CENTER FOR DISEASE CONTROL

July 27, 1979 / Vol. 28 / No. 29

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Current Trends

Increasing the Supply of Cadaveric Kidneys for Transplantation

Cadaveric kidney transplantation is a cost-effective and desirable treatment alternative for many patients on chronic dialysis. However, the number of cadaveric kidneys available nationally for transplantation does not meet the present demand.

In 1974, the earliest date information is available, the National Dialysis Registry reported that 10,164 patients were on chronic dialysis (*1*). The Health Care Financing Administration (HCFA) reports that 36,463 end stage renal disease (ESRD) patients are currently on Medicare-reimbursed dialysis, and estimates that there will be 75,700 such patients in 1984 (*2*). Since 1972, the number of cadaveric kidneys transplanted has been reported to be at a plateau between 2,100 and 2,800 per year (*3*). Today, a 3-fold increase in the number of kidneys available for transplantation is required for the estimated 7,500* patients on transplant registries.

In 1976, in response to this need, CDC undertook a multi-centered, collaborative pilot project to increase the number of cadaveric kidneys available for transplantation. This project used epidemiologic and other public health techniques to (1) ascertain and disseminate the medical criteria used for determining suitability of donors, (2) describe and assess the potential donor supply, and (3) implement and evaluate methods for improving retrieval of kidneys. In addition, an analysis was undertaken to predict treatment costs and life expectancy for ESRD patients.

Criteria for Donor Suitability

Discussions were held with the staff of 6 U.S. transplant centers and the published literature was reviewed to compile currently used criteria for determining if a person is a suitable donor. In general, these determinants were related to age, the presence of infection or malignancy, the health of the patient before hospitalization, the renal status at the time of death, and the circumstances of death. Many differences in criteria were observed among transplant centers. For example, the age criterion for potential donorship at 1 center ranged from newborn to age 65 years, whereas at another, the acceptable age range was 5 to 50 years. Among other differences in criteria were the accepted types of infection, preterminal and terminal renal status, and the level and duration of acceptable hypertension, hypoxia, or hypotension. Because of these differing criteria, 2 case definitions for donorship evolved. Broad criteria were defined by combining the 6 centers' criteria and those reported in the literature to encompass the widest range of criteria in

*Data received from the South East Organ Procurement Foundation, representing 37 transplant centers, show 17% of the patients on dialysis are listed on transplant registries. By extrapolating this percentage to the total dialysis population, it is estimated that 7,500 dialysis patients are on transplant registries in the United States.

Cadaveric Kidneys – Continued

use. Center-specific criteria for a potential donor were also assembled. In this way the local potential donor supply was determined according to center-specific criteria, while the broad criteria were used to determine the number of potential donors theoretically available.

Assessment of the Potential Donor Supply

A review was undertaken of records of patients who had died in 67 acute-care hospitals that are served by organ banks in Georgia and in Kansas and western Missouri and that had reported 100 or more deaths during 1975. A random sampling, consisting of 10,420 or 43.1% of the 24,164 total deaths in these hospitals, was reviewed. When the broad criteria were used, a total of 851 potential donors (1,702 kidneys)† were identified for a potential donor rate of 3.5 per 100 in-hospital deaths. When the center-specific criteria were used, potential donor rates of 1.6 (for Georgia) and 1.8 (for Kansas-Missouri) per 100 deaths—or 374 and 428 potential kidneys, respectively—were found. The centers serving these 2 areas had retrieved kidneys from 5.3% (Georgia) and 34.6% (Kansas-Missouri) of these potential donors. When the broad criteria were used, only 2.5% and 17.3%, respectively, of the potential donors had actually donated kidneys.

Characteristics of the Potential Donor Population

The age distribution of potential donors identified by the broad criteria showed that 57% were between ages 5 and 55, 24% were between 56 and 65, and 20% were under 5. Race distribution among donors was similar to the general population; however, males were twice as frequently potential donors as females. Fifty-six percent of potential donors spent $\leq$24 hours in the hospital, and 75% died within 3 days of hospitalization. Seventy-one percent of the donors were in critical-care units at the time of death. Pediatric hospitals and community hospitals with >350 deaths/year had the highest potential donor rates. In 34% of the potential donors, head trauma, vehicular accidents, gunshot wounds, and other violent events were associated with deaths; central nervous system aneurysms, tumors, and hemorrhages accounted for another 23%. Deaths attributed to vascular failures were listed in 33%. Congenital anomalies, metabolic diseases, and emergency-room deaths accounted for an additional 10%.

Development of Improved Methods for Retrieving Organs

The information collected from these record reviews was used at those hospitals with the highest apparent potential for retrieval. Improved retrieval efforts included ongoing educational programs for hospital personnel to explain the need for cadaveric kidneys, the criteria for donorship, and the procedures required for identification, referral, and retrieval of cadaveric kidneys. Active surveillance of donors was initiated using key hospital staff to identify and promptly report potential donors to the kidney-retrieval organization. The participating staff varied according to hospital and individual interests. They included nephrologists, neurologists, neurosurgeons, emergency-room physicians, nursing supervisors, unit managers, chaplains, and social workers. Nurse or physician-assistant transplant coordinators helped coordinate surveillance and notification procedures in the hospitals, maintain program visibility, and assist hospital staff in donor management and kidney retrieval. Deaths in each hospital were reviewed monthly for potential donors that had not been recognized or reported, and—according to the circumstances involved—changes were made to improve the surveillance system. The steps involved in the retrieval process were similarly evaluated.

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†Calculated for convenience as 2 kidneys per donor. In fact, within a population, because of anatomic abnormalities, the usable yield of kidneys per donor approximates 1.7 kidneys.

Cadaveric Kidneys – Continued

Applying New Methods for Procuring and Retrieving Kidneys, Georgia

Since September 1976, 34 Georgia hospitals have instituted donor-surveillance procedures for a total of 900 hospital-months of effort. By center-specific criteria, 555 potential donors were identified for a rate of 2.3 per 100 in-hospital deaths.‡ From these donors, 1,110 potential kidneys would be expected, for an annual kidney retrieval rate of 110 per million population. Actual retrieval in the service area resulted in 82 donors (162 kidneys) for a rate of 16 kidneys per million population per year. A 9-fold increase in the number of kidneys retrieved occurred from September 1, 1977 to August 31, 1978, compared to the year preceding the introduction of this methodology.

