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MORBIDITY AND MORTALITY WEEKLY REPORT

International Notes

Occupational Mercury Poisoning — Nicaragua

In May 1980, the detection of inorganic mercury in drinking water in Managua, Nicaragua, led to the discovery that a chemical plant had been discharging mercury into Lake Managua, the source of the city's water supply. An estimated 40 tons of mercury has been discharged, at increasing annual rates, into air and water during the 12 years of the plant's operation; the rate of discharge in 1980 was approximately 50 pounds per day. On further investigation, a major outbreak of occupational mercury poisoning was discovered in workers at the plant.

The plant, partially owned and managed by a firm based in the United States, manufactures chlorine gas and sodium hydroxide (caustic soda) from sodium chloride by the chloralkali process; this process involves the separation of sodium from chlorine by direct electric current in the presence of a mercury cathode (*1*). Inspection of the plant showed visible contamination with metallic mercury, including pools of mercury on the floor of several work areas. Since metallic mercury is highly volatile and vaporizes readily at room temperatures, there was also inhalation exposure. Workers had been provided no personal protective equipment and had not been informed of the hazards of this element.

Physical examinations were conducted on all 152 workers at the plant. Fifty-six (37%) were found to have clinical evidence of mercury intoxication with central nervous system (CNS) damage. Initially, the criteria of such intoxication were the presence of specific signs and symptoms (tremor, emotional lability/irritability, metallic taste, and gingivitis) plus the presence of one or more non-specific symptoms (insomnia, memory deficit, inability to concentrate, depression, dysarthria, diaphoresis, chills, cramps, weakness, and sialorrhea). Fifteen other workers (10%) were found to have at least 3 specific and 2 non-specific symptoms of mercury intoxication.

Fifty-four of the initial 56 workers with CNS signs or symptoms were examined further by a neurologist. Forty-five had objective tremor, 45 memory deficit, 45 difficulty in concentration, and 52 paresthesias. One had undergone hospitalization for treatment of psychiatric symptoms; later, he and 3 co-workers had been removed from the plant by health officials following the development of mercurialism.

Epidemiologic investigation indicated that the highest prevalence of mercurialism had occurred in "mercury cell" (vat) workers (12 of 16, 75%) followed by process operators (16 of 33, 48%), and maintenance workers (23 of 62, 37%); in office workers, supervisors, and others the prevalence rate was 12% (5 of 41). The interval from beginning of employment to onset of symptoms ranged from 7 months to 7 years.

As a result of this investigation, Nicaraguan authorities have ordered (1) lowering of

Mercury Poisoning — Continued

mercury levels in the air in the plant; (2) improved maintenance; (3) construction of eating, showering, and changing facilities for workers; (4) provision of work clothes; and (5) periodic biologic monitoring of workers.

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Editorial Note: Outbreaks of mercurialism are seldom seen today. Chronic mercury poisoning occurs in 2 distinct clinical forms. Inorganic or elemental mercury typically produces a syndrome of dermatitis, gingivitis, stomatitis, and tremor together with CNS dysfunction (*2*). The CNS manifestations—including irritability, pathologic shyness, and the loss of attention span, memory, and intellect—are referred to as erethism (*3*). Nephrosis may occasionally occur (*4*). As in the present outbreak, inorganic mercurialism is almost always an occupational disease, and may be seen in such occupationally exposed groups as miners, mirror makers, mercury battery makers, jewelers, photographers, dentists, and dental assistants.

Poisoning by the organic compounds of mercury produces an almost purely neurologic illness (*5*). Early symptoms include paresthesias, numbness, and other manifestations of sensory neuropathy. With continued exposure, the syndrome progresses to a triad of dysarthria, ataxia, and visual field constriction (*6*). Organic mercury poisoning has occurred in occupationally exposed groups such as pesticide formulators and seed handlers (*7*).

Much greater attention has, however, been directed to the widespread outbreaks of organic mercury poisoning that have occurred as the result of the consumption of mercury-contaminated foodstuffs (*8*). Major epidemics have occurred in Minamata Bay, Japan, where exposure resulted from ingestion of contaminated shellfish (*9*), and in Iraq (*10*), Pakistan (*11*), and Guatemala (*12*), where exposure was caused by consumption of seed grain that had been treated with mercurial fungicides. In 1969, an episode occurred in the United States among members of a New Mexico family who ate pork from hogs that had been fed mercury-treated seed grain (*13*). Lake Managua serves as a major source of fish for Managua residents, and there is concern that a syndrome similar to that which occurred in Minamata may develop among consumers of fish from the lake. Additional investigations are underway to evaluate possible organic mercury intake in persons consuming water or fish from Lake Managua.

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Epidemiologic Notes and Reports

Formaldehyde Exposure at a Mortuary Science Embalming Laboratory – Ohio

In October 1979, a health hazard evaluation was conducted by the National Institute for Occupational Safety and Health (NIOSH) at an embalming laboratory at an Ohio college of mortuary science to determine if chemicals used during embalming operations were presenting a potential exposure problem. The request was prompted by the early-disability retirement of a 30-year-old embalming instructor, who had developed asthmatic bronchitis after 5 years of laboratory exposure.

Medical histories of 4 instructors who were working in the laboratory at the time of the investigation revealed that all gave positive histories of allergy. All were exposed to embalming fluids consisting of formaldehyde, phenol, unspecified preservatives, ketone, and ester solvents. This exposure was on a daily basis for periods ranging from 3 to 12 years. All noted symptoms of burning eyes and nose, dryness of mouth and throat, cough, headache, and lacrimation while using these chemicals.

