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## Human Immunodeficiency Virus Infection in the United States

*The following report summarizes the review of current knowledge on human immunodeficiency virus (HIV) infection in the United States that was presented to the Domestic Policy Council. The review was conducted during the period September–November 1987, by CDC in conjunction with the National Institute on Drug Abuse of the Alcohol, Drug Abuse, and Mental Health Administration and the National Institutes of Health. Although the various studies reviewed differ in design and cannot be precisely compared, the review yielded a description of the approximate patterns and trends of HIV infection in this country.*

### Background

Over 46,000 cases of acquired immunodeficiency syndrome (AIDS), which is a result of HIV infection, have been reported to CDC since 1981. The mean interval between infection with HIV and the onset of AIDS exceeds 7 years. Thus, information on the number of currently infected individuals (prevalence) and the rate at which new HIV infections occur over time (incidence) is vital to monitoring the progression of the HIV epidemic.

Transmission of HIV infection can be slowed or halted by reducing or eliminating the behaviors that place individuals at risk for acquiring the infection. Better and more extensive information is essential for targeting and evaluating control and prevention efforts at local and state levels, for predicting future health-care needs, and for understanding where the HIV/AIDS epidemic is headed. Surveillance of the prevalence and incidence of HIV infection through continually monitoring sentinel populations, expanding focused seroprevalence studies, and developing models to help interpret the data remains a critical element of the nation's response to this major public health crisis.

### HIV Infection in the United States

*Infection Among Groups at Recognized Risk.* Observed prevalence of infection remains highest in those groups that account for the vast majority of AIDS cases. In 50 studies throughout the country, seroprevalence among homosexual and bisexual men has ranged from under 10% to as high as 70%; however, most findings have been between 20% and 50%. In 88 studies of intravenous (IV) drug abusers, HIV antibody prevalence has ranged from 50% to 65% in the New York City vicinity and Puerto Rico to rates that, although varied, have been mostly below 5% in areas other than the East Coast.

HIV antibody prevalence among persons with coagulation disorders requiring clotting factor concentrates (hemophiliacs) has varied according to the type and

*HIV – Continued*

severity of the disorder. The overall prevalence among hemophilia A patients has been approximately 70%; for hemophilia B patients, it has been 35%. These rates appear uniform throughout the country and reflect the national distribution of clotting factor concentrates.

The prevalence of HIV infection among regular heterosexual partners of infected persons has ranged from under 10% to 60%. Among partners of those who are at risk but whose HIV status is unknown, the prevalence has generally been under 10%.

*Infection Among Groups Within the General Population.* In selected groups within the general population—blood donors, civilian applicants for military service, Job Corps entrants, sentinel hospital patients, and women seen in family planning and other women's health clinics—the prevalence of HIV infection has generally been a fraction of 1%. However, seroprevalence rates have varied considerably and have been found to be much higher among selected inner city populations.

Persons at increased risk for HIV infection are asked not to donate blood; therefore, the prevalence and incidence rates of donor groups underrepresent the actual rates in the population. The overall prevalence of HIV antibody among Red Cross blood donors who have not been previously tested has averaged 0.04%. Applicants for military service, who underrepresent persons in the principal risk groups for HIV infection, have had a crude HIV antibody prevalence of 0.15%, which, when adjusted to the age, sex, and racial composition of the 17- to 59-year age group of the U.S. population, is 0.14%. Job Corps entrants (disadvantaged youths 16 to 21 years of age) have had a prevalence of 0.33%. Patients without AIDS-like conditions who have been tested anonymously at four sentinel hospitals have had a prevalence of 0.32%; the sex- and age-adjusted prevalence for military applicants from the same cities has been 0.11%.

Childbearing women in Massachusetts who were tested anonymously through filter-paper blood specimens from their newborn infants had an HIV antibody prevalence of 0.21%. Female applicants for military service from the same state have had a prevalence rate of 0.13%. The findings from surveys in women's health clinics have ranged from 0 to as high as 2.60% positive.\* The higher prevalences have occurred in areas where the incidence of AIDS is high among women.

*HIV Antibody Prevalence by Geographic Location, Age, Sex, and Race or Ethnicity.* The geographic distribution of HIV antibody prevalence among blood donors and applicants for military service and, to a limited extent, among homosexual men and IV drug abusers has been similar to the geographic distribution of AIDS cases (i.e., highest on the East Coast and West Coast and lowest in the northern Midwest and Mountain states). In addition, HIV antibody prevalence, like AIDS case incidence, has been greater in urban than in rural areas. Like AIDS cases, HIV infection among groups within the general population and among high-risk groups has been concentrated among young to early middle-aged adults and has consistently been more common among men and among blacks and Hispanics.

*Heterosexuals.* Information on the extent of HIV infection among persons who are exclusively heterosexual, do not use IV drugs, and have no known sexual exposure to persons at increased risk for HIV infection comes from two principal sources: 1) evaluation of the risk factors of seropositive blood donors and applicants for military service and 2) HIV surveys among heterosexuals attending sexually transmitted disease (STD) clinics.

\*These surveys exclude pregnant drug users, whose prevalence reached nearly 30.0%.

*HIV – Continued*

Limited studies of the exposure risks of seropositive blood donors, military applicants, and active duty military personnel suggest that approximately 85% of such individuals have identifiable risks for HIV infection. If the risk factor data from these limited studies prove to be consistent in more extensive national studies, then HIV antibody prevalence levels in persons without acknowledged or recognized risks would be below 0.02% for military applicants and below 0.01% for blood donors. However, more extensive studies on risk factors are urgently needed, particularly in inner city areas where AIDS case surveillance data suggest that heterosexual HIV transmission occurs.

In limited studies in which the subgroup of heterosexuals at highest risk (those being treated for STD) have been rigorously interviewed and those who are seropositive have been reinterviewed, the prevalence of HIV infection has generally ranged from 0 to 1.20% for persons without specific, identified risk factors. By contrast, the prevalence of infection among homosexual men at the same clinics has ranged from 12% to over 50%.

*HIV Infection Trends Over Time and the Incidence of New Infection.* Much less information exists on the trends and incidence of HIV infection than on its prevalence, and such data are much more difficult to develop. In the two general population groups tested over time (applicants for military service and first-time blood donors) HIV antibody prevalence rates have remained stable for 2 years, although the prevalence among donors has fluctuated seasonally. Increased self-exclusion of persons who know that they either are at risk or are already infected may have contributed to this observed prevalence pattern. The apparent stability may reflect the competing effects of self-exclusion by infected persons and the continued occurrence of new HIV infections.

