CENTERS FOR DISEASE CONTROL

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MORBIDITY AND MORTALITY WEEKLY REPORT

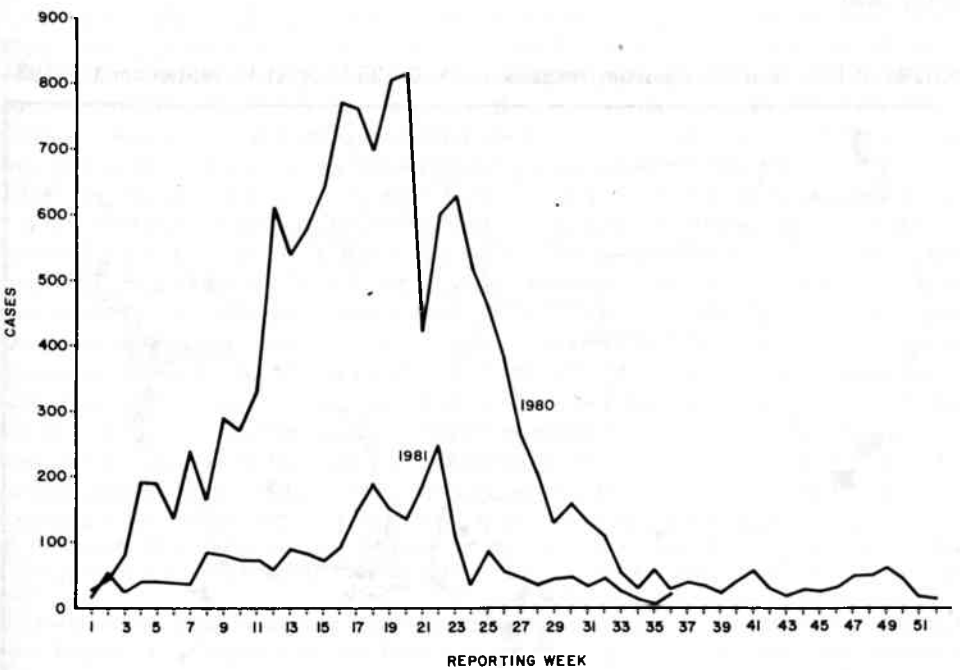
Surveillance Summary

Measles, United States — Weeks 33-36, 1981

In the first 36 weeks of 1981 (Figure 1), there were 2,649 reported cases of measles—a 79% drop from the 12,825 cases reported in the same period in 1980. Reported measles cases reached a record low in the United States during the 4-week period from August 16 to September 12, 1981 (reporting weeks 33-36), when only 63 cases were reported—the lowest number for any 4-week period to date and an average of less than 16 cases per week. During the 35th reporting week (August 30 to September 5), there were only 5 measles cases reported—an all-time low for any week in any year.

During this 4-week period, only 1% (34) of the nation's 3,144 counties reported measles (Figure 2). Since the 63 reported cases occurred in 34 counties, there was an average of <2 cases per county during this period.

FIGURE 1. Reported measles cases, by reporting week, United States, 1980-1981*



*1981 data for weeks 1-36 (Jan. 4-Sept. 12, 1981).

Measles — Continued

Reported by Surveillance and Assessment Br, Immunization Div, Center for Prevention Svcs, CDC.

Editorial Note: Measles transmission is currently at the lowest level since 1925, when communicable disease reporting on a weekly basis was instituted in all states. The absence of reported measles cases in a given area for a prolonged period suggests that measles transmission has ceased or faded out (*1,2*). Fade outs are defined as the absence of reported measles cases for a period longer than the incubation period of measles. The CDC criterion for a fade out of measles transmission is the absence of reported cases from a reporting area for 4 or more consecutive weeks (*3*). In the 4-week period discussed here, 99% of the nation's counties had fade outs, suggesting that measles transmission has been interrupted in all these counties.

The current record-low incidence results primarily from 2 factors: implementation of the measles elimination strategy (*4*) and the characteristic seasonal reduction in transmission that occurs in late summer and early fall (*5*).

The present marked reduction in cases should be exploited by the further interruption of the few remaining chains of transmission (*5*). The measles elimination strategy should be implemented aggressively in all areas. This is especially important in areas of current transmission (Figure 2) and areas that have recently had sustained transmission (*6*). Vigorous intervention should include achieving and maintaining documented immunity in a high percentage of school children. School laws should be fully enforced (*7,8*), and students should be excluded from school if they lack evidence of adequate immunity to measles (i.e., a record of physician-diagnosed measles or vaccination with live measles vaccine on or after the first birthday) (*9*). Active and passive surveillance systems should be intensified. Reported cases should be investigated rapidly and aggressive outbreak control used.