To evaluate environmental exposures, air samples were taken for phenol and formaldehyde determination during a 2-day period. One the first day, when a greater-than-usual number of bodies were embalmed, the ventilation system was not in operation (not an unusual condition), and airborne contaminants accumulated. The second day's embalmings were performed while the exhaust system was in operation.

Environmental sampling indicated the phenol concentrations were below the limits of detection (0.4 mg/sample). Formaldehyde, on the other hand, was found to exceed the current Occupational Safety and Health Administration (OSHA) standard of 3 parts per million (ppm) (*1*) in 2 samples (3.93 and 3.65) on the first day of evaluation. All sample concentrations exceeded the NIOSH-recommended ceiling of 1.0 ppm. On the second day of the evaluation, with ventilation and exhaust systems working properly, concentrations in all samples were within the NIOSH-recommended and OSHA standards.

Reported by the Hazard Evaluations and Technical Assistance Br, Div of Surveillance, Hazard Evaluations, and Field Studies, NIOSH, CDC.

Editorial Note: Formaldehyde gas may cause severe irritation to the mucous membranes of the respiratory tract and eyes. Sensory irritation (itching of the eyes, dry and sore throat, increased thirst, disturbed sleep) has been reported in workers in paper-processing plants at concentrations of 0.9 to 1.6 ppm (*2*). In another study, intense irritation of the eyes, nose, and throat was reported at levels ranging from 0.13 to 0.45 ppm (*3*). More recent studies conducted in funeral homes indicated that concentrations of airborne formaldehyde from 0.25 to 1.39 ppm evoked complaints of upper respiratory tract and eye irritation and headache among embalmers (*4*). The levels at which serious inflammation of the bronchi and lower respiratory tract would occur in humans are unknown;

Formaldehyde Exposure – Continued

inhalation of high levels, however, has caused chemical pneumonitis, pulmonary edema, and death.

Formaldehyde has recently been found to produce a high incidence of nasopharyngeal cancer in laboratory rats (*5*). Present recommendations and standards for exposure to this chemical are not based on these carcinogenicity data. NIOSH is currently initiating an occupational epidemiologic study to help evaluate the human carcinogenicity rate due to formaldehyde exposure.

The environmental results of this study demonstrate the potential for overexposure to formaldehyde for embalmers when proper ventilation and exhaust systems are not operating. Based on the results of this evaluation, and on the irritant and carcinogenic effects of formaldehyde, NIOSH has recommended that embalmers, pathologists, and others using this substance be aware of the need for proper ventilation, protective clothing, personal protective equipment, and periodic or continuous monitoring of the airborne concentrations of formaldehyde in the workplace.

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

[Cumulative totals include revised and delayed reports through previous weeks.]

DISEASE	33rd WEEK ENDING		MEDIAN	CUMULATIVE, FIRST 33 WEEKS		
	August 16, 1980	August 18, 1979	1975-1979	August 16, 1980	August 18, 1979	MEDIAN 1975-1979
Aseptic meningitis	270	397	207	2,888	3,215	2,285
Brucellosis	10	6	6	125	97	136
Chickenpox	392	336	308	155,164	170,637	149,452
Diphtheria	–	–	1	3	7	59
Encephalitis: Primary (arthropod-borne & unspec.)	22	52	50	430	497	517
Post-infectious	5	4	5	141	170	170
Hepatitis, Viral: Type B	387	286	286	10,825	9,087	9,444
Type A	576	582	600	17,009	18,587	19,584
Type unspecified	266	222	168	7,519	6,366	5,341
Malaria	52	19	17	1,213	419	339
Measles (rubeola)	54	196	157	12,684	11,789	23,371
Meningococcal infections: Total	33	33	28	1,813	1,870	1,210
Civilian	33	33	28	1,806	1,852	1,202
Military	–	–	–	7	18	18
Mumps	78	84	112	6,933	10,914	15,624
Pertussis	54	44	44	912	872	872
Rubella (German measles)	32	65	65	3,196	10,513	14,606
Tetanus	2	1	2	41	40	42
Tuberculosis	558	555	628	17,383	17,638	19,135
Tularemia	6	12	3	114	129	89
Typhoid fever	15	15	11	274	297	250
Typhus fever, tick-borne (Rky. Mt. spotted)	50	77	45	775	731	730
Venereal diseases:						
Gonorrhea: Civilian	21,031	21,139	21,139	615,121	616,951	616,951
Military	386	783	607	17,036	17,535	17,535
Syphilis, primary & secondary: Civilian	544	726	502	16,540	15,255	15,406
Military	6	4	4	200	185	190
Rabies in animals	110	124	69	4,223	3,173	1,938

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1980		CUM. 1980
Anthrax	–	Poliomyelitis: Total	6
Botulism (Colo. 1, Calif. 1)	38	Paralytic	4
Cholera (Calif. 1)	8	Psittacosis(N.J. 1, Ohio 1, Wash. 1, Oreg. 1)	57
Congenital rubella syndrome	43	Rabies in man	–
Leprosy (Tex. 3, Calif. 1)	120	Trichinosis(N.J. 3)	78
Leptospirosis (Calif. 1)	40	Typhus fever, flea-borne (endemic, murine),(La. 1)	44
Plague	8		