There is evidence that new infections continue to occur among blood donors, military personnel, and groups at increased risk. However, in some groups, the rate of new infection may have declined somewhat from the rates that prevailed in the early 1980s. This interpretation is supported by the following observations: 1) declines in incidence of new infections have been observed in eight cohorts of homosexual men (the current principal risk group); 2) the net seroprevalence among military applicants and donors no longer appears to be rising; and 3) serologic screening of blood products and heat treatment of clotting factor concentrates have significantly reduced new infection in transfusion recipients and hemophiliacs. However, insufficient trend and incidence data are available to evaluate recent patterns in IV drug abusers or heterosexually active persons or in local geographic areas such as the inner cities.

The HIV/AIDS epidemic is a composite of many individual, though overlapping, smaller epidemics, each with its own dynamics and time course. The incidence of new infection in certain subgroups may have declined somewhat; however, in the absence of specific information, incidence rates cannot be assumed to have declined in all subgroups or in all geographic areas. It is important that trends be monitored among the various groups at increased risk, with particular emphasis on the groups and settings in which the pattern of transmission may be changing (i.e., IV drug abusers and heterosexually active persons and in localized areas such as inner cities). Data are insufficient to determine precisely the overall trends and incidence of HIV infection.

*HIV – Continued*

In 1986, public health and medical specialists from within and outside the government were convened by the Public Health Service to develop a working estimate of the number of Americans with HIV infection. They estimated that between 1 and 1.5 million persons were infected. This conclusion was based on the estimated sizes of populations at risk and the estimated average seroprevalence values for those populations. Since then, this computation has been reexamined in light of recently available data; other data, on AIDS cases and disease progression, have been used to explore mathematical models. The resulting estimates vary widely, but they are consistent with the 1986 figures. The estimation of the total number of infected persons will remain complex and inexact. There is no substitute for carefully obtained incidence and prevalence data. Additional surveys and studies are needed to determine the current extent of spread of HIV through the population.

The full report on the review of HIV infection in the United States is being published as an *MMWR* supplement (Vol. 36, No. S-6) and will be dated December 18, 1987.

*Epidemiologic Notes and Reports***Adult T-Cell Leukemia/Lymphoma Associated With Human T-Lymphotropic Virus Type I (HTLV-I) Infection – North Carolina**

A case of adult T-cell leukemia/lymphoma (ATL) associated with human T-lymphotropic virus type I (HTLV-I) has been reported from North Carolina. The patient, a black adult male, developed jaundice in December 1986, after several weeks of anorexia, fatigue, and fever.

When admitted to the hospital, he had an enlarged liver, a serum bilirubin level of 15.5 mg/dL, and an SGOT level of 279 IU/L, but serologic tests for hepatitis B markers and hepatitis A antibody were negative. Ultrasound examination revealed no evidence of intra- or extra-hepatic obstruction. He was thought to have alcoholic hepatitis. During the next week, he became pancytopenic, and bone marrow biopsy revealed hypocellularity of all cell lines but no malignant infiltrates. He was given transfusions of red blood cells and platelets and was discharged in February 1987, despite continued clinical and laboratory abnormalities. The diagnosis upon discharge was resolving hepatitis.

In March 1987, the patient returned to the hospital because of abdominal pain, nausea, vomiting, and somnolence. Laboratory studies revealed a leukocytosis with abnormal lymphocytes, a calcium level of 20.5 mg/dL, and an amylase level of 1,209 IU/L. He was thought to have ATL with hypercalcemia and consequent acute pancreatitis. His condition deteriorated despite chemotherapy and treatment for hypercalcemia, and he died on March 22. Autopsy revealed leukemic infiltrates in the spleen, bone marrow, and kidneys. When peripheral blood mononuclear cells obtained before the patient's death were subjected to flow cytometric analysis, 95% of the cells were of the CD4+ (T-helper cell) phenotype. Antibodies against HTLV-I were detected in several serum samples by radioimmunoassay and by Western blot. HTLV-I was isolated from the man's peripheral blood lymphocytes.

*Leukemia/Lymphoma – Continued*

The patient had served in the U.S. Army in South Vietnam, Korea, and Germany and had gone to North Carolina after discharge. He was divorced at the time of his illness. He had used intravenous drugs and had shared needles with a woman with whom he had had sexual contact for 2 years before his illness. He had never had a blood transfusion.

Serum specimens were obtained from 28 family members and sexual contacts of the patient. Five of these persons had antibodies against HTLV-I. They comprised the woman with whom the patient had had sexual contact and had shared needles, this woman's former husband, another former female sexual partner of the patient, the patient's sister, and the sister's daughter. None of these persons had lived outside the United States or had received blood transfusions, and none other than the woman with whom the index patient had shared needles were known to have used intravenous drugs.

A serosurvey of 245 attendees at sexually transmitted disease and family planning clinics in the county in which the patient had resided revealed no persons seropositive for antibody against HTLV-I.

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**Editorial Note:** HTLV-I, the first human retrovirus to be discovered, was first isolated and reported in the United States in 1980 (1) and in Japan in 1981 (2). Infection with HTLV-I, like infection with other retroviruses, probably occurs for life and can be inferred when antibody against HTLV-I is detected in the serum. Studies of HTLV-I antibody indicate that the virus is endemic in southern Japan (3), in the Caribbean (4), and in Africa (5,6).

HTLV-I infection in the United States appears to be rare. Although little serologic data exist, prevalence of infection is thought to be highest among blacks living in the Southeast (7). A prevalence rate of 30% has been found among black intravenous drug abusers in New Jersey, and a rate of 49% has been found in a similar group in New Orleans (8). It is possible that prevalence of infection is increasing in this risk group.

ATL is usually a highly aggressive non-Hodgkin's lymphoma with no characteristic histologic appearance except for a diffuse pattern and a mature T-cell phenotype. Circulating lymphocytes with an irregular nuclear contour (leukemic cells) are frequently seen. Several lines of evidence suggest that HTLV-I causes ATL. This evidence includes the frequent isolation of HTLV-I from patients with this disease and the detection of HTLV-I proviral genome in ATL leukemic cells (9). ATL is frequently accompanied by visceral involvement, hypercalcemia, lytic bone lesions, and skin lesions (10). Most patients die within 1 year of diagnosis.

ATL is relatively uncommon among those infected with HTLV-I. The overall incidence of ATL is estimated at about 1 per 1,500 adult HTLV-I carriers per year (11,12). Those cases that have been reported have occurred mostly among persons from the Caribbean or blacks from the Southeast (National Institutes of Health, unpublished data).

The presence in this investigation of family members and sexual contacts who are seropositive for HTLV-I is consistent with current knowledge concerning trans-

## Leukemia/Lymphoma – Continued

mission of HTLV-I infection. Transmission occurs from mother to child; by sexual contact; and through exposure to contaminated blood, either through blood transfusion or sharing of contaminated needles. The source of the patient's sister's infection is obscure. She and her brother may have acquired infection from their mother, who is deceased.

