CENTERS FOR DISEASE CONTROL

January 27, 1989 / Vol. 38 / No. 3

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Topics in Minority Health

Black/White Comparisons of Premature Mortality for Public Health Program Planning – District of Columbia

Analyses of mortality patterns in the United States have shown differences in health status by race (*1–4*). These mortality data are an important component of public health planning to obtain the same standards of health for minority and nonminority populations. However, mortality measures based solely on race obscure the role of potential risk factors such as cigarette smoking (*5,6*), alcohol and drug use (*7*), blood pressure, diet, educational attainment, income, occupation, and adequacy of health care (*1,8,9*). Examining the burden of preventable mortality associated with these risk factors helps to focus the public health planning process on the gap between the current burden of mortality and the lesser burden achievable through specific interventions (*10*).

The District of Columbia Commission of Public Health analyzed its mortality data for 1980–1986 to determine the adequacy of current prevention and control activities and to identify possible gaps in public health services. These data were analyzed using three measures: 1) age-adjusted mortality, 2) premature deaths (deaths occurring before age 70), and 3) years of potential life lost before age 65 (YPLL) (*11*). Age-adjustment was performed by the direct method using the 1970 population as the standard.

In addition, "excess deaths" were calculated using the definition of the Secretary's Task Force on Black and Minority Health of the U.S. Department of Health and Human Services (*1*). This estimate reflects the difference between the number of observed deaths before age 70 in the black population and the number that would be expected if the black population had the same age- and sex-specific mortality rates as the white population. Excess YPLL for blacks also were calculated to determine the difference between observed and expected YPLL.

During 1980–1986, 47,694 resident deaths occurred in the District of Columbia, resulting in an average annual age-adjusted mortality rate of 973 per 100,000 population. Among blacks, the average annual age-adjusted mortality rate was 1092 per 100,000 population, exceeding the rate for whites (692 per 100,000) by 37%. Mortality rates were highest for black males, followed by white males, black females, and white females (Figure 1).

YPLL — Continued

Compared with white males in the District, black males had higher mortality rates for sudden infant death syndrome (SIDS) (rate ratio [RR] = 4.7), suicide and homicide (RR = 2.5), prematurity (RR = 2.2), chronic liver disease and cirrhosis (RR = 2.1), and unintentional injuries (RR = 2.1). Compared with white females, black females had higher mortality rates for diabetes (RR = 3.6), SIDS (RR = 3.0), prematurity (RR = 2.3), chronic liver disease and cirrhosis (RR = 2.0), and pneumonia and influenza (RR = 1.6). Overall, blacks had lower mortality rates than whites for congenital anomalies (RR = 0.7) and chronic obstructive lung disease (RR = 0.7).

In the District, as in the nation, YPLL rates were highest for black males, followed by black females, white males, and white females (Figure 2). When compared with

FIGURE 1. Average annual age-adjusted mortality rates per 100,000 population, by race and sex — District of Columbia, 1980–1986

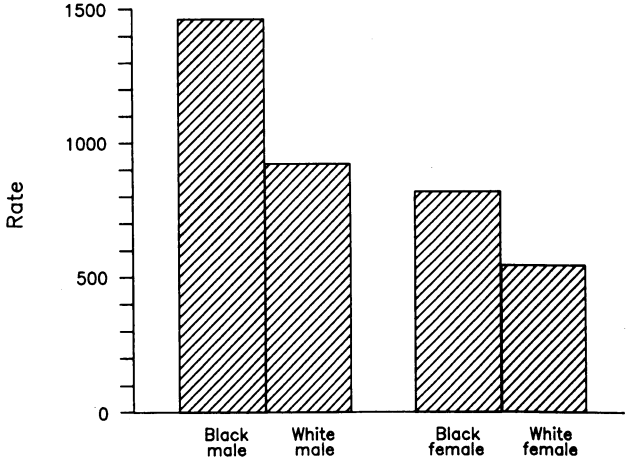
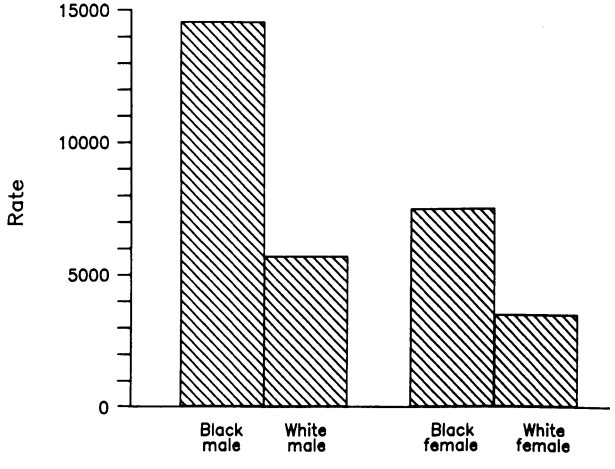


FIGURE 2. Average annual age-adjusted rates of years of potential life lost before age 65 per 100,000 population, by race and sex — District of Columbia, 1980–1986



YPLL — Continued

white males, District black males had higher YPLL rates for SIDS (RR = 5.1), cerebrovascular disease (RR = 4.5), suicide and homicide (RR = 3.6), and diabetes (RR = 3.3) (Table 1). Compared with white females, black females had higher YPLL rates for diabetes (RR = 10.3), pneumonia and influenza (RR = 8.4), heart disease (RR = 3.9), and chronic liver disease and cirrhosis (RR = 3.6) (Table 1).

Blacks in the District had an average annual total of 1493 excess premature deaths and 28,606 excess YPLL when compared with whites. Total premature deaths and YPLL in the District were twice those expected if black mortality rates were equal to white rates. Although black males constitute 46% of the District's black population, they accounted for 66% of the excess premature deaths and 69% of the excess YPLL (*12*).

Reported by: M Levy, MD, State Epidemiologist, and staff, District of Columbia Commission of Public Health. Epidemiology Program Office, CDC.

