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MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Acquired Immunodeficiency Syndrome (AIDS) Update — United States

As of June 20, 1983, physicians and health departments in the United States and Puerto Rico had reported a total of 1,641 cases of acquired immunodeficiency syndrome (AIDS). These cases were diagnosed in patients who had Kaposi's sarcoma (KS) or an opportunistic infection suggestive of an underlying cellular immunodeficiency. Of these patients, 644 (39%) are known to have died; the proportion of patients with KS alone who have died (22%) is less than half that of patients with opportunistic infections who have died (46%). Fifty-five (3%) cases were diagnosed before 1981; 225 (14%), in 1981; 832 (51%), in 1982; and 529 (32%), to date in 1983. *Pneumocystis carinii* pneumonia (PCP) is the most common life-threatening opportunistic infection in AIDS patients, accounting for 51% of primary diagnoses; 26% of patients have KS without PCP, and 8% have both PCP and KS. Many of these patients may also have other opportunistic infections, and 15% of AIDS patients have such infections without KS or PCP. Over 90% of AIDS patients are 20-49 years old; almost 48% are 30-39 years old. Cases have occurred in all primary racial groups in the United States. Only 109 (7%) cases have been reported in women.

Groups at highest risk of acquiring AIDS continue to be homosexual and bisexual men (71% of cases), intravenous drug users (17%), persons born in Haiti and now living in the United States (5%), and patients with hemophilia (1%)*. Six percent of the cases cannot be placed in one of the above risk groups; approximately half of these are patients for whom information regarding risk factors is either absent or incomplete. The remainder includes, in order of decreasing frequency, patients with no identifiable risk factors, heterosexual partners of AIDS patients or persons in risk groups, recipients of blood transfusions, and KS patients with normal immunologic studies. Of the 109 cases among females, 52% occurred among drug users and 9% among Haitians; for 39%, the risk group is unknown.

In addition to the 1,641 reported AIDS cases, 21 infants with opportunistic infections and unexplained cellular immunodeficiencies have been reported to CDC. Infant cases are recorded separately because of the uncertainty in distinguishing their illnesses from previously described congenital immunodeficiency syndromes.

*The risk groups listed are hierarchically ordered; cases with multiple risk factors are tabulated only in the risk group listed first.

AIDS — Continued

Most cases continue to be reported among residents of large cities. New York City has reported 45% of all cases meeting the surveillance definition†; San Francisco, 10% of cases; and Los Angeles, 6% of cases. Cases have been reported from 38 states, the District of Columbia, and Puerto Rico (Figure 1).

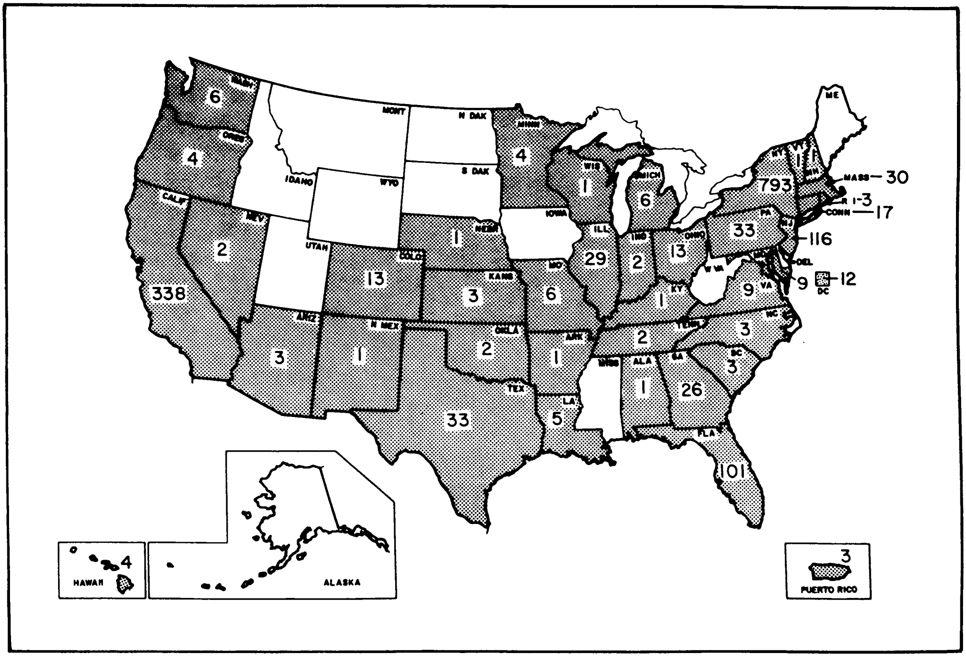
Reported by State and Territorial Epidemiologists; AIDS Activity, Center for Infectious Diseases, CDC.

Editorial Note: During 1982 and early 1983, city and state health departments throughout the United States began assuming an increasingly active role in the surveillance and investigation of AIDS. At the annual Conference of State and Territorial Epidemiologists in May 1983, the group affirmed the urgency of AIDS as a public health problem and passed, as one part of a resolution on AIDS, the recommendation that AIDS be added to the list of notifiable diseases in all states. The method of making a disease notifiable varies markedly in different states, ranging from a change in state law to regulatory action by the Board of Health or executive decision by the health officer. Several states have already made AIDS notifiable; other states are taking similar action.

Case counts of patients with AIDS listed by cities or states may differ from those listed by CDC. The standard surveillance definition of AIDS does not apply to suspected subclinical or mild cases of AIDS—to the extent they occur—or to cases involving persistent generalized lymphadenopathy or other conditions in persons from high-risk groups. Some AIDS patients

†For the limited purposes of epidemiologic surveillance, CDC defines a case of AIDS as a reliably diagnosed disease that is at least moderately indicative of an underlying cellular immunodeficiency in a person who has had no known underlying cause of cellular immunodeficiency nor any other cause of reduced resistance reported to be associated with that disease.