Treatment Cost

Effective July 1, 1973, the federal government became responsible, under the Medicare Program, for paying for treatment of ESRD patients under age 65. During fiscal year 1978, $709 million was expended by HCFA in the care of 47,946 ESRD patients (*4*). By fiscal year 1984, it is estimated that $2.024 billion will be spent on 75,700 patients (*2*). In 1975, the General Accounting Office reported that successful kidney transplantation was more economical than either facility or home dialysis, notwithstanding the initial outlays for surgery and postoperative ancillary care (*5*). However, the long-term effect on cost and life expectancy of the choice between dialysis and transplantation is unknown, and data are still being compiled.

In a study completed at CDC (*6*), estimates were made of cumulative, 10-year direct medical costs and life expectancy associated with the 3 different methods of treatment, based on patient survival data published up to 1976. Over a hypothetical 10-year period, the direct costs of transplantation ranged from 22% to 46% less than those of home and facility dialysis, respectively. In that study, it was estimated that if 1,000 patients each year were to shift from facility dialysis to cadaver transplantation, for 10 years, there would be a $279-$330 million reduction in total costs. This would be accompanied, however, by a reduction of 7% to 17% in life expectancy. Shifting from home dialysis to transplantation was predicted to reduce total costs by $103 to $142 million, but, again, life expectancy—by 10% to 20% (*6*).

Since these cost and list expectancy analyses were made, however, survival after transplantation has significantly improved (*7*). Recent modifications in the management of patients with renal allografts have diminished the mortality rate to 5% at 1 year for patients receiving kidneys from cadaveric sources (*8*), a rate comparable to that of dialysis (*9*). The diminishing risks associated with renal transplantation have made it an increasingly attractive and cost-effective alternative to chronic dialysis for patients with ESRD.

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Editorial Note: During this pilot study, several deficiencies were identified which appear to account for procurement programs' inability to retrieve sufficient supplies of cadaveric kidneys: (1) inaccurately or incompletely defined size of the potential donor supply and of the location of the potential donors, (2) lack of systematic procedures in hospitals for timely identification and referral of all potential donors, (3) lack of trained staff with the responsibility and proficiency to implement and maintain systematic procurement-retrieval procedures, and (4) failure to employ epidemiologic analysis and evaluation

‡Calculation of the donor rate is based only upon reviews of completed death records.

Cadaveric Kidneys — Continued

techniques that would assure effective procedures to identify potential donors and retrieve their organs.

By employing epidemiologic and community-based disease control methods to the pilot study areas, these deficiencies were corrected, and an increase was shown in the number of cadaveric kidneys retrieved. Replication of these methods—including delineating criteria for donorship; accurately assessing the potential donor supply; instituting systematic methods of donor identification and referral, as well as kidney retrieval; and employing evaluation procedures—will result in an increased supply of cadaveric kidneys. CDC will continue to provide technical assistance to requesting state and local organizations to improve kidney procurement.

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4. Health Care Financing Administration: End State Renal Disease Medical Information System. Washington, Department of Health, Education, and Welfare, for quarter ending 31 Mar 1979
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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	29th WEEK ENDING		MEDIAN 1974-1978**	CUMULATIVE, FIRST 29 WEEKS		MEDIAN 1974-1978**
	July 21, 1979	July 22, 1978*		July 21, 1979	July 22, 1978*	
Aseptic meningitis	197	139	88	1,987	1,596	1,335
Brucellosis	11	3	6	76	94	113
Chickenpox	904	1,120	938	167,923	120,889	120,889
Diphtheria	–	–	2	61	47	119
Encephalitis: Primary (arthropod-borne & unspec.)	26	37	22	317	376	384
Post-infectious	4	6	5	138	124	152
Hepatitis, Viral: Type B	258	245	245	7,744	8,386	8,281
Type A	568	512	623	16,017	15,936	19,415
Type unspecified	200	137	163	5,828	4,467	4,657
Malaria	26	18	18	342	371	230
Measles (rubeola)	141	276	289	11,226	22,436	22,436
Meningococcal infections: Total	28	43	31	1,684	1,514	1,006
Civilian	28	43	30	1,676	1,493	990
Military	–	–	–	8	21	21
Mumps	297	148	346	10,839	12,560	31,309
Pertussis	24	50	44	696	1,116	721
Rubella (German measles)	96	152	152	10,171	15,879	14,274
Tetanus	3	1	2	34	41	35
Tuberculosis	597	651	651	15,718	16,024	16,933
Tularemia	10	8	5	96	62	76
Typhoid fever	5	10	9	248	273	206
Typhus fever, tick-borne (Rky. Mt. spotted)	53	51	51	470	508	418
Venereal diseases:						
Gonorrhea: Civilian	19,754	22,194	22,194	533,905	528,072	530,099
Military	522	499	499	15,017	14,182	15,135
Syphilis, primary & secondary: Civilian	450	390	391	13,209	11,342	11,418
Military	2	6	6	161	162	167
Rabies in animals	108	38	61	2,638	1,714	1,639

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1979		CUM. 1979
Anthrax	–	Poliomyelitis: Total †	21
Botulism (Calif. 1)	12	Paralytic	18
Congenital rubella syndrome †	31	Psittacosis †	67
Leprosy (Fla. 1, Tex. 1, Calif. 1)	95	Rabies in man (Tex. 1)	2
Leptospirosis (Fla. 1, Tex. 1)	20	Trichinosis	76
Plague (Colo. 1)	8	Typhus fever, flea-borne (endemic, murine)(Tex.2,Hawaii 1)	28

*Delayed reports received for calendar year 1978 are used to update last year's weekly and cumulative totals.

**Medians for gonorrhea and syphilis are based on data for 1976-1978.

†The following delayed reports will be reflected in next week's cumulative totals: Cong. rubella syndrome: Ups. NY +1.

†Delayed reports: Cong. rubella syn.: Ind. +1 (1978); Polio, non-para: Ind. +1 (1978); Psittacosis: N.J. +1 (1978), Ind. +1 (1978).