TABLE 1. Average annual age-adjusted rates of years of potential life lost before age 65*, by cause, gender, and race — District of Columbia, 1980–1986

	Male			Female		
Cause of death	**White**	**Black**	**Rate ratio**	**White**	**Black**	**Rate ratio**
ALL CAUSES (Total)	**5654**	**14526**	**2.6**	**3447**	**7451**	**2.2**
Unintentional injuries (E800–E949)	443	1338	3.0	179	406	2.3
Malignant neoplasms (140–208)	712	1548	2.2	771	1068	1.4
Heart diseases (390–398, 402, 404–429)	641	1760	2.7	211	813	3.9
Suicide/Homicide (E950–E978)	551	1984	3.6	235	408	1.7
Congenital anomalies (740–759)	641	456	0.7	696	470	0.7
Prematurity (765, 769)	638	1375	2.2	422	989	2.3
Sudden infant death syndrome (798)	87	440	5.1	90	265	2.9
Cerebrovascular disease (430–438)	71	318	4.5	111	219	2.0
Chronic liver disease and cirrhosis (571)	236	654	2.8	77	280	3.6
Pneumonia/Influenza (480–487)	115	334	2.9	18	151	8.4
Chronic obstructive pulmonary disease (490–496)	44	98	2.2	65	58	0.9
Diabetes mellitus (250)	29	96	3.3	6	62	10.3

*Standardized to the 1970 U.S. population and expressed per 100,000 population.

YPLL — Continued

Editorial Note: The Secretary's Task Force on Black and Minority Health uses "excess deaths" as the primary indicator of the disparity in health status between minority and nonminority populations (*1*). During 1979–1981, blacks and other minorities in the United States had an average annual 58,942 deaths in excess of what was expected based on rates for whites (*1*). These excess deaths represent 42% of deaths occurring to blacks <70 years of age. Cardiovascular disease (heart disease and stroke), homicide, cancer, and infant mortality were the leading causes of these excess deaths.

During 1980–1986 in the District of Columbia, the major causes of excess premature deaths in blacks were heart disease (24%), cancer (18%), suicide and homicide (7%)*, and unintentional injuries (6%). As in the nation, blacks in the District had higher YPLL rates than did whites for many leading causes of death (*11*). In contrast to the rankings for excess premature mortality, the leading causes of excess YPLL were homicide (15%), heart disease (13%), unintentional injuries (9%), cancer (9%), and prematurity (8%). The measure of excess YPLL emphasizes the disparity in mortality between blacks and whites by accentuating those causes of death that disproportionately affect young blacks. For example, homicide ranked third as a cause of excess premature mortality, but these intentional injuries were the leading cause of excess YPLL.

Public health planning based on excess YPLL suggests a need for more emphasis on prevention of homicide, heart disease, unintentional injuries, and cancer for the black population in the District and in the nation (*13,14*). Such prevention efforts at the local level may include 1) outreach programs and other measures to increase the use and quality of preventive health services and 2) implementation of school and community education in programs to encourage healthy behaviors. Although previously reported, the elevated YPLL rates for pneumonia and influenza, diabetes, and SIDS in the black population warrant further study and the development of interventions (*1,15,16*). States and cities with large minority populations may find the approach to mortality analyses used by the District helpful for establishing priorities and evaluating public health programs.

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*When the category "suicide and homicide" was delineated further, homicide accounted for all excess deaths, whereas suicide was not in excess.

YPLL — Continued

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Epidemiologic Notes and Reports

Update: Creutzfeldt-Jakob Disease in a Second Patient Who Received a Cadaveric Dura Mater Graft

In late May 1988, a 25-year-old man from New Zealand developed a rapidly progressive dementia 31 months after neurosurgery for head injuries sustained from a fall. During surgery, extensive, bilateral dura mater tears were repaired with imported, commercially prepared cadaveric human dura mater grafts. The patient died July 31, 1988, and Creutzfeldt-Jakob disease (CJD) was confirmed by brain necropsy, which demonstrated spongiform encephalopathy. He had no family history of degenerative neurologic disease, nor had he received cadaveric, pituitary-derived human growth hormone. Previous major surgery included an appendectomy at age 10. An ongoing investigation by the New Zealand Department of Health determined that the dural grafts used in this patient were LYODURA®, processed by B. Braun Melsungen AG of the Federal Republic of Germany; the lot numbers are unknown.

Reported by: TJ Nisbet, PhD, Office for Inquiries, New Zealand Dept of Health; I MacG Donaldson, MD, FRACP, FRCP, Christchurch Hospital, Christchurch, New Zealand; SN Bishara, MCh, FRCS, FRACS, Dunedin Hospital, Dunedin, New Zealand. Food and Drug Administration. Hospital Infections Program and Div of Viral Diseases, Center for Infectious Diseases, CDC.

Editorial Note: This is the second patient reported to CDC who developed CJD after receiving a lyophilized, irradiated, human cadaveric dura mater graft, LYODURA®. The first patient was a 28-year-old woman from Connecticut who had received her graft, LYODURA® (lot 2105), during a surgical resection of a cholesteatoma 19 months before onset of CJD (*1,2*). The young age of the patient from New Zealand and his recent surgery using the same brand of dura mater graft that was implicated as the source of the CJD agent in the U.S. patient strongly suggest that his dural grafts were the vehicle of transmission of the CJD agent. The surgeries during which LYODURA® grafts were used in the two patients were performed within a 6-month

CJD – Continued

period in 1985. Lot 2105 was not distributed to New Zealand. Whether these grafts were produced around the same time is unknown.

This second case of LYODURA®-associated CJD supports a published conclusion of the joint CDC/Food and Drug Administration (FDA) investigation of the first patient that "LYODURA® may carry a higher risk of transmitting CJD than other dura mater products used in the United States" (*2*). In June 1987, representatives of B. Braun Melsungen AG reported that their procedures for collection and processing of dura after May 1, 1987, were revised to reduce the risk of CJD transmission.

On April 28, 1987, FDA had issued a safety alert recommending disposal of all LYODURA® from packages bearing a four-digit lot number beginning with the digit "2" (code for material packaged in 1982), as well as all unmarked LYODURA® (*3*). Because the lot numbers of the LYODURA® used in the New Zealand patient cannot be determined, however, it now may be prudent to avoid using LYODURA® produced before the manufacturer's reported changes in procedures were instituted.

