CENTERS FOR DISEASE CONTROL

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MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Smoking and Cancer

The Department of Health and Human Service's (DHHS) 1982 report to Congress on the health consequences of smoking presents a comprehensive evaluation of the relationship between cigarette smoking and cancer. It identifies cigarette smoking as the major single cause of cancer mortality in the United States (*1*).

Since 1937 cancer has been the second most frequent cause of death in the United States and will account for an estimated 430,000 deaths this year. The mortality rate for cancer, unlike the declining rates for other chronic diseases, has changed little over 2 decades, and that change has been a small but measurable increase. This increase in mortality has occurred in the face of remarkable improvements in survival rates associated with some cancer sites through earlier or better diagnosis and treatment. Unfortunately, however, these advances have failed to counter the increases in mortality from smoking-related cancer.

Tobacco's contribution to cancer deaths is currently estimated to be 30%. This means that 129,000 Americans are likely to die of cancer this year because of the higher overall cancer death rates for smokers as compared with nonsmokers. Cigarette smokers have total cancer death rates that are 2 times greater than those for nonsmokers. Heavy smokers (those who smoke more than 1 pack a day) have a 3-4 times greater excess risk of cancer mortality.

Lung Cancer and Smoking

Cigarette smoking is the major cause of lung cancer in the United States. Lung cancer alone accounts for fully 25% of all cancer deaths in this country; it is estimated that 85% of lung-cancer cases are due to cigarette smoking. The number of lung-cancer deaths in the United States increased from 18,313 in 1950 to 90,828 in 1977.

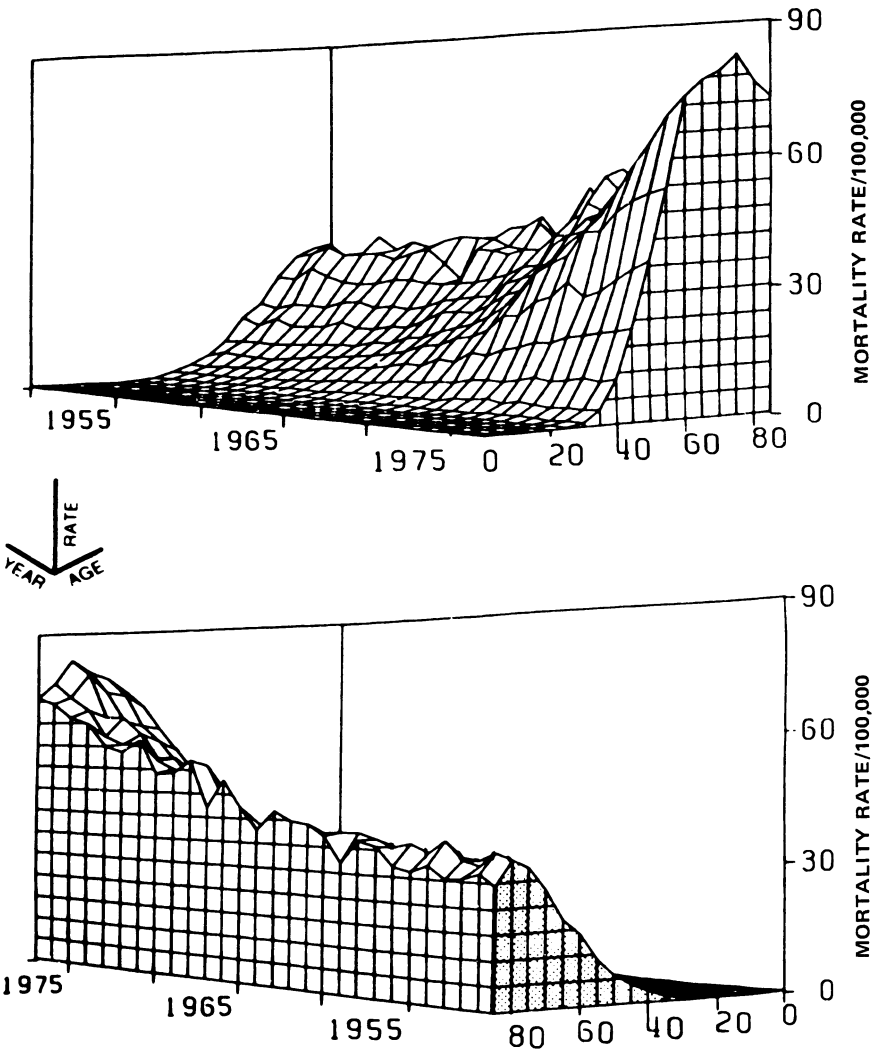
The American Cancer Society estimates that 111,000 persons will die of lung cancer in 1982—80,000 men and 31,000 women. The lung-cancer death rate for women is currently rising faster than that for men, reflecting the more recent adoption of smoking by large numbers of women. When 5-year age-specific lung cancer mortality rates for white females are plotted by calendar year and age, the 3-dimensional graph of lung-cancer mortality (Figure 1) shows a sharp increase in recent years. If these trends continue, the lung-cancer death rate for women will soon surpass that of breast cancer, currently the leading cause of cancer mortality in women. The 5-year survival rate for lung cancer is less than 10%. This rate has not changed appreciably in over 15 years.

Smoking and Cancer — Continued

Lung Cancer and Involuntary Exposure to Smoking

The DHHS report states that 3 epidemiologic studies examined involuntary or passive smoking and lung cancer in nonsmokers this past year. Two studies found a statistically significant correlation between involuntary smoking and lung-cancer risk in nonsmoking wives of men who smoked. The third noted a positive, but not statistically significant, association. While the nature of this association is unresolved, it does raise the concern that involuntary smoking may pose a carcinogenic risk to the nonsmoker.

FIGURE 1. Age-specific mortality rates by 5-year age groups for cancer of the bronchus, trachea, and lung for white females, United States, 1950-1977



Smoking and Cancer — Continued

Cancer of the Larynx, Oral Cavity, and Esophagus

Cigarette smoking is a major cause of cancer of the larynx, oral cavity, and esophagus. Smokers have a mortality-risk ratio for laryngeal cancer at least 5 times greater than that of nonsmokers. Heavy smokers have laryngeal-cancer mortality ratios 15-30 times those for nonsmokers. In several prospective studies, mortality ratios for these types of cancer could not be calculated because all of the deaths occurred among smokers. An estimated 40,000 individuals will develop laryngeal and oral cancer, which will result in approximately 13,000 deaths this year in the United States. These types of cancers are also strongly associated with use of cigars and pipes in addition to cigarettes. All 3 forms of tobacco carry approximately the same excess relative risk of at least 5-fold. The long-term use of snuff appears to be a factor in the development of oral cancer, particularly of the cheek and gum.