FIGURE 1. Acquired immunodeficiency syndrome (AIDS) cases meeting the surveillance definition reported to CDC, by state — United States



AIDS – Continued

may seek treatment in cities other than those in which they reside and may be reported through health departments in cities where they are treated. CDC eliminates duplicate reports and assigns each patient to the city and state of residence at the time of reported onset of illness. In addition, the processing of case reports may result in a delay between diagnosis, reporting, and entry of a case into the registry at the different health departments or CDC.

Physicians aware of patients fitting the case definition for AIDS are requested to report such cases to CDC through their local or state health departments. AIDS patients who do not belong to any of the recognized risk groups or who are recipients of blood or blood products (including anti-hemophiliac factors) should be reported immediately.

The vast majority of cases continue to occur among persons in the major identified risk categories. The cause of AIDS is unknown, but it seems most likely to be caused by an agent transmitted by intimate sexual contact, through contaminated needles, or, less commonly, by percutaneous inoculation of infectious blood or blood products. No evidence suggests transmission of AIDS by airborne spread (*1*). The failure to identify cases among friends relatives, and co-workers of AIDS patients provides further evidence that casual contact offers little or no risk. Most of the 21 infants with unexplained immunodeficiency have been born to mothers belonging to high-risk groups for AIDS (*2*). If this syndrome is, indeed, AIDS, the occurrence in young infants suggests transmission from an affected mother to a susceptible infant before, during, or shortly after birth. Previously published guidelines to prevent the transmission of AIDS and precautions for health care and laboratory workers are still applicable (*1,3*).

References

1. CDC. Acquired immune deficiency syndrome (AIDS): precautions for clinical and laboratory staffs. MMWR 1982;31:577-80.
2. CDC. Unexplained immunodeficiency and opportunistic infections in infants-New York, New Jersey, California. MMWR 1982;31:665-7.
3. CDC. Prevention of acquired immune deficiency syndrome (AIDS): report of inter-agency recommendations. MMWR 1983;32:101-3.

International Notes

Diarrheal Diseases Control Program: Rotavirus Diarrhea

Rotavirus was first detected in humans in Melbourne, Australia, in 1973, by thin-section electron microscope examination of duodenal biopsies obtained from children with acute diarrhea. Shortly thereafter, rotavirus was found in Australia, Canada, the United Kingdom, and the United States by electron microscope examination of diarrheal stool specimens. The virus has since emerged as the single most important cause of diarrhea in infants and young children admitted to hospitals for treatment of gastroenteritis. The present state of knowledge in the field of rotavirus diarrhea was reviewed in depth at the second meeting of the Scientific Working Group on Viral Diarrheas, and priority areas for future research were outlined (*1*).

Although there have been numerous studies in both tropical and temperate countries on the monthly and annual frequency of rotavirus infection in children admitted to hospitals, a need still exists for long-term, community-based studies of the incidence and prevalence of

Diarrheal Diseases — Continued

the infection. These should include longitudinal surveys of titers of rotavirus antibody in sera from selected cohorts of children in developing countries. The incidence and clinical severity of concurrent infections with rotavirus and other enteric pathogens also requires further study.

More research is needed on the factors that influence the survival of rotaviruses in the environment, both in the community at large and within closed communities, such as hospital wards, day-care centers, and nursing homes. The relative importance of water, food, air, and fomites as vehicles in the spread of rotavirus infection needs to be determined.

The exact antigenic structure of rotavirus is still unclear, and at present, investigators disagree about which polypeptides are incorporated in the virion and which are non-structural. The precise disposition of the polypeptides in the virion is, therefore, important, and much research is already in progress in this area; work on monoclonal antibodies and further biochemical studies will probably help considerably to clarify the position.

The availability of new techniques for the direct isolation of rotavirus from clinical material has stimulated research relating to the structure and classification of the antigen and diagnosis of rotavirus infection. Further attention is needed for: 1) development of methods for rapid

(Continued on page 317)

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

Disease	24th Week Ending			Cumulative, 24th Week Ending		
	June 18, 1983	June 19, 1982	Median 1978-1982	June 18, 1983	June 19, 1982	Median 1978-1982
Aseptic meningitis	137	139	121	2,031	1,991	1,558
Encephalitis: Primary (arthropod-borne & unspec.)	19	20	16	387	417	296
Post-infectious	1	2	6	36	40	97
Gonorrhea: Civilian	17,907	18,867	19,451	401,585	430,100	432,043
Military	445	491	448	11,035	12,840	12,551
Hepatitis: Type A	398	395	527	10,353	10,200	12,445
Type B	451	417	417	10,188	9,553	7,673
Non A, Non B	57	46	N	1,519	1,038	N
Unspecified	152	181	181	3,631	3,892	4,576
Legionellosis	25	6	N	345	209	N
Leprosy	4	1	3	121	89	80
Malaria	17	14	19	310	422	422
Measles: Total	28	60	483	941	818	9,971
Indigenous	20	N	N	770	N	N
Imported*	8	N	N	171	N	N
Meningococcal infections: Total	56	46	51	1,583	1,674	1,517
Civilian	56	46	51	1,568	1,667	1,507
Military	-	-	-	15	7	10
Mumps	51	157	185	1,981	3,701	6,231
Pertussis	56	17	17	795	500	503
Rubella (German measles)	31	66	109	643	1,558	2,679
Syphilis (Primary & Secondary): Civilian	689	704	550	14,724	15,174	11,899
Military	1	17	3	207	187	146
Toxic-shock syndrome	10	N	N	201	N	N
Tuberculosis	509	524	586	10,372	11,587	12,140
Tularemia	10	6	6	100	70	70
Typhoid fever	7	10	9	155	175	199
Typhus fever, tick-borne (RMSF)	69	37	49	252	290	283
Rabies, animal	112	150	136	2,927	2,860	2,860