(Continued on page 43)

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

Disease	3rd Week Ending			Cumulative, 3rd Week Ending		
	Jan. 21, 1989	Jan. 23, 1988	Median 1984-1988	Jan. 21, 1989	Jan. 23, 1988	Median 1984-1988
Acquired Immunodeficiency Syndrome (AIDS)†	281	U*	123	1,649	1,475	537
Aseptic meningitis	60	60	79	167	197	218
Encephalitis: Primary (arthropod-borne & unspec)	10	10	14	21	39	39
Post-infectious	1	-	1	4	1	1
Gonorrhea: Civilian	12,662	13,738	16,573	32,207	41,001	43,988
Military	194	245	340	458	617	1,036
Hepatitis: Type A	533	284	383	1,303	908	960
Type B	312	285	414	800	819	1,106
Non A, Non B	37	32	55	108	102	164
Unspecified	20	22	78	82	81	202
Legionellosis	16	9	6	31	39	26
Leprosy	-	-	4	5	4	12
Malaria	14	12	11	38	26	31
Measles: Total†	64	25	11	102	46	44
Indigenous	62	24	4	96	44	41
Imported	2	1	4	6	2	6
Meningococcal infections	49	56	55	105	158	142
Mumps	98	53	53	222	177	177
Pertussis	32	9	18	108	42	75
Rubella (German measles)	2	8	6	7	10	14
Syphilis (Primary & Secondary): Civilian	544	601	571	1,413	1,689	1,480
Military	6	4	3	15	10	10
Toxic Shock syndrome	2	4	4	10	12	13
Tuberculosis	239	243	252	719	644	679
Tularemia	2	3	1	4	10	5
Typhoid Fever	6	4	4	11	6	9
Typhus fever, tick-borne (RMSF)	1	-	-	4	-	3
Rabies, animal	56	33	60	133	110	177

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1989		Cum. 1989
Anthrax	-	Leptospirosis (Hawaii 3)	5
Botulism: Foodborne	-	Plague	-
Infant	-	Poliomyelitis, Paralytic	-
Other	-	Psittacosis (N.H. 1, Wash. 1)	4
Brucellosis	-	Rabies, human	-
Cholera	-	Tetanus	2
Congenital rubella syndrome	-	Trichinosis	-
Congenital syphilis, ages 1 year	-		
Diphtheria	-		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.
†Two of the 62 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 January 21, 1989 and January 23, 1988 (3rd Week)

Reporting Area	AIDS	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy
			Primary	Post-infectious			A	B	NA,NB	Unspecified		
	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989
UNITED STATES	1,649	167	21	4	32,207	41,001	1,303	800	108	82	31	5
NEW ENGLAND	94	13	-	-	1,195	1,169	37	82	10	6	2	-
Maine	5	-	-	-	25	27	1	3	2	-	-	-
N.H.	1	1	-	-	9	31	10	5	2	-	-	-
Vt.	1	-	-	-	4	11	1	2	1	-	-	-
Mass.	70	7	-	-	475	336	22	59	4	5	1	-
R.I.	2	2	-	-	59	100	-	11	-	1	1	-
Conn.	15	3	-	-	623	664	3	2	1	-	-	-
MID. ATLANTIC	501	5	1	-	2,412	5,590	235	114	14	9	9	1
Upstate N.Y.	79	4	1	-	156	535	46	35	6	-	2	-
N.Y. City	255	1	-	-	-	2,500	1	5	-	1	-	-
N.J.	132	-	-	-	530	665	38	32	4	5	-	-
Pa.	35	-	-	-	1,726	1,890	150	42	4	3	7	1
E.N. CENTRAL	202	31	9	-	6,327	6,469	46	89	7	2	8	-
Ohio	16	12	3	-	1,823	1,268	23	44	1	-	7	-
Ind.	53	-	-	-	522	539	-	-	-	-	-	-
Ill.	84	-	-	-	1,918	1,970	1	1	-	-	-	-
Mich.	49	19	6	-	1,882	2,172	21	42	6	2	1	-
Wis.	-	-	-	-	182	520	1	2	-	-	-	-
W.N. CENTRAL	52	3	-	-	1,372	1,482	14	7	4	-	-	-
Minn.	-	-	-	-	154	184	3	1	-	-	-	-
Iowa	9	3	-	-	90	138	3	2	2	-	-	-
Mo.	35	-	-	-	830	964	4	4	-	-	-	-
N. Dak.	1	-	-	-	4	14	-	-	-	-	-	-
S. Dak.	-	-	-	-	18	28	-	-	2	-	-	-
Nebr.	-	-	-	-	160	34	2	-	-	-	-	-
Kans.	7	-	-	-	116	120	2	-	-	-	-	-
S. ATLANTIC	347	34	3	1	9,824	10,251	110	139	13	6	3	-
Del.	11	2	-	-	130	171	4	8	-	-	-	-
Md.	52	5	-	-	997	831	23	34	5	5	3	-
D.C.	30	-	-	-	470	614	-	-	-	-	-	-
Va.	26	9	1	-	827	980	4	11	-	-	-	-
W. Va.	1	1	2	-	129	68	2	-	-	-	-	-
N.C.	1	7	-	1	1,438	1,007	48	57	8	-	-	-
S.C.	16	2	-	-	1,110	1,077	-	14	-	1	-	-
Ga.	64	3	-	-	1,683	2,175	19	3	-	-	-	-
Fla.	146	5	-	-	3,040	3,328	10	12	-	-	-	-
E.S. CENTRAL	31	20	-	-	3,326	3,276	26	89	15	1	2	-
Ky.	5	6	-	-	260	269	12	25	5	-	1	-
Tenn.	-	5	-	-	829	972	7	35	3	-	1	-
Ala.	15	9	-	-	1,288	1,283	3	28	7	1	-	-
Miss.	11	-	-	-	949	752	4	1	-	-	-	-
W.S. CENTRAL	26	4	1	-	3,731	6,245	48	12	2	1	4	-
Ark.	3	-	-	-	336	381	2	-	-	-	-	-
La.	19	1	-	-	500	2,139	-	-	-	-	-	-
Okla.	-	2	1	-	416	279	34	11	1	-	4	-
Tex.	4	1	-	-	2,479	3,446	12	1	1	1	-	-
MOUNTAIN	32	7	1	-	521	829	260	42	10	7	1	-
Mont.	-	-	-	-	10	24	1	8	-	-	-	-
Idaho	-	-	-	-	12	20	15	3	-	-	-	-
Wyo.	3	-	-	-	5	5	4	1	-	-	-	-
Colo.	3	1	-	-	46	222	26	4	1	4	-	-
N. Mex.	-	2	-	-	74	92	18	6	2	-	-	-
Ariz.	4	2	-	-	202	251	124	6	1	2	1	-
Utah	7	2	1	-	39	38	25	4	3	1	-	-
Nev.	22	-	-	-	133	177	47	10	3	-	-	-
PACIFIC	364	50	6	3	3,499	5,690	527	226	33	50	2	4
Wash.	61	-	-	-	102	338	3	1	-	1	-	-
Oreg.	19	-	-	-	159	185	68	8	4	-	-	-
Calif.	283	48	4	3	3,135	5,048	396	213	28	48	2	4
Alaska	-	-	2	-	85	74	60	3	1	1	-	-
Hawaii	1	2	-	-	18	45	-	1	-	-	-	-
Guam	-	-	-	-	-	12	-	-	-	-	-	-
P.R.	76	5	-	-	-	97	1	4	-	-	-	-
V.I.	15	-	-	-	21	23	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	3	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	2	-	-	-	-	-	-