This year 8,300 deaths are expected due to cancer of the esophagus; only about 4% of patients are alive 5 years after diagnosis, and most die within 6 months. Patients with this form of cancer have one of the poorest survival rates for any form of cancer. The use of alcohol in conjunction with smoking acts synergistically to increase the risk of cancer of the larynx, oral cavity, and esophagus.

Cancer of the Bladder, Pancreas, and Kidney

Cigarette smoking is a contributory factor for the development of cancer of the bladder, pancreas, and kidney. The term "contributory factor" by no means excludes the possibility of a direct role of smoking in the causation of these types of cancer. The consistent demonstration of an excess risk of cancer of these sites among smokers in comparison with nonsmokers suggests that if smoking were not to exist in these populations, a measurable proportion of these diseases would not occur. Over 50,000 Americans are expected to develop bladder and kidney cancer this year; about 20,000 will die. The 5-year survival rates are approximately 50%-60%. Numerous investigators have estimated that between 30% and 40% of cases of bladder cancer are smoking related, with slightly higher estimates for males than for females.

Approximately 24,000 people will develop cancer of the pancreas this year, and there will be an estimated 22,000 deaths from pancreatic cancer. Like cancer of the lung and esophagus, pancreatic cancer is often fatal. Patients with this form of cancer have one of the poorest 5-year survival rates for any form of cancer. While few estimates are available as to the proportion of these deaths attributable to smoking, it would appear to be about 30%. Pancreatic cancer appears to be increasing at a more rapid rate than cancer of most other sites except the lung.

Stomach Cancer

Cancer of the stomach has been declining as a cause of death in the United States for many years. The age-adjusted death rate for both males and females declined by 60% from 1950 through 1977. Reasons for this decline are unknown. It is estimated that there will be 24,200 new cases of stomach cancer in the United States in 1982 and 13,800 deaths.

Numerous epidemiologic studies have noted a link between smoking and cancer of the stomach. This association is smaller than that noted between smoking and other cancer sites. The nature of this association cannot be determined at this time because of a lack of supporting clinical and animal-experimentation evidence.

Smoking and Cancer — Continued

Uterine Cervix Cancer

There is conflicting evidence on the role of smoking in the development of cancer of the uterine cervix; further studies are necessary to determine whether an association exists.

Lower-Tar Cigarettes

Smokers of filtered or lower-tar cigarettes have statistically lower death rates from lung cancer than do smokers of nonfiltered or higher-tar brands. This reduced risk was also noted for laryngeal cancer. However, cancer death rates for smokers of lower-tar cigarettes were still significantly higher than those noted for nonsmokers.

Cessation of Smoking

Although cigarette smoking is a cause of many forms of cancer, encouraging facts are presented in this report. Even after many years of cigarette smoking, stopping smoking reduces one's cancer risk substantially compared with that of the continuing smoker. The more years one refrains from smoking cigarettes after stopping, the greater the reduction in excess cancer risk. Fifteen years after stopping cigarette smoking, for example, a former smoker's lung-cancer risk is reduced to nearly the level observed for nonsmokers. This same reduction in cancer risk is observed for other cancer sites associated with smoking. There is no single action an individual can take to reduce the risk of cancer more effectively than to stop smoking—particularly smoking cigarettes.

Reported by the Office on Smoking and Health.

Reference

1. Office on Smoking and Health. The health consequences of smoking: cancer. A report of the Surgeon General. Rockville, Md.: Public Health Service, U.S. Department of Health and Human Services, 1982.

Note: Copies of the full report can be obtained by writing to: Office on Smoking and Health, Park Building, Room 1-58, 5600 Fishers Lane, Rockville, Md. 20857.

Epidemiologic Notes and Reports

Deaths among Patients Using Continuous Subcutaneous Insulin Infusion Pumps — United States

Insulin infusion pumps are open loop devices that administer insulin subcutaneously at a constant low level and deliver added amounts before meals. They represent a new method for attaining improved glucose control in Type I (insulin-dependent) diabetics. Animal studies and limited information regarding humans suggest that improved control of blood sugar may prevent or slow the rate of development of serious complications of diabetes such as retinopathy, nephropathy, neuropathy, and cardiovascular disease. There are approximately 5 million diabetics in the United States, of whom 5%-15% are Type I. Approximately 4,000 pumps are currently in use in the United States, and the number is growing rapidly (*1*).

Three deaths among patients using these devices were reported at the National Diabetes Research Interchange workshop in January 1982 in San Antonio, Texas. CDC subsequently began an active inquiry into the circumstances surrounding these deaths and identified addi-

Insulin Infusion Pumps – Continued

tional deaths that occurred among patients using these devices. A total of 11 cases have been identified.

On February 17, 1982, a panel* of representatives from the National Institutes of Health, the Food and Drug Administration, the National Diabetes Advisory Board, and other diabetes experts met at CDC to discuss these cases (Table 1). Only fragmentary data were available regarding several of the cases; however, all 11 persons died in 1981. Patients ranged in age from 11 years to the early 60's; 6 were male. Duration of diabetes ranged from 3 to 43 years. On the basis of preliminary information, 2 deaths were due to myocardial infarctions, 1 to a cerebrovascular accident, and 1 to mucormycosis. Of 3 patients found dead or comatose in bed, 1 had documented hypoglycemia. One patient drowned, 1 died suddenly in the middle of the night, and 1 died of ketoacidosis. Information was not available for 1 patient. In none of the cases was there any evidence of pump malfunction or failure; patients used pumps from more than 1 manufacturer. When checked, pumps were found to be working properly. In several instances, patients delayed contacting a physician despite finding abnormal blood-sugar levels on home blood-glucose monitors.

The panel came to the following conclusions: 1) Some deaths seem essentially unrelated to insulin therapy. While none of the deaths could be attributed to the infusion pumps, some deaths may have been due to the intensive glycemia control used as a therapeutic goal. Until further information is available, physicians and patients should exercise prudence in selecting goals of therapy, in appropriately monitoring blood-glucose levels, and in regulating insulin dosage. The risks of intensive glycemia control must be weighed against the potential long-term benefits. 2) A better description of the characteristics of the population using these devices is needed, as is information on therapeutic complications for a comparable group of diabetics receiving intensive therapy with multiple manual injections of insulin. Further investigation of the cases reported here is warranted, and surveillance of deaths among patients using insulin infusion pumps should be established.