TABLE III. Cases of specified notifiable diseases, United States, weeks ending July 21, 1979, and July 22, 1978 (29th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1979	1978	1979	1979	CUM. 1979	1979	1978*	1979	1979	1978	1979	1979	CUM. 1979
UNITED STATES	197	11	904	–	61	26	37	4	258	568	200	26	342
NEW ENGLAND	10	3	178	–	–	2	3	–	7	13	9	1	21
Maine	–	–	19	–	–	–	–	–	–	3	–	–	1
N.H.	–	–	1	–	–	1	1	–	–	–	1	–	–
Vt.	–	–	9	–	–	–	–	–	–	–	–	–	–
Mass.	–	–	97	–	–	–	–	–	2	4	7	–	4
R.I.	4	–	25	–	–	–	–	–	–	1	–	–	5
Conn.	6	3	27	–	–	1	2	–	5	5	1	1	11
MID. ATLANTIC	11	1	153	–	–	–	2	–	9	11	–	2	44
Upstate N.Y.	–	1	153	–	–	–	2	–	5	4	–	1	9
N.Y. City	3	–	–	–	–	–	–	–	4	7	–	–	24
N.J.	6	–	NN	–	–	–	–	–	NA	NA	NA	–	4
Pa.	2	–	–	–	–	–	–	–	NA	NA	NA	1	7
E.N. CENTRAL	22	–	233	–	2	–	9	1	52	69	12	3	25
Ohio†	1	–	17	–	–	–	–	–	15	20	–	–	5
Ind.	5	–	17	–	1	–	6	–	9	4	4	–	1
Ill.	5	–	35	–	–	–	–	–	12	18	3	3	9
Mich.	7	–	35	–	–	–	1	1	12	19	5	–	8
Wis.	4	–	129	–	1	–	2	–	4	8	–	–	2
W.N. CENTRAL	3	1	53	–	1	3	3	1	9	38	6	–	12
Minn.†	–	–	–	–	–	–	2	1	3	9	–	–	3
Iowa	3	1	9	–	–	3	–	–	6	13	2	–	2
Mo.	–	–	2	–	1	–	1	–	–	8	3	–	3
N. Dak.	–	–	6	–	–	–	–	–	–	–	–	–	–
S. Dak.	–	–	4	–	–	–	–	–	–	3	–	–	–
Nebr.	–	–	32	–	–	–	–	–	–	1	–	–	2
Kans.†	–	–	–	–	–	–	–	–	–	4	1	–	2
S. ATLANTIC	13	2	85	–	–	1	4	2	52	90	19	1	45
Del.	1	–	5	–	–	–	–	–	–	1	–	–	1
Md.	–	–	–	–	–	–	–	–	12	12	2	–	5
D.C.	–	–	1	–	–	–	–	–	–	5	–	–	5
Va.†	5	1	7	–	–	1	–	1	10	4	4	1	16
W. Va.	–	–	33	–	–	–	–	–	3	4	–	–	2
N.C.	–	–	NN	–	–	–	3	–	8	9	2	–	3
S.C.	1	–	–	–	–	–	–	–	2	11	3	–	1
Ga.	–	1	1	–	–	–	–	–	5	21	–	–	2
Fla.	6	–	38	–	–	–	1	1	12	23	8	–	10
E.S. CENTRAL	12	1	75	–	–	2	6	–	18	25	1	–	6
Ky.	5	–	73	–	–	–	1	–	2	2	–	–	–
Tenn.	3	1	NN	–	–	–	3	–	13	11	1	–	–
Ala.†	3	–	2	–	–	1	1	–	2	7	–	–	2
Miss.	1	–	–	–	–	1	1	–	1	5	–	–	4
W.S. CENTRAL	45	3	35	–	–	8	8	–	13	84	65	2	22
Ark.	–	–	–	–	–	–	3	–	2	9	5	–	–
La.	10	1	NN	–	–	4	–	–	5	21	1	–	2
Okla.	4	–	–	–	–	–	1	–	–	4	7	–	3
Tex.	31	2	35	–	–	4	4	–	6	50	52	2	17
MOUNTAIN	34	–	52	–	1	1	–	–	15	82	26	1	10
Mont.	–	–	14	–	–	–	–	–	–	1	–	1	1
Idaho	–	–	3	–	–	–	–	–	1	10	–	–	–
Wyo.	–	–	–	–	–	–	–	–	–	–	–	–	1
Colo.	32	–	35	–	–	–	–	–	4	16	2	–	4
N. Mex.	2	–	–	–	–	1	–	–	1	9	–	–	–
Ariz.	–	–	NN	–	1	–	–	–	4	31	19	–	4
Utah	–	–	–	–	–	–	–	–	4	11	5	–	–
Nev.	–	–	–	–	–	–	–	–	1	4	–	–	–
PACIFIC	47	–	40	–	57	9	2	–	83	156	62	16	157
Wash.	4	–	24	–	55	2	–	–	3	26	4	–	7
Oreg.	–	–	1	–	–	1	–	–	12	12	1	1	6
Calif.†	39	–	–	–	2	6	2	–	66	114	57	14	142
Alaska	1	–	12	–	–	–	–	–	1	2	–	–	–
Hawaii	3	–	3	–	–	–	–	–	1	2	–	1	2
Guam†	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
P.R.	–	–	9	–	–	–	–	–	3	3	8	–	1
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.