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 21, 1989 and January 23, 1988 (3rd Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin-gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
	Cum. 1989	1989	Cum. 1989	1989	Cum. 1989	Cum. 1988	Cum. 1989	1989	Cum. 1989	1989	Cum. 1989	Cum. 1988	1989	Cum. 1989	Cum. 1988
UNITED STATES	38	62	96	2	6	46	105	98	222	32	108	42	2	7	10
NEW ENGLAND	3	-	-	-	-	1	9	-	2	2	9	3	-	-	-
Maine	-	-	-	-	-	-	1	-	-	-	2	1	-	-	-
N.H.	-	-	-	-	-	-	3	-	2	2	5	2	-	-	-
Vt.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mass.	3	-	-	-	-	1	3	-	-	-	-	-	-	-	-
R.I.	-	-	-	-	-	-	1	-	-	-	2	-	-	-	-
Conn.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
MID. ATLANTIC	5	-	-	1	1	2	3	3	11	1	13	-	1	1	-
Upstate N.Y.	4	-	-	-	-	-	2	-	-	-	-	-	1	1	-
N.Y. City	-	U	-	U	-	-	1	U	-	U	-	-	U	-	-
N.J.	-	-	-	1†	1	-	-	3	7	1	12	-	-	-	-
Pa.	1	-	-	-	-	2	-	-	4	-	1	-	-	-	-
E.N. CENTRAL	2	44	44	1	1	1	11	7	21	-	1	2	-	-	2
Ohio	2	44	44	1†	1	-	6	-	8	-	1	-	-	-	-
Ind.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
Ill.	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2
Mich.	-	-	-	-	-	-	3	7	13	-	-	1	-	-	-
Wis.	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-
W.N. CENTRAL	-	1	10	-	-	-	4	39	82	-	2	8	-	-	-
Minn.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iowa	-	-	-	-	-	-	-	1	3	-	2	1	-	-	-
Mo.	-	1	10	-	-	-	-	-	-	-	-	-	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-
S. Dak.	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-
Nebr.	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
Kans.	-	-	-	-	-	-	-	38	79	-	-	1	-	-	-
S. ATLANTIC	3	-	1	-	1	2	23	21	41	-	2	7	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Md.	1	-	1	-	1	1	6	20	27	-	-	-	-	-	-
D.C.	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-
Va.	1	-	-	-	-	-	2	-	8	-	1	1	-	-	-
W. Va.	-	-	-	-	-	-	2	1	2	-	-	-	-	-	-
N.C.	-	-	-	-	-	1	3	-	2	-	1	4	-	-	-
S.C.	-	-	-	-	-	-	1	-	2	-	-	-	-	-	-
Ga.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fla.	1	-	-	-	-	-	5	-	-	-	-	1	-	-	-
E.S. CENTRAL	-	-	1	-	-	-	9	4	11	-	4	3	-	-	-
Ky.	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-
Tenn.	-	-	-	-	-	-	-	3	9	-	-	2	-	-	-
Ala.	-	-	1	-	-	-	2	1	2	-	4	-	-	-	-
Miss.	-	-	-	-	-	-	-	N	N	-	-	1	-	-	-
W.S. CENTRAL	-	-	-	-	2	-	4	14	24	-	-	-	-	-	-
Ark.	-	-	-	-	2	-	1	4	7	-	-	-	-	-	-
La.	-	-	-	-	-	-	-	3	3	-	-	-	-	-	-
Okla.	-	-	-	-	-	-	1	-	4	-	-	-	-	-	-
Tex.	-	-	-	-	-	-	2	7	10	-	-	-	-	-	-
MOUNTAIN	6	-	13	-	1	12	3	1	3	28	56	3	-	-	1
Mont.	-	-	12	-	1	-	-	-	-	-	-	-	-	-	-
Idaho	3	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Colo.	-	-	-	-	-	12	2	1	1	1	1	-	-	-	-
N. Mex.	1	-	-	-	-	-	-	N	N	1	1	-	-	-	-
Ariz.	1	-	1	-	-	-	1	-	1	26	53	1	-	-	-
Utah	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Nev.	1	-	-	-	-	-	-	-	-	-	1	-	-	-	1
PACIFIC	19	17	27	-	-	28	39	9	27	1	21	16	1	6	7
Wash.	-	-	-	-	-	-	1	1	2	1	1	1	-	-	-
Oreg.	-	-	-	-	-	-	3	N	N	-	-	-	-	-	-
Calif.	19	17	27	-	-	28	33	8	23	-	20	6	1	6	7
Alaska	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Hawaii	-	-	-	-	-	-	-	-	2	-	-	9	-	-	-
Guam	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
P.R.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
V.I.	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-
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 21, 1989 and January 23, 1988 (3rd Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1988	Cum. 1989	Cum. 1989	Cum. 1989	Cum. 1989
UNITED STATES	1,413	1,689	10	719	644	4	11	4	133
NEW ENGLAND	122	39	-	14	4	-	6	-	-
Maine	-	2	-	1	-	-	-	-	-
N.H.	-	1	-	3	-	-	-	-	-
Vt.	-	-	-	-	-	-	-	-	-
Mass.	41	19	-	2	2	-	1	-	-
R.I.	28	-	-	2	1	-	4	-	-
Conn.	53	17	-	6	1	-	1	-	-
MID. ATLANTIC	119	336	1	133	178	1	3	-	27
Upstate N.Y.	-	10	-	6	18	-	-	-	-
N.Y. City	30	230	-	90	100	-	2	-	-
N.J.	82	33	-	16	28	-	-	-	-
Pa.	7	63	1	21	32	1	1	-	27
E.N. CENTRAL	39	35	1	87	95	-	-	-	5
Ohio	-	-	1	20	22	-	-	-	-
Ind.	3	7	-	1	2	-	-	-	-
Ill.	30	21	-	38	44	-	-	-	2
Mich.	6	5	-	25	22	-	-	-	1
Wis.	-	2	-	3	5	-	-	-	2
W.N. CENTRAL	21	6	1	23	19	-	-	1	9
Minn.	1	1	-	7	4	-	-	-	3
Iowa	3	1	-	4	3	-	-	1	-
Mo.	8	1	-	7	4	-	-	-	1
N. Dak.	-	1	-	-	1	-	-	-	2
S. Dak.	-	-	1	3	7	-	-	-	-
Nebr.	9	2	-	1	-	-	-	-	1
Kans.	-	-	-	1	-	-	-	-	2
S. ATLANTIC	574	610	2	129	135	-	-	1	40
Del.	4	3	-	-	3	-	-	-	-
Md.	19	35	-	5	16	-	-	1	10
D.C.	41	18	-	9	4	-	-	-	-
Va.	25	20	-	23	16	-	-	-	13
W. Va.	-	-	-	4	4	-	-	-	5
N.C.	25	33	2	13	9	-	-	-	-
S.C.	40	26	-	27	25	-	-	-	7
Ga.	140	97	-	8	3	-	-	-	5
Fla.	280	378	-	40	55	-	-	-	-
E.S. CENTRAL	108	91	-	49	59	1	-	2	3
Ky.	2	-	-	24	25	1	-	2	1
Tenn.	-	11	-	-	-	-	-	-	-
Ala.	55	49	-	24	30	-	-	-	2
Miss.	51	31	-	1	4	-	-	-	-
W.S. CENTRAL	213	208	-	30	13	1	-	-	28
Ark.	19	-	-	4	-	-	-	-	2
La.	48	21	-	7	-	-	-	-	-
Okla.	2	13	-	-	7	1	-	-	6
Tex.	144	174	-	19	6	-	-	-	20
MOUNTAIN	11	14	1	16	17	-	-	-	5
Mont.	-	-	-	-	-	-	-	-	4
Idaho	-	-	-	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-
Colo.	2	12	-	-	5	-	-	-	-
N. Mex.	-	-	-	4	4	-	-	-	-
Ariz.	5	-	1	10	6	-	-	-	1
Utah	4	2	-	-	-	-	-	-	-
Nev.	-	-	-	2	2	-	-	-	-
PACIFIC	206	350	4	238	124	1	2	-	16
Wash.	-	12	-	10	8	-	-	-	-
Oreg.	9	8	-	7	9	-	-	-	-
Calif.	197	327	4	212	94	1	2	-	13
Alaska	-	-	-	4	3	-	-	-	3
Hawaii	-	3	-	5	10	-	-	-	-
Guam	-	-	-	-	-	-	-	-	-
P.R.	-	36	-	-	6	-	-	-	-
V.I.	1	1	-	-	-	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	1	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending January 21, 1989 (3rd Week)