All delayed reports will be included in the following week's cumulative totals.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending August 16, 1980, and August 18, 1979 (33rd week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1980	1980	1980	1980	CUM. 1980	1980	1979	1980	1980	1980	1980	1980	CUM. 1980
UNITED STATES	270	10	392	–	3	22	52	5	387	576	266	52	1,213
NEW ENGLAND	20	–	50	–	–	–	–	1	15	5	11	2	76
Maine	2	–	5	–	–	–	–	–	–	–	1	–	12
N.H.	1	–	–	–	–	–	–	–	2	–	–	–	7
Vt.	–	–	1	–	–	–	–	–	1	2	–	–	–
Mass.	4	–	8	–	–	–	–	–	3	2	9	1	38
R.I.	12	–	1	–	–	–	–	–	1	–	–	1	8
Conn.	1	–	35	–	–	–	–	1	8	1	1	–	11
MID. ATLANTIC	63	–	79	–	1	9	6	–	49	38	22	7	164
Upstate N.Y.	9	–	11	–	–	1	3	–	8	8	2	2	26
N.Y. City	7	–	66	–	1	–	–	–	9	5	3	2	42
N.J.	33	–	NN	–	–	3	1	–	20	13	15	–	45
Pa.	14	–	2	–	–	5	2	–	12	12	2	3	51
E.N. CENTRAL	22	–	145	–	1	6	24	–	35	66	13	–	59
Ohio	–	–	17	–	–	–	9	–	9	8	4	–	8
Ind.	–	–	27	–	–	–	3	–	2	9	3	–	4
Ill.	5	–	17	–	–	–	–	–	2	27	1	–	21
Mich.	14	–	30	–	1	3	7	–	17	18	4	–	19
Wis.	3	–	54	–	–	3	5	–	5	4	1	–	7
W.N. CENTRAL	15	3	11	–	1	2	8	1	28	20	8	2	46
Minn.	–	–	–	–	–	–	–	–	8	5	–	1	18
Iowa	4	–	5	–	–	1	1	–	10	1	–	–	7
Mo.	7	2	1	–	1	–	–	–	7	5	5	–	11
N. Dak.	–	–	2	–	–	–	–	–	–	–	–	–	–
S. Dak.	–	–	3	–	–	–	–	–	–	1	–	–	2
Nebr.	4	1	–	–	–	1	–	–	1	–	2	1	5
Kans.	–	–	–	–	–	–	7	1	2	8	1	–	3
S. ATLANTIC	44	1	50	–	–	–	3	2	97	109	52	4	124
Del.	–	–	2	–	–	–	–	–	–	1	1	–	–
Md.	9	–	4	–	–	–	–	–	23	11	18	–	23
D.C.	–	–	–	–	–	–	–	–	2	–	–	–	1
Va.	8	–	17	–	–	–	3	–	16	6	3	4	47
W. Va.	–	–	5	–	–	–	–	–	1	2	1	–	4
N.C.	16	–	NN	–	–	–	–	–	11	14	3	–	7
S.C.	1	–	–	–	–	–	–	–	7	1	3	–	5
Ga.	–	–	–	–	–	–	–	–	10	15	–	–	14
Fla.	10	1	22	–	–	–	–	2	27	59	23	–	23
E.S. CENTRAL	47	–	6	–	–	4	4	–	13	26	1	–	10
Ky.	3	–	4	–	–	–	1	–	3	6	–	–	2
Tenn.	6	–	NN	–	–	2	–	–	7	8	–	–	–
Ala.	37	–	1	–	–	–	3	–	3	4	1	–	6
Miss.	1	–	1	–	–	2	–	–	–	8	–	–	2
W.S. CENTRAL	16	2	24	–	–	–	2	–	33	83	54	–	111
Ark.	1	1	1	–	–	–	–	–	1	6	8	–	6
La.	–	–	NN	–	–	–	–	–	11	13	–	–	40
Okla.	–	–	–	–	–	–	2	–	7	6	4	–	12
Tex.	15	1	23	–	–	–	–	–	14	58	42	–	53
MOUNTAIN	2	–	14	–	–	–	2	–	8	34	13	3	49
Mont.	–	–	–	–	–	–	–	–	–	–	–	–	–
Idaho	–	–	–	–	–	–	–	–	–	–	–	–	1
Wyo.	–	–	–	–	–	–	–	–	–	–	–	–	2
Colo.	1	–	13	–	–	–	2	–	3	28	8	1	25
N. Mex.	–	–	–	–	–	–	–	–	–	–	–	1	3
Ariz.	–	–	NN	–	–	–	–	–	–	–	1	1	12
Utah	–	–	1	–	–	–	–	–	3	5	3	–	–
Nev.	1	–	–	–	–	–	–	–	2	1	1	–	6
PACIFIC	41	4	13	–	–	1	3	1	109	195	92	34	574
Wash.	–	–	7	–	–	–	–	–	2	3	–	5	42
Oreg.	3	–	–	–	–	–	1	–	4	18	4	–	30
Calif.	37	4	–	–	–	1	2	1	103	173	86	28	481
Alaska	1	–	1	–	–	–	–	–	–	–	2	1	6
Hawaii	–	–	5	–	–	–	–	–	–	1	–	–	15
Guam	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	3
P.R.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	3
V.I.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
Pac. Trust Terr.	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–