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1983		Cum. 1983
Anthrax	-	Plague	7
Botulism: Foodborne (Ariz. 1)	10	Poliomyelitis: Total	1
Infant (Wash. 1)	31	Paralytic	1
Other	-	Psittacosis (Tex. 1, Calif. 1)	55
Brucellosis (S.D. 1, Va. 1, Tex. 10)	72	Rabies, human	2
Cholera	-	Tetanus (S.C. 1, La. 1, Calif. 1)	31
Congenital rubella syndrome	11	Trichinosis (N.Y. City 1)	18
Diphtheria	-	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	14
Leptospirosis (Va. 1, Fla. 1, Ky. 1, La. 1)	17		

*Seven of the 28 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending June 18, 1983 and June 19, 1982 (24th week)

Reporting Area	Aseptic Meningitis	Encephalitis: Primary	Encephalitis: Post-infectious	Gonorrhea (Civilian)	Gonorrhea (Civilian)	Hepatitis (Viral), by type: A	Hepatitis (Viral), by type: B	Hepatitis (Viral), by type: NA,NB	Hepatitis (Viral), by type: Unspecified	Legionellosis	Leprosy	Malaria
	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1982	1983	1983	1983	1983	1983	Cum. 1983	Cum. 1983
UNITED STATES	137	387	36	401,585	430,100	398	451	57	152	25	121	310
NEW ENGLAND	3	16	-	10,075	10,118	9	22	-	16	2	3	12
Maine	-	-	-	542	464	2	1	-	-	-	-	-
N.H.	-	1	-	285	347	-	-	-	-	-	2	-
Vt.	-	1	-	183	201	1	1	-	-	-	-	1
Mass.	-	8	-	4,395	4,655	3	5	-	16	1	-	4
R.I.	-	-	-	552	699	1	2	-	-	1	-	2
Conn.	3	6	-	4,118	3,752	2	13	-	-	-	1	5
MID ATLANTIC	15	51	3	51,336	51,977	88	95	6	18	10	19	42
Upstate N.Y.	-	13	-	7,562	8,068	9	25	4	1	-	-	13
N.Y. City	7	7	-	21,271	22,188	59	19	-	4	3	18	13
N.J.	5	12	-	9,812	9,353	9	28	1	10	-	-	13
Pa.	3	19	3	12,691	12,368	11	23	1	3	7	1	3
E.N. CENTRAL	8	74	9	53,678	61,911	25	46	2	5	6	5	13
Ohio	6	30	6	15,639	17,368	8	20	1	1	5	1	2
Ind.	U	8	1	6,235	6,689	U	U	U	U	U	-	-
Ill.	-	-	-	11,748	18,006	7	9	1	-	-	2	2
Mich.	2	29	-	15,090	14,304	10	17	-	4	1	2	8
Wis.	-	7	2	4,966	5,544	-	-	-	-	-	-	1
W.N. CENTRAL	2	42	4	18,731	19,982	8	13	4	3	1	4	13
Minn.	-	18	1	2,685	3,004	3	2	3	1	-	3	4
Iowa	-	18	-	2,152	2,178	-	-	1	1	-	-	2
Mo.	1	2	-	8,976	9,157	3	7	-	1	-	-	2
N. Dak.	-	-	-	179	278	-	-	-	-	-	-	1
S. Dak.	-	-	1	525	552	1	3	-	-	1	-	-
Nebr.	-	3	-	1,104	1,257	-	-	-	-	-	-	1
Kans.	1	1	2	3,110	3,556	1	1	-	-	-	1	3
S. ATLANTIC	22	64	12	104,276	111,560	38	77	16	15	-	7	48
Del.	-	-	-	1,866	1,698	1	-	-	-	-	-	-
Md.	-	11	-	13,036	13,787	-	13	3	1	-	1	10
D.C.	-	-	-	7,116	5,905	-	4	-	-	-	-	7
Va.	2	18	1	8,888	9,423	-	11	1	-	-	-	6
W. Va.	-	-	-	1,096	1,251	1	4	-	3	-	-	1
N.C.	7	19	-	15,244	17,665	-	10	-	2	-	-	1
S.C.	1	2	-	9,761	10,476	5	11	1	6	-	-	5
Ga.	1	3	-	22,336	21,632	4	7	3	-	-	1	4
Fla.	11	11	11	24,933	29,723	27	17	8	3	-	5	14
E.S. CENTRAL	5	14	-	33,858	36,161	25	28	2	7	5	-	3
Ky.	1	-	-	4,024	4,938	18	5	-	2	5	-	-
Tenn.	1	2	-	13,592	13,931	3	12	1	3	-	-	-
Ala.	3	12	-	10,638	10,809	2	10	1	2	-	-	1
Miss.	-	-	-	5,604	6,483	2	1	-	-	-	-	2
W.S. CENTRAL	49	41	1	57,694	59,515	51	50	1	50	-	13	37
Ark.	-	4	-	4,282	4,947	-	4	-	3	-	-	1
La.	-	4	-	10,678	10,556	10	16	-	2	-	1	4
Okla.	12	9	1	6,709	6,454	12	9	1	2	-	-	8
Tex.	37	24	-	36,025	37,558	29	21	-	43	-	12	24
MOUNTAIN	7	23	3	12,504	14,984	37	29	5	9	-	11	15
Mont.	-	-	-	535	615	-	-	-	1	-	-	-
Idaho	-	-	-	569	714	1	1	-	-	-	-	2
Wyo.	1	2	-	328	411	-	-	-	-	-	-	1
Colo.	1	11	-	3,516	3,989	13	2	2	3	-	2	5
N. Mex.	-	1	-	1,505	1,881	4	2	1	-	-	-	3
Ariz.	4	2	3	3,524	4,150	11	12	-	3	-	9	3
Utah	1	7	-	617	689	5	4	1	2	-	-	1
Nev.	-	-	-	1,910	2,535	3	8	1	-	-	-	-
PACIFIC	26	62	4	59,433	63,892	117	91	21	29	1	59	127
Wash.	3	4	1	4,232	5,228	10	5	3	2	-	7	2
Oreg.	-	-	1	3,032	3,560	14	4	-	-	-	1	4
Calif.	19	54	2	49,517	52,371	92	80	18	27	1	35	121
Alaska	-	-	-	1,484	1,599	-	-	-	-	-	-	-
Hawaii	4	4	-	1,168	1,134	1	2	-	-	-	16	-
Guam	U	-	-	65	65	U	U	U	U	U	-	2
P.R.	1	-	1	1,393	1,346	2	3	-	4	-	-	1
V.I.	U	-	-	113	109	U	U	U	U	U	-	-
Pac. Trust Terr.	U	-	-	-	213	U	U	U	U	U	-	-