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
NEW ENGLAND	681	499	107	43	15	17	57
Boston, Mass.	182	126	30	13	5	8	14
Bridgeport, Conn.§	47	34	8	4	1	-	3
Cambridge, Mass.	29	25	4	-	-	-	6
Fall River, Mass.	33	27	3	3	-	-	1
Hartford, Conn.	53	32	12	6	2	1	1
Lowell, Mass.	25	20	3	2	-	-	2
Lynn, Mass.	16	13	2	1	-	-	1
New Bedford, Mass.	28	23	3	1	1	-	5
New Haven, Conn.	79	61	4	5	4	5	11
Providence, R.I.	47	31	11	2	1	2	1
Somerville, Mass.	4	4	-	-	-	-	-
Springfield, Mass.§	49	36	9	3	1	-	6
Waterbury, Conn.	29	24	5	-	-	-	4
Worcester, Mass.	60	43	13	3	-	1	2
MID. ATLANTIC	3,077	2,002	623	307	78	67	176
Albany, N.Y.	53	38	10	4	1	-	2
Allentown, Pa.	21	15	5	1	-	-	-
Buffalo, N.Y.	98	71	18	6	-	3	15
Camden, N.J.	36	20	10	3	1	2	2
Elizabeth, N.J.	26	17	6	2	1	-	5
Erie, Pa.†	48	28	17	3	-	-	3
Jersey City, N.J.§	65	41	15	8	-	1	1
N.Y. City, N.Y.	1,601	1,024	312	184	41	40	74
Newark, N.J.	121	53	33	26	8	1	9
Paterson, N.J.	33	21	2	6	2	2	4
Philadelphia, Pa.	510	322	119	38	17	14	31
Pittsburgh, Pa.†	74	58	13	1	1	1	6
Reading, Pa.	38	35	2	1	-	-	2
Rochester, N.Y.	120	91	15	7	4	3	11
Schenectady, N.Y.	14	11	1	2	-	-	-
Scranton, Pa.†	36	28	7	1	-	-	3
Syracuse, N.Y.	83	60	18	3	2	-	3
Trenton, N.J.	41	24	9	8	-	-	2
Utica, N.Y.	23	17	5	1	-	-	1
Yonkers, N.Y.	36	28	6	2	-	-	2
E.N. CENTRAL	2,412	1,607	494	171	64	76	129
Akron, Ohio	31	22	4	2	1	2	-
Canton, Ohio	52	32	12	7	-	1	6
Chicago, Ill§	564	362	125	45	10	22	16
Cincinnati, Ohio	147	99	26	10	5	7	29
Cleveland, Ohio	156	104	29	15	3	5	3
Columbus, Ohio	175	121	36	14	1	3	1
Dayton, Ohio	133	97	27	4	2	3	12
Detroit, Mich.	304	182	67	28	18	9	10
Evansville, Ind.	48	29	11	4	4	-	3
Fort Wayne, Ind.	66	46	13	1	3	3	3
Gary, Ind.	29	16	9	2	-	2	1
Grand Rapids, Mich.	48	23	17	4	1	3	4
Indianapolis, Ind.	164	112	32	10	6	4	4
Madison, Wis.	42	32	8	1	-	1	10
Milwaukee, Wis.	130	96	28	2	2	2	6
Peoria, Ill.	40	28	5	3	1	3	1
Rockford, Ill.	57	41	9	6	1	-	6
South Bend, Ind.	41	38	1	1	-	1	2
Toledo, Ohio	133	93	25	8	5	2	12
Youngstown, Ohio	52	34	10	4	1	3	-
W.N. CENTRAL	743	554	121	37	12	19	30
Des Moines, Iowa	87	67	12	6	-	2	5
Duluth, Minn.	21	14	5	1	1	-	-
Kansas City, Kans.	39	23	11	2	1	2	1
Kansas City, Mo.	126	84	25	9	3	5	3
Lincoln, Nebr.	39	29	10	-	-	-	4
Minneapolis, Minn.	118	90	18	6	2	2	8
Omaha, Nebr.	118	93	18	5	-	2	8
St. Louis, Mo.	138	113	11	5	4	5	-
St. Paul, Minn.	40	31	8	-	1	-	1
Wichita, Kans.	17	10	3	3	-	1	-