FIGURE 2. U.S. counties reporting measles, weeks 33-36 (August 16-September 12), 1981

Measles — Continued

References

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Epidemiologic Notes and Reports

Loa loa Among American Naturalists

In March 1981, a 32-year-old male naturalist in Pittsburgh, who collects mammals for study, was found to have eosinophilia (WBC 9,900 with 31% eosinophils on differential count) while he was being monitored for an unrelated medical problem. Tests for ova and parasites in stool specimens were negative. Serum screening for parasites done at CDC showed a filarial indirect-hemagglutination (IHA) titer of 1,024 and a bentonite-flocculation titer of 40. A travel history showed that the man had spent 3 months in Cameroon in 1978. He also gave a history of intermittent aching and swelling of the arm for at least a year. Tests of peripheral blood, collected repeatedly at midday and midnight and tested for microfilariae using Knott's technique for concentration were negative. Skin snips were also negative for parasites. However, because of the clinical history the patient was treated with diethylcarbamazine and on day 11 of treatment he removed a worm, identified as *Loa loa*, from his leg. He completed treatment without difficulty and has improved. When his travel companions and fellow field workers who had also been in Cameroon were contacted, 2 of 4 indicated that they had developed swelling of their extremities 6 months after returning home to other parts of the United States. The 2 coworkers stated that they had had microfilariae of *Loa loa* independently identified on blood smears. Each had also been given diethylcarbamazine without side effects.

Reported by FL Ruben, MD, G Nathan, MD, H Mendelow, MD, Montefiore Hospital, University of Pittsburgh; S Williams, Carnegie Museum of Natural History; Allegheny County Health Dept; Field Services Div, Epidemiology Program Office, Parasitic Diseases Div, Center for Infectious Diseases, CDC.

Editorial Note: Loiasis is a chronic infection among residents of west and central African rain forests. It is caused by the filarid nematode *Loa loa*. Adult parasites, measuring 3-7 cm, migrate through the subcutaneous tissue of the human host, often beneath the

Loa loa – Continued

bulbar conjunctiva. As in the case cited above, a frequent presentation of this disease may be the occurrence of transient subcutaneous tumors, so-called fugitive or Calabar swellings. The exact source of the swellings remains obscure; current hypotheses favor an immune mechanism (1).

Diagnosis of loiasis is made on the basis of clinical findings and demonstration of microfilariae in the peripheral blood. A marked eosinophilia usually accompanies the infection. Serologic testing is not suggested as a primary diagnostic method. Pure *Loa loa* antigen is not available, and the 1,024 IHA titer in this case could be attributed to the lack of specificity of filarial serologic testing in general.

The parasite is transmitted to humans in its larval form by the bite of certain tabanid or blood-feeding deer flies belonging to the genus *Chrysops*. Although it has been shown experimentally that at least 1 species of *Chrysops* on the North American continent is capable of maintaining this parasite *(2)*, transmission in the United States has never been reported.

References

1. Price DL, Hopps HC. Loiasis. In: Marcial-Rojas, RA, ed. Pathology of protozoal and helminthic diseases, with clinical correlation. Baltimore: Williams & Wilkins, 1971.
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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	38th WEEK ENDING		MEDIAN	CUMULATIVE, FIRST 38 WEEKS		
	September 26 1981	September 20 1980	1976-1980	September 26 1981	September 20 1980	MEDIAN 1976-1980
Aseptic meningitis	471	321	302	6,180	4,859	4,122
Brucellosis	5	4	4	113	138	138
Chickenpox	332	407	310	168,187	158,344	158,344
Diphtheria	–	–	–	3	2	60
Encephalitis: Primary (arthropod-borne & unspec.)	43	31	52	932	745	745
Post-infectious	1	4	4	62	162	167
Hepatitis, Viral: Type B	402	476	306	14,794	12,822	10,946
Type A	530	620	620	18,210	20,294	21,498
Type unspecified	239	255	179	7,947	8,275	6,426
Malaria	29	31	14	1,027	1,486	524
Measles (rubeola)	62	31	75	2,645	12,895	24,019
Meningococcal infections: Total	39	31	28	2,658	2,021	1,845
Civilian	38	30	28	2,647	2,006	1,822
Military	1	1	–	11	15	17
Mumps	41	71	100	3,209	7,184	13,525
Pertussis	36	49	49	884	1,214	1,161
Rubella (German measles)	21	29	47	1,770	3,293	10,737
Tetanus	2	3	1	43	65	54
Tuberculosis	545	547	631	19,728	19,647	21,318
Tularemia	10	11	3	191	163	121
Typhoid fever	7	25	13	355	357	356
Typhus fever, tick-borne (Rky. Mt. spotted)	31	25	24	1,066	992	897
Venereal diseases:						
Gonorrhea: Civilian	21,381	23,893	23,723	730,037	721,702	722,734
Military	399	411	581	20,837	20,066	20,066
Syphilis, primary & secondary: Civilian	691	577	538	22,132	19,296	17,660
Military	9	8	9	272	235	231
Rabies in animals	141	127	87	5,409	4,897	2,326