Because of the rarity of ATL in the United States and the potential for learning more about the transmission of HTLV-I in the United States, physicians who see adults with diffuse non-Hodgkin's lymphoma with at least two features consistent with ATL (abnormal lymphocytes on peripheral blood smear, T-cell phenotype of malignant cells, visceral involvement, hypercalcemia, lytic bone lesions, and skin lesions) are encouraged to report these cases through their local and state health departments to the Retrovirus Diseases Branch, Division of Viral Diseases, Center for Infectious Diseases, CDC, telephone number (404) 639-3091.

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

Disease	49th Week Ending			Cumulative, 49th Week Ending		
	Dec. 12, 1987	Dec. 6, 1986	Median 1982-1986	Dec. 12, 1987	Dec. 6, 1986	Median 1982-1986
Acquired Immunodeficiency Syndrome (AIDS)	414	61	N	19,266	12,248	N
Aseptic meningitis	97	267	189	10,588	10,350	9,820
Encephalitis: Primary (arthropod-borne & unspc)	15	33	29	1,208	1,161	1,235
Post-infectious	2	1	2	95	99	99
Gonorrhea: Civilian	12,533	17,655	17,957	721,291	838,708	838,708
Military	168	248	443	15,211	15,811	19,988
Hepatitis: Type A	565	531	530	23,150	21,573	21,573
Type B	524	542	542	23,867	24,279	24,279
Non A, Non B	55	84	N	2,719	3,329	N
Unspecified	61	91	115	2,930	4,122	5,412
Legionellosis	9	23	N	814	779	N
Leprosy	6	5	5	188	241	226
Malaria	6	14	19	800	1,059	973
Measles: Total*	18	41	14	3,572	5,961	2,530
Indigenous	16	40	N	3,151	5,656	N
Imported	2	1	N	421	305	N
Meningococcal infections: Total	45	53	56	2,686	2,335	2,517
Civilian	45	53	56	2,685	2,333	2,513
Military	-	-	-	1	2	7
Mumps	185	279	60	11,959	5,190	3,098
Pertussis	30	59	39	2,351	3,961	2,203
Rubella (German measles)	-	3	9	325	508	716
Syphilis (Primary & Secondary): Civilian	651	463	565	33,780	25,473	26,274
Military	1	1	2	151	153	273
Toxic Shock syndrome	6	12	N	310	342	N
Tuberculosis	497	527	527	20,138	20,624	20,624
Tularemia	1	4	4	183	157	244
Typhoid Fever	2	3	10	329	301	366
Typhus fever, tick-borne (RMSF)	2	3	5	579	734	825
Rabies, animal	52	60	82	4,358	5,101	5,101

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1987		Cum. 1987
Anthrax	1	Leptospirosis (Mich. 1)	37
Botulism: Foodborne	12	Plague	11
Infant (Ky. 1)	45	Poliomyelitis, Paralytic	-
Other	2	Psittacosis (Fla. 1)	77
Brucellosis (Tex. 9; Calif. 1)	113	Rabies, human	-
Cholera	4	Tetanus (Vt. 1)	38
Congenital rubella syndrome	5	Trichinosis (Alaska 1)	34
Congenital syphilis, ages < 1 year	127	Typhus fever, flea-borne (endemic, murine) (Tex. 2; Hawaii 1)	37
Diphtheria	3		

\*Two of the 18 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

**TABLE III. Cases of specified notifiable diseases, United States, weeks ending December 12, 1987 and December 6, 1986 (49th Week)**

Reporting Area	AIDS Cum. 1987	Aseptic Mening- itis 1987	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel- losis 1987	Leprosy Cum. 1987
			Primary Cum. 1987	Post-in- fectious Cum. 1987	Cum. 1987	Cum. 1986	A 1987	B 1987	NA,NB 1987	Unspeci- fied 1987		
UNITED STATES	19,266	97	1,208	95	721,291	838,708	565	524	55	61	9	188
NEW ENGLAND	802	1	44	2	22,470	20,561	25	28	1	8	-	13
Maine	28	-	4	-	666	800	-	-	-	-	-	-
N.H.	30	1	2	-	384	537	6	8	-	-	-	2
Vt.	15	-	6	-	205	252	-	1	-	-	-	-
Mass.	456	-	17	1	7,887	8,124	8	10	1	8	-	10
R.I.	60	-	3	1	2,034	1,768	1	1	-	-	-	-
Conn.	213	-	12	-	11,294	9,080	10	8	-	-	-	1
MID. ATLANTIC	5,707	6	137	8	113,228	146,065	44	92	3	4	-	21
Upstate N.Y.	664	3	49	3	15,674	17,663	26	17	1	1	-	-
N.Y. City	3,106	1	14	1	61,100	84,374	12	60	-	2	-	21
N.J.	1,364	2	10	-	15,578	18,726	6	15	2	1	-	-
Pa.	573	-	64	4	20,876	25,302	-	-	-	-	-	-
E.N. CENTRAL	1,243	18	351	13	110,482	112,518	33	37	5	4	2	8
Ohio	279	6	158	6	25,238	27,531	16	17	1	2	-	3
Ind.	110	-	53	-	8,789	12,010	-	-	-	-	-	-
Ill.	548	-	25	7	31,947	25,465	3	2	-	1	-	1
Mich.	210	11	78	-	35,386	35,471	14	18	4	1	2	3
Wis.	96	1	37	-	9,122	11,789	-	-	-	-	-	1
W.N. CENTRAL	445	6	87	-	29,067	36,007	48	23	5	-	2	-
Minn.	130	-	53	-	4,311	5,172	2	4	3	-	1	-
Iowa	27	-	13	-	2,870	3,675	3	2	-	-	1	-
Mo.	220	3	1	-	15,459	17,777	41	16	2	-	-	-
N. Dak.	2	-	1	-	264	290	-	-	-	-	-	-
S. Dak.	2	1	-	-	584	732	-	-	-	-	-	-
Nebr.	18	1	10	-	1,917	2,680	2	1	-	-	-	-
Kans.	46	1	9	-	3,662	5,681	-	-	-	-	-	-
S. ATLANTIC	3,247	24	163	35	188,959	217,805	23	92	8	4	3	6
Del.	32	-	7	1	3,230	3,534	-	-	-	-	-	-
Md.	406	7	20	7	21,709	25,752	5	21	2	1	2	2
D.C.	430	-	-	-	12,576	16,235	-	-	-	-	-	-
Va.	221	6	38	2	13,779	17,849	4	3	-	-	-	-
W. Va.	20	-	55	-	1,341	2,085	-	-	-	-	-	-
N.C.	166	-	26	-	28,770	33,717	1	20	3	-	-	-
S.C.	75	1	1	-	14,192	18,399	2	10	1	-	-	1
Ga.	457	2	1	-	33,745	35,977	4	8	-	-	-	-
Fla.	1,440	8	15	25	59,617	64,257	7	30	2	3	1	3
E.S. CENTRAL	293	1	61	7	54,406	66,567	14	23	3	1	1	-
Ky.	43	-	31	1	5,487	7,396	12	7	2	-	1	-
Tenn.	70	1	13	-	19,202	25,081	2	14	-	-	-	-
Ala.	143	-	17	1	16,911	19,511	-	2	1	1	-	-
Miss.	37	-	-	5	12,806	14,579	-	-	-	-	-	-
W.S. CENTRAL	1,961	16	145	4	80,948	97,400	68	52	7	14	-	4
Ark.	45	-	2	2	9,177	9,173	18	2	2	-	-	-
La.	333	1	28	-	13,167	16,705	1	13	1	2	-	-
Okla.	96	-	26	1	8,634	11,120	-	-	-	-	-	-
Tex.	1,487	15	89	1	49,970	60,402	49	37	4	12	-	4
MOUNTAIN	558	3	73	4	18,712	24,504	117	53	12	6	1	2
Mont.	7	-	1	-	535	641	1	1	-	-	-	-
Idaho	10	-	-	-	647	820	15	5	-	-	-	1
Wyo.	3	-	1	-	400	510	-	1	-	-	-	-
Colo.	205	3	42	-	4,256	6,320	6	5	2	-	1	-
N. Mex.	46	-	5	-	2,033	2,613	9	1	-	-	-	-
Ariz.	168	-	18	1	6,377	7,949	75	36	7	5	-	-
Utah	39	-	1	3	612	1,045	9	4	3	-	-	-
Nev.	80	-	5	-	3,852	4,606	2	-	-	1	-	1
PACIFIC	5,010	22	147	22	103,019	117,281	193	124	11	20	-	134
Wash.	318	-	11	4	8,265	8,686	60	25	2	2	-	6
Oreg.	153	-	-	-	3,747	5,123	23	13	1	-	-	1
Calif.	4,445	19	130	18	88,615	100,028	102	84	8	15	-	104
Alaska	14	1	3	-	1,605	2,473	7	2	-	3	-	-
Hawaii	80	2	3	-	787	1,223	1	-	-	-	-	23
Guam	3	-	-	-	180	207	-	-	-	-	-	-
P.R.	180	1	1	1	1,813	2,293	2	1	1	11	-	5
V.I.	-	-	-	-	276	259	-	-	-	-	-	-
Pac. Trust Terr.	-	-	-	-	355	466	-	1	-	-	-	48
Amer. Samoa	-	-	-	-	76	56	-	-	-	-	-	1