Reporting Area	All Causes, By Age (Years)						P&I**
	All Ages	≥65	45-64	25-44	1-24	<1	Total
S. ATLANTIC	1,169	718	233	136	34	45	57
Atlanta, Ga.	134	79	26	22	5	2	9
Baltimore, Md.	80	43	20	10	3	4	5
Charlotte, N.C.	111	74	18	8	4	7	9
Jacksonville, Fla.	124	78	30	9	3	4	3
Miami, Fla.	145	84	32	24	4	1	1
Norfolk, Va.	66	40	15	5	1	5	5
Richmond, Va.	57	27	16	5	1	8	5
Savannah, Ga.	76	50	12	6	1	7	3
St. Petersburg, Fla.	80	63	10	4	1	2	6
Tampa, Fla.	69	47	13	5	-	3	6
Washington, D.C.	197	108	38	37	10	2	5
Wilmington, Del.	30	25	3	1	1	-	-
E.S. CENTRAL	841	574	173	45	28	21	58
Birmingham, Ala.	135	93	34	3	3	2	4
Chattanooga, Tenn.	53	40	6	3	2	2	3
Knoxville, Tenn.	110	72	22	9	5	2	8
Louisville, Ky.	74	48	11	5	3	7	5
Memphis, Tenn.	185	131	36	12	5	1	22
Mobile, Ala.	83	47	28	3	2	3	3
Montgomery, Ala.	81	59	13	4	4	1	4
Nashville, Tenn.	120	84	23	6	4	3	9
W.S. CENTRAL	1,893	1,180	422	184	63	44	100
Austin, Tex.	52	37	9	4	1	1	6
Baton Rouge, La.	71	35	24	4	4	4	1
Corpus Christi, Tex.§	48	37	10	1	-	-	1
Dallas, Tex.	222	130	52	26	8	6	8
El Paso, Tex.	65	46	9	5	1	4	5
Fort Worth, Tex	101	72	13	10	5	1	8
Houston, Tex.§	734	436	169	89	24	16	18
Little Rock, Ark.	68	44	14	6	3	1	11
New Orleans, La.	112	69	25	12	5	1	-
San Antonio, Tex.	247	151	64	19	5	8	20
Shreveport, La.	68	47	13	3	4	1	6
Tulsa, Okla.	105	76	20	5	3	1	16
MOUNTAIN	731	485	147	58	23	18	43
Albuquerque, N. Mex.	91	60	10	8	12	1	5
Colo. Springs, Colo.	38	28	9	-	-	1	3
Denver, Colo.	96	58	22	12	1	3	3
Las Vegas, Nev.	123	83	25	11	2	2	9
Ogden, Utah	30	22	6	2	-	-	3
Phoenix, Ariz.	147	90	30	16	4	7	6
Pueblo, Colo.	30	23	7	-	-	-	2
Salt Lake City, Utah	44	22	13	5	2	2	-
Tucson, Ariz.	132	99	25	4	2	2	12
PACIFIC	1,850	1,247	317	186	52	37	148
Berkeley, Calif.	17	11	4	1	-	1	1
Fresno, Calif.	51	31	13	5	1	1	3
Glendale, Calif.	19	16	1	1	-	-	1
Honolulu, Hawaii	77	55	13	8	1	-	10
Long Beach, Calif.§	90	63	18	7	1	1	13
Los Angeles Calif.	412	251	59	68	22	6	18
Oakland, Calif.	84	56	13	8	2	3	6
Pasadena, Calif.	52	36	6	2	3	5	1
Portland, Oreg.	155	116	25	9	3	1	7
Sacramento, Calif.	179	127	32	12	5	3	23
San Diego, Calif.	129	87	22	12	5	3	18
San Francisco, Calif.	174	107	36	25	3	2	3
San Jose, Calif.	211	153	38	12	5	3	29
Seattle, Wash.	100	65	18	12	-	5	7
Spokane, Wash.	55	41	8	4	-	2	4
Tacoma, Wash.	45	32	11	-	1	1	4
TOTAL	13,397††	8,866	2,637	1,167	369	344	798

*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.