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TABLE 1. Deaths in patients using insulin infusion pumps

Case	Sex	Age	Length of time on pump (mos.)	Information available on circumstances relating to death
1	M	14	9	Sudden
2	M	29	4	Myocardial infarction
3	M	29	1	Drowned
4	F	54	7	Myocardial infarction
5	F	20	1	Hypoglycemia
6	F	21	5	Dead in bed
7	F	11	6	Ketoacidosis
8	M	50's	NA	NA
9	M	40's	NA	Mucormycosis
10	F	60's	NA	Cerebrovascular accident
11	M	60's	NA	Dead in bed

NA = available

Insulin Infusion Pumps — Continued

Reported by RL Olson, MD, Lewiston, Idaho; S Leichter, MD, Lexington, Kentucky; J Warram, MD, A Krolewski, MD, Boston, Massachusetts; P Raskin, MD, Dallas, Texas; Diabetes Control, Operation Research, Center for Prevention Svcs, CDC.

Editorial Note: No data on morbidity or mortality are currently available from a group of diabetics under intensive control and not using infusion pumps, i.e., comparable to patients using infusion pumps. Because hypoglycemia is rarely given as the underlying cause of death on death certificates, hypoglycemia death rates are unknown. In Great Britain, some 4% of all deaths among diabetics under age 50 were attributed to hypoglycemia; many of these persons committed suicide (*2*). A prospective study of 285 Type I diabetics seen at the Joslin Clinic and followed for a total of 6,371 patient years showed that 2 deaths had been attributed to hypoglycemia and 3 more were possibly due to hypoglycemia. Information for metropolitan Atlanta suggests an 8-month average duration of pump use. Thus, although 4,000 pumps are currently estimated to be in use in the United States, the number of patient years of insulin pump use may be substantially less than the number of pumps might indicate.

Hypoglycemia is a well-recognized complication of intensive control of diabetes (*3*), but further information is necessary before conclusions can be drawn as to whether hypoglycemia was the cause of death in a greater-than-expected number of patients using insulin infusion devices. CDC is initiating data collection efforts.

(Continued on page 87)

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

DISEASE	7th WEEK ENDING			CUMULATIVE, FIRST 7 WEEKS		
	February 20 1982	February 21 1981	MEDIAN 1977-1981	February 20 1982	February 21 1981	MEDIAN 1977-1981
Aseptic meningitis	62	47	48	522	440	347
Brucellosis	3	1	4	10	10	18
Encephalitis: Primary (arthropod-borne & unspec.)	12	7	7	87	91	85
Post-infectious	–	1	3	3	11	15
Gonorrhea: Civilian	14,355	17,692	17,376	124,404	131,097	129,326
Military	457	481	488	3,832	4,019	3,821
Hepatitis: Type A	458	603	603	2,723	3,110	3,551
Type B	319	385	308	2,238	2,239	1,977
Non A, Non B	33	N	N	181	N	N
Unspecified	115	180	212	1,106	1,293	1,262
Legionellosis	8	N	N	32	N	N
Leprosy	7	3	3	17	30	22
Malaria	9	16	13	77	156	57
Measles (rubeola)	15	34	265	73	237	1,432
Meningococcal infections: Total	53	132	67	380	674	403
Civilian	53	132	66	379	673	398
Military	–	–	–	1	1	1
Mumps	69	135	374	555	711	2,052
Pertussis	26	25	25	106	116	135
Rubella(German measles)	45	48	278	216	302	1,035
Syphilis (Primary & Secondary): Civilian	651	598	449	4,433	3,991	3,238
Military	6	7	4	63	50	42
Tuberculosis	476	452	456	2,989	2,931	3,124
Tularemia	3	2	–	10	13	12
Typhoid fever	5	7	7	54	54	41
Typhus fever, tick-borne (RMSF)	1	2	2	14	8	8
Rabies, animal	70	118	61	520	683	344

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1982		CUM. 1982
Anthrax	–	Poliomyelitis: Total	1
Botulism	10	Paralytic	1
Cholera	1	Psittacosis (N.J. 1)	9
Congenital rubella syndrome	–	Rabies, human	–
Diphtheria	–	Tetanus	6
Leptospirosis	9	Trichinosis	13
Plague	1	Typhus fever, flea-borne (endemic, murine) (Ala. 1)	1