*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: Asep. Meng.: Ala. –2; Chickenpox: Calif. +15, Guam +2; Hep.B: Ohio +1, Minn. +1, Kans. –1; Hep.A: Ohio –2, Minn. –1, Guam +2; Hep. unsp.: Va. –1, Guam +1.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending July 21, 1979, and July 22, 1978 (29th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1979	CUM. 1979	CUM. 1978*	1979	CUM. 1979	CUM. 1978*	1979	CUM. 1979	1979	1979	CUM. 1979	CUM. 1979
UNITED STATES	141	11,226	22,436	28	1,684	1,514	297	10,839	24	96	10,171	34
NEW ENGLAND	–	288	1,934	2	81	84	2	367	–	30	1,400	4
Maine	–	17	1,309	–	4	5	–	130	–	–	61	–
N.H.†	–	37	45	1	9	7	–	4	–	–	115	–
Vt.	–	116	25	–	5	2	–	6	–	3	405	–
Mass.†	–	12	230	1	24	33	–	31	–	22	486	3
R.I.	–	103	7	–	6	14	–	24	–	3	86	–
Conn.	–	3	318	–	33	23	2	172	–	2	247	1
MID. ATLANTIC	30	1,390	2,014	6	247	245	6	1,015	3	6	1,844	6
Upstate N.Y.	2	624	1,310	3	87	73	2	146	1	3	1,022	1
N.Y. City	27	673	295	–	63	60	–	103	1	2	244	3
N.J.†	–	53	69	1	59	50	–	508	–	1	315	1
Pa.†	1	40	340	2	38	62	4	258	1	–	263	1
E.N. CENTRAL	51	2,956	10,070	2	158	160	34	4,615	3	21	2,374	2
Ohio	9	243	460	–	58	49	5	1,660	–	10	128	1
Ind.†	21	194	171	2	37	29	2	256	–	2	698	–
Ill.	3	1,309	1,076	–	4	27	5	827	–	1	166	–
Mich.	17	773	6,952	–	45	44	1	870	2	3	1,157	1
Wis.†	1	437	1,411	–	14	11	21	1,002	1	5	225	–
W.N. CENTRAL	13	1,491	377	1	49	57	4	633	1	5	406	–
Minn.	10	985	36	–	10	12	2	8	–	–	35	–
Iowa	1	16	53	1	8	9	–	223	–	–	51	–
Mo.	–	413	9	–	23	23	1	187	–	–	40	–
N. Dak.	2	16	189	–	1	3	–	2	–	–	8	–
S. Dak.	–	1	–	–	2	2	–	5	–	–	3	–
Nebr.†	–	–	5	–	–	–	1	7	–	4	186	–
Kans.	–	60	85	–	5	8	–	201	1	1	83	–
S. ATLANTIC	18	1,620	4,785	3	415	372	36	461	2	6	1,149	7
Del.	–	1	5	–	3	1	4	30	–	–	4	–
Md.	–	7	43	3	38	19	31	122	–	–	24	–
D.C.	–	1	47	–	2	1	–	1	–	–	1	–
Va.†	–	247	2,786	–	61	48	–	77	–	2	193	1
W. Va.	–	50	1,009	–	8	9	1	86	1	1	99	–
N.C.	–	108	111	–	57	78	–	58	1	2	513	3
S.C.	4	149	193	–	50	23	–	2	–	–	59	–
Ga.	8	357	17	–	64	45	–	3	–	1	8	–
Fla.	6	700	574	–	132	148	–	82	–	–	248	3
E.S. CENTRAL	2	166	1,357	4	126	122	195	1,292	5	2	254	6
Ky.	–	24	115	1	24	23	191	1,067	2	–	64	–
Tenn.	–	48	914	1	38	30	2	91	2	–	82	–
Ala.	2	75	101	2	30	38	2	20	1	2	38	4
Miss.	–	19	227	–	34	31	–	114	–	–	70	2
W.S. CENTRAL	–	887	928	2	290	224	6	1,589	5	–	206	9
Ark.	–	7	14	–	27	20	–	755	–	–	6	2
La.	–	243	316	1	116	85	–	36	–	–	26	2
Okla.	–	22	12	–	22	16	–	–	2	–	22	–
Tex.	–	615	586	1	125	103	6	798	3	–	152	5
MOUNTAIN	7	290	238	–	68	33	1	247	2	4	489	–
Mont.	2	57	103	–	6	2	–	10	–	–	63	–
Idaho	–	18	1	–	5	3	–	8	–	3	199	–
Wyo.	–	36	–	–	1	–	–	–	–	–	–	–
Colo.	4	52	30	–	4	2	1	69	1	1	64	–
N. Mex.	–	31	–	–	4	7	–	12	–	–	9	–
Ariz.	1	70	45	–	31	11	–	47	1	–	124	–
Utah	–	15	44	–	8	4	–	90	–	–	29	–
Nev.	–	11	15	–	9	4	–	11	–	–	1	–
PACIFIC	20	2,138	733	8	250	217	13	620	3	22	2,049	–
Wash.	2	1,117	134	2	42	39	–	182	–	–	169	–
Oreg.	2	63	138	1	15	20	–	62	–	4	83	–
Calif.	15	877	456	5	180	150	12	285	3	17	1,777	–
Alaska	–	17	–	–	5	5	–	9	–	–	2	–
Hawaii	1	64	5	–	8	3	1	82	–	1	18	–
Guam	NA	3	25	–	1	–	NA	8	NA	NA	3	–
P.R.	1	306	204	–	2	2	7	495	–	–	33	5
V.I.	NA	4	6	–	3	1	NA	15	NA	NA	–	–
Pac. Trust Terr.	NA	6	550	–	1	2	NA	22	NA	NA	1	–

NA: Not available.

*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.

†The following delayed reports will be reflected in next week's cumulative totals: Measles: Ind. –2, Va. –1; Men. Inf.: Pa. –1; Mumps: N.J. +4, Wis. +1. Rubella: N.H. +2, Mass. –3, Nebr. –3, Va. –1.

