038.0–038.9 [*4*]) was recorded from 1979 through 1987.

From 1979 through 1987, septicemia discharges totaled 2,570,000. Septicemia rates increased 139%, from 73.6 per 100,000 persons (164,000 discharges) to 175.9 per 100,000 persons (425,000 discharges) (Figure 1). The proportion of all septicemia diagnoses in which septicemia was the principal or first-listed diagnosis increased from 33.5% to 40.5%. For all geographic regions, the proportion of all discharges that included septicemia increased (Figure 2). The percentage of infectious disease diagnoses that included a septicemia diagnosis also increased, from 9.2% to 25.2% (Figure 3).

Although the septicemia rate increased for all age groups, the increase was greatest (162%) for persons ≥65 years of age—from 326.3 per 100,000 in 1979 to 854.7 per 100,000 by 1987. During this period, the proportion of discharged persons ≥65

*Systemic disease associated with the presence and persistence of pathogenic microorganisms or their toxins in the blood.

FIGURE 1. National Hospital Discharge Survey rates per 100,000 persons for septicemia — United States, 1979–1987



Septicemia — Continued

years of age in this study increased from 50.0% to 60.1%; however, age-adjusted septicemia rates increased 111%, from 73.6 to 155.6 per 100,000 persons.

For 15–44-year-olds, age-specific rates increased 91%—from 24.0 per 100,000 to 45.9 per 100,000. In the West, rates increased 161%—from 27.1 to 70.6 per 100,000; overall rates increased less in the other regions. The percentage of 15–44-year-olds with septicemia discharges who were male increased substantially in the West (from 39.9% to 58.3%) and Northeast (from 43.6% to 57.7%), increased slightly in the North Central region (from 46.7% to 50.2%), and decreased in the South (from 47.4% to 39.4%).

FIGURE 2. Percentage of all hospital discharges that included septicemia as a diagnosis, by major region — National Hospital Discharge Survey, 1979–1987

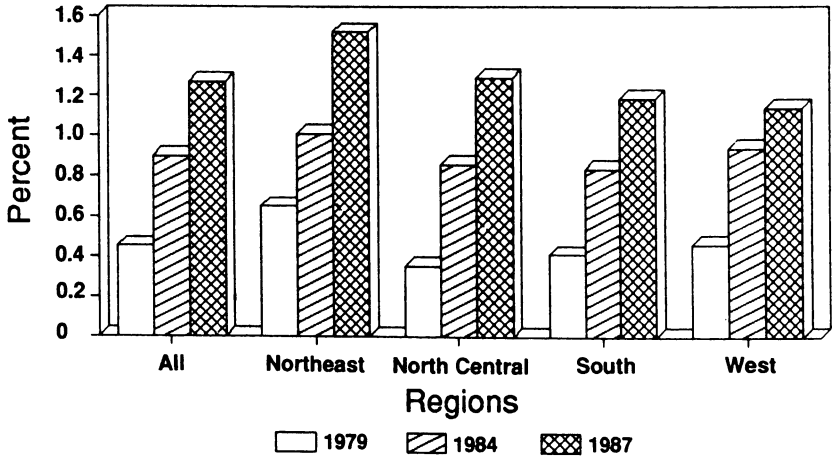
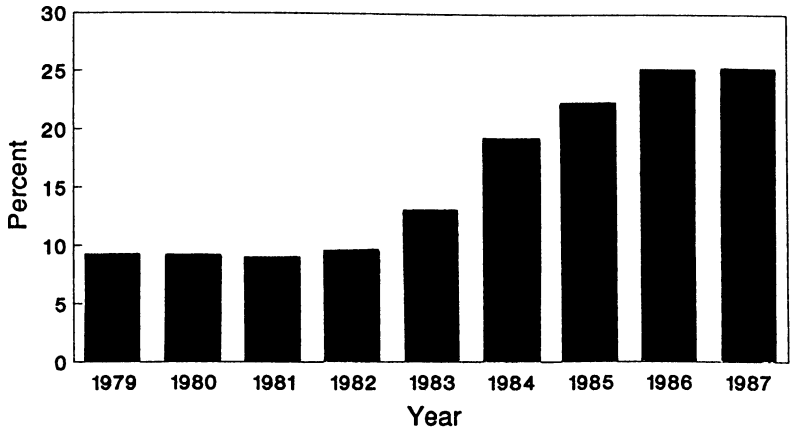


FIGURE 3. Percentage of all infectious disease discharges that included a septicemia diagnosis — National Hospital Discharge Survey, 1979–1987



Septicemia — Continued

The fatality rate for patients with a discharge diagnosis of septicemia declined during the study period for all age groups, from 31.0% to 25.3%. However, even by 1987, patients were at significantly greater risk for death if septicemia was one of the discharge diagnoses (relative risk = 8.6; 95% confidence interval = 8.14–9.09).

Reported by: Office of Planning and Extramural Programs and Hospital Care Statistics Br, Div of Health Care Statistics, National Center for Health Statistics; Hospital Infections Program, Center for Infectious Diseases, CDC.

Editorial Note: The discharge diagnosis of septicemia may reflect hospital-acquired infection, community-acquired infection, or both. At least four factors may account for the increase in the rate of discharges for septicemia: 1) improved medical technology may have increased the number of immunocompromised patients who are at risk for septicemia; 2) the increased use of invasive devices (e.g., single and multiple lumen catheters) inside and outside the hospital may place patients at increased risk for both hospital- and community-acquired septicemia (*5*); 3) physicians' ability to diagnose septicemia increased; and 4) the number of immunocompromised patients (e.g., with human immunodeficiency virus [HIV] infection) who developed community-acquired septicemia increased.