N: Not notifiable U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending June 18, 1983 and June 19, 1982 (24th week)

Reporting Area	Measles (Rubeola) Indigenous 1983	Measles Indigenous Cum. 1983	Measles Imported* 1983	Measles Imported* Cum. 1983	Measles Total Cum. 1982	Meningococcal Infections Cum. 1983	Mumps 1983	Mumps Cum. 1983	Mumps Cum. 1982	Pertussis 1983	Pertussis Cum. 1983	Pertussis Cum. 1982	Rubella 1983	Rubella Cum. 1983	Rubella Cum. 1982
UNITED STATES	20	770	8	171	818	1,583	51	1,981	3,701	56	795	500	31	643	1,558
NEW ENGLAND	-	2	1	9	10	77	2	78	137	1	26	29	-	8	11
Maine	-	-	-	-	-	8	-	15	32	-	-	3	-	-	-
N.H.	-	-	-	1	2	2	-	15	13	-	5	4	-	2	8
Vt.	-	-	-	-	2	3	-	9	5	-	3	1	-	3	-
Mass.	-	2	1 §	1	2	27	2	19	63	1	16	10	-	3	-
R.I.	-	-	-	-	-	6	-	9	12	-	2	9	-	-	1
Conn.	-	-	-	7	4	31	-	11	12	-	-	2	-	-	2
MID ATLANTIC	1	25	1	20	119	263	7	146	228	8	224	79	3	118	76
Upstate N.Y.	-	-	-	6	87	86	3	57	45	1	66	49	-	19	37
N.Y. City	1	25	1 †	10	24	44	2	13	35	4	31	16	2	84	26
N.J.	-	-	-	1	4	40	2	28	33	3	14	7	-	3	13
Pa.	-	-	-	3	4	93	-	48	115	-	113	7	1	12	-
E.N. CENTRAL	10	460	-	51	50	266	27	1,008	2,096	12	182	148	3	86	146
Ohio	10	44	-	13	1	96	16	507	1,493	9	66	33	-	1	-
Ind.	U	325	U	-	2	29	U	23	33	U	14	11	U	15	24
Ill.	-	91	-	33	16	65	6	112	227	3	80	73	2	39	57
Mich.	-	-	-	5	31	54	5	311	267	-	11	8	1	14	42
Wis.	-	-	-	-	-	22	-	55	76	-	11	23	-	17	23
W.N. CENTRAL	-	-	-	-	35	95	1	126	465	3	54	24	-	33	53
Minn.	-	-	-	-	-	13	-	20	356	1	20	8	-	5	3
Iowa	-	-	-	-	-	10	-	35	29	-	5	3	-	-	-
Mo.	-	-	-	-	2	50	-	20	7	-	8	7	-	4	38
N. Dak.	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-
S. Dak.	-	-	-	-	-	4	-	-	1	-	2	3	-	-	1
Nebr.	-	-	-	-	-	1	-	2	-	-	-	1	-	-	-
Kans.	-	-	-	-	33	15	1	49	72	2	18	2	-	24	11
S. ATLANTIC	-	149	-	23	33	332	3	122	205	4	103	58	5	72	60
Del.	-	-	-	-	-	-	-	5	6	2	2	3	-	-	1
Md.	-	-	-	4	2	36	-	23	21	-	8	2	-	1	31
D.C.	-	-	-	-	1	4	-	-	-	-	-	1	-	-	-
Va.	-	11	-	11	14	48	-	20	30	-	38	9	-	1	10
W. Va.	-	-	-	-	2	3	-	25	79	-	4	3	-	-	1
N.C.	-	-	-	-	-	67	1	5	9	-	5	9	1	7	1
S.C.	-	-	-	4	-	37	1	7	11	-	7	6	-	-	1
Ga.	-	6	-	-	-	53	1	37	11	1	25	10	1	11	5
Fla.	-	132	-	4	14	84	-	-	38	1	14	15	3	52	10
E.S. CENTRAL	1	1	-	5	6	98	1	36	29	1	7	17	-	8	37
Ky.	-	-	-	1	1	19	-	15	9	-	2	2	-	7	21
Tenn.	-	-	-	-	5	38	-	17	11	-	2	6	-	-	-
Ala.	1	1	-	4	-	27	1	1	5	-	1	-	-	1	-
Miss.	-	-	-	-	-	14	-	3	4	1	2	9	-	-	16
W.S. CENTRAL	-	34	5	37	10	178	1	139	133	21	97	30	4	90	70
Ark.	-	-	-	11	-	14	-	2	6	1	4	2	-	-	-
La.	-	-	5 †	25	-	33	-	-	3	-	2	2	-	9	-
Okla.	-	1	-	-	-	20	-	-	-	18	60	3	-	-	3
Tex.	-	33	-	1	10	111	1	137	124	2	31	23	4	81	67
MOUNTAIN	1	1	1	3	5	61	-	84	57	2	71	29	3	22	53
Mont.	-	-	-	-	-	5	-	2	3	-	1	-	-	3	4
Idaho	-	-	-	-	-	5	-	5	3	-	2	2	1	8	2
Wyo.	-	-	-	-	-	1	-	-	2	-	4	1	-	1	5
Colo.	-	-	-	2	5	25	-	10	13	2	45	9	-	-	5
N. Mex.	-	-	-	-	-	5	-	-	-	-	5	4	-	-	5
Ariz.	-	-	1 †	1	-	13	-	58	23	-	9	12	-	4	7
Utah	-	-	-	-	-	7	-	6	11	-	5	1	2	5	16
Nev.	1	1	-	-	-	-	-	3	2	-	-	-	-	1	9
PACIFIC	7	98	-	23	550	213	9	242	351	4	31	86	13	206	1,052
Wash.	-	1	-	3	25	28	1	35	58	-	2	15	-	6	30
Oreg.	-	5	-	2	-	33	-	-	-	-	5	20	1	12	3
Calif.	7	91	-	18	521	146	7	184	281	4	24	51	12	188	1,012
Alaska	-	-	-	-	1	-	1	10	6	-	-	-	-	-	1
Hawaii	-	1	-	-	3	6	-	13	6	-	-	-	-	-	6
Guam	U	-	U	1	6	1	U	-	3	U	-	-	U	-	2
P.R.	-	77	-	-	68	8	4	98	39	-	7	12	-	3	4
V.I.	U	-	U	5	-	-	U	-	-	U	-	-	U	1	-
Pac. Trust Terr.	U	-	U	-	-	-	U	-	1	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations. U: Unavailable †International §Out-of-state