NN: Not notifiable. NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 16, 1980, and August 18, 1979 (33rd week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1980	CUM. 1980	CUM. 1979	1980	CUM. 1980	CUM. 1979	1980	CUM. 1980	1980	1980	CUM. 1980	CUM. 1980
UNITED STATES	54	12,684	11,789	33	1,813	1,870	78	6,933	54	32	3,196	41
NEW ENGLAND	1	660	287	2	102	96	2	546	2	3	207	1
Maine	–	33	17	–	5	5	–	284	–	–	68	1
N.H.	–	322	33	1	7	9	–	19	–	–	34	–
Vt.	–	226	118	–	13	6	–	9	–	–	3	–
Mass.	1	55	13	1	34	31	–	118	1	1	75	–
R.I.	–	2	102	–	7	7	2	22	–	–	9	–
Conn.	–	22	4	–	36	38	–	94	1	2	18	–
MID. ATLANTIC	23	3,741	1,422	5	328	281	12	774	2	5	519	6
Upstate N.Y.	2	678	595	1	107	103	1	100	1	–	182	1
N.Y. City	7	1,165	728	1	82	66	3	86	1	1	91	2
N.J.	4	825	55	1	67	69	–	94	–	3	100	–
Pa.	10	1,073	44	2	72	43	8	494	–	1	146	3
E.N. CENTRAL	10	2,381	3,055	2	210	190	14	2,655	11	8	772	2
Ohio	2	373	253	–	75	75	2	1,112	5	–	4	1
Ind.	–	90	193	–	35	39	1	108	4	4	325	–
Ill.	–	321	1,362	–	34	8	1	350	–	–	159	–
Mich.	3	234	814	2	53	50	1	793	2	3	126	1
Wis.	5	1,363	433	–	13	18	9	292	–	1	158	–
W.N. CENTRAL	1	1,309	1,712	–	66	60	1	248	6	–	221	4
Minn.	1	1,095	1,205	–	20	10	1	23	2	–	51	2
Iowa	–	–	16	–	9	9	–	39	–	–	8	–
Mo.	–	64	408	–	24	31	–	70	4	–	45	1
N. Dak.	–	–	20	–	1	1	–	4	–	–	5	–
S. Dak.	–	–	2	–	4	4	–	2	–	–	2	–
Nebr.	–	83	–	–	–	–	–	9	–	–	1	–
Kans.	–	67	61	–	8	5	–	101	–	–	109	1
S. ATLANTIC	3	1,860	1,782	8	433	460	28	929	13	2	310	7
Del.	–	3	1	–	2	5	–	38	–	–	1	–
Md.	–	71	13	1	45	40	7	313	–	–	70	1
D.C.	–	–	–	–	1	–	–	3	–	–	1	–
Va.	–	300	263	2	42	66	1	54	1	–	50	2
W. Va.	1	23	52	–	14	8	1	83	–	–	22	1
N.C.	–	128	110	–	82	70	2	88	2	2	46	–
S.C.	–	157	150	1	53	56	1	203	–	–	51	2
Ga.	–	799	423	–	72	67	–	1	6	–	–	–
Fla.	2	379	770	4	122	148	16	146	4	–	69	1
E.S. CENTRAL	1	338	194	2	169	139	5	839	3	1	79	3
Ky.	1	53	37	1	53	29	4	742	1	1	36	1
Tenn.	–	179	50	–	44	38	–	24	2	–	38	1
Ala.	–	22	83	–	45	36	–	15	–	–	3	1
Miss.	–	84	24	1	27	36	1	58	–	–	2	–
W.S. CENTRAL	2	914	882	4	194	296	1	243	9	2	116	10
Ark.	–	13	7	1	17	24	–	20	1	–	4	1
La.	–	13	245	1	72	115	–	65	2	–	10	2
Okla.	1	741	22	–	17	25	–	–	–	–	4	–
Tex.	1	147	608	2	88	132	1	158	6	2	98	7
MOUNTAIN	4	456	304	6	61	73	3	182	5	–	133	–
Mont.	–	2	53	–	3	7	–	53	–	–	41	–
Idaho	–	–	18	–	4	6	–	15	–	–	18	–
Wyo.	–	–	36	–	2	1	–	–	–	–	1	–
Colo.	–	23	59	2	15	5	1	47	–	–	9	–
N. Mex.	–	9	38	1	8	4	–	–	3	–	5	–
Ariz.	4	367	72	2	12	31	2	32	2	–	30	–
Utah	–	47	17	–	2	8	–	26	–	–	24	–
Nev.	–	8	11	1	15	11	–	9	–	–	5	–
PACIFIC	9	1,025	2,151	4	250	275	12	517	3	11	839	8
Wash.	–	174	1,124	–	49	44	–	124	–	–	71	–
Oreg.	–	–	58	–	41	24	2	60	–	–	50	–
Calif.	9	840	889	3	153	194	10	307	3	11	703	8
Alaska	–	5	17	1	7	5	–	11	–	–	10	–
Hawaii	–	6	63	–	–	8	–	15	–	–	5	–
Guam	NA	5	10	–	1	1	NA	9	NA	NA	–	–
P.R.	NA	98	321	–	9	3	NA	116	NA	NA	14	7
V.I.	NA	6	5	–	1	3	NA	2	NA	NA	–	–
Pac. Trust Terr.	NA	6	7	–	–	1	NA	14	NA	NA	1	–

NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 16, 1980, and August 18, 1979 (33rd week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1980	CUM. 1980	CUM. 1980	1980	CUM. 1980	1980	CUM. 1980	1980	CUM. 1980	CUM. 1979	1980	CUM. 1980	CUM. 1979	CUM. 1980
UNITED STATES	558	17,383	114	15	274	50	775	21,031	615,121	616,951	544	16,540	15,255	4,223
NEW ENGLAND	24	500	2	–	7	–	9	525	15,355	15,476	8	386	297	39
Maine	4	38	–	–	1	–	–	20	882	1,091	–	4	7	18
N.H.	–	10	–	–	–	–	–	37	556	561	–	1	16	6
Vt.	–	18	–	–	–	–	–	1	338	360	–	5	1	–
Mass.	14	269	1	–	4	–	5	209	6,367	6,197	8	247	166	8
R.I.	1	54	–	–	1	–	2	56	991	1,286	–	19	9	–
Conn.	5	111	1	–	1	–	2	202	6,221	5,981	–	110	98	7
MID. ATLANTIC	119	2,830	1	2	55	1	32	2,035	66,424	66,429	96	2,355	2,314	46
Upstate N.Y.	37	572	–	–	8	–	12	406	12,436	10,843	17	202	158	22
N.Y. City	34	997	1	1	24	–	2	680	25,161	26,516	55	1,542	1,582	–
N.J.	31	598	–	1	11	1	9	251	12,257	11,986	12	287	305	11
Pa.	17	663	–	–	12	–	9	698	16,570	17,084	12	324	269	13
E.N. CENTRAL	65	2,457	1	–	21	–	22	3,766	94,586	94,802	33	1,527	2,024	644
Ohio	24	451	–	–	5	–	10	1,220	25,008	26,135	3	236	395	38
Ind.	9	254	–	–	–	–	2	223	9,272	8,422	1	119	133	59
Ill.	27	885	–	–	9	–	6	1,098	29,832	29,034	25	871	1,139	362
Mich.	–	725	1	–	5	–	3	911	21,475	22,436	–	242	297	7
Wis.	5	142	–	–	2	–	1	314	8,999	8,775	4	59	60	178
W.N. CENTRAL	15	648	20	1	21	7	42	1,227	28,752	30,129	7	206	205	1,363
Minn.	4	125	1	1	3	–	–	176	4,677	5,040	1	74	54	146
Iowa	2	58	1	–	1	–	1	117	3,098	3,682	3	12	26	268
Mo.	5	298	17	–	15	6	29	585	12,719	12,873	3	101	94	298
N. Dak.	1	32	–	–	–	–	–	19	408	508	–	3	2	158
S. Dak.	–	33	–	–	1	–	2	22	863	1,019	–	2	1	295
Nebr.	–	27	1	–	–	1	1	91	2,259	2,096	–	6	2	78
Kans.	3	75	–	–	1	–	9	217	4,728	4,911	–	8	26	120
S. ATLANTIC	118	3,878	9	2	31	32	507	5,246	153,411	150,281	107	3,888	3,650	305
Del.	3	56	–	–	1	–	1	134	2,151	2,488	–	10	18	1
Md.	21	498	2	–	2	5	57	NA	15,503	18,398	NA	275	240	21
D.C.	5	224	–	–	3	–	–	484	10,762	9,635	16	289	280	–
Va.	10	412	–	–	4	14	66	630	13,805	14,264	9	358	308	9
W. Va.	4	144	–	–	3	–	2	103	2,054	2,070	–	15	41	14
N.C.	28	691	3	–	2	11	219	702	21,879	21,407	6	269	305	11
S.C.	8	358	–	–	3	2	120	661	14,695	14,081	5	217	182	44
Ga.	15	511	4	–	–	–	38	1,178	29,658	28,739	27	1,107	1,009	150
Fla.	24	984	–	2	13	–	4	1,354	42,904	39,199	44	1,348	1,267	55
E.S. CENTRAL	40	1,576	8	1	8	3	65	1,468	50,069	52,861	35	1,357	993	227
Ky.	11	341	–	–	2	1	6	228	7,421	6,895	2	91	102	102
Tenn.	10	527	6	–	–	2	41	595	18,052	18,833	15	573	421	97
Ala.	11	433	–	–	2	–	10	290	14,601	15,712	8	282	186	28
Miss.	8	275	2	1	4	–	8	355	9,995	11,421	10	411	284	–
W.S. CENTRAL	61	1,908	52	–	35	7	82	2,948	79,344	80,034	160	3,254	2,735	1,040
Ark.	3	195	32	–	4	–	14	216	6,059	6,305	8	96	93	133
La.	5	358	–	–	–	–	1	570	14,396	14,081	33	794	665	7
Okla.	7	191	15	–	3	7	51	285	7,884	7,528	–	59	56	178
Tex.	46	1,164	5	–	28	–	16	1,877	51,005	52,120	119	2,305	1,921	722
MOUNTAIN	4	458	17	1	18	–	12	905	23,924	24,594	2	398	288	156
Mont.	–	18	4	–	1	–	3	59	903	1,221	–	1	7	30
Idaho	1	22	1	–	1	–	1	40	1,056	1,066	–	23	19	1
Wyo.	–	16	3	–	–	–	2	16	702	678	–	8	5	8
Colo.	–	62	5	1	4	–	1	271	6,420	6,467	–	103	61	36
N. Mex.	–	91	–	–	2	–	4	105	2,957	3,104	–	68	57	29
Ariz.	3	197	1	–	7	–	–	170	6,521	6,851	–	129	84	48
Utah	–	32	2	–	3	–	1	61	1,137	1,272	1	11	3	3
Nev.	–	20	1	–	–	–	–	183	4,228	3,935	1	55	52	1
PACIFIC	112	3,128	4	8	78	–	4	2,911	103,256	102,345	96	3,169	2,749	403
Wash.	11	281	–	2	3	–	–	NA	7,782	8,921	NA	154	144	–
Oreg.	4	107	1	–	9	–	1	162	7,016	6,455	1	66	112	3
Calif.	96	2,647	2	6	66	–	3	2,623	83,888	81,824	95	2,833	2,410	356
Alaska	–	41	1	–	–	–	–	70	2,496	3,255	–	8	16	44
Hawaii	1	52	–	–	–	–	–	56	2,074	1,890	–	108	67	–
Guam	NA	28	–	NA	–	NA	–	NA	62	73	NA	3	–	–
P.R.	NA	111	–	NA	5	NA	–	NA	1,537	1,318	NA	323	312	29
V.I.	NA	–	–	NA	–	NA	–	NA	108	115	NA	10	6	–
Pac. Trust Terr.	NA	30	–	NA	–	NA	–	NA	258	308	NA	–	1	–

NA: Not available.
All delayed reports and corrections will be included in the following week's cumulative totals.