CJD — Continued

The methods of producing and distributing human tissue products, including dura mater grafts, are not routinely subjected to FDA inspection and approval. Health-care providers are urged to use human tissue products that have been handled according to strict guidelines, such as those established by the American Association of Tissue Banks (*4,5*). In addition, hospitals should maintain records so that infections associated with human tissue products can be linked with specific lot numbers of the specific products.

Previous and current patients who have rapidly progressive dementing illnesses consistent with CJD and who have received a dural graft during an operative procedure should be reported through their appropriate state health department to L. Schonberger, M.D., Division of Viral Diseases, Center for Infectious Diseases, CDC, Building 6, Room 127, Mailstop A32, Atlanta, Georgia 30333; telephone (404) 639-3091.

References

1. CDC. Rapidly progressive dementia in a patient who received a cadaveric dura mater graft. MMWR 1987;36:49–50,55.
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3. Food and Drug Administration. FDA safety alert: possibly contaminated dura mater transplant material. Rockville, Maryland: US Department of Health and Human Services, Public Health Service, April 28, 1987.
4. American Association of Tissue Banks. Standards for tissue banking. Arlington, Virginia: American Association of Tissue Banks, 1984.
5. American Association of Tissue Banks. Technical manual for tissue banking: section II—Musculoskeletal Council. Arlington, Virginia: American Association of Tissue Banks, 1987;M-1 to M-25.

Deaths Associated with Thiamine-Deficient Total Parenteral Nutrition

Between October 9 and October 11, 1988, three of 59 patients receiving total parenteral nutrition (TPN) at a large university medical center died of refractory lactic acidosis. Each died within 5 weeks of receiving TPN without thiamine and had had a clinical course strongly suggestive of acute beriberi. For the two patients on whom autopsies were performed, examination of the brain showed lesions diagnostic of acute thiamine deficiency: necrosis and petechial hemorrhages in each mammillary body, hypothalamic neovascularization, and petechial hemorrhage with gliosis and engorgement of parenchymal periaqueductal blood vessels near the third and fourth ventricles.

Thiamine was absent from the TPN fluids given these patients during a nationwide shortage of intravenous (IV) multivitamins resulting from substantially reduced production by one of the two major domestic manufacturers of multivitamins in June 1988. Since then, the shortage has abated with increased production, although the demand for nonpediatric preparations of IV multivitamins has not been fully met. The hospital in which these three cases occurred ran out of multivitamins for inpatients on September 5.

Brief case reports follow.

Case 1. A 59-year-old woman had been taking TPN at home for short bowel syndrome for at least 3 years. When the hospital supply of multivitamins for outpatient TPN was exhausted on September 12, she could have had at most a 2-day

TPN — Continued

supply at home. She was admitted September 26 for vomiting. Unexplained lactic acidosis occurred about 1 week after admission and was followed by high-output renal failure. She deteriorated gradually and died October 9.

Case 2. A previously healthy 29-year-old woman, recovering from surgery for abdominal gunshot wounds, received TPN as her only source of nutrition from September 3 until death. Unexplained lactic acidosis was first noted October 7, and she died October 11.

Case 3. At another hospital, a 27-year-old man received TPN for 2–3 days for ulcerative colitis. After transfer to the university medical center on August 29, where he underwent abdominal surgery, he remained on TPN. Unexplained lactic acidosis developed on September 30 and was followed by progressive deterioration until death on October 9.

As of January 23, 1989, no additional cases had been reported to the American Society for Parenteral and Enteral Nutrition (ASPEN) or the Food and Drug Administration.

Reported by: Div of Epidemiology and Surveillance, Div of Metabolic and Endocrine Products, Center for Drug Evaluation and Research, Food and Drug Administration. American Society for Parenteral and Enteral Nutrition, Silver Spring, Maryland.

Editorial Note: Each of these three patients developed lactic acidosis within 5 weeks of initiation of treatment with thiamine-deficient TPN, as did four patients reported previously with lactic acidosis secondary to iatrogenic thiamine deficiency (*1,2*). In other reports of thiamine deficiency attributed to IV therapy containing insufficient or no thiamine supplementation, the deficiency was manifested by Wernicke's encephalopathy *without* lactic acidosis. These reports include: nine patients (at least three of whom were alcoholics) who had received IV therapy for 4–80 days (*3*); four malnourished alcoholics (*4*); a premature infant (*5*); and a chronically malnourished 22-year-old man with ulcerative colitis who developed Wernicke's encephalopathy 5 days after colectomy and 17 days after beginning a TPN regimen providing 300 g of carbohydrate (50 g on the last 3 days) and 3.2 mg of thiamine daily (*6*).

Thiamine, one of the components in the multivitamin products, is essential for two enzymes needed for aerobic metabolism: pyruvate dehydrogenase and α-ketoglutarate dehydrogenase. In the absence of thiamine, pyruvate cannot enter the Krebs cycle, resulting in pyruvate accumulation and conversion to lactate (Figure 1). In addition, generation of NADH within the Krebs cycles is prevented, stimulating anaerobic glycolysis and further lactate production. Unlike the fat-soluble vitamins, the body stores of thiamine are minimal; the duration of availability of thiamine reserves is unknown. In one study, deficiency was detected after approximately 6 weeks without thiamine (*7*). In a study of healthy young men ingesting $\leq$0.2 mg thiamine daily, urinary excretion of thiamine stopped within 18 days (*8*). The case studies reported here suggest that fatal deficiency can develop in as few as 3½ weeks without thiamine intake. Measuring whole blood or erythrocyte transketolase activity, with and without addition of thiamine diphosphate, is the most reliable method of detecting thiamine deficiency (*9*).