The high septicemia rates in male 15–44-year-olds residing in the West and Northeast may reflect, in part, the emergence of the acquired immunodeficiency syndrome epidemic in the United States since 1981. These findings are consistent with a recent change in trends for septicemia-associated mortality among 25–44-year-old men with HIV infection (*6*). However, further analyses of smaller geographic clusters, secondary diagnoses, marital status, and other NHDS-listed variables are needed to confirm this hypothesis.

During the period studied, both the proportion of the U.S. population and the proportion of hospitalized patients aged ≥65 years increased. However, even though elderly persons had the highest rate of septicemia, the rate increased the most in that age group. Furthermore, age-adjustment of the national rates resulted in a 111% increase from 1979 to 1987.

The NHDS depends on the accuracy and consistency of the listed discharge diagnoses. Increased use and sensitivity of diagnostic methods and the implementation of a reimbursement system based on discharge diagnoses may have influenced the trend (*7*). Septicemia remains a potentially increasing problem for the national health-care system. Further study is necessary to identify the causes of the increased septicemia rate and to identify control measures to reduce the incidence of septicemia.

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Septicemia – Continued

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Notices to Readers

MMWR Serial Publications, Vol. 38, 1989

The following documents were published as part of *MMWR* Vol. 38. For information regarding purchase of these documents, contact the U.S. Government Printing Office (telephone [202] 783-3238) or MMS Publications (telephone [617] 893-3800). For additional information, contact Editorial Services, Epidemiology Program Office, CDC (telephone [404] 332-4555).

Supplements:

Chronic Disease Reports in the *Morbidity and Mortality Weekly Report* (*MMWR*) (Vol. 38, No. S-1, February 3, 1989).

The Surgeon General's 1989 Report on Reducing the Health Consequences of Smoking: 25 Years of Progress—Executive Summary (Vol. 38, No. S-2, March 24, 1989).

A Strategic Plan for the Elimination of Tuberculosis in the United States (Vol. 38, No. S-3, April 21, 1989).

AIDS and Human Immunodeficiency Virus Infection in the United States: 1988 Update (Vol. 38, No. S-4, May 12, 1989).

Recommendations and Reports:

Guidelines for Prophylaxis Against *Pneumocystis carinii* Pneumonia for Persons Infected with Human Immunodeficiency Virus (Vol. 38, No. S-5, June 16, 1989).

Guidelines for Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Health-Care and Public-Safety Workers (Vol. 38, No. S-6, June 23, 1989).

Interpretation and Use of the Western Blot Assay for Serodiagnosis of Human Immunodeficiency Virus Type 1 Infections (Vol. 38, No. S-7, July 21, 1989).

1989 Sexually Transmitted Diseases Treatment Guidelines (Vol. 38, No. S-8, September 1, 1989).

Measles Prevention: Recommendations of the Immunization Practices Advisory Committee (ACIP) (Vol. 38, No. S-9, December 29, 1989).

Notices to Readers — Continued

CDC Surveillance Summaries:

Rabies Surveillance, United States, 1988 (Vol. 38, No. SS-1, August 1989).

Vol. 38, No. SS-2, September 1989:
Ectopic Pregnancy Surveillance, United States, 1970–1986.
Abortion Surveillance, United States, 1984–1985.

International Track of the Epidemic Intelligence Service Course

The International Health Program Office, CDC, and the Division of Public Health of Emory University will conduct the International Track of the Epidemic Intelligence Service Course, October 1–26, 1990, in Atlanta. This course will replace the course previously offered in June and July but will be similar in content. The course is designed to provide participants with basic epidemiologic skills useful for work in developing countries. Participants should have some epidemiology background or have current or future job responsibilities related to epidemiology activities in a developing country. Applications are due June 1, 1990. For further information or an application form, contact Department PSB, Emory University, Division of Public Health, 1599 Clifton Road, N.E., Atlanta, GA 30329; telephone (404) 727-0199; FAX (404) 727-8744; TELEX (810) 751-8512.

International Course in Surveillance and Applied Epidemiology for HIV and AIDS

CDC, the Global Programme on AIDS of the World Health Organization, the Pan American Health Organization, the Fogarty International Center of the National Institutes of Health, and the U.S. Agency for International Development will cosponsor a course for public health and medical officials, primarily from developing countries, who are responsible for monitoring human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) in their countries. The course will be held August 13–31, 1990, in Atlanta. It will include surveillance methods for HIV infection and notification systems for AIDS reporting, as well as basic epidemiologic skills for investigating risk factors and unusual occurrences of HIV infection and disease and for monitoring and evaluating surveillance and intervention programs. The course will be taught in English. Applications are due March 30, 1990.

Course announcement and application forms are available from International Activity, Division of HIV/AIDS, Center for Infectious Diseases, CDC, Mailstop G29, Atlanta, GA 30333; telephone (404) 639-2060; FAX (404) 639-2029; TELEX 549571 CDCATL; Dialcom 132:PHF50202.

Training Course for Hospital Epidemiologists

CDC and the Society for Hospital Epidemiologists of America will cosponsor a training course for hospital epidemiologists March 29–April 1, 1990, in Miami. The target audience is new hospital epidemiologists and infectious diseases fellows. The

Notices to Readers — Continued

format includes lectures and seminars on fundamental aspects of hospital epidemiology and hands-on epidemiologic exercises. A course fee will be charged. Additional information is available from the Hospital Epidemiologist, Children's Hospital, 300 Longwood Avenue, Boston, MA 02115; telephone (617) 735-7623.

The *Morbidity and Mortality Weekly Report* is prepared by the Centers for Disease Control, Atlanta, Georgia, and available on a paid subscription basis from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, (202) 783-3238.

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: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333; telephone (404) 332-4555.

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