N: Not notifiable

TABLE III. Cases of specified notifiable diseases, United States, weeks ending February 20, 1982 and February 21, 1981 (7th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	ENCEPHALITIS		GONORRHEA (Civilian)		HEPATITIS (Viral), by type				LEGIONELLOSIS	LEPROSY
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	1982	CUM. 1982	CUM. 1982	CUM. 1982	CUM. 1982	CUM. 1981	1982	1982	1982	1982	1982	CUM. 1982
UNITED STATES	62	10	87	3	124,404	131,097	458	319	33	115	8	17
NEW ENGLAND	1	–	1	–	2,849	3,297	6	13	1	6	–	1
Maine	–	–	–	–	146	150	–	–	–	–	–	–
N.H.	–	–	–	–	110	129	–	2	–	–	–	–
Vt.	–	–	–	–	72	52	–	1	1	–	–	–
Mass.	–	–	1	–	1,200	1,281	3	–	–	6	–	–
R.I.	–	–	–	–	186	149	1	1	–	–	–	–
Conn.	1	–	–	–	1,135	1,536	2	9	–	–	–	1
MID. ATLANTIC	7	–	13	–	14,994	14,372	32	39	2	7	–	1
Upstate N.Y.	2	–	6	–	2,219	2,068	10	12	1	4	–	–
N.Y. City	1	–	4	–	6,478	5,625	4	6	–	–	–	–
N.J.	1	–	–	–	2,841	3,158	18	21	1	3	–	–
Pa.	3	–	3	–	3,456	3,521	U	U	U	U	–	1
E.N. CENTRAL	3	–	20	1	15,152	21,021	30	28	3	6	1	–
Ohio	–	–	3	–	5,017	8,552	6	9	1	1	–	–
Ind.	1	–	8	1	2,063	1,692	9	7	1	3	1	–
Ill.	–	–	–	–	2,173	4,493	5	6	1	2	–	–
Mich.	2	–	7	–	4,319	4,583	7	6	–	–	–	–
Wis.	–	–	2	–	1,580	1,701	3	–	–	–	–	–
W.N. CENTRAL	1	1	5	–	5,862	6,519	16	18	3	2	3	–
Minn.	1	–	–	–	912	1,018	9	1	1	–	–	–
Iowa	–	–	2	–	594	586	3	2	1	1	3	–
Mo.	–	1	2	–	2,646	2,979	1	7	1	–	–	–
N. Dak.	–	–	–	–	68	62	–	–	–	–	–	–
S. Dak.	–	–	–	–	182	181	–	1	–	–	–	–
Nebr.	–	–	–	–	334	476	–	5	–	–	–	–
Kans.	–	–	1	–	1,126	1,217	3	2	–	1	–	–
S. ATLANTIC	11	4	12	1	33,176	33,084	43	83	10	23	1	–
Del.	–	–	–	–	503	503	–	–	–	1	–	–
Md.	1	–	5	–	4,286	3,278	1	29	1	6	1	–
D.C.	–	–	–	–	1,573	2,220	–	–	–	–	–	–
Va.	5	2	3	–	2,675	3,100	6	8	4	2	–	–
W. Va.	–	–	–	–	358	426	–	2	–	–	–	–
N.C.	–	–	1	–	5,525	5,483	2	2	–	1	–	–
S.C.	–	1	–	–	2,844	2,921	1	5	–	–	–	–
Ga.	1	–	–	–	5,648	6,909	14	10	1	4	–	–
Fla.	4	1	3	1	9,764	8,244	19	27	4	9	–	–
E.S. CENTRAL	4	1	5	–	10,233	10,763	29	39	7	4	1	–
Ky.	–	–	–	–	1,342	1,347	10	1	–	–	–	–
Tenn.	1	–	4	–	3,966	3,893	13	20	1	–	–	–
Ala.	2	1	1	–	2,988	3,657	2	17	6	4	1	–
Miss.	1	–	–	–	1,937	1,866	4	1	–	–	–	–
W.S. CENTRAL	7	1	7	–	17,800	19,209	131	11	1	36	1	–
Ark.	1	1	–	–	1,565	1,256	1	2	1	1	–	–
La.	5	–	1	–	2,912	2,889	11	1	–	2	–	–
Okla.	–	–	4	–	1,886	1,819	17	3	–	9	1	–
Tex.	1	–	2	–	11,437	13,245	102	5	–	24	–	–
MOUNTAIN	1	–	5	1	4,611	5,215	36	9	2	6	1	–
Mont.	–	–	–	–	214	204	4	–	–	–	–	–
Idaho	–	–	–	–	207	210	2	1	–	1	–	–
Wyo.	–	–	–	–	129	118	3	–	–	–	–	–
Colo.	–	–	1	1	1,293	1,398	7	3	1	–	–	–
N. Mex.	–	–	–	–	591	635	8	2	1	–	–	–
Ariz.	1	–	1	–	1,202	1,653	10	2	–	4	1	–
Utah	–	–	–	–	172	247	2	–	–	–	–	–
Nev.	–	–	3	–	803	750	–	1	–	1	–	–
PACIFIC	27	3	19	–	19,727	17,617	135	79	4	25	–	15
Wash.	–	–	2	–	1,662	1,525	59	18	2	2	–	1
Oreg.	–	–	–	–	1,139	1,444	8	4	2	3	–	–
Calif.	11	3	17	–	16,107	13,780	61	55	–	20	–	11
Alaska	–	–	–	–	486	454	–	–	–	–	–	–
Hawaii	16	–	–	–	333	414	7	2	–	–	–	3
Guam	U	–	–	–	–	29	U	U	U	U	U	–
P.R.	–	–	1	–	247	396	8	2	–	2	–	–
V.I.	–	–	–	–	32	–	–	–	–	–	–	–
Pac. Trust Terr.	U	–	–	–	36	73	U	U	U	U	U	1

–: Not notifiable U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending February 20, 1982 and February 21, 1981 (7th week)