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending July 21, 1979, and July 22, 1978 (29th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1979	CUM. 1979	CUM. 1979	1978	CUM. 1979	1979	CUM. 1979	1979	CUM. 1979	CUM. 1978*	1978	CUM. 1979	CUM. 1978*	CUM. 1979
UNITED STATES	597	15,718	96	5	248	53	470	19,754	533,905	528,072	450	13,209	11,342	2,638
NEW ENGLAND	21	421	1	–	16	1	6	482	13,515	13,532	10	253	337	30
Maine	1	32	–	–	1	–	–	37	940	1,031	–	7	7	21
N.H.	–	8	–	–	–	–	–	27	494	626	–	12	5	3
Vt.	–	20	–	–	–	–	–	7	316	314	–	1	3	–
Mass.	17	227	1	–	10	1	3	165	5,415	5,913	6	147	207	5
R.I.	–	36	–	–	2	–	–	38	1,104	966	–	9	16	–
Conn.	3	98	–	–	3	–	3	208	5,246	4,682	4	77	99	1
MID. ATLANTIC	88	2,505	1	–	39	1	19	1,998	57,382	56,673	73	2,036	1,521	21
Upstate N.Y.†	11	447	1	–	7	–	16	459	9,316	9,185	–	138	104	17
N.Y. City	21	921	–	–	17	–	1	1,002	22,539	22,220	52	1,397	1,086	–
N.J.	16	460	–	–	11	1	2	90	10,583	10,717	8	269	170	4
Pa.	40	677	–	–	4	–	–	447	14,944	14,551	13	232	161	–
E.N. CENTRAL	121	2,279	–	2	21	3	27	2,790	82,377	78,819	79	1,803	1,228	227
Ohio†	18	420	–	–	3	–	8	977	23,024	20,680	21	339	228	16
Ind.	15	298	–	–	–	–	2	NA	7,472	8,121	NA	122	67	50
Ill.	63	881	–	–	6	2	14	1,018	25,240	24,572	25	1,032	770	113
Mich.†	25	587	–	2	10	1	2	795	19,352	18,231	33	259	123	5
Wis.†	–	93	–	–	2	–	1	NA	7,289	7,215	NA	51	40	43
W.N. CENTRAL	23	523	14	–	10	4	27	759	25,462	26,616	4	173	259	526
Minn.	2	81	–	–	2	–	–	82	4,210	4,630	–	47	113	99
Iowa	2	44	–	–	2	2	13	77	3,149	3,002	–	23	25	102
Mo.	12	288	12	–	4	1	7	343	10,958	11,383	4	76	68	169
N. Dak.	–	14	–	–	–	–	–	18	438	489	–	2	2	30
S. Dak.	–	31	1	–	–	–	–	45	871	954	–	1	1	50
Nebr.	–	3	1	–	1	–	–	81	1,776	1,939	–	1	8	–
Kans.	7	62	–	–	1	1	7	113	4,060	4,219	–	23	42	76
S. ATLANTIC	113	3,609	4	1	29	35	249	5,255	129,407	128,210	95	3,189	3,013	339
Del.	2	32	–	–	–	–	2	40	2,093	1,750	–	17	6	–
Md.	9	469	–	–	7	–	18	595	15,720	16,340	6	216	235	9
D.C.	7	188	–	–	1	1	2	347	8,329	8,378	6	245	235	–
Va.†	14	413	–	1	4	5	57	484	12,322	12,056	4	282	255	8
W. Va.	5	140	–	–	2	3	8	60	1,782	1,842	–	40	8	–
N.C.†	26	558	–	–	–	15	93	685	18,463	18,382	9	267	291	3
S.C.†	4	282	1	–	3	6	45	484	12,050	12,622	9	153	156	112
Ga.†	10	540	3	–	–	4	23	975	25,022	24,520	24	864	733	183
Fla.†	36	987	–	–	12	1	1	1,585	33,626	32,320	37	1,105	1,094	24
E.S. CENTRAL	41	1,454	12	1	12	6	67	1,655	46,246	45,666	33	849	571	181
Ky.†	14	389	2	1	5	3	10	314	6,054	5,580	4	91	74	81
Tenn.	13	413	10	–	2	1	43	568	16,597	16,714	23	372	192	61
Ala.	3	323	–	–	5	2	11	391	13,850	13,235	6	162	88	38
Miss.	11	329	–	–	–	–	3	382	9,745	10,137	–	224	217	1
W.S. CENTRAL	70	1,880	38	1	32	3	70	2,588	69,195	73,024	84	2,366	1,807	1,066
Ark.	11	145	24	1	1	–	20	288	5,386	5,514	4	81	45	225
La.	11	404	4	–	3	–	1	546	12,364	12,024	33	551	378	17
Okla.	7	202	5	–	–	2	38	298	6,478	6,871	–	47	53	170
Tex.	41	1,129	5	–	28	1	11	1,456	44,967	48,615	47	1,687	1,331	654
MOUNTAIN	15	466	22	–	21	–	5	743	20,731	19,634	3	252	215	61
Mont.	1	21	5	–	–	–	2	28	966	1,188	–	6	7	5
Idaho	–	6	–	–	1	–	–	28	865	733	–	19	6	3
Wyo.†	–	3	–	–	1	–	–	12	484	440	–	5	4	–
Colo.	–	68	10	–	12	–	–	189	5,444	5,456	1	55	61	15
N. Mex.	3	87	1	–	2	–	1	116	2,694	2,859	2	49	53	25
Ariz.	6	225	–	–	3	–	–	287	5,849	5,012	–	76	45	12
Utah	3	18	5	–	–	–	–	30	1,082	1,059	–	3	11	1
Nev.	2	38	1	–	2	–	2	53	3,347	2,887	–	39	28	–
PACIFIC	105	2,581	4	–	68	–	–	3,484	89,590	85,898	69	2,288	2,391	187
Wash.	3	139	3	–	2	–	–	212	7,673	6,685	NA	118	114	–
Oreg.	2	112	–	–	1	–	–	176	5,767	5,920	5	103	82	2
Calif.	98	2,095	1	–	57	–	–	2,909	71,649	68,945	60	1,993	2,165	183
Alaska	–	52	–	–	1	–	–	96	2,901	2,749	3	16	7	2
Hawaii	2	183	–	–	7	–	–	91	1,600	1,599	1	58	23	–
Guam†														
P.R.	NA	34	–	NA	–	NA	–	NA	44	63	NA	–	–	–
V.I.	5	179	–	–	3	–	–	19	1,135	1,268	10	267	249	15
Pac. Trust Terr.	NA	3	–	NA	1	NA	–	NA	94	120	NA	6	11	–
	NA	17	–	NA	–	NA	–	NA	207	272	NA	–	–	–

NA: Not available.
*Delayed reports received for 1978 are not shown below but are used to update last year's weekly and cumulative totals.
†The following delayed reports will be reflected in next week's cumulative totals: TB: Mich. –3, N.C. –2, Fla. –1, Ky. –1; RMSF: Va. –2, S.C. –1, Ga. +14; GC: Wis. –3 civ., Wyo. +27 civ., Guam +4 civ. +4 mil.; An. rabies: Ups. NY +2, Ohio +1.