N: Not notifiable

U: Unavailable

**TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending December 12, 1987 and December 6, 1986 (49th Week)**

Reporting Area	Malaria	Measles (Rubella)				Meningococcal Infections	Mumps		Pertussis			Rubella			
	Cum. 1987	Indigenous		Imported*			Cum. 1986	1987	Cum. 1987	1987	Cum. 1987	Cum. 1986	1987	Cum. 1987	Cum. 1986
		1987	Cum. 1987	1987	Cum. 1987										
UNITED STATES	800	16	3,151	2	421	5,961	2,686	185	11,959	30	2,351	3,961	-	325	508
NEW ENGLAND	54	1	120	-	163	103	224	-	60	9	170	173	-	2	9
Maine	2	-	3	-	-	13	13	-	1	5	33	2	-	1	-
N.H.	3	1	62	-	102	43	22	-	11	4	43	82	-	-	1
Vt.	-	-	11	-	15	-	19	-	7	-	4	3	-	-	1
Mass.	22	-	27	-	39	36	109	-	23	-	55	56	-	1	4
R.I.	8	-	1	-	1	2	14	-	2	-	5	6	-	-	2
Conn.	19	-	16	-	6	9	47	-	16	-	30	24	-	-	1
MID. ATLANTIC	110	2	531	-	57	1,765	351	4	274	5	293	204	-	12	37
Upstate N.Y.	34	2	29	-	14	101	122	3	112	1	163	126	-	10	27
N.Y. City	23	-	447	-	19	727	36	-	16	-	19	10	-	1	5
N.J.	27	-	32	-	7	909	71	-	75	1	21	20	-	1	5
Pa.	26	-	23	-	17	28	122	1	71	3	90	48	-	-	-
E.N. CENTRAL	51	2	362	-	25	1,122	413	26	6,424	-	236	392	-	37	77
Ohio	13	-	1	-	4	10	137	-	113	-	74	166	-	-	1
Ind.	7	-	-	-	-	38	42	-	934	-	17	36	-	-	-
Ill.	7	2	189	-	18	681	101	7	2,625	-	17	39	-	27	67
Mich.	18	-	29	-	-	106	108	19	1,072	-	49	36	-	9	8
Wis.	6	-	143	-	3	287	25	-	1,680	-	79	112	-	1	1
W.N. CENTRAL	28	-	208	-	22	340	108	6	1,420	1	139	1,347	-	2	14
Minn.	8	-	19	-	20	49	31	1	782	1	14	48	-	-	1
Iowa	6	-	-	-	-	134	5	5	451	-	58	19	-	1	1
Mo.	8	-	188	-	1	32	31	-	33	-	34	24	-	-	1
N. Dak.	-	-	1	-	-	25	1	-	6	-	14	5	-	-	1
S. Dak.	-	-	-	-	-	-	3	-	90	-	3	14	-	-	-
Nebr.	5	-	-	-	-	1	6	-	4	-	1	10	-	-	-
Kans.	1	-	-	-	1	99	31	-	54	-	15	1,227	-	1	10
S. ATLANTIC	141	7	165	-	13	859	438	3	303	3	313	768	-	18	12
Del.	3	-	32	-	-	1	7	-	-	-	5	227	-	2	-
Md.	33	-	9	-	2	35	43	-	30	-	19	164	-	3	1
D.C.	20	-	-	-	1	2	10	-	1	-	-	-	-	1	-
Va.	25	-	1	-	-	60	68	3	83	3	55	50	-	1	-
W. Va.	2	-	-	-	-	2	5	-	40	-	50	26	-	-	-
N.C.	13	-	2	-	4	4	52	-	30	-	119	82	-	1	-
S.C.	6	-	2	-	-	301	39	-	19	-	-	18	-	-	-
Ga.	6	-	9	-	1	93	88	-	40	-	23	133	-	2	-
Fla.	33	7	110	-	5	361	126	-	60	-	42	68	-	8	11
E.S. CENTRAL	15	-	5	-	3	70	143	109	1,483	-	47	49	-	3	4
Ky.	3	-	-	-	-	6	27	-	273	-	2	5	-	2	4
Tenn.	1	-	-	-	-	56	63	108	1,147	-	15	18	-	1	-
Ala.	5	-	1	-	3	2	44	1	62	-	24	25	-	-	-
Miss.	6	-	4	-	-	6	9	N	N	-	6	1	-	-	-
W.S. CENTRAL	54	-	444	-	4	723	180	25	1,293	-	304	252	-	11	71
Ark.	1	-	-	-	-	283	21	-	293	-	13	20	-	2	1
La.	1	-	-	-	-	4	23	11	676	-	50	15	-	-	-
Okla.	5	-	3	-	1	39	24	N	N	-	163	128	-	5	-
Tex.	47	-	441	-	3	397	112	14	308	-	78	89	-	4	70
MOUNTAIN	42	-	480	-	19	330	87	6	237	10	213	278	-	25	24
Mont.	-	-	127	-	1	8	4	-	7	1	7	20	-	8	2
Idaho	3	-	-	-	-	1	6	-	7	8	73	49	-	1	-
Wyo.	2	-	-	-	2	-	-	-	-	-	5	4	-	1	1
Colo.	13	-	5	-	4	10	31	1	31	1	68	66	-	-	1
N. Mex.	2	-	311	-	9	38	7	N	N	-	12	28	-	-	-
Ariz.	18	-	35	-	1	258	26	5	175	-	38	65	-	5	2
Utah	1	-	-	-	1	13	9	-	12	-	10	42	-	10	15
Nev.	3	-	2	-	1	2	4	-	5	-	-	4	-	-	3
PACIFIC	305	4	836	2	115	649	742	6	465	2	636	498	-	215	260
Wash.	26	-	34	2†	12	168	79	1	63	1	98	151	-	2	17
Oreg.	6	-	21	-	81	12	35	N	N	-	71	16	-	2	4
Calif.	267	4	781	-	17	440	611	5	379	1	226	298	-	139	233
Alaska	3	-	-	-	1	-	7	-	7	-	5	5	-	2	-
Hawaii	3	-	-	-	4	29	10	-	16	-	236	31	-	70	6
Guam	-	-	2	-	-	5	5	-	5	-	-	-	-	1	4
P.R.	1	-	771	-	-	36	5	1	13	-	20	19	-	3	62
V.I.	-	-	-	-	-	-	-	1	21	-	-	-	-	1	-
Pac. Trust Terr.	-	-	1	-	-	-	1	-	5	-	1	-	-	1	3
Amer. Samoa	-	-	2	-	-	2	-	-	7	-	-	-	-	-	1