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending June 18, 1983 and June 19, 1982 (24th week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1983	Cum. 1982	1983	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983
UNITED STATES	14,724	15,174	10	509	10,372	100	155	252	2,927
NEW ENGLAND	320	255	-	20	282	-	6	1	8
Maine	9	1	-	-	17	-	-	-	2
N.H.	9	2	-	-	23	-	-	-	1
Vt.	2	1	-	2	4	-	-	-	-
Mass.	197	178	-	16	153	-	6	1	2
R.I.	11	12	-	1	21	-	-	-	-
Conn.	92	61	-	1	64	-	-	-	3
MID ATLANTIC	1,840	2,088	2	95	1,873	-	30	1	94
Upstate N.Y.	90	241	-	27	319	-	4	-	37
N.Y. City	1,120	1,244	-	28	767	-	14	1	-
N.J.	372	268	-	13	386	-	10	-	2
Pa.	258	335	2	27	401	-	2	-	55
E.N. CENTRAL	676	956	5	38	1,331	2	24	24	236
Ohio	225	145	4	7	206	-	7	16	28
Ind.	71	93	U	U	91	-	1	-	17
Ill.	248	535	-	15	599	1	9	3	129
Mich.	96	131	1	13	363	1	7	3	2
Wis.	36	52	-	3	72	-	-	2	60
W.N. CENTRAL	176	286	-	23	338	28	8	15	443
Minn.	77	55	-	9	70	-	2	-	85
Iowa	6	14	-	2	29	-	-	-	120
Mo.	59	171	-	10	177	22	1	9	54
N. Dak.	1	4	-	-	3	-	-	1	35
S. Dak.	8	-	-	-	22	-	-	2	70
Nebr.	11	8	-	-	8	2	-	-	38
Kans.	14	34	-	2	29	4	5	3	41
S. ATLANTIC	3,912	4,127	1	98	2,063	13	20	89	1,009
Del.	17	8	-	1	16	-	-	-	1
Md.	252	232	-	8	166	5	4	11	405
D.C.	168	255	-	2	80	-	-	-	1
Va.	272	296	-	8	201	1	4	15	379
W. Va.	12	15	-	1	72	-	2	6	73
N.C.	363	281	-	19	283	6	1	24	8
S.C.	245	207	-	13	191	-	1	15	15
Ga.	742	861	-	14	406	1	1	16	110
Fla.	1,841	1,972	1	32	648	-	7	2	17
E.S. CENTRAL	1,003	1,056	-	42	982	8	2	15	234
Ky.	58	55	-	10	251	-	-	1	51
Tenn.	281	283	-	11	291	6	1	10	151
Ala.	409	375	-	10	249	-	-	3	32
Miss.	255	343	-	11	191	2	1	1	-
W.S. CENTRAL	3,963	3,817	-	94	1,227	44	17	103	619
Ark.	96	99	-	17	137	32	2	11	106
La.	836	816	-	19	193	2	3	-	18
Okla.	111	79	-	-	126	9	-	55	65
Tex.	2,920	2,823	-	58	771	1	12	37	430
MOUNTAIN	333	376	1	12	277	2	7	3	94
Mont.	5	3	-	-	22	-	1	1	66
Idaho	6	18	-	-	13	1	-	1	-
Wyo.	6	10	-	1	6	-	-	1	1
Colo.	78	108	-	-	25	-	1	-	-
N. Mex.	107	78	-	4	53	1	-	-	4
Ariz.	77	92	1	7	126	-	3	-	23
Utah	11	12	-	-	22	-	1	-	-
Nev.	43	55	-	-	10	-	1	-	-
PACIFIC	2,501	2,213	1	87	1,999	3	41	1	190
Wash.	71	74	-	5	101	2	2	-	2
Oreg.	50	59	-	2	85	-	-	-	-
Calif.	2,343	2,012	1	77	1,666	1	38	1	181
Alaska	7	8	-	-	25	-	-	-	7
Hawaii	30	60	-	3	122	-	1	-	-
Guam	-	1	U	U	2	-	-	-	-
P.R.	400	287	-	2	213	-	-	-	26
V.I.	8	9	U	U	1	-	-	-	-
Pac. Trust Terr.	-	-	U	U	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending June 19, 1983 (24th week)