TABLE IV. Deaths in 121 U.S. cities,* week ending July 21, 1979 (29th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
NEW ENGLAND	649	419	151	37	25	38
Boston, Mass.	182	110	43	14	6	5
Bridgeport, Conn.	50	30	16	1	2	2
Cambridge, Mass.	27	22	3	2	–	1
Fall River, Mass.	30	20	5	4	1	1
Hartford, Conn.	51	30	15	1	3	1
Lowell, Mass.	22	15	5	2	–	1
Lynn, Mass.	13	11	2	–	–	1
New Bedford, Mass.	24	18	5	–	–	–
New Haven, Conn.	42	25	11	4	1	2
Providence, R.I.	70	42	18	3	6	13
Somerville, Mass.	9	6	3	–	–	–
Springfield, Mass.	44	28	10	3	2	3
Waterbury, Conn.	32	27	3	2	–	3
Worcester, Mass.	53	35	12	1	4	5
MID. ATLANTIC	2,678	1,712	633	178	83	104
Albany, N.Y.	46	31	11	2	2	2
Allentown, Pa.	17	13	4	–	–	–
Buffalo, N.Y.	119	60	40	8	7	7
Camden, N.J.	37	23	12	2	–	–
Elizabeth, N.J.	15	10	4	1	–	–
Erie, Pa.†	28	16	11	–	–	–
Jersey City, N.J.	57	38	10	8	–	2
Newark, N.J.	69	29	24	5	8	1
N.Y. City, N.Y.	1,384	905	308	94	34	44
Paterson, N.J.	13	6	4	1	1	3
Philadelphia, Pa.†	396	258	83	31	16	28
Pittsburgh, Pa.†	91	41	37	7	5	1
Reading, Pa.	41	30	6	4	–	1
Rochester, N.Y.	134	97	23	6	4	5
Schenectady, N.Y.	23	16	6	1	–	1
Scranton, Pa.†	31	25	5	–	–	3
Syracuse, N.Y.	90	55	25	2	6	–
Trenton, N.J.	37	19	14	4	–	3
Utica, N.Y.	24	18	4	2	–	2
Yonkers, N.Y.	26	22	2	–	–	1
E.N. CENTRAL	2,163	1,341	512	146	85	55
Akron, Ohio	63	38	20	2	2	–
Canton, Ohio	37	24	11	1	–	–
Chicago, Ill.	529	321	120	46	23	16
Cincinnati, Ohio	142	93	30	9	6	4
Cleveland, Ohio	161	98	39	14	4	2
Columbus, Ohio	131	73	38	13	2	7
Dayton, Ohio	101	55	34	7	2	–
Detroit, Mich.	293	181	61	28	14	3
Evansville, Ind.	45	30	9	3	2	4
Fort Wayne, Ind.	39	23	7	2	3	1
Gary, Ind.	13	6	5	2	–	1
Grand Rapids, Mich.	50	34	10	2	2	2
Indianapolis, Ind.	168	105	40	5	6	2
Madison, Wis.	24	15	4	–	4	1
Milwaukee, Wis.	124	76	34	5	5	2
Peoria, Ill.	16	13	2	–	1	1
Rockford, Ill.	36	23	4	2	3	4
South Bend, Ind.	49	33	11	–	3	3
Toledo, Ohio	86	55	28	3	–	1
Youngstown, Ohio	56	45	5	2	3	1
W.N. CENTRAL	816	502	193	44	43	23
Des Moines, Iowa	67	38	21	3	3	–
Duluth, Minn.	24	13	6	4	–	2
Kansas City, Kans.	42	27	8	3	1	2
Kansas City, Mo.	140	88	32	7	8	4
Lincoln, Nebr.	49	37	8	1	2	2
Minneapolis, Minn.	76	50	13	4	5	2
Omaha, Nebr.	89	51	25	5	3	1
St. Louis, Mo.	169	97	40	9	14	3
St. Paul, Minn.	77	49	19	3	3	1
Wichita, Kans.	83	52	21	5	4	6

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)					P & I** TOTAL
	ALL AGES	>65	45-64	25-44	<1	
S. ATLANTIC	1,160	642	310	100	61	37
Atlanta, Ga.	136	73	36	20	1	3
Baltimore, Md.	304	168	77	32	14	5
Charlotte, N.C.	64	25	19	10	4	1
Jacksonville, Fla.	106	61	29	7	3	–
Miami, Fla.	92	53	27	4	4	4
Norfolk, Va.	53	29	20	3	1	1
Richmond, Va.	72	39	22	3	3	4
Savannah, Ga.	30	22	6	1	–	5
St. Petersburg, Fla.	77	59	11	3	3	1
Tampa, Fla.	75	49	20	–	6	9
Washington, D.C.	94	38	30	14	10	3
Wilmington, Del.	57	26	13	3	12	1
E.S. CENTRAL	711	403	184	54	26	16
Birmingham, Ala.	125	74	31	9	4	–
Chattanooga, Tenn.	60	39	14	3	–	1
Knoxville, Tenn.	53	36	12	2	–	–
Louisville, Ky.	87	42	28	6	6	6
Memphis, Tenn.	169	95	39	14	8	–
Mobile, Ala.	51	27	10	8	–	1
Montgomery, Ala.	45	28	13	3	1	2
Nashville, Tenn.	121	62	37	9	7	6
W.S. CENTRAL	1,282	683	338	111	64	29
Austin, Tex.	58	34	16	3	2	2
Baton Rouge, La.	51	33	13	2	2	1
Corpus Christi, Tex.	44	28	12	4	–	–
Dallas, Tex.	182	100	42	20	10	2
El Paso, Tex.	49	31	6	3	4	–
Fort Worth, Tex.	92	51	25	7	4	3
Houston, Tex.	347	159	95	42	13	5
Little Rock, Ark.	59	31	15	2	7	4
New Orleans, La.	108	47	37	15	4	–
San Antonio, Tex.	169	96	48	4	11	5
Shreveport, La.	51	32	9	2	4	5
Tulsa, Okla.	72	41	20	7	3	2
MOUNTAIN	509	296	122	41	20	17
Albuquerque, N. Mex	51	34	11	4	–	1
Colo. Springs, Colo.	27	21	1	2	1	3
Denver, Colo.	117	65	38	7	1	3
Las Vegas, Nev.	73	46	14	5	2	4
Ogden, Utah	16	12	1	–	–	3
Phoenix, Ariz.	100	55	26	8	4	1
Pueblo, Colo.	28	22	4	1	1	1
Salt Lake City, Utah	46	18	10	8	9	1
Tucson, Ariz.	51	23	17	6	2	–
PACIFIC	1,615	946	423	123	76	56
Berkeley, Calif.	20	13	6	–	1	–
Fresno, Calif.	68	33	21	5	7	6
Glendale, Calif.	23	21	2	–	–	1
Honolulu, Hawaii	52	23	19	4	2	2
Long Beach, Calif.	105	61	35	6	1	4
Los Angeles, Calif.	443	250	102	44	28	9
Oakland, Calif.	72	38	23	5	4	4
Pasadena, Calif.	32	28	2	–	1	3
Portland, Oreg.	111	64	27	10	7	2
Sacramento, Calif.	66	41	17	5	2	6
San Diego, Calif.	89	51	25	7	5	–
San Francisco, Calif.	140	78	41	12	6	1
San Jose, Calif.	164	99	45	12	4	6
Seattle, Wash.	133	85	32	9	3	5
Spokane, Wash.	55	34	17	–	4	4
Tacoma, Wash.	42	27	9	4	1	3
TOTAL	11,583	6,944	2,866	834	483	375