\*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 December 12, 1987 and December 6, 1986 (49th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1987	Cum. 1986	1987	Cum. 1987	Cum. 1986	Cum. 1987	Cum. 1987	Cum. 1987	Cum. 1987
UNITED STATES	33,780	25,473	6	20,138	20,624	183	329	579	4,358
NEW ENGLAND	613	465	-	601	643	1	32	8	7
Maine	1	19	-	28	34	-	1	-	3
N.H.	3	13	-	18	32	-	-	-	-
Vt.	4	9	-	16	16	-	1	-	-
Mass.	293	253	-	328	353	1	19	4	-
R.I.	12	19	-	58	42	-	3	-	1
Conn.	300	152	-	153	166	-	8	4	3
MID. ATLANTIC	6,149	3,580	1	3,732	4,054	1	43	25	381
Upstate N.Y.	233	185	1	493	594	1	9	11	54
N.Y. City	4,584	2,017	-	1,841	2,113	-	13	5	-
N.J.	674	618	-	674	690	-	21	1	15
Pa.	658	760	-	724	657	-	-	8	312
E.N. CENTRAL	827	814	-	2,236	2,418	3	36	38	149
Ohio	104	117	-	400	430	1	11	22	14
Ind.	56	108	-	220	262	-	5	1	17
Ill.	418	370	-	1,018	1,055	-	12	7	44
Mich.	191	177	-	508	566	-	5	5	28
Wis.	58	42	-	90	105	2	3	3	46
W.N. CENTRAL	175	201	1	574	605	65	11	54	919
Minn.	22	31	-	112	144	-	5	-	224
Iowa	26	9	1	38	46	4	2	1	261
Mo.	79	104	-	311	296	41	3	19	54
N. Dak.	1	6	-	14	10	1	-	-	105
S. Dak.	11	9	-	24	28	9	-	1	219
Nebr.	16	12	-	25	15	3	-	3	16
Kans.	20	30	-	50	66	7	1	30	40
S. ATLANTIC	11,842	7,732	1	4,335	4,140	5	34	222	1,261
Del.	67	55	-	39	46	1	-	2	-
Md.	596	435	-	386	288	-	4	46	431
D.C.	392	287	-	149	152	-	2	-	42
Va.	313	322	-	409	354	2	9	22	349
W. Va.	13	20	-	98	115	-	1	7	74
N.C.	684	505	-	564	609	2	3	80	8
S.C.	668	656	-	439	527	-	-	33	59
Ga.	1,581	1,420	1	777	700	-	2	29	199
Fla.	7,528	4,032	-	1,474	1,349	-	13	3	99
E.S. CENTRAL	1,805	1,688	-	1,819	1,840	8	4	98	301
Ky.	24	65	-	399	414	3	2	13	135
Tenn.	719	595	-	571	545	1	1	58	81
Ala.	475	486	-	519	567	1	1	15	78
Miss.	587	542	-	330	314	3	-	12	7
W.S. CENTRAL	4,146	4,946	-	2,343	2,665	72	30	117	576
Ark.	240	244	-	289	369	38	2	12	120
La.	768	875	-	285	391	3	-	-	13
Okla.	169	139	-	224	238	28	4	87	32
Tex.	2,969	3,688	-	1,545	1,667	3	24	18	411
MOUNTAIN	665	589	1	487	514	16	16	13	358
Mont.	9	7	-	18	27	2	-	11	164
Idaho	6	14	-	17	23	1	-	-	9
Wyo.	3	4	-	-	-	-	-	1	73
Colo.	119	131	-	40	72	5	-	-	7
N. Mex.	54	68	-	96	94	1	11	-	3
Ariz.	284	239	1	258	230	3	4	-	81
Utah	24	18	-	25	31	2	-	1	7
Nev.	166	108	-	33	37	2	1	-	14
PACIFIC	7,558	5,458	2	4,011	3,745	12	123	4	406
Wash.	144	168	1	232	200	4	8	-	-
Oreg.	290	110	-	121	118	5	2	1	-
Calif.	7,104	5,145	1	3,405	3,204	2	105	3	401
Alaska	4	1	-	67	55	1	-	-	5
Hawaii	16	34	-	186	168	-	8	-	-
Guam	2	1	-	26	35	-	-	-	-
P.R.	850	819	-	281	310	-	-	-	67
V.I.	10	1	-	2	1	-	-	-	-
Pac. Trust Terr.	222	262	-	154	94	-	20	-	-
Amer. Samoa	2	1	-	4	5	-	1	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,\* week ending  
December 12, 1987 (49th Week)