Reporting Area	All Causes, By Age (Years): All Ages	≥65	45-64	25-44	1-24	<1	P&I** Total
NEW ENGLAND	574	400	116	25	19	14	42
Boston, Mass.	148	98	23	10	8	9	15
Bridgeport, Conn.	48	31	11	3	2	1	4
Cambridge, Mass.	28	19	9	-	-	-	2
Fall River, Mass.	26	19	7	-	-	-	1
Hartford, Conn.	36	27	7	1	1	-	-
Lowell, Mass.	25	18	6	-	1	-	1
Lynn, Mass.	13	10	2	1	-	-	-
New Bedford, Mass.	16	14	1	1	-	-	2
New Haven, Conn.	47	29	9	4	3	2	1
Providence, R.I.	63	39	18	3	1	2	7
Somerville, Mass.	8	6	2	-	-	-	-
Springfield, Mass.	40	28	10	2	-	-	3
Waterbury, Conn.	25	23	-	-	2	-	2
Worcester, Mass.	51	39	11	-	1	-	4
MID. ATLANTIC	2,537	1,716	544	156	63	58	91
Albany, N.Y.	58	38	12	2	4	2	1
Allentown, Pa.	19	14	4	1	-	-	-
Buffalo, N.Y.	100	79	14	3	2	2	4
Camden, N.J.	38	20	13	1	-	4	1
Elizabeth, N.J.	28	20	5	3	-	-	2
Erie, Pa.†	45	32	10	2	-	1	2
Jersey City, N.J.	58	42	12	1	2	1	-
N.Y. City, N.Y.	1,387	938	290	102	32	25	49
Newark, N.J.	56	26	11	8	4	7	4
Paterson, N.J.	28	20	5	1	1	1	2
Philadelphia, Pa.†	228	148	57	12	6	5	11
Pittsburgh, Pa.†	78	47	21	5	3	2	-
Reading, Pa.	40	27	12	1	-	-	1
Rochester, N.Y.	125	90	23	6	3	3	9
Schenectady, N.Y.	28	16	8	1	3	-	1
Scranton, Pa.†	23	16	7	-	-	-	-
Syracuse, N.Y.	96	67	20	3	3	3	1
Trenton, N.J.	40	24	11	4	-	1	1
Utica, N.Y.	26	23	3	-	-	-	-
Yonkers, N.Y.	36	29	6	-	-	1	2
E.N. CENTRAL	2,262	1,378	553	139	90	102	79
Akron, Ohio	43	31	10	1	1	-	-
Canton, Ohio	53	41	9	1	1	1	3
Chicago, Ill.	532	304	112	48	21	47	19
Cincinnati, Ohio	139	80	38	7	8	6	13
Cleveland, Ohio	166	97	45	7	12	5	1
Columbus, Ohio	94	56	25	5	3	5	8
Dayton, Ohio	129	77	35	10	5	2	-
Detroit, Mich.	232	134	59	23	10	6	2
Evansville, Ind.	47	32	14	-	-	1	3
Fort Wayne, Ind.	47	31	10	2	3	1	-
Gary, Ind.	18	5	6	6	1	-	1
Grand Rapids, Mich.	59	41	12	-	2	4	2
Indianapolis, Ind.	173	112	41	7	5	8	4
Madison, Wis.	62	37	16	3	4	2	4
Milwaukee, Wis.	134	87	33	8	4	2	3
Peoria, Ill.	43	29	6	5	2	1	5
Rockford, Ill.	49	27	14	1	3	4	-
South Bend, Ind.	54	36	14	1	1	2	6
Toledo, Ohio	124	79	37	2	3	3	3
Youngstown, Ohio	64	42	17	2	1	2	2
W.N. CENTRAL	680	442	153	32	19	30	33
Des Moines, Iowa	53	41	12	-	-	-	7
Duluth, Minn.	38	23	9	3	1	2	2
Kansas City, Kans.	43	29	6	2	4	2	1
Kansas City, Mo.	124	73	35	7	1	4	9
Lincoln, Nebr.	41	28	9	1	3	-	1
Minneapolis, Minn.	79	55	20	1	2	1	1
Omaha, Nebr.	84	51	18	4	6	5	4
St. Louis, Mo.	127	76	31	8	-	12	5
St. Paul, Minn.	48	35	5	5	1	2	-
Wichita, Kans.	43	31	8	1	1	2	3