REPORTING AREA	MALARIA		MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS (Total)		MUMPS		PERTUSSIS	RUBELLA		
	1982	CUM. 1982	1982	CUM. 1982	CUM. 1981	1982	CUM. 1982	1982	CUM. 1982	1982	1982	CUM. 1982	CUM. 1981
UNITED STATES	9	77	15	73	237	53	380	69	555	26	45	216	302
NEW ENGLAND	–	5	1	3	7	3	17	8	50	1	2	10	46
Maine	–	–	–	–	–	–	2	–	13	–	–	–	27
N.H.	–	–	1	1	2	1	5	1	6	–	–	7	17
Vt.	–	–	–	2	1	–	1	–	3	–	–	–	–
Mass.	–	3	–	–	–	–	1	4	19	–	2	3	2
R.I.	–	1	–	–	–	–	1	2	5	1	–	–	–
Conn.	–	1	–	–	4	2	7	1	4	–	–	–	–
MID. ATLANTIC	–	6	–	19	60	10	60	8	39	5	3	11	40
Upstate N.Y.	–	2	–	13	35	3	14	1	16	4	1	7	15
N.Y. City	–	4	–	5	8	1	14	–	6	–	2	4	8
N.J.	–	–	–	–	7	3	17	1	4	1	–	–	15
Pa.	–	–	–	1	10	3	15	6	13	–	–	–	2
E.N. CENTRAL	1	8	–	3	20	3	32	15	231	12	9	28	66
Ohio	–	1	–	–	7	2	12	–	123	8	–	–	–
Ind.	1	1	–	1	–	–	1	2	11	–	2	3	24
Ill.	–	–	–	1	3	1	6	4	21	–	1	9	11
Mich.	–	5	–	1	10	–	13	4	52	–	4	6	9
Wis.	–	1	–	–	–	–	–	5	24	4	2	10	22
W.N. CENTRAL	–	1	–	–	2	3	18	1	26	2	–	9	14
Minn.	–	–	–	–	1	–	4	–	3	–	–	1	2
Iowa	–	–	–	–	–	2	3	1	8	–	–	–	–
Mo.	–	1	–	–	–	1	8	–	3	1	–	6	–
N. Dak.	–	–	–	–	–	–	2	–	–	–	–	–	–
S. Dak.	–	–	–	–	–	–	–	–	–	1	–	–	–
Nebr.	–	–	–	–	1	–	–	–	–	–	–	–	–
Kans.	–	–	–	–	–	–	1	–	12	–	–	2	12
S. ATLANTIC	3	11	–	8	61	13	87	10	70	1	1	9	27
Del.	–	–	–	–	–	–	–	–	–	–	–	–	–
Md.	–	4	–	–	–	1	4	1	6	–	–	–	–
D.C.	–	1	–	–	1	–	–	–	–	–	–	–	–
Va.	1	2	–	8	3	–	5	2	9	–	–	7	–
W. Va.	–	–	–	–	3	–	2	4	33	–	–	–	9
N.C.	–	–	–	–	–	6	20	1	4	–	–	–	2
S.C.	1	2	–	–	–	1	11	–	2	1	–	–	3
Ga.	1	1	–	–	30	3	26	–	2	–	–	1	5
Fla.	–	1	–	–	24	2	19	2	14	–	1	1	8
E.S. CENTRAL	–	–	1	4	–	6	26	2	8	–	–	5	5
Ky.	–	–	–	1	–	–	1	–	1	–	–	5	4
Tenn.	–	–	1	3	–	2	11	2	4	–	–	–	1
Ala.	–	–	–	–	–	4	14	–	1	–	–	–	–
Miss.	–	–	–	–	–	–	–	–	2	–	–	–	–
W.S. CENTRAL	–	3	3	9	12	5	49	1	23	2	4	17	20
Ark.	–	–	–	–	–	–	4	–	2	–	–	–	–
La.	–	–	–	–	–	–	3	–	–	–	–	–	2
Okla.	–	–	1	1	–	1	5	–	–	–	1	1	–
Tex.	–	3	2	8	12	4	37	1	21	2	3	16	18
MOUNTAIN	–	3	–	–	7	3	24	3	15	2	2	6	9
Mont.	–	–	–	–	–	–	3	–	1	–	–	–	1
Idaho	–	–	–	–	–	–	2	–	2	–	–	–	1
Wyo.	–	–	–	–	–	–	–	–	1	–	–	1	–
Colo.	–	2	–	–	–	–	10	–	1	–	–	–	4
N. Mex.	–	–	–	–	–	–	1	–	–	–	–	–	–
Ariz.	–	1	–	–	–	2	4	–	3	2	1	1	1
Utah	–	–	–	–	–	–	1	2	5	–	1	3	2
Nev.	–	–	–	–	7	1	3	1	2	–	–	1	–
PACIFIC	5	40	10	27	68	7	67	21	93	1	24	121	75
Wash.	–	2	4	9	1	1	7	2	17	–	–	4	15
Oreg.	–	2	–	–	–	–	14	–	–	–	–	–	3
Calif.	5	35	6	17	67	5	42	19	75	1	24	116	57
Alaska	–	–	–	–	–	1	4	–	1	–	–	–	–
Hawaii	–	1	–	1	–	–	–	–	–	–	–	1	–
Guam	U	–	U	–	3	U	–	U	–	U	U	–	–
P.R.	–	1	1	11	36	–	1	1	4	1	–	2	–
V.I.	–	–	–	–	2	–	–	–	–	–	–	–	–
Pac. Trust Terr.	U	–	U	–	–	U	–	U	–	U	U	–	1

U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending February 20, 1982 and February 21, 1981 (7th week)

REPORTING AREA	SYPHILIS (Civilian) (Primary & Secondary)		TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		RABIES, Animal
	CUM. 1982	CUM. 1981	1982	CUM. 1982	CUM. 1982	1982	CUM. 1982	1982	CUM. 1982	CUM. 1982
UNITED STATES	4,433	3,991	476	2,989	10	5	54	1	14	520
NEW ENGLAND	84	98	5	73	–	–	4	–	–	4
Maine	–	1	1	7	–	–	–	–	–	4
N.H.	–	3	1	6	–	–	–	–	–	–
Vt.	–	1	–	3	–	–	2	–	–	–
Mass.	59	56	2	45	–	–	2	–	–	–
R.I.	6	10	–	7	–	–	–	–	–	–
Conn.	19	27	1	5	–	–	–	–	–	–
MID. ATLANTIC	591	635	78	488	–	–	5	–	–	3
Upstate N.Y.	43	48	8	87	–	–	1	–	–	1
N.Y. City	395	398	14	169	–	–	4	–	–	–
N.J.	67	79	32	107	–	–	–	–	–	–
Pa.	86	110	24	125	–	–	–	–	–	2
E.N. CENTRAL	140	234	67	480	–	–	3	–	–	50
Ohio	48	49	20	105	–	–	1	–	–	3
Ind.	24	17	5	68	–	–	–	–	–	5
Ill.	20	119	30	184	–	–	–	–	–	17
Mich.	33	33	7	93	–	–	2	–	–	–
Wis.	15	16	5	30	–	–	–	–	–	25
W.N. CENTRAL	84	64	17	65	5	–	2	–	1	166
Minn.	16	17	–	10	–	–	–	–	–	42
Iowa	1	3	8	11	–	–	1	–	–	58
Mo.	52	36	6	25	4	–	1	–	1	15
N. Dak.	2	–	–	2	–	–	–	–	–	19
S. Dak.	–	–	1	3	–	–	–	–	–	7
Nebr.	2	3	1	2	–	–	–	–	–	15
Kans.	11	5	1	12	1	–	–	–	–	10
S. ATLANTIC	1,222	1,040	109	636	3	1	4	1	9	80
Del.	2	1	–	6	–	–	–	–	–	–
Md.	73	83	18	96	1	1	2	1	6	5
D.C.	76	88	4	21	–	–	–	–	–	–
Va.	89	97	15	43	1	–	1	–	–	38
W. Va.	4	1	1	13	–	–	1	–	–	4
N.C.	98	71	20	117	–	–	–	–	3	–
S.C.	68	76	11	55	1	–	–	–	–	5
Ga.	264	257	12	103	–	–	–	–	–	23
Fla.	548	366	28	182	–	–	–	–	–	5
E.S. CENTRAL	354	320	49	276	–	–	7	–	3	40
Ky.	19	15	10	78	–	–	–	–	–	7
Tenn.	88	124	21	95	–	–	2	–	–	22
Ala.	118	96	16	91	–	–	5	–	3	11
Miss.	129	85	2	12	–	–	–	–	–	–
W.S. CENTRAL	1,230	994	57	255	1	1	3	–	–	85
Ark.	34	11	2	12	1	–	–	–	–	16
La.	221	206	18	61	–	–	–	–	–	2
Okla.	21	21	16	53	–	1	3	–	–	23
Tex.	954	756	21	129	–	–	–	–	–	44
MOUNTAIN	118	88	20	91	1	–	2	–	–	6
Mont.	1	3	5	9	–	–	–	–	–	3
Idaho	9	1	1	3	–	–	–	–	–	–
Wyo.	7	1	1	3	–	–	–	–	–	1
Colo.	32	30	1	12	–	–	–	–	–	–
N. Mex.	22	15	2	14	–	–	–	–	–	1
Ariz.	22	17	3	31	–	–	2	–	–	1
Utah	3	–	5	5	1	–	–	–	–	–
Nev.	22	21	2	14	–	–	–	–	–	–
PACIFIC	610	518	74	625	–	3	24	–	1	86
Wash.	11	18	4	28	–	–	–	–	–	–
Oreg.	25	11	–	19	–	1	1	–	–	–
Calif.	555	474	62	535	–	2	22	–	1	72
Alaska	4	1	–	8	–	–	–	–	–	14
Hawaii	15	14	8	35	–	–	1	–	–	–
Guam	–	–	U	–	–	U	–	U	–	–
P.R.	47	79	4	30	–	–	–	–	–	2
V.I.	–	–	–	1	–	–	–	–	–	–
Pac. Trust Terr.	–	–	U	19	–	U	–	U	–	–