Reporting Area	All Causes, By Age (Years)					P&I**	Total	Reporting Area	All Causes, By Age (Years)					P&I**	Total
	All Ages	≥65	45-64	25-44	1-24				<1	All Ages	≥65	45-64	25-44		
NEW ENGLAND	626	433	121	47	10	15	47	S. ATLANTIC	1,171	708	276	104	45	38	55
Boston, Mass.	169	106	33	20	4	6	19	Atlanta, Ga.	197	120	50	17	7	3	5
Bridgeport, Conn.	41	30	5	4	1	1	3	Baltimore, Md.	116	71	27	13	1	4	7
Cambridge, Mass.	24	19	5	-	-	-	2	Charlotte, N.C.	96	55	23	9	4	5	8
Fall River, Mass.	27	20	6	1	-	-	-	Jacksonville, Fla.	112	71	30	6	5	-	2
Hartford, Conn.	90	52	21	11	3	3	2	Miami, Fla.	118	52	39	14	8	5	2
Lowell, Mass.	33	25	6	-	-	-	2	Norfolk, Va.	65	41	9	9	1	-	2
Lynn, Mass.	17	15	2	-	-	-	3	Richmond, Va.	90	48	29	4	7	2	10
New Bedford, Mass.	28	25	3	-	-	-	1	Savannah, Ga.	50	31	8	6	1	4	2
New Haven, Conn.	9	4	2	2	1	-	1	St. Petersburg, Fla.	78	61	12	2	1	2	4
Providence, R.I.	52	40	11	1	-	-	1	Tampa, Fla.	72	53	13	4	1	1	3
Somerville, Mass.	8	6	2	-	-	-	-	Washington, D.C.	144	80	29	19	9	7	4
Springfield, Mass.†	48	37	8	3	-	-	3	Wilmington, Del.	33	25	7	1	-	-	4
Waterbury, Conn.	37	25	7	3	-	-	2	E.S. CENTRAL	906	569	208	62	31	36	53
Worcester, Mass.	43	29	10	2	1	1	7	Birmingham, Ala.	132	77	30	13	5	7	6
MID. ATLANTIC	2,717	1,770	520	287	70	70	134	Chattanooga, Tenn.	59	41	14	1	1	2	4
Albany, N.Y.	62	45	7	6	2	2	3	Knoxville, Tenn.	103	66	23	8	5	1	6
Allentown, Pa.	17	10	5	1	-	-	1	Louisville, Ky.	119	66	37	8	5	3	5
Buffalo, N.Y.	109	79	18	8	1	3	6	Memphis, Tenn.	193	129	38	12	6	8	14
Camden, N.J.	36	25	7	4	-	-	-	Mobile, Ala.	69	40	14	4	4	7	3
Elizabeth, N.J.	19	12	5	1	1	-	-	Montgomery, Ala.	55	36	14	4	1	-	7
Erie, Pa.†	35	23	8	2	2	-	6	Nashville, Tenn.	176	114	38	12	4	8	8
Jersey City, N.J.	46	35	7	4	-	-	-	W.S. CENTRAL	1,307	839	271	114	39	44	56
N.Y. City, N.Y.	1,438	914	281	165	41	37	64	Austin, Tex.	60	38	12	8	2	-	2
Newark, N.J.	133	64	24	29	6	10	4	Baton Rouge, La.	53	37	11	3	-	-	3
Peterson, N.J.	25	16	4	4	1	-	1	Corpus Christi, Tex.	32	21	5	2	1	3	7
Philadelphia, Pa.†	396	258	92	27	7	12	19	Dallas, Tex.	190	108	41	23	12	6	7
Pittsburgh, Pa.†	57	39	12	4	1	1	6	El Paso, Tex.	60	39	16	3	2	-	2
Reading, Pa.	29	22	3	1	2	1	6	Fort Worth, Tex	99	63	16	7	5	8	4
Rochester, N.Y.	125	88	20	11	4	2	10	Houston, Tex.†	308	176	74	34	13	11	7
Schenectady, N.Y.	20	16	1	3	-	-	2	Little Rock, Ark.	54	38	11	3	1	1	5
Scranton, Pa.†	17	16	1	-	-	-	2	New Orleans, La.	112	75	26	9	-	-	2
Syracuse, N.Y.	93	61	19	11	1	1	8	San Antonio, Tex.	183	131	31	13	1	7	20
Trenton, N.J.	23	19	2	2	-	-	1	Shreveport, La.	37	21	9	4	-	-	3
Utica, N.Y.	19	18	-	1	-	-	2	Tulsa, Okla.	119	92	19	5	2	1	5
Yonkers, N.Y.	18	10	4	3	1	-	1	MOUNTAIN	712	455	146	52	21	38	36
E.N. CENTRAL	2,369	1,565	520	153	59	72	96	Albuquerque, N. Mex.	89	58	16	9	4	2	2
Akron, Ohio	97	65	24	3	3	2	3	Colo. Springs, Colo.	27	19	5	2	1	-	-
Canton, Ohio	35	24	8	1	1	1	2	Denver, Colo.	135	75	26	10	7	17	8
Chicago, Ill.‡	564	362	125	45	10	22	16	Las Vegas, Nev.	98	64	27	4	3	-	5
Cincinnati, Ohio	102	71	22	5	-	4	8	Ogden, Utah	23	15	4	3	-	-	2
Cleveland, Ohio	155	94	42	12	3	4	3	Phoenix, Ariz.	147	90	25	12	5	15	6
Columbus, Ohio	175	112	40	8	8	7	2	Pueblo, Colo.	20	17	1	2	-	-	6
Dayton, Ohio	126	86	22	8	7	3	5	Salt Lake City, Utah	55	35	13	6	-	-	2
Detroit, Mich.	268	156	57	31	13	11	5	Tucson, Ariz.	118	82	29	4	1	2	5
Evansville, Ind.	30	24	3	2	-	-	2	PACIFIC	2,232	1,483	438	162	67	70	127
Fort Wayne, Ind.	47	32	9	3	2	1	2	Berkeley, Calif.	20	14	6	-	-	-	1
Gary, Ind.	18	12	5	1	-	-	-	Fresno, Calif.	96	66	20	6	3	1	10
Grand Rapids, Mich.	81	57	17	3	1	3	7	Glendale, Calif.	26	16	7	3	-	-	2
Indianapolis, Ind.	159	98	39	11	7	4	2	Honolulu, Hawaii	70	51	13	2	-	-	4
Madison, Wis.	34	25	7	2	-	-	3	Long Beach, Calif.	158	104	36	10	3	5	12
Milwaukee, Wis.‡	140	103	28	3	-	-	6	Los Angeles, Calif.	659	420	131	61	24	14	25
Peoria, Ill.	50	35	10	3	-	-	2	Oakland, Calif.	90	61	20	5	-	-	4
Rockford, Ill.	49	32	11	4	2	-	5	Pasadena, Calif.	28	15	10	2	-	-	1
South Bend, Ind.	50	44	5	1	-	-	4	Portland, Oreg.	160	123	17	7	7	6	6
Toledo, Ohio	127	93	27	5	2	-	13	Sacramento, Calif.	159	104	32	10	7	6	10
Youngstown, Ohio	62	40	19	2	-	-	1	San Diego, Calif.	149	93	37	8	4	4	4
W.N. CENTRAL	916	671	150	47	16	31	38	San Francisco, Calif.	173	101	32	25	7	8	7
Des Moines, Iowa	79	56	16	5	1	1	5	San Jose, Calif.	197	142	30	12	4	9	17
Duluth, Minn.	30	25	3	2	-	-	1	Seattle, Wash.	138	96	26	5	7	4	3
Kansas City, Kans.	36	21	10	1	1	3	-	Spokane, Wash.	73	53	15	3	-	-	2
Kansas City, Mo.	109	79	21	4	1	4	4	Tacoma, Wash.	36	24	6	3	1	2	3
Lincoln, Nebr.	33	31	2	-	-	-	1	TOTAL	12,956††	8,493	2,650	1,028	358	414	642
Minneapolis, Minn.	247	183	32	14	8	10	17								
Omaha, Nebr.	77	53	12	8	1	3	1								
St. Louis, Mo.	155	106	32	7	2	7	2								
St. Paul, Minn.	64	51	11	1	-	1	1								
Wichita, Kans.	86	66	11	5	2	2	6								