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1981		CUM. 1981
Anthrax	–	Poliomyelitis: Total	3
Botulism (Calif. 8)	52	Paralytic	3
Cholera	3	Psittacosis (Wash. 1)	81
Congenital rubella syndrome	9	Rabies in man	1
Leprosy (Hawaii 3, Calif. 4)	185	Trichinosis (N.J. 1)	110
Leptospirosis (Mo. 1, Fla. 1, Calif. 1)	33	Typhus fever, flea-borne (endemic, murine)	36
Plague	9		

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

TABLE III. Cases of specified notifiable diseases, United States, weeks ending September 26, 1981 and September 20, 1980 (38th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKEN POX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS (VIRAL), BY TYPE			MALARIA	
						Primary		Post-infectious	B	A	Unspecified		
	1981	1981	1981	1981	CUM. 1981	1981	1980	1981	1981	1981	1981	1981	CUM. 1981
UNITED STATES	471	5	332	-	3	43	31	1	402	530	239	29	1,027
NEW ENGLAND	11	-	33	-	-	2	2	-	14	17	20	3	55
Maine	-	-	10	-	-	-	-	-	-	3	-	-	1
N.H.	-	-	-	-	-	-	-	-	-	-	-	-	3
Vt.	-	-	-	-	-	-	-	-	-	1	-	-	4
Mass.	4	-	11	-	-	1	2	-	2	3	19	-	31
R.I.	2	-	4	-	-	-	-	-	-	2	-	1	3
Conn.	5	-	8	-	-	1	-	-	12	8	1	2	13
MID. ATLANTIC	52	1	8	-	-	4	4	-	50	59	25	4	121
Upstate N.Y.	19	-	3	-	-	-	-	-	7	12	6	1	32
N.Y. City	12	-	5	-	-	-	1	-	22	11	2	2	40
N.J.	11	1	NN	-	-	-	1	-	21	36	17	1	36
Pa.	10	-	-	-	-	4	2	-	NA	NA	NA	-	13
E.N. CENTRAL	174	-	88	-	-	18	8	-	53	96	24	-	47
Ohio	134	-	7	-	-	16	-	-	14	17	9	-	7
Ind.	23	-	9	-	-	-	5	-	10	33	10	-	6
Ill.	-	-	9	-	-	-	2	-	7	32	3	-	15
Mich.	17	-	8	-	-	-	1	-	17	11	2	-	19
Wis.	-	-	55	-	-	2	-	-	5	3	-	-	-
W.N. CENTRAL	11	1	39	-	-	3	5	-	10	15	6	1	29
Minn.	-	1	-	-	-	-	2	-	4	3	-	-	10
Iowa	2	-	20	-	-	1	3	-	2	2	-	-	4
Mo.	6	-	2	-	-	1	-	-	1	4	4	-	3
N. Dak.	-	-	2	-	-	-	-	-	-	-	-	-	1
S. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	1
Nebr.	-	-	2	-	-	-	-	-	2	2	1	-	2
Kans.	3	-	13	-	-	1	-	-	1	4	1	1	8
S. ATLANTIC	58	1	95	-	1	10	3	-	92	59	26	3	124
Del.	-	-	2	-	-	-	-	-	4	1	-	-	1
Md.	10	-	-	-	-	1	1	-	7	3	5	-	28
D.C.	-	-	-	-	-	-	-	-	1	-	2	-	-
Va.	8	-	2	-	-	-	-	-	30	8	6	1	24
W. Va.	3	-	7	-	-	5	-	-	-	1	-	1	4
N.C.	14	1	NN	-	-	2	-	-	13	5	2	1	9
S.C.	-	-	-	-	-	-	-	-	5	7	1	-	2
Ga.	9	-	3	-	-	-	-	-	9	10	-	-	8
Fla.	14	-	81	-	1	2	2	-	23	24	10	-	39
E.S. CENTRAL	73	1	3	-	-	1	-	1	35	16	5	-	10
Ky.	33	-	2	-	-	-	-	-	8	7	1	-	-
Tenn.	8	-	NN	-	-	-	-	-	8	3	1	-	-
Ala.	30	-	1	-	-	1	-	1	12	4	3	-	9
Miss.	2	1	-	-	-	-	-	-	7	2	-	-	1
W.S. CENTRAL	10	1	21	-	-	-	1	-	20	70	47	1	80
Ark.	1	-	-	-	-	-	-	-	1	1	1	-	5
La.	6	-	NN	-	-	-	-	-	9	27	8	-	5
Okla.	-	-	-	-	-	-	-	-	1	5	5	-	6
Tex.	3	1	21	-	-	-	1	-	9	37	33	1	64
MOUNTAIN	16	-	7	-	1	2	2	-	15	43	18	1	31
Mont.	2	-	-	-	1	1	-	-	1	1	-	-	1
Idaho	8	-	-	-	-	-	-	-	-	15	-	-	2
Wyo.	-	-	-	-	-	-	-	-	-	-	-	-	-
Colo.	3	-	-	-	-	-	-	-	2	7	3	1	15
N. Mex.	-	-	-	-	-	-	-	-	2	5	-	-	2
Ariz.	-	-	NN	-	-	-	1	-	2	9	9	-	4
Utah	3	-	-	-	-	1	1	-	3	4	4	-	4
Nev.	-	-	7	-	-	-	-	-	5	2	2	-	3
PACIFIC	66	-	38	-	1	3	6	-	113	155	68	16	530
Wash.	7	-	28	-	-	-	1	-	4	14	-	-	24
Oreg.	1	-	-	-	-	-	-	-	9	14	1	-	15
Calif.	49	-	9	-	-	3	5	-	98	121	67	16	482
Alaska	2	-	-	-	1	-	-	-	1	3	-	-	1
Hawaii	7	-	1	-	-	-	-	-	1	3	-	-	8
Guam	NA	NA	NA	NA	-	-	-	-	NA	NA	NA	NA	2
P.R.	-	-	9	-	-	-	-	-	3	6	1	-	11
V.I.	-	-	-	-	-	-	-	-	-	-	-	-	4
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 September 26, 1981 and September 20, 1980 (38th week)