TABLE IV. Deaths in 121 U.S. cities,* week ending August 16, 1980 (33rd week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	638	419	146	35	16	33
Boston, Mass.	201	119	48	16	9	12
Bridgeport, Conn.	51	36	11	3	1	4
Cambridge, Mass.	26	16	7	1	–	3
Fall River, Mass.	23	20	3	–	–	–
Hartford, Conn.	38	26	8	2	1	2
Lowell, Mass.	18	14	4	–	–	–
Lynn, Mass.	23	17	5	1	–	–
New Bedford, Mass.	9	7	1	1	–	–
New Haven, Conn.	62	42	10	4	1	–
Providence, R.I.	67	35	25	3	2	6
Somerville, Mass.	7	7	–	–	–	–
Springfield, Mass.	36	25	9	–	–	3
Waterbury, Conn.	32	22	8	1	–	1
Worcester, Mass.	45	33	7	3	2	2
MID. ATLANTIC	2,603	1,636	610	194	76	118
Albany, N.Y.	53	29	10	5	5	–
Allentown, Pa.	18	16	2	–	–	–
Buffalo, N.Y.	97	60	27	5	3	8
Camden, N.J.	30	17	8	1	2	–
Elizabeth, N.J.	25	21	3	1	–	–
Erie, Pa.†	22	17	2	2	–	1
Jersey City, N.J.	46	24	16	3	1	2
Newark, N.J.	49	26	12	8	1	3
N.Y. City, N.Y.	1,361	860	309	119	28	51
Paterson, N.J.	37	23	7	3	3	–
Philadelphia, Pa.†	440	264	108	27	25	31
Pittsburgh, Pa.†	78	46	24	2	4	3
Reading, Pa.	30	22	6	2	–	1
Rochester, N.Y.	113	77	27	7	–	8
Schenectady, N.Y.	32	18	11	1	–	1
Scranton, Pa.†	22	16	5	1	–	2
Syracuse, N.Y.	80	52	20	2	3	2
Trenton, N.J.	29	19	4	4	–	–
Utica, N.Y.	20	15	3	–	1	1
Yonkers, N.Y.	21	14	6	1	–	4
E.N. CENTRAL	2,161	1,271	565	161	72	54
Akron, Ohio	64	32	22	5	4	–
Canton, Ohio	43	25	13	1	2	–
Chicago, Ill.	492	285	123	41	14	8
Cincinnati, Ohio	117	71	29	8	2	12
Cleveland, Ohio	182	113	38	18	11	3
Columbus, Ohio	130	76	36	9	2	3
Dayton, Ohio	101	65	23	6	2	1
Detroit, Mich.	268	150	69	29	11	6
Evansville, Ind.	41	27	7	3	1	1
Fort Wayne, Ind.	54	32	17	–	4	3
Gary, Ind.	26	11	9	2	–	–
Grand Rapids, Mich.	55	27	18	4	3	4
Indianapolis, Ind.	133	80	34	10	4	2
Madison, Wis.	31	19	7	1	1	2
Milwaukee, Wis.	150	94	40	8	4	2
Peoria, Ill.	27	18	5	2	2	3
Rockford, Ill.	41	25	11	3	1	–
South Bend, Ind.	33	16	10	4	2	2
Toledo, Ohio	109	59	42	5	1	2
Youngstown, Ohio	64	46	12	2	1	–
W.N. CENTRAL	759	500	159	43	29	35
Des Moines, Iowa	64	37	20	1	4	2
Duluth, Minn.	31	23	6	1	1	3
Kansas City, Kans.	32	22	6	3	–	–
Kansas City, Mo.	120	70	28	10	6	5
Lincoln, Nebr.	49	36	7	1	2	6
Minneapolis, Minn.	69	40	13	6	6	3
Omaha, Nebr.	98	61	23	6	5	2
St. Louis, Mo.	182	125	37	11	3	10
St. Paul, Minn.	78	58	12	4	2	1
Wichita, Kans.	36	28	7	–	–	3