*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.

Cadaveric Kidneys – Continued

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Epidemiologic Notes and Reports

Follow-Up on Poliomyelitis – United States, Canada, Netherlands

No new cases of epidemic-associated poliomyelitis have been reported to CDC during the past month. Two cases previously reported as suspected have now been confirmed, bringing the 1979 total of confirmed cases in the United States and Canada to 17. Fourteen of these cases (all paralytic) occurred in unvaccinated Amish persons; 2 (both nonparalytic) were in unvaccinated non-Amish persons, who lived in or near an Amish area; and 1 case (paralytic) occurred in an Amish infant, who received oral poliovirus vaccine 5 days before becoming ill. In the latter case, the patient had laboratory evidence of recent infection with both type 1 and type 2 poliovirus; the other 16 cases were clearly due to a wild (type 1) poliovirus. These 17 cases have been reported from 4 different states (Pennsylvania, 8 cases; Iowa, 3; Wisconsin, 3; Missouri, 1) and Canada (2). Immunization campaigns for the Amish are continuing; at least half of the nation's Amish have now received 1 or more doses of oral poliovirus vaccine.

Antigenic marker tests, consisting of (a) the van Wezel Method, using cross-absorbed rabbit antisera against vaccine and nonvaccine (wild) poliovirus strains and (b) the modified Wecker method, using guinea pig antisera against vaccine strains, have been performed on the poliovirus type 1 strains isolated from 5 U.S. cases and from a household contact of a sixth case. All isolates were nonvaccine-like in their antigenic characteristics.

The type 1 poliovirus isolated from the first 1979 poliomyelitis patient (an Amish female from Pennsylvania) shows a resemblance to a wild type 1 strain isolated in Kuwait in 1977 (*1*). Type 1 strains from cases occurring in the 1978 epidemic in the Netherlands and Canada also showed a resemblance to the Kuwait poliovirus strain (*1*).

Epidemiologic information also links last year's poliomyelitis epidemic in the Netherlands and Canada with this year's outbreak in the United States and Canada. During the 1978 outbreak, members of the affected religious group traveled from the Netherlands to Canada, where cases subsequently appeared. An Amish family from an Ontario town 15 miles from the affected area moved in late summer 1978 to the Pennsylvania town where the first U.S. Amish case subsequently occurred, in January 1979. There were also other, less well-defined contacts between Amish persons in Ontario and Pennsylvania.

Reported by Dr. A. van Wezel and Dr. van Zermarel, Rijks Institute voor der Volksgezondheit, the Netherlands; S Acres, MD, Dept of National Health and Welfare, Ottawa; State Epidemiologists from Iowa, Missouri, Pennsylvania, and Wisconsin; Virology Div, Bur of Laboratories, and Viral Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Both laboratory and epidemiologic information have suggested a link between the poliovirus type 1 strain from the 1979 outbreak in the United States and Canada with the type 1 strain responsible for last year's outbreak in the Netherlands and Canada. The onset of illness in the last case occurring in Canada in 1978 was in August, more than 4 months before the onset of illness in the first 1979 case, which occurred in Pennsylvania. Nearly 3 months elapsed before the next 1979 cases occurred, and these

Poliomyelitis – Continued

were also in Pennsylvania. These data suggest that the wild poliovirus circulated inapparently through several generations without causing paralytic disease. The absence of new cases of paralytic poliomyelitis reflects, in part, the success of the multi-state immunization campaigns for the Amish; the possibility of new cases remains, because the wild type 1 poliovirus may continue to be excreted by some infected persons throughout the summer months. However, the risk of additional cases is diminishing as more of the susceptible Amish persons receive vaccine.

Reference

1. van Wezel A: Personal communication.

Survey of Intestinal Parasites – Illinois

In February 1979, the Illinois Department of Public Health received several requests to screen a group of Laotian immigrants living in Kankakee and Will counties, Illinois, for intestinal parasites. Since 1977, 165 Meo Laotians have moved into these 2 counties.

In March 1979, all 165 persons submitted stool specimens to the Illinois Department of Public Health Laboratory in Chicago to be examined for ova and parasites. Stools were preserved in formalin and, in many cases, polyvinyl alcohol (PVA). All stools were examined by the formalin-ether concentration method, and, where possible, PVA smears were prepared and stained. When ova or parasites were not observed on first examination, a second stool specimen was requested and, in most instances, received.

The results of the laboratory examinations are summarized in Table 1. Hookworm was the most frequently detected parasite: its higher occurrence in females—52/72 (72%)—than in males—54/93 (58%)—accounted for the overall increased incidence of intestinal parasitism among females. Persons 4 years of age or older were significantly more likely to be infected with hookworm than children less than 4 ($p<.001$). Attack rates for giardiasis were significantly greater in the 4- to 9-year-olds, when compared with all other age groups ($p>.01$). Persons 4-14 years of age were more likely to have both ascariasis and trichiriasis when compared with all others. There were no other statistically significant differences in attack rates by age.