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending February 20, 1982 (7th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	681	469	134	35	19	24	56
Boston, Mass.	209	137	39	14	9	10	27
Bridgeport, Conn.	48	31	11	2	1	3	–
Cambridge, Mass.	16	15	1	–	–	–	2
Fall River, Mass.	23	17	5	–	1	–	1
Hartford, Conn.	67	39	19	6	3	–	4
Lowell, Mass.	26	19	3	3	–	1	–
Lynn, Mass.	18	13	5	–	–	–	–
New Bedford, Mass.	25	16	8	–	–	1	1
New Haven, Conn.	37	25	4	2	–	6	7
Providence, R.I.	64	47	12	2	3	–	3
Somerville, Mass.	6	5	1	–	–	–	–
Springfield, Mass.	42	28	9	2	1	2	6
Waterbury, Conn.	32	26	4	1	1	–	1
Worcester, Mass.	68	51	13	3	–	1	4
MID. ATLANTIC	2,561	1,704	577	153	61	66	96
Albany, N.Y.	58	39	11	4	1	3	1
Allentown, Pa.	23	16	7	–	–	–	2
Buffalo, N.Y.	150	101	33	3	5	8	10
Camden, N.J.	39	20	11	4	–	4	1
Elizabeth, N.J.	34	27	7	–	–	–	3
Erie, Pa.†	35	20	9	4	–	2	–
Jersey City, N.J.	61	45	10	5	1	–	1
N.Y. City, N.Y.	1,437	973	301	101	38	24	56
Newark, N.J.	66	30	19	9	4	4	2
Paterson, N.J.	32	8	12	3	1	8	–
Philadelphia, Pa.†	169	108	47	7	4	3	3
Pittsburgh, Pa.†	50	31	16	2	–	1	2
Reading, Pa.	31	25	5	1	–	–	–
Rochester, N.Y.	139	87	40	5	3	4	7
Schenectady, N.Y.	27	26	1	–	–	–	–
Scranton, Pa.†	21	16	4	–	–	1	–
Syracuse, N.Y.	110	75	25	3	3	4	6
Trenton, N.J.	35	23	9	2	1	–	1
Utica, N.Y.	24	19	5	–	–	–	–
Yonkers, N.Y.	20	15	5	–	–	–	1
E.N. CENTRAL	2,256	1,413	569	139	57	78	70
Akron, Ohio	76	48	18	6	2	2	–
Canton, Ohio	40	29	11	–	–	–	2
Chicago, Ill.	448	270	111	31	16	20	13
Cincinnati, Ohio	126	81	35	5	–	5	10
Cleveland, Ohio	175	108	48	7	9	3	2
Columbus, Ohio	171	96	44	17	8	6	1
Dayton, Ohio	102	62	30	6	1	3	5
Detroit, Mich.	294	159	82	30	9	14	5
Evansville, Ind.	40	31	9	–	–	–	3
Fort Wayne, Ind.	62	36	16	5	1	4	3
Gary, Ind.	21	10	8	3	–	–	–
Grand Rapids, Mich.	50	31	13	3	1	2	3
Indianapolis, Ind.	140	87	43	5	2	3	6
Madison, Wis.	23	15	6	–	1	1	2
Milwaukee, Wis.	145	106	26	3	1	9	2
Peoria, Ill.	43	35	7	1	–	–	2
Rockford, Ill.	34	20	10	4	–	–	1
South Bend, Ind.	50	39	10	1	–	–	2
Toledo, Ohio	143	98	26	9	5	5	6
Youngstown, Ohio	73	52	16	3	1	1	2
W.N. CENTRAL	663	452	133	30	16	32	36
Des Moines, Iowa	47	32	9	1	3	2	1
Duluth, Minn.	48	35	9	3	–	1	6
Kansas City, Kans.	22	15	3	2	–	2	–
Kansas City, Mo.	125	79	25	7	3	11	6
Lincoln, Nebr.	22	19	3	–	–	–	3
Minneapolis, Minn.	76	50	16	2	3	5	5
Omaha, Nebr.	89	61	16	7	4	1	1
St. Louis, Mo.	117	76	32	3	2	4	6
St. Paul, Minn.	75	58	11	3	–	3	5
Wichita, Kans.	42	27	9	2	1	3	3