The differential diagnosis of lactic acidosis includes not only thiamine deficiency, but all causes of inadequate tissue perfusion (e.g., sepsis and hypovolemia), all causes of hypoxia (e.g., hypothermia and strenuous exercise), and several systemic disorders (e.g., severe liver disease, leukemia, and other cancers). In addition, lactic

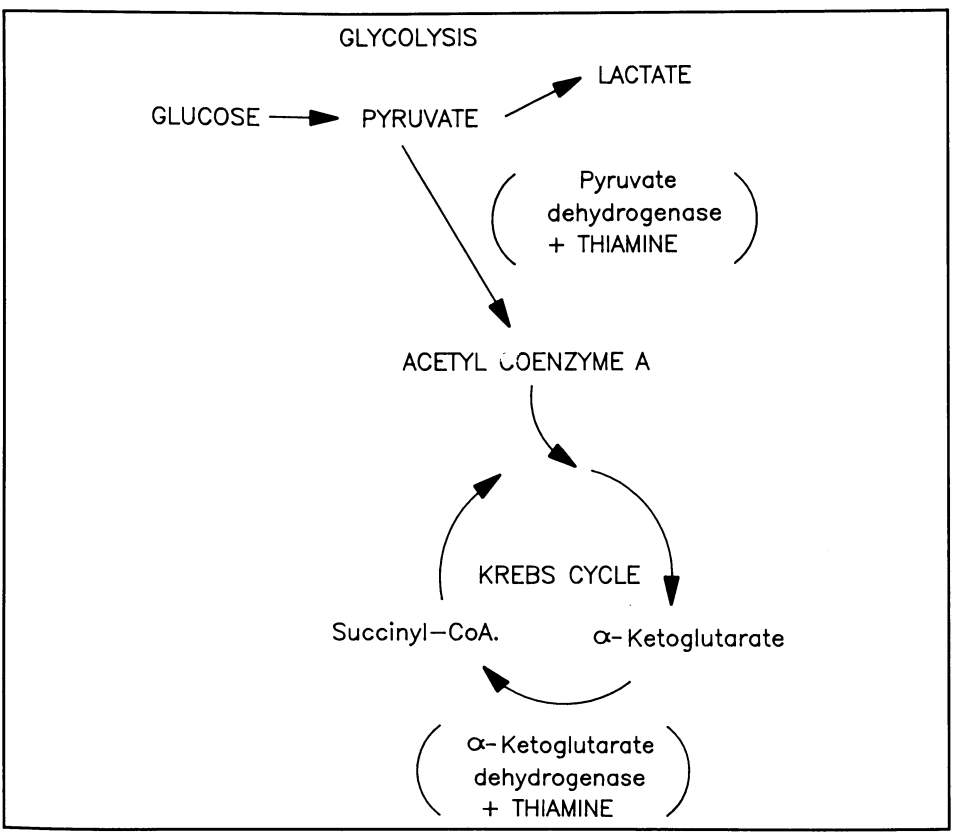
TPN – Continued

acidosis may be associated with the use of agents such as phenformin and other biguanides, salicylates, glucagon, and sorbitol (*10*).

Alternative diagnoses in the three cases presented in this report had been excluded by medical evaluation. In two of the three patients, the most likely competing diagnosis, sepsis, was ruled out by negative blood cultures and other findings. The third patient had multiple blood cultures positive for candida, staphylococcus, and enterococcus but also was shown by autopsy to have suffered acute thiamine deficiency.

ASPEN estimates that at any given time in the United States, over 10,000 outpatients and 25,000–30,000 inpatients use TPN and that during the course of a year, approximately 500,000 patients use TPN. For such patients, IV multivitamin preparations are crucial. Although the shortage is decreasing, some orders may remain unfilled, at least for the next several weeks. Hospitals with limited stocks of thiamine need to conserve available supplies for persons at highest risk of deficiency, i.e., patients unable to tolerate or absorb vitamins orally for more than 1 week.

FIGURE 1. Thiamine requirements in the metabolic pathways of glucose*



*Source: Velez RJ, Myers B, Guber MS. Severe acute metabolic acidosis (acute beriberi): an unavoidable complication of TPN. JPEN 1985;9:218. Reprinted with permission from the American Society for Parenteral and Enteral Nutrition.

TPN — Continued

Possible approaches include giving multivitamins less often than daily; increasing use of oral supplements; administering single-entity monovitamin products; and, if sufficient quantity is available, using pediatric multivitamins. Hospitals needing *emergency* multivitamin supplies can obtain them by calling Lyphomed at (800) 621-3334 and Armour Pharmaceutical Company, a subsidiary of Rorer Pharmaceutical Corporation, at (800) 435-1852 ([800] 892-1865 inside Illinois).

Additional case reports should be directed to the Epidemiology Branch, Division of Epidemiology and Surveillance, Office of Epidemiology, Center for Drug Evaluation and Research, Food and Drug Administration, Room 15-42, 5600 Fishers Lane, Rockville, MD 20857; telephone (301) 443-2306.

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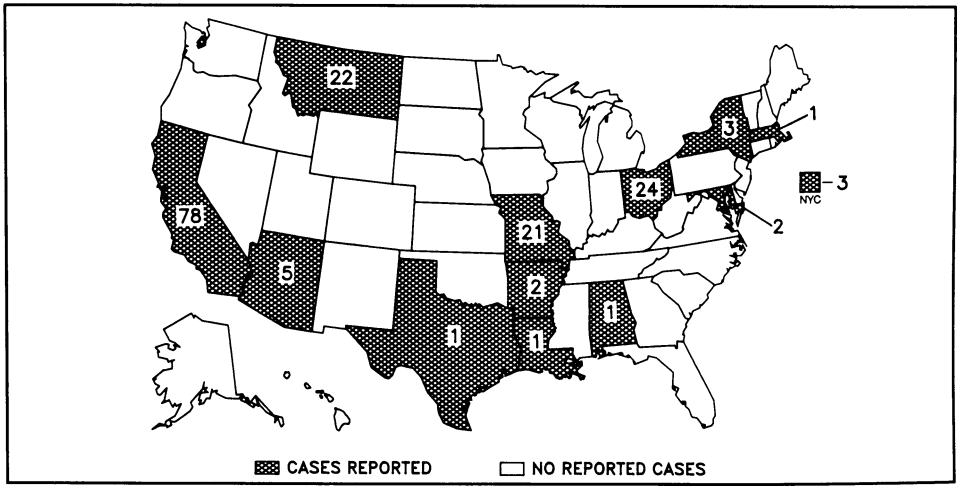
FIGURE I. Reported measles cases – United States, Weeks 51–52, 1988 and Weeks 1–2, 1989



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.

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☆U.S. Government Printing Office: 1989-631-108/81544 Region IV

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