All infected persons have been appropriately treated.

Reported by D Safran, RN, H Wheeler, RN, Kankakee County Nurses Office; D Fazio, BS, Will County Health Dept; MK Nickels, BS, KG Hashimoto, BS, RJ Martin, DVM, BJ Francis, MD, State Epidemiologist, Illinois Dept of Public Health; Field Services Div, Parasitic Diseases Div, Bur of Epidemiology, CDC.

TABLE 1. Intestinal parasitism in Laotian immigrants, by age group, February 1979

Age group	Number tested	Helminths								Protozoans			
		Hookworm		*Trichuris*		*Ascaris*		Other		*E. histolytica*		*G. lamblia*	
<1	4	0*		0		0		0		0		0	(.00)
1-3	17	0		0		1	(.9)	0		0		2	(18)
4-9	38	23	(61)	5	(13)	6	(16)	5	(13)	1	(3)	12	(32)
10-14	26	19	(73)	7	(24)	4	(15)	4	(15)	2	(8)	7	(27)
15-19	19	16	(84)	1	(5)	1	(5)	1	(5)	0		2	(11)
20-24	13	13	(100)	2	(15)	0		0		0		1	(14)
25-29	8	4	(50)	1	(12)	0		0		0		1	(20)
30-34	12	11	(92)	1	(8)	0		0		0		1	(17)
35-39	5	2	(40)	1	(20)	0		0		0		2	(40)
40-44	7	5	(71)	0		1	(14)	0		0		0	(0)
45-64	16	13	(81)	2	(12)	1	(6)	1	(6)	0		1	(6)
Total	165	106	(64)*	20	(12)	14	(9)	11	(7)	3	(2)	29	(18)

*Number of persons infected (percent infected).

Intestinal Parasites — Continued

Editorial Note: The high infection rates with hookworm, *Trichuris*, and *Ascaris* reported in this study do not pose a significant public health hazard because eggs of these parasites require a 2-week incubation period in the soil before becoming infective, and transmission is interrupted by adequate sewage disposal. However, early diagnosis and treatment are encouraged for the patient's benefit.

From a public health point of view, the protozoan infections pose a greater potential heaith risk than the other parasitic infections because the cyst stages of these parasites are infectious at the moment feces are passed. The rate of *Entamoeba histolytica* infection reported in this study is not greater than the expected U.S. level (*1*). This group of immigrants did have a high rate of *Giardia lamblia* infection, however—higher than previous groups that have been examined. Thirty percent (19/64) of children 4-14 years of age were infected with this parasite. By comparison, less than 4% of the U.S. population have a *Giardia* infection (*1*). Although the risk of *Giardia* transmission is small among persons who practice good personal hygiene, the high incidence of giardiasis among young children, especially preschoolers, may pose a public health problem where children congregate, if hygienic practices are deficient (*2*).

CDC does not consider it necessary to routinely screen all Indochinese refugees for intestinal parasites. However, testing for ova and parasites is indicated as part of a complete examination of individual refugees requiring medical care.

References

1. CDC: Intestinal Parasite Surveillance Annual Summary 1977. Issued September 1978
2. Black RE, Dykes AC, Sinclair SP, Wells IG: Giardiasis in day-care centers: Evidence of person-to-person transmission. Pediatrics 60:486-491, 1977

Influenza — United States, Worldwide

United States: During April and May, approximately 40 influenza B viruses were isolated in Illinois, Michigan, Minnesota, Washington, and Wisconsin; in June, 2 additional isolates were reported from Illinois and Washington. Two outbreaks caused by influenza B virus occurred among elderly populations. In an urban Washington nursing home, an increased incidence of respiratory disease was noted from mid-March to May 1; the attack rate among residents was 24%, varying from 2.4% to 46% in the residents, depending upon the unit in which they lived. Influenza B virus was isolated from 1 patient, and ≥4-fold rises in antibody titer to influenza B were detected in 4 patients who were tested.

In Minnesota, 127 (36.2%) of 351 elderly residents in a nursing home facility developed febrile respiratory illness. Influenza B virus was isolated from 11 of 19 throat culture

The Morbidity and Mortality Weekly Report, circulation 87,000, 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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Influenza – Continued

specimens. Eighteen of 19 ill residents developed ⩾4-fold antibody titer rises to influenza B, compared to 3 of 18 non-ill residents (p=0.00001). Illness also occurred in employees of the facility at the same time. Isolates of influenza B from Washington and Minnesota were most similar to B/Hong Kong/5/72. Further analysis of specimens and data from both outbreaks is in progress.

In Seattle an H3N2 strain of influenza A was isolated in early July from a university student who reported a mild respiratory illness shortly after returning from a visit to Taiwan.

Worldwide: In addition to previous reports (*1*), influenza A (H1N1) viruses were isolated for the first time this year in Peru (February), and in Australia, Hungary, and India (March). Further isolations of influenza A (H3N2) strains were also reported for the first time this year in Hong Kong (March), China and Singapore (April), and Jamaica (May). Influenza B viruses were isolated in China (January); Austria, Hong Kong, and India (March); Australia and Singapore (April); and Malaysia and Indonesia (May). In Australia, outbreaks were caused by the influenza A (H1N1) strains, the majority of which resembled A/Brazil/11/78, although some A/USSR/90/77-like strains also were identified. The Asian countries, however, have experienced outbreaks of influenza B/Hong Kong/5/72-like virus. Approximately equal numbers of influenza A (H3N2) and influenza B viruses were isolated in Hong Kong during the first 2 weeks of May, but elsewhere only sporadic cases of influenza A (H3N2) have been detected. The H3N2 virus isolates have been reported to resemble A/Texas/1/77.

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Editorial Note: The U.S. reports of influenza B are consistent with a general, worldwide increase in influenza B this year. In Europe and several Asian countries, this virus has caused substantial morbidity in regional outbreaks and epidemics, including among older persons.

Reference

1. MMWR 28:70, 1979

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE / CENTER FOR DISEASE CONTROL
ATLANTA, GEORGIA 30333 **OFFICIAL BUSINESS**

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HEW Publication No. (CDC) 79-8017