Reporting Area	All Causes, By Age (Years): All Ages	≥65	45-64	25-44	1-24	<1	P&I** Total
S. ATLANTIC	1,148	676	301	86	32	53	40
Atlanta, Ga.	130	76	36	10	1	7	2
Baltimore, Md.	193	112	48	15	9	9	7
Charlotte, N.C.	63	37	20	2	2	2	2
Jacksonville, Fla.	85	47	27	7	-	4	4
Miami, Fla.	120	59	38	15	5	3	2
Norfolk, Va.	50	31	12	-	-	7	3
Richmond, Va.	91	45	32	6	5	3	9
Savannah, Ga.	34	25	9	-	-	-	2
St. Petersburg, Fla.	93	78	11	4	-	-	5
Tampa, Fla.	65	33	18	3	2	9	1
Washington, D.C.	174	99	41	21	4	9	1
Wilmington, Del.	50	34	9	3	4	-	2
E.S. CENTRAL	767	467	188	50	28	34	31
Birmingham, Ala.	121	73	24	7	7	10	2
Chattanooga, Tenn.	60	40	14	4	2	-	4
Knoxville, Tenn.	34	24	6	3	1	-	-
Louisville, Ky.	136	84	38	5	4	5	4
Memphis, Tenn.	164	103	45	10	6	-	7
Mobile, Ala.	71	41	12	6	3	9	2
Montgomery, Ala.	59	30	16	6	1	6	5
Nashville, Tenn.	122	72	33	9	4	4	7
W.S. CENTRAL	1,197	697	302	93	49	56	36
Austin, Tex.	49	29	5	4	3	8	4
Baton Rouge, La.	59	34	12	11	1	1	-
Corpus Christi, Tex.	48	33	12	3	-	-	-
Dallas, Tex.	223	129	61	15	3	15	4
El Paso, Tex.	27	16	9	1	-	1	1
Fort Worth, Tex.	98	55	23	6	4	10	1
Houston, Tex.	215	101	60	30	17	7	6
Little Rock, Ark.	81	47	25	4	4	1	3
New Orleans, La.	104	65	30	2	5	2	-
San Antonio, Tex.	164	105	35	12	8	4	16
Shreveport, La.	32	20	7	3	-	2	-
Tulsa, Okla.	97	63	23	2	4	5	1
MOUNTAIN	598	354	139	54	27	24	35
Albuquerque, N.Mex.	58	29	15	10	3	1	3
Colo. Springs, Colo.	29	11	6	3	6	3	3
Denver, Colo.	156	81	48	15	7	5	9
Las Vegas, Nev.	74	35	27	6	3	3	3
Ogden, Utah	16	15	1	-	-	-	2
Phoenix, Ariz.	123	77	25	12	3	6	6
Pueblo, Colo.	21	18	1	1	1	-	2
Salt Lake City, Utah	46	35	6	1	2	2	3
Tucson, Ariz.	75	53	10	6	2	4	4
PACIFIC	1,877	1,172	418	154	65	67	104
Berkeley, Calif.	17	13	3	1	-	-	-
Fresno, Calif.	58	37	12	2	4	3	2
Glendale, Calif.	28	23	4	-	1	-	4
Honolulu, Hawaii	77	48	20	5	3	1	10
Long Beach, Calif.	90	63	20	3	2	2	3
Los Angeles, Calif.	668	381	161	74	25	27	27
Oakland, Calif.	73	45	14	6	5	3	3
Pasadena, Calif.	19	14	1	1	1	2	1
Portland, Oreg.	102	67	18	12	1	4	5
Sacramento, Calif.	75	46	20	5	4	-	9
San Diego, Calif.	143	93	35	4	7	4	12
San Francisco, Calif.	126	69	36	14	-	6	-
San Jose, Calif.	135	96	19	8	5	7	10
Seattle, Wash.	166	110	37	13	2	4	4
Spokane, Wash.	54	34	11	4	4	1	9
Tacoma, Wash.	46	33	7	2	1	3	5
TOTAL	11,640††	7,302	2,714	789	392	438	491

* 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.

Diarrheal Diseases — Continued

identification of rotavirus subgroups and serotypes; 2) adoption of an agreed-upon nomenclature or numbering system for the classification of rotavirus subgroups and serotypes; 3) adoption of an agreed-upon system, possibly similar to that used for influenza virus and poliovirus, for the registration of tissue-culture-adapted rotavirus isolates in each country or region; 4) further development of monoclonal antibodies for the diagnosis of rotavirus.

The development of a rotavirus vaccine deserves high priority. In developing such a vaccine, it would be helpful to have an understanding of the mechanisms by which immunity to rotaviral illness is achieved. To date, studies in calves, piglets, and lambs have demonstrated the importance of intestinal rotarviral antibody in preventing or attenuating illness. In specially pertinent studies in lambs, rotavirus antibody administered by the alimentary route was effective in inducing resistance to rotavirus challenge by the same route, whereas circulating antibody alone was not characteristically protective. There have been very few studies, however, of the mechanisms of immunity to rotavirus illness in humans.

A major obstacle to vaccine development has been the inability to propagate human rotaviruses efficiently in cell cultures; thus, it has not been possible to produce enough human rotavirus antigen for vaccine development studies. However, important advances have been made in this area, and several human rotavirus strains have now been successfully cultivated in cynomolgus monkey kidney cell cultures. It may now be possible to develop attentuated mutants by various methods, such as cell culture passage, cold adapatation, chemical mutagenesis, and reassortment.

Another strategy being pursued is the use of a calf rotavirus to immunize humans, in an effort to evoke protective antibodies without causing illness. The promise of this type of approach has been demonstrated 1) in calves inoculated in utero with bovine rotavirus; they were significantly protected against challenge with human rotavirus on the day of, or one day after, birth, and 2) in piglets infected with bovine rotavirus and later challenged with human rotavirus; they shed virus for substantially fewer days than control animals.

A number of research groups are seeking to apply recombinant deoxyribonucleic acid methods to the characterization of rotavirus genome segments. This approach is seen as a promising means both of obtaining basic information on the nature of rotavirus genes and of producing rotavirus proteins that could be of value in vaccine development.

Another approach to the prevention of rotavirus illness involves the administration of high-titer rotavirus antibody by the alimentary route. Various animals studies have demonstrated the feasibility of this passive immunization approach for a defined period. In one study in humans, 4- to 9-day-old, breast-fed infants had substantially fewer rotavirus infections than those who were not breast fed. In another study, antibodies and/or trypsin inhibitors present in human milk were found to be associated with protection of neonates against rotavirus infection in the first 5 days of life. These findings could be important, but they require confirmation.

With the passive immunization approach, it might be feasible to immunize pregnant mothers with inactive or live rotavirus vaccine in an attempt to stimulate high levels of antibody in breast milk. It might also be feasible, in selected circumstances, to produce high-titre homologous antibody (or heterologous antibody, if found safe), or to prepare suitably treated human immune serum globulin, and add such antibody to the infant's diet for a defined period.