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,124	692	268	90	36	36	50
Atlanta, Ga.	112	69	21	18	4	–	4
Baltimore, Md.	215	128	54	18	6	9	5
Charlotte, N.C.	55	36	13	3	1	–	5
Jacksonville, Fla.	89	55	23	3	7	1	4
Miami, Fla.	111	74	21	7	2	7	3
Norfolk, Va.	52	35	9	2	3	3	4
Richmond, Va.	61	33	18	2	3	5	4
Savannah, Ga.	44	31	10	2	–	1	5
St. Petersburg, Fla.	78	65	6	2	2	3	4
Tampa, Fla.	71	48	16	2	2	3	6
Washington, D.C.	197	95	65	29	5	3	1
Wilmington, Del.	39	23	12	2	1	1	5
E.S. CENTRAL	677	402	181	48	24	22	27
Birmingham, Ala.	120	72	29	9	3	7	3
Chattanooga, Tenn.	56	39	13	2	1	1	5
Knoxville, Tenn.	42	32	8	1	1	–	–
Louisville, Ky.	95	52	31	6	2	4	6
Memphis, Tenn.	173	98	49	15	6	5	6
Mobile, Ala.	44	21	10	8	2	3	2
Montgomery, Ala.	31	23	5	1	2	–	1
Nashville, Tenn.	116	65	36	6	7	2	4
W.S. CENTRAL	1,671	936	445	155	77	56	61
Austin, Tex.	52	36	10	3	2	1	3
Baton Rouge, La.	67	35	19	7	1	5	3
Corpus Christi, Tex.	22	14	5	2	1	–	3
Dallas, Tex.	193	97	57	18	12	9	3
El Paso, Tex.	67	37	19	5	2	3	4
Fort Worth, Tex.	87	56	17	6	1	6	13
Houston, Tex.	653	337	183	76	37	20	11
Little Rock, Ark.	49	33	10	6	–	–	4
New Orleans, La.	141	78	39	14	9	1	1
San Antonio, Tex.	165	99	42	10	6	8	8
Shreveport, La.	99	61	29	5	2	2	1
Tulsa, Okla.	76	53	15	3	4	1	7
MOUNTAIN	693	429	160	43	31	27	39
Albuquerque, N. Mex.	63	37	9	10	4	–	1
Colo. Springs, Colo.	42	24	13	1	3	1	3
Denver, Colo.	109	67	23	8	7	4	5
Las Vegas, Nev.	74	38	22	5	4	5	2
Ogden, Utah	27	21	4	1	–	1	4
Phoenix, Ariz.	177	107	46	7	8	9	7
Pueblo, Colo.	24	16	5	2	1	–	3
Salt Lake City, Utah	49	27	15	3	2	2	–
Tucson, Ariz.	128	92	23	6	2	5	14
PACIFIC	1,642	1,147	312	90	38	52	82
Berkeley, Calif.	17	12	4	1	–	–	1
Fresno, Calif.	52	35	5	1	5	6	2
Glendale, Calif.	28	25	–	3	–	–	–
Honolulu, Hawaii	71	51	15	4	1	–	2
Long Beach, Calif.	75	52	16	3	1	3	3
Los Angeles, Calif.	427	284	89	31	17	6	22
Oakland, Calif.	70	49	15	2	–	4	2
Pasadena, Calif.	51	39	8	–	1	3	3
Portland, Oreg. §	130	111	2	5	3	7	1
Sacramento, Calif.	76	47	19	3	1	6	6
San Diego, Calif.	97	67	25	2	1	2	11
San Francisco, Calif.	169	109	36	14	5	4	2
San Jose, Calif.	198	138	40	13	2	5	15
Seattle, Wash.	100	66	23	7	–	4	6
Spokane, Wash.	39	32	6	–	1	–	4
Tacoma, Wash.	42	30	9	1	–	2	2
TOTAL	11,968††	7,644	2,779	783	359	393	517

*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 4 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.

Insulin Infusion Pumps—Continued

References

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Wound Botulism Associated with Parenteral Cocaine Abuse — New York City

CDC recently received its first report of botulism directly associated with drug abuse. The patient was admitted to a New York hospital with symptoms of botulism several days after attempting to inject cocaine intravenously. *Clostridium botulinum* the causative organism, usually associated with the consumption of contaminated food, was isolated from specimens obtained from the patient after he was admitted to the hospital.

A 30-year-old male drug abuser in New York City was hospitalized January 2, 1982, 3 days after the onset of progressive neurologic symptoms that included dysphonia, dysarthria, dysphagia and dry mouth, dyspnea, and bilateral arm weakness. Physical examination revealed a small subcutaneous, non-erythematous, non-tender, cyst-like structure on the left arm at the site of an attempt, 2 weeks earlier, to inject cocaine intravenously. Also noted were bilateral ptosis, bilateral abducens paralysis, facial diplegia, dysarthric speech, inability to protrude the tongue, and bilateral arm weakness that was more pronounced in the proximal than the distal musculature. Sensation was normal to all modalities, and deep tendon reflexes were preserved.

Administration of intravenous edrophonium chloride (Tensilon) relieved ptosis and improved extraocular movements and grip strength. Lumbar puncture revealed 5 white blood cells (WBCs)/μL, a protein level of 17mg/dL, and a cerebrospinal fluid glucose level of 51 mg/dL. Median nerve conduction velocity and F-responses were normal, but the amplitude of the evoked muscle-action potential was low. Repetitive stimulation at 10 Hertzogs increased the muscle action potential by 50%. On the basis of these results, a preliminary diagnosis of botulism was made.

Muscle strength and vital capacity deteriorated progressively, and the patient required respiratory support. Cultures of stool and gastric aspirate obtained on admission did not reveal *C. botulinum*; stool and serum were negative for *C. botulinum* toxin in a mouse bioassay. An aspirate of the subcutaneous cyst yielded anaerobic, gram-positive, gas-forming bacilli; isolates were positive for type B botulinum toxin in a mouse bioassay.

Questioning the patient and his family failed to implicate any food source, and no cocaine was available from the sample used by the patient 2 weeks earlier. He had not injected the drug in the company of others, and he reported that none of his friends were similarly ill.

The abscess was excised on the 8th hospital day, and the patient was treated with intravenous penicillin (9 million units per day) for 10 days. *Botulinum* antitoxin was not administered. Because myasthenia gravis, toxic neuropathy, and the descending variant of Guillain-Barré syndrome were considered as diagnoses, the patient was given daily plasma exchanges. Limb and extraocular palsy and vital capacity began to improve, and respiratory support was re-

Wound Botulism — Continued

moved on the 17th hospital day. The patient's dysphagia remains the most severe symptom; however, he continues to improve daily.

Reported by S Rapoport, MD, PB Watkins, MD, S Saul, MD, James Salzer, MD, R Cooper, MD, R Roberts, MD, L Drusin, MD, New York Hospital, S Shahidi, PhD, R Clark, Bureau of Laboratories; V Paul, S Friedman, MD, New York City Dept of Health, R Rothenberg, MD, State Epidemiologist, New York State Dept of Health; H Janiger, US Food and Drug Administration; Bacterial Diseases Div, Center for Infectious Diseases, CDC.

Editorial Note: Since 1943, when the first report of wound botulism was received, 27 cases have been reported to CDC; 22 involved males. The mean age was 22.7 years (range 6-44). Fifteen cases were associated with type A, 5 with type B, 1 with mixed A and B, and the remainder were undetermined as to type. Twenty cases occurred in states west of the Mississippi, with 10 in California alone. This report from New York City represents the first case involving a drug abuser and suggests that botulism should be considered in the differential diagnosis when a patient with a history of drug abuse is seen for neurologic and respiratory symptoms. The relatively minor wound, the negative stool culture, and negative assays of stool and serum for toxin observed for this patient emphasize the difficulties associated with recognizing cases of wound botulism.