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P&I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
S. ATLANTIC	1,183	679	302	89	53	35
Atlanta, Ga.	122	68	35	11	1	4
Baltimore, Md.	196	106	52	16	15	1
Charlotte, N.C.	62	38	16	4	3	3
Jacksonville, Fla.	81	47	21	3	4	1
Miami, Fla.	133	80	40	9	1	4
Norfolk, Va.	70	42	22	1	1	1
Richmond, Va.	69	35	19	7	4	5
Savannah, Ga.	36	18	11	2	4	2
St. Petersburg, Fla.	100	79	13	2	5	3
Tampa, Fla.	78	54	15	4	3	6
Washington, D.C.	170	92	42	15	10	3
Wilmington, Del.	66	20	16	15	2	2
E.S. CENTRAL	707	410	187	45	23	33
Birmingham, Ala.	114	63	33	4	8	5
Chattanooga, Tenn.	65	37	18	4	1	3
Knoxville, Tenn.	34	22	10	2	–	1
Louisville, Ky.	94	61	20	5	2	4
Memphis, Tenn.	152	88	40	13	2	12
Mobile, Ala.	72	34	24	6	1	2
Montgomery, Ala.	41	26	8	1	4	2
Nashville, Tenn.	135	79	34	10	5	4
W.S. CENTRAL	1,217	656	318	125	43	36
Austin, Tex.	52	28	10	5	3	3
Baton Rouge, La.	43	26	12	5	–	–
Corpus Christi, Tex.	27	15	8	2	1	–
Dallas, Tex.	184	99	51	20	2	3
El Paso, Tex.	44	20	13	6	2	3
Fort Worth, Tex.	95	56	21	9	5	3
Houston, Tex.	254	101	74	42	13	3
Little Rock, Ark.	60	29	18	7	3	2
New Orleans, La.	143	85	45	6	2	2
San Antonio, Tex.	194	117	44	16	7	13
Shreveport, La.	52	34	12	1	–	1
Tulsa, Okla.	69	46	10	6	5	3
MOUNTAIN	595	350	138	47	32	19
Albuquerque, N. Mex.	72	42	15	8	4	4
Colo. Springs, Colo.	44	23	15	3	2	4
Denver, Colo.	123	71	25	9	10	6
Las Vegas, Nev.	56	29	20	6	–	1
Ogden, Utah	16	12	1	1	–	2
Phoenix, Ariz.	128	78	29	11	3	2
Pueblo, Colo.	16	9	4	1	1	–
Salt Lake City, Utah	46	24	11	3	7	–
Tucson, Ariz.	94	62	18	5	5	–
PACIFIC	1,508	958	352	106	45	50
Berkeley, Calif.	19	11	3	2	3	–
Fresno, Calif.	51	33	11	5	–	6
Glendale, Calif.	15	9	5	1	–	–
Honolulu, Hawaii	34	19	9	5	1	3
Long Beach, Calif.	96	63	25	7	1	3
Los Angeles, Calif.	391	255	90	25	11	12
Oakland, Calif.	82	48	21	7	2	6
Pasadena, Calif.	33	27	3	1	1	4
Portland, Oreg.	107	68	23	6	3	–
Sacramento, Calif.	59	37	11	4	1	1
San Diego, Calif.††	113	70	28	8	4	1
San Francisco, Calif.	145	92	37	8	6	2
San Jose, Calif.	136	78	36	12	5	4
Seattle, Wash.	141	87	31	12	4	3
Spokane, Wash.	45	33	9	2	1	4
Tacoma, Wash.	41	28	10	1	2	1
TOTAL	11,371	6,879	2,777	845	389	413

*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.

†† Data not available this week. Figures are estimates based on average percent of regional totals.

Formaldehyde Exposure — Continued

3. Bourne H, Seferian S. Formaldehyde in wrinkle-proof apparel processes. tears for my lady. Industrial Medicine and Surgery 1959;28:232-3.
4. Kerfoot E, Mooney T. Formaldehyde and paraformaldehyde study in funeral homes. American Industrial Hygiene Association Journal 1975;36:533-7.
5. Bureau of National Affairs. Occupational Safety and Health Reporter, October 18, 1979:471.

▲This article was developed from NIOSH Health Hazard Evaluation Report #70-146-670. A summary of that report, as well as all Health Hazard Evaluation and Technical Assistance Reports since December 1979, is now available in a new quarterly publication called "Health Hazard Evaluation Summaries." It is available from NIOSH by writing or calling: Ms. Vivian Morgan, NIOSH, Publications Dissemination, 4676 Columbia Parkway, Cincinnati, Ohio, 45226; Phone: 513-684-8323.

Current Trends

Mortality due to Malignant Neoplasms — Florida

In the state of Florida in 1978, the age-adjusted rate for deaths due to malignant neoplasms (cancer) was 132.1 per 100,000 population, which equalled the previous high in 1972 (Table 1). Provisional data for 1979 indicate a 3.7% increase in the number of cancer deaths.§

Data were classified into 4 groups: white males; white females; males, all other races; and females, all other races. White males continued to have the highest cancer mortality among the 4 groups, both in the number of deaths and in the unadjusted rates (Table 1).

TABLE 1. Malignant neoplasm (cancer) deaths and death rates per 100,000 population, by race and sex, Florida, 1950, 1960, and 1968-1978

YEAR	DEATHS					RATES					
	Total	Whites		All other races		Age-Adjusted*	Unadjusted				
							Total	White		All other races	
		Male	Female	Male	Female			Male	Female	Male	Female
1950	3,661	1,634	1,438	292	297	115.3	129.8	149.4	129.0	98.0	94.4
1960	7,789	3,920	2,849	544	476	119.8	155.7	193.8	136.5	123.9	104.6
1968	12,047	6,292	4,377	807	571	122.3	185.6	238.5	156.0	160.0	105.0
1969	12,809	6,662	4,779	812	556	123.8	191.2	244.5	164.3	158.5	100.2
1970	13,716	7,081	5,130	913	583	127.8	200.1	253.9	171.6	177.2	104.1
1971	14,449	7,556	5,354	923	614	126.5	202.9	260.7	171.3	175.8	107.4
1972	15,953	8,292	6,036	950	666	132.1	214.4	273.6	183.6	176.9	113.6
1973	16,581	8,602	6,274	979	724	128.0	211.4	268.2	179.3	180.0	121.6
1974	17,767	9,226	6,835	1,037	669	125.8	215.4	268.9	186.6	189.2	110.1
1975	18,387	9,451	7,126	1,100	707	122.5	216.7	268.8	187.6	200.1	114.1
1976	19,500	10,155	7,472	1,160	712	129.3	228.0	287.5	194.3	209.7	114.9
1977	20,200	10,242	7,918	1,235	800	129.1	231.7	284.6	201.7	220.4	126.5
1978	21,639	11,066	8,522	1,261	783	132.1	241.3	297.9	210.6	222.4	122.6
1979†	22,432	11,444	8,846	1,296	840	NA‡	241.4	297.0	210.7	221.7	127.6

*Age-adjusted to U.S. 1940 standard population.
†Provisional data. ‡Not available.

§The age-adjusted rate for 1979 is not yet available.