REPORTING AREA	MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	1981	1981	CUM. 1981	CUM. 1981
UNITED STATES	62	2,645	12,895	39	2,658	2,021	41	3,209	36	21	1,770	43
NEW ENGLAND	-	80	674	1	176	112	3	158	1	1	115	2
Maine	-	5	33	1	21	5	-	29	-	-	33	-
N.H.	-	7	331	-	17	7	-	19	-	1	46	-
Vt.	-	3	226	-	6	13	-	6	-	-	-	-
Mass.	-	57	58	-	56	38	3	43	1	-	24	-
R.I.	-	-	2	-	16	7	-	21	-	-	-	-
Conn.	-	8	24	-	60	42	-	40	-	-	12	2
MID. ATLANTIC	4	812	3,782	2	370	353	4	556	17	2	211	3
Upstate N.Y.	2	214	693	1	122	112	-	108	13	1	102	1
N.Y. City	2	78	1,183	-	61	87	3	77	1	1	52	2
N.J.	-	56	833	1	83	76	-	83	3	-	46	-
Pa.	-	464	1,073	-	104	78	1	288	-	-	11	-
E.N. CENTRAL	-	79	2,413	2	314	253	16	899	5	5	361	7
Ohio	-	16	377	-	117	73	2	142	1	-	3	1
Ind.	-	8	91	-	43	37	6	106	-	2	129	2
Ill.	-	23	336	1	76	73	1	174	3	3	86	-
Mich.	-	30	235	1	73	57	-	299	-	-	34	3
Wis.	-	2	1,374	-	5	13	7	168	1	-	109	1
W.N. CENTRAL	-	6	1,333	5	119	78	1	173	1	-	75	3
Minn.	-	2	1,099	1	41	18	-	8	-	-	6	2
Iowa	-	1	20	1	20	9	-	46	1	-	4	-
Mo.	-	1	64	2	37	36	-	16	-	-	2	1
N. Dak.	-	-	-	-	2	1	-	-	-	-	-	-
S. Dak.	-	-	-	-	5	5	-	1	-	-	-	-
Nebr.	-	1	83	-	-	-	-	3	-	-	1	-
Kans.	-	1	67	1	14	9	1	99	-	-	62	-
S. ATLANTIC	41	408	1,896	13	615	489	5	463	1	-	139	8
Del.	-	-	3	-	4	2	-	10	1	-	1	-
Md.	-	5	82	-	42	45	-	83	-	-	1	-
D.C.	-	1	-	-	3	1	-	3	-	-	-	-
Va.	-	7	301	-	77	49	2	122	-	-	11	-
W. Va.	-	9	9	-	23	16	1	80	-	-	22	-
N.C.	-	3	129	6	89	91	-	15	-	-	5	2
S.C.	-	2	159	1	77	55	-	12	-	-	8	2
Ga.	-	112	811	3	102	83	-	35	-	-	36	1
Fla.	41	269	402	3	198	147	2	103	-	-	55	3
E.S. CENTRAL	-	4	330	4	190	177	-	77	-	-	37	2
Ky.	-	-	55	2	55	53	-	38	-	-	21	-
Tenn.	-	2	169	1	52	47	-	20	-	-	15	-
Ala.	-	2	22	1	55	50	-	16	-	-	1	2
Miss.	-	-	84	-	24	27	-	3	-	-	-	-
W.S. CENTRAL	11	858	943	4	427	209	-	192	1	3	150	9
Ark.	10	11	16	1	23	17	-	5	-	-	2	1
La.	-	4	11	2	105	75	-	5	-	-	9	2
Okla.	-	6	774	-	35	18	-	-	-	1	1	1
Tex.	1	837	142	1	264	99	-	182	1	2	138	5
MOUNTAIN	-	34	468	1	108	78	3	116	-	1	85	2
Mont.	-	-	2	-	7	3	-	10	-	-	4	-
Idaho	-	1	-	-	4	4	-	4	-	-	3	-
Wyo.	-	-	-	-	1	3	-	1	-	-	10	-
Colo.	-	10	24	1	38	20	3	45	-	-	27	-
N. Mex.	-	8	11	-	7	8	-	-	-	-	5	-
Ariz.	-	5	376	-	19	13	-	27	-	-	20	1
Utah	-	-	47	-	5	5	-	16	-	-	5	1
Nev.	-	10	8	-	27	22	-	13	-	1	11	-
PACIFIC	6	364	1,056	7	339	272	9	585	10	9	597	7
Wash.	-	3	177	1	61	48	2	141	-	-	89	-
Oreg.	1	5	-	-	51	46	-	62	-	-	51	-
Calif.	5	349	867	6	215	170	7	351	10	9	445	7
Alaska	-	-	6	-	8	8	-	10	-	-	1	-
Hawaii	-	7	6	-	4	-	-	21	-	-	11	-
Guam	NA	5	6	-	-	1	NA	6	NA	NA	1	-
P.R.	5	275	143	-	10	9	6	123	-	1	4	5
V.I.	-	25	6	-	1	1	-	5	-	-	1	-
Pac. Trust Terr.	NA	1	9	-	-	-	NA	10	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 September 26, 1981 and September 20, 1980 (38th week)