Reported by WHO Weekly Epidemiological Record *1983;58:165-6.*

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Epidemiologic Notes and Reports

Silicosis — South Dakota, Wisconsin

In 1982 and 1983, two surveys among workers exposed to crystalline (free) silica were completed by the National Institute for Occupational Safety and Health (NIOSH); both confirmed the presence of silicosis. The first survey was conducted in several plants processing minerals in South Dakota (*1*); the second, in a foundry in Wisconsin (*2*).

South Dakota: Diagnoses of silicosis in two former mineral plant workers prompted an environmental and medical survey, which was completed in March 1983. Investigators visited three plants in southwestern South Dakota that purchase feldspar, quartz rocks, and mica chips from independent miners and process them by crushing and milling. The products are used in ceramics, crystal glassware, and asphalt shingles, respectively. Seventy-seven current and former production workers participated in the health survey. Silicosis was diagnosed in five (11%) of 47 current and four (20%) of 20 former employees (with at least 1 year of exposure) when NIOSH-certified radiologists interpreted a posteroanterior chest radiograph as positive, based on the 1971 international standard classification (*3*).

The Mine Safety and Health Administration (MSHA) provided measurements of respirable crystalline silica dust for these worksites from 1979 to 1982. These showed that seven (26%) of 27 samples exceeded the MSHA standard for exposure to crystalline silica.* Respirable dust contained 6% quartz at the plant processing feldspar, 8% at the plant processing mica, and 38% at the plant processing quartz. No other forms of crystalline silica were detected. In 25 (38%) of 66 measurements taken by NIOSH, respirable dust samples demonstrated levels of crystalline silica that exceeded the MSHA standard. Workers with the greatest exposure included baggers, mill operators, and handlers of bulk products.

Three current workers with less than 1 year of exposure to silica dust showed no radiographic evidence of silicosis. Of the nine current and former workers with silicosis and at least 1 year of exposure, six (67%) had simple pneumoconiosis, and three (33%) had progressive massive fibrosis (PMF). Two of the nine workers had been employed only at the plant processing feldspar; three, only at the plant processing quartz; and four, at more than one worksite. Although the mean duration of exposure to silica dust among workers with silicosis was 12 years, four of the nine had less than 5 years of exposure. Results of spirometry varied considerably among the workers with silicosis; since all but one person smoked, however, attribution of pulmonary function abnormalities to silicosis was difficult. The one worker who did not smoke had PMF after 4.5 years of exposure and exhibited a moderately severe restrictive ventilatory impairment (forced vital capacity = 54% of predicted).

Wisconsin: In March 1982, as part of a health hazard evaluation at a foundry producing iron castings, 64 (61%) of 105 current workers and three (10%) of 30 retired workers were examined. Respiratory disease was evaluated by questionnaire, spirometry, and review of chest radiographs taken by the company. Assessment of the work environment included sampling for total and respirable dust and analyzing respirable dust samples by x-ray diffraction for content of crystalline silica.

Chest radiographs were submitted to NIOSH-certified radiologists for classification ac-

*Actual values are computed and vary according to the percentage of quartz present. If a sample contains less than 1% quartz, the threshold limit value (TLV) is 10 mg/m^3 (total dust sample). If the sample analysis indicates more than 1% quartz, a respirable sample is taken, and the TLV is calculated by using the formula: 10% quartz + 2. The resulting figure is multiplied by 1.2 to incorporate sampling-error factors.

Silicosis — Continued

cording to the 1971 international standards (*3*). Six workers (9%), whose length of employment at the foundry varied from 10 to 36 years, had radiographic evidence of silicosis. Spirometry was normal in all workers, except one with a 40-pack-year history of smoking (number of years smoking times number of packs of cigarettes per day).

Environmental sampling showed that 16 (64%) of 25 samples of dust from the core and molding areas exceeded the NIOSH recommendation of 50 $\mu g/m^3$ (range 50-130 $\mu g/m^3$). All 12 dust samples obtained in the finishing area exceeded the enforceable standards of MSHA and the Occupational Safety and Health Administration (OSHA) (*4*), as well as NIOSH-recommended limits.

Reported by Mining Hazard Evaluation and Technical Assistance Program, Clinical Investigations Br, Div of Respiratory Disease Studies, Hazard Evaluation and Technical Assistance Br, Div of Surveillance, Hazard Evaluations, and Field Studies, NIOSH, CDC.

Editorial Note: Silicosis is a form of diffuse interstitial pulmonary fibrosis resulting from the deposition of respirable crystalline silica in the lung. The present investigations document one of the oldest occupational diseases in two high-risk industries. The relatively short exposures and the high proportion of PMF cases observed here among the mineral workers contrast sharply with the long latent periods and less advanced stages of pneumoconiosis observed among foundry workers. Conditions of exposure may affect both the occurrence and severity of silicosis. Although it usually occurs after 15 or more years of exposure, some forms with latent periods of only a few years are well recognized and are associated with intense exposures to respirable dust high in free silica (*5*). Early, simple silicosis usually produces no symptoms. However, both acute and complicated silicosis (PMF) are associated with shortness of breath, intolerance for exercise, and a marked reduction in measured pulmonary function. Diagnosis is most often based on a history of occupational exposure to free silica and the characteristic appearance of a chest radiograph. Respiratory failure and premature death may occur in advanced forms of the disease. Individuals with silicosis are also at increased risk of contracting tuberculosis. No specific treatment is available, and the disease may progress even after a worker is no longer exposed to silica.

Silicosis is largely preventable by technology available to control exposure to dust. In selected industries, such as foundries, it may be eliminated by substituting other materials for silica (*6*). Because the disease is preventable, a specific objective of the U.S. Public Health Service for accomplishment by 1990 states: "Among workers newly exposed after 1985, there should be virtually no new cases of . . . silicosis" (*7*).

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Erratum, Vol. 32, No. 21

p. 281. In the article, "Annual Mussel Quarentine — California, 1982," the fifth sentence of the fourth paragraph should read, "If placed under quarentine, no part of clams and scallops should be eaten."

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The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

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

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