\*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

\*\*Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

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

**TABLE V. Estimated years of potential life lost before age 65 and cause-specific mortality, by cause of death – United States, 1985**

Cause of mortality (ICD, 9 <sup>th</sup> Revision)	YPLL for persons dying in 1985*	Cause-specific mortality, 1985† (rate/100,000)
<b>ALL CAUSES</b>		
(Total)	11,844,475	874.8
<b>Unintentional injuries‡</b> (E800-E949)	<b>2,235,064</b>	<b>38.6</b>
Malignant neoplasms (140-208)	1,813,245	191.7
Diseases of the heart (390-398,402,404-429)	1,600,265	325.0
Suicide, homicide (E950-E978)	1,241,688	20.1
Congenital anomalies (740-759)	694,715	5.5
Prematurity†† (765, 769)	444,931	2.9
Sudden infant death syndrome (798)	313,386	2.0
Cerebrovascular disease (430-438)	253,044	64.0
Chronic liver diseases and cirrhosis (571)	235,629	11.2
Pneumonia and influenza (480-487)	168,949	27.9
Acquired immunodeficiency syndrome (AIDS)**	152,595	2.3
Chronic obstructive pulmonary diseases (490-496)	129,815	31.2
Diabetes mellitus (250)	128,229	16.2

\*For details of calculation, see footnotes to Table V, *MMWR* 1987;36:56.

†Cause-specific mortality rates as reported in the National Center for Health Statistics' *Monthly Vital Statistics Report* are compiled from a 10% sample of all deaths.

‡Equivalent to accidents and adverse effects.

††Category derived from disorders relating to short gestation and respiratory distress syndrome.

*Leukemia/Lymphoma – Continued**References*

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### **International Outbreak of Type E Botulism Associated With Ungutted, Salted Whitefish**

On November 2, 1987, a 39-year-old Russian immigrant and his 9-year-old son were admitted to a suburban New York hospital with symptoms indicative of botulism. The father's stool specimen contained type E botulinum toxin. On October 23, the father had purchased a whole, ungutted, salted, air-dried whitefish known as either ribyetz or kapchunka from a delicatessen in Queens, New York City. He and his son had eaten the fish on October 30 and 31. On November 3, 1987, CDC received a report from the Ministry of Health, Jerusalem, Israel, of five additional cases suspected to be botulism; one case was fatal. The patients had eaten ribyetz purchased in a grocery in Brighton Beach, Brooklyn, New York City, on October 17 and taken to Israel. The fish as well as a serum sample from one surviving patient subsequently yielded type E botulinum toxin.

The implicated fish was distributed in the New York City area by Gold Star Smoked Fish Inc., a firm in Brooklyn. On November 3, the New York City Department of Health issued an embargo on the sale and distribution of ribyetz or kapchunka and removed the implicated product from the shelves of stores selling Gold Star products. The

*Botulism – Continued*

public was alerted through news releases, and acute care hospitals in New York City and surrounding areas were notified. No additional cases have been identified in New York. However, one additional laboratory-confirmed case of botulism has been reported in Israel. On November 13, the patient, a 17-year-old female, had eaten whitefish that had been purchased on October 18 at the same delicatessen in Queens associated with the original patients.

*Reported by: S Kotev, MD, Hadassah Univ Hospital, Jerusalem; A Leventhal, MD, MPH, A Bashary, RN, H Zahavi, RN, Jerusalem Dist Health Office; A Cohen, National Botulism Reference Lab; P Slater, MD, MPH, Ministry of Health, Israel. A Ruston, MD, E Baron, PhD, B Farber, MD, J Greenspan, MD, M Tenenbaum, MD, R vanAmerongon, MD, North Shores Univ Hospital, Manhasset; V Tulumello, J Lynch, Nassau County Health Dept; S Schultz, MD, C Reisberg, S Shahidi, PhD, S Joseph, MD, New York City Dept of Health; L Crowell, DVM, J Ferrara, New York State Dept of Agriculture and Markets; J Guzewich, M Shayegani, PhD, G Farnett, DL Morse, MD, MS, State Epidemiologist, New York State Dept of Health. US Food and Drug Administration. Div of Field Svcs, Epidemiology Program Office; Enteric Diseases Br, Div of Bacterial Diseases, Center for Infectious Diseases, CDC.*

**Editorial note:** Ribyetz, or kapchunka, is an ethnic food consumed in this country primarily by Russian immigrants. It has been implicated as a vehicle for botulism twice in recent years. In 1981, a California man became ill (1), and, in 1985, two Russian immigrants died in New York City after eating the fish (2,3). Type E botulism is typically associated with foods of marine origin (4). The mechanism of contamination of the ribyetz has not been established. However, *Clostridium botulinum* spores can be found in the intestinal contents of fish, and the fact that the fish were unviscerated may have been important (5).

The whitefish implicated in this outbreak was produced by one firm and distributed only in New York City. In addition to halting the distribution of the fish, officials in New York City and New York State are developing regulations that would in effect prohibit the production and sale of such unviscerated whitefish. Although refrigeration is recommended, some consumers may be storing the fish unrefrigerated before eating it uncooked. Persons who purchased ribyetz in New York City in October should dispose of any remaining fish in such a way as to make it inaccessible to others.

Public health personnel should be aware of the potential problem, especially for people in ethnic groups known to eat this product. Guidance in treating botulism and testing serum and stool samples for botulin toxin can be obtained through state or city health departments. Requests for testing specimens of ribyetz can be made through the district offices of the Food and Drug Administration (FDA) or the FDA Division of Emergency and Epidemiological Operations, Rockville, Maryland 20857; telephone number (301) 443-1240.