Malignant Neoplasms — Continued

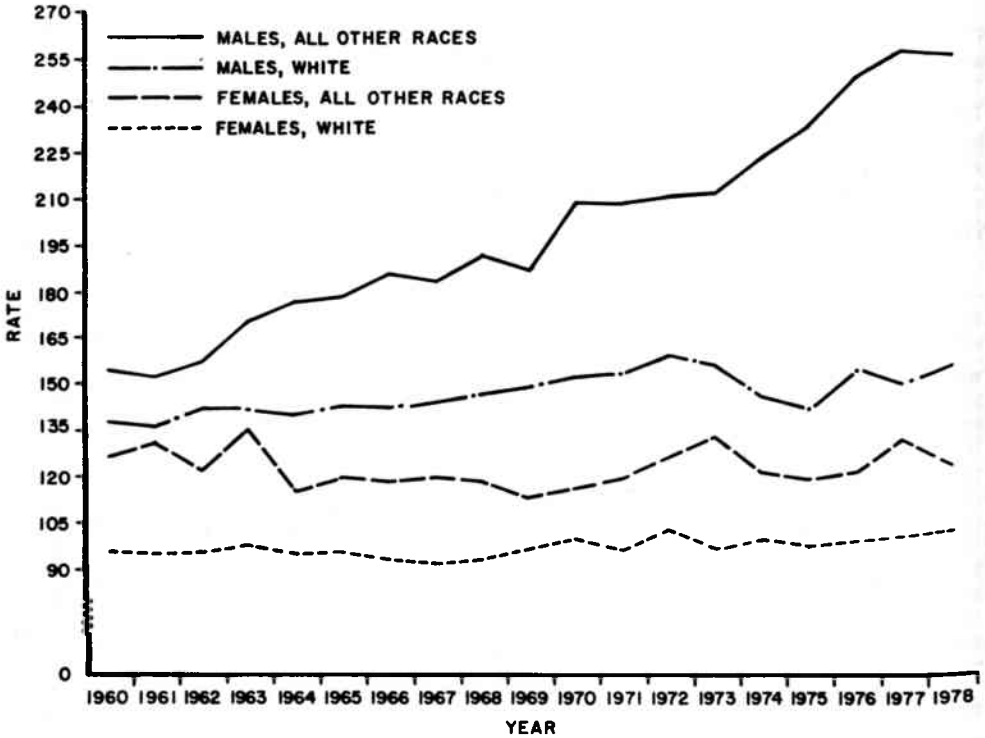
Males of all other races have the second highest rate followed by white females, then females of all other races. This pattern has persisted since 1973. All 4 groups continued to show increases in number, but the rates for whites may be leveling off. For the category "all other races," the rates are the highest ever reported in the state.

There has been a recent, sharp increase in the age-adjusted cancer mortality rate among males of all other races but white (Figure 1). The gap in age-adjusted rates between these males and the other groups has widened considerably over the past 10 years. During the same period, the age-adjusted rates for the other 3 groups have shown a very gradual increase. These relative positions and trends are approximately the same for the United States as a whole, except that age-adjusted rates in Florida for all other races but white are a little higher than those for the nation.

The cancer death rate is generally increased among the older age groups and decreased among the younger age groups. Since 1970, the death rate has decreased 26% for those under 15 years of age, and decreased 9% for those 15-24 years of age. There has been an increase of 11% in the mortality rate for those 25-34 years of age, but a decrease of 15% for those 35-44, and 1% for those 45-54. Increases have occurred among the 3 oldest age groups, 55-64 (2%), 65-74 (10%), and 75+ (11%).

Cancer of the respiratory system increased at a greater rate than cancers of other sites and was the only site showing a fairly consistent increase from 1970 through 1977. The

FIGURE 1. Age-adjusted* cancer mortality rates per 100,000 population, by race and sex, Florida, 1960-1978.



*Adjusted to U.S. 1940 standard population.

Malignant Neoplasms – Continued

age-adjusted mortality rates for cancer of the genital organs and leukemia have declined somewhat since 1970. No real trend is discernible for the age-adjusted mortality rates for cancer of the digestive system, which is lower than it was in 1970, and breast cancer, which is higher than it was in 1970.

Reported by RT Downes, BA, GA Purcell, BS, RA Gunn, MD, State Epidemiologist, the Florida Dept of Health and Rehabilitative Services, in the Monthly Vital Statistics Report, January-October, 1970; Chronic Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: The leading cause of death in Florida and the nation is heart disease. Cancer is the second leading cause. In Florida, cancer represented 22.8% of all deaths reported during 1979 and was responsible for more than twice as many deaths as stroke, the third leading cause of death.

Comparing Florida to the United States as a whole, the age-adjusted rates show that the U.S. rate for cancer mortality was 2% higher in 1970, 3% higher in 1977, and 1% higher in 1978. Florida's lower rates are probably due to an over-64 population that is relatively more affluent than the national average, a fact which might be expected to result in more-accessible medical care. In addition, Florida is probably more oriented towards the medical problems of the elderly, since the state's over-64 population is 17.5% of the total, compared with 11.0% nationally.

Incorrect Drug Dosage in the FDA Drug Bulletin

The July issue of the Food and Drug Administration (FDA) Drug Bulletin contains a serious error in the pediatric dosage of vancomycin to be used in the prophylaxis of bacterial endocarditis in patients allergic to penicillin. The incorrect dosage is 200 mg/kg intravenously as a single dose. The correct dosage is 20 mg/kg intravenously as a single dose.

Reported at the request of the FDA.

The Morbidity and Mortality Weekly Report, circulation 91,840, is published by the Center for Disease Control, Atlanta, Georgia. The data in this report are provisional, based on weekly telegraphs 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. Send reports to: Center for Disease Control, Attn: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

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