There is no evidence that plasma exchanges are useful in treating persons with any form of botulism. In addition, because of the small number of recognized cases, it has not been possible to evaluate the efficacy of antibiotics or antitoxin as therapy for wound botulism. In 1 review of 9 wound-botulism cases, antitoxin was administered to 4 patients; 3 of these patients survived (*1*).

Reference

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Bacteremia among Aortic-Valve Surgery Patients — Boston

In the period March 19-April 6, 1981, 3 of 5 patients at a Boston hospital who had undergone thoracotomy for aortic-valve replacement, developed bacteremia; the causative agent was a strain of *Enterobacter cloacae* not previously isolated at this hospital.

Clinical onset of infection ranged from 4 days to 2 weeks after surgery; 2 patients had mediastinitis in addition to bacteremia. The infected patients ranged in age from 60 to 83 years. Two of the 3 had also had coronary-artery-bypass grafts (CABG), but 22 other patients who had CABG surgery without valve replacement within the same 19-day period after surgery did not subsequently become infected by *E. cloacae*.

Because 3 of 5 patients who had valve replacements had been infected by the same uncommon bacterial strain, and because 2 different types of valves had been used in surgery, an investigation was initiated to identify procedures or equipment used in this surgery that were not used in other types of open-heart surgery. The only piece of equipment used exclusively for aortic-valve surgery was an anaeroid manometer that measured the pressure of cardioplegia solution being injected into the coronary arteries. The manometer, approximately 1 foot of disposable tubing, and a stopcock were connected to sterile tubing extending from the bubble trap (reservoir) of the cardioplegia solution. The manometer was not sterilized or disinfected after each use, and the stopcocks and tubing were not changed on a regular basis. Al-

Bacteremia — Continued

though reflux of the cardioplegia solution into the manometer tubing had not been observed, it was believed this could have occurred as a result of changes in pressure and fluid levels during surgery.

Use of this system was stopped immediately. The inner surfaces of the manomoeter and tubing junction were cultured. The cultures were positive for *E. cloacae* of the same biotype that caused infection in the index patients. In addition, 3 subsequent aortic-valve replacements without use of the implicated manometer were observed, and multiple cultures were obtained during surgery; all cultures were negative for *E. cloacae*.

The infusion pressure of cardioplegia solution is now monitored only with a pressure transducer that is sterilized with ethylene oxide after each use and is connected to the bubble trap by sterile tubing and stopcocks.

Reported by R Kalaidjian, RN, IB Tager, MD, Boston, Massachusetts; Hospital Infections Br, Bacterial Diseases Div, Center for Infectious Diseases, CDC.

Editorial Note: Mediastinitis and bacteremia are not uncommon complications of cardiac surgery. In one large study, 3.4% of cardiac surgical procedures performed through a median sternotomy were complicated by mediastinitis; however, there were no clusters of infection caused by a single microbial strain (*1*). Clusters of postoperative mediastinitis and bacteremia caused by a single strain of bacteria do sometimes occur, although the source of infection for the clusters is not often identified. Over the past years, cases of bacteremia have occurred as a result of intravascular infusion of solutions contaminated by pressure transducers (*2*); these instruments have rarely been associated with sternal osteomyelitis and mediastinitis (*3*).

Unsterile anaeroid and mercury manometers are used frequently in a variety of medical and surgical settings to calibrate electronic-pressure-monitoring equipment, such as that used in cardiac catheterization studies. Only rarely has contamination of sterile lines or solution by calibration or monitoring procedures been clearly associated with infection (2). The outbreak investigation reported here clearly demonstrates that a risk exists and reemphasizes the need to keep sterile systems closed and to ensure that the internal surfaces of all equipment directly connected to a sterile system remain sterile.

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Measles, United States — Weeks 1-4, 1982

In the 4-week period January 3-30, 1982 (reporting weeks 1-4), 36 cases of measles were reported to CDC—an average of 9 cases per week. This total is 71.4% below the 126 cases reported in the same period in 1981. It is also a record low for any 4-week period in any reporting year. Only 0.6% (18) of the nation's 3,144 counties reported any measles to CDC in this period (Figure 2).

Of the 36 measles cases reported, 4 were imported, each from a different country: Australia, Canada, England, and Jamaica. The imported cases were reported to have occurred in

Measles – Continued

Hawaii, New York City (2), and Vermont. Three of the importations involved U.S. citizens, and 1 involved a foreign citizen.

An additional 9 of the 36 reported measles cases occurred following transmission from imported cases. This included all cases in 6 of the 10 states reporting measles cases during this period: Hawaii, Kentucky, New Hampshire, Tennessee, Vermont, and Virginia. In 4 of these states, the cases were part of a multi-state outbreak of measles resulting from an earlier importation from El Salvador (*1-2*).

Reported by Immunization Div, Center for Prevention Svcs, CDC.

Editorial Note: The 36 measles cases reported in the first 4 weeks of 1982 represent a 99.9% reduction from the 31,411 cases reported in the same period in 1962, the year preceding measles-vaccine licensure. Moreover, the total is a record low for any 4-week period since 1925, when communicable disease reporting on a regular weekly basis was instituted in all states. Importations played a major part in measles activity during this 4-week period, since more than one-third (13/36, 36.1%) of the cases were either importations or resulted from importations. During this period, 99.4% of the nation's counties reported no measles, suggesting that measles transmission has been interrupted in these areas.

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FIGURE 2. States and counties reporting measles,* weeks 1-4, January 3-30, 1982

*Data include 1 case from Hawaii; total for New York represents 4 cases in New York City and 8 from Upstate New York.

Erratum, Vol. 31, Nos. 1 & 2

p 16. In the article "Measles, United States—Weeks 49-52, 1981," reference 1 should read: "CDC. Measles, United States—Weeks 45-48, 1981. MMWR 1981;30:621-2.

Erratum, Vol. 31, No. 5

p 53. In the article "National Surveillance for Reye Syndrome, 1981: Update, Reye Syndrome and Salicylate Usage," reference 1 should read: CDC. Follow-up on Reye syndrome—United States. MMWR 1980;29:321-2.

Erratum, Vol. 31, No. 6

p 73 In the article "Influenza Update—United States," the first name in the credits was misspelled. It should read: P Hom, MD, Sacramento County Health Dept.

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