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*Perspectives in Disease Prevention and Health Promotion***Premature Mortality Due to Unintentional Injuries – United States, 1984**

Unintentional injuries are the leading cause of years of potential life lost (YPLL) before the age of 65. In 1985, unintentional injuries (E800-949)\* accounted for over 2.2 million YPLL, or 19% of all YPLL. Unintentional injuries were also the leading cause of YPLL in 1983 and 1984 (1).

For this analysis, National Center for Health Statistics (NCHS) mortality data for 1984, the latest year for which detailed data are available, were used to determine the number of deaths associated with unintentional injury and the related YPLL. Population data, based on the 1984 U.S. Bureau of the Census estimates, were used to calculate age- and cause-specific YPLL rates.

In 1984, motor vehicle traffic crashes (E810-819), which caused 39,228 deaths, were the leading cause of both YPLL and deaths resulting from unintentional injuries. Injuries to passenger vehicle occupants are the major cause of deaths due to motor vehicle crashes and cause one out of every three deaths from all causes among 15- to 19-year-old males (2). Deaths from drowning (E910), fire and flames (E890-899), poisoning (E850-869), falls (E880-888), unintentional discharge of firearms (E922), and choking on food or objects (E911-912) were also leading causes of YPLL in 1984.

Fatalities caused by nontraffic motor vehicle crashes involving off-the-road vehicles, such as snowmobiles and all-terrain vehicles, and fatalities due to air and water transportation remained among the ten unintentional injuries that cause the largest number of deaths and YPLL (Table 1). For all unintentional injuries, the rate of YPLL for males was between 1.7 and 8.9 times greater (depending on the unintentional injury) than that for females. This difference was greatest for fatal injuries involving air transportation.

In 1984, fatalities involving pedestrians were the second leading cause of motor vehicle traffic deaths and constituted about 14% of all fatalities associated with motor vehicle traffic incidents. A total of 5,652 persons were killed in pedestrian incidents, and a resultant 195,586 years of potential life were lost. White males had a YPLL rate of 120.7/100,000 population for pedestrian fatalities, and black males had a rate of

\*Based on the International Classification of Diseases, 9th Revision, Supplementary Classification of External Causes of Injury and Poisoning.

**TABLE 1. Deaths and years of potential life lost (YPLL) due to unintentional injuries before age 65 – United States, 1984**

<b>Cause of Mortality (ICD, 9th Revision)</b>	<b>Deaths</b>	<b>YPLL</b>
Motor Vehicle, Traffic (E810-819)	39,228	1,387,534
Poisonings (E850-869)	4,244	130,632
Drowning (E910)	3,982	162,656
Falls (E880-888)	3,168	72,889
Fire and Flames (E890-899)	2,087	132,681
Firearms (E922)	1,538	58,579
Choking (E911-912)	1,354	38,342
Air Transport (E840-845)	1,187	32,151
Water Transport (E830-838)	1,027	32,641
Motor Vehicle, Nontraffic (E820-825)	901	35,978

*Injuries – Continued*

225.3/100,000. The rates for white and black females showed a similar difference. Although the age-specific fatality rate for pedestrians was high for children under age 5, it was highest for adults 15-29 years of age and for those over 50. Children under 10 contributed 26% of the YPLL due to pedestrian fatalities.

*Reported by: Program Development and Implementation Br, Div of Injury Epidemiology and Control, Center for Environmental Health and Injury Control, CDC.*

**Editorial Note:** Alcohol is the single most frequently found human factor in fatal crashes (3,4). A 1982 study of 46 motor vehicle crashes in Fulton County, Georgia, in which the drivers' blood alcohol concentrations (BACs) were measured showed that, in 39 (85%) of the crashes, at least one of the drivers involved was legally intoxicated. Drivers who had been drinking were involved in 42 (91%) of the crashes. Thirty-two (82%) of the legally intoxicated drivers were at least 25 years old, and 30 (77%) were male (5).

Deaths involving pedestrians represent the second largest category of motor vehicle deaths. Males account for 70% of pedestrian fatalities in all age groups. Two-thirds of all pedestrian deaths occur in urban areas. Alcohol plays a major role in adult pedestrian fatalities (3,4). Almost half of all fatally injured adult pedestrians have BACs  $\geq 0.1\%$ , and more than 50% of all fatally injured pedestrians in the 20- to 64-year age group have BACs  $\geq 0.1\%$ . For persons killed in motor vehicle crashes, the percentage of elevated BAC declines after age 40.

Reductions of motor vehicle occupant and pedestrian fatalities depend on a variety of interventions designed to alter the human and environmental factors affecting motor vehicle crashes. Interventions that could reduce human factors in motor vehicle crashes include public awareness and legal enforcement actions designed to deter alcohol use by drivers and pedestrians and special educational efforts directed toward these two groups. Studies of the cost-effectiveness of possible engineering changes, such as altering vehicle and highway design and constructing barriers to physically separate pedestrians and vehicles, may reveal some other important interventions.

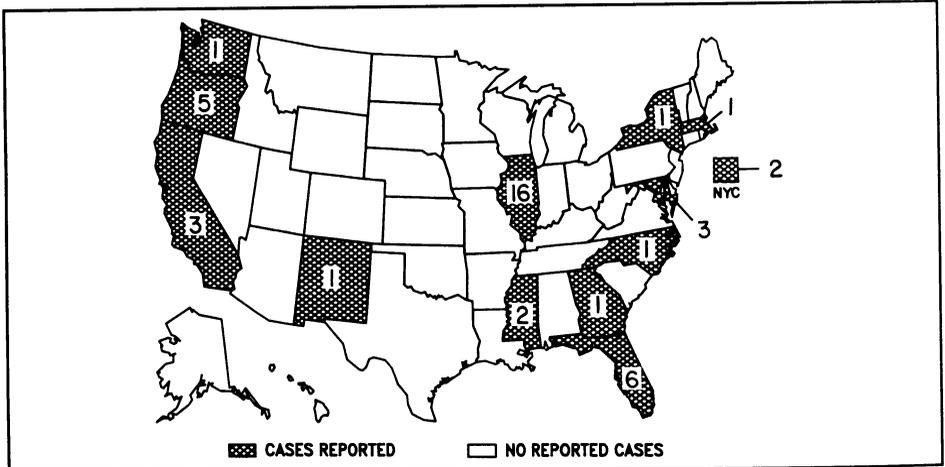
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*Notice to Readers***Holiday Publication Schedule**

The *MMWR* will not be published during Christmas week. The next issue will come out on January 1, 1988, and will include the tables on specified notifiable diseases and deaths in 121 U.S. cities for the weeks ending December 19 and December 26, 1987.

**FIGURE I. Reported measlescases – United States, Weeks 45-48, 1987**



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The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday. The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. Such reports and any other matters pertaining to editorial or other textual considerations should be addressed to: Editor, *Morbidity and Mortality Weekly Report*, Centers for Disease Control, Atlanta, Georgia 30333.

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