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		VENEREAL DISEASES (Civilian)						RABIES (in Animals)
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1981	CUM. 1981	CUM. 1981	1981	CUM. 1981	1981	CUM. 1981	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	CUM. 1980	CUM. 1981
UNITED STATES	545	19,728	191	7	355	31	1,066	21,381	730,037	721,702	691	22,132	19,296	5,409
NEW ENGLAND	17	569	2	1	15	-	9	495	18,189	18,147	17	440	376	34
Maine	2	38	-	-	1	-	-	30	938	1,036	1	5	5	13
N.H.	-	17	-	-	-	-	-	14	648	653	-	11	3	6
Vt.	1	19	1	-	-	-	-	15	303	423	-	13	5	-
Mass.	12	326	-	-	8	-	5	182	7,569	7,588	7	282	220	10
R.I.	1	42	-	-	-	-	2	33	1,056	1,170	-	24	24	-
Conn.	1	127	1	1	6	-	2	221	7,675	7,277	9	105	119	5
MID. ATLANTIC	96	3,096	10	4	60	-	38	3,094	87,905	78,239	83	3,226	2,709	85
Upstate N.Y.	9	549	10	-	11	-	14	663	15,018	14,285	-	296	234	60
N.Y. City	23	1,176	-	3	33	-	3	1,700	36,442	30,217	59	1,920	1,759	-
N.J.	37	672	-	1	11	-	9	133	16,444	14,335	14	452	325	19
Pa.	27	699	-	-	5	-	12	598	20,001	19,402	10	558	391	6
E.N. CENTRAL	73	2,609	1	1	28	-	45	2,877	107,593	111,892	39	1,558	1,792	726
Ohio	6	489	-	1	8	-	36	1,442	34,592	29,311	-	222	277	58
Ind.	11	303	-	-	-	-	2	190	9,452	11,333	7	205	143	81
Ill.	46	1,038	-	-	11	-	6	381	29,504	35,329	29	796	1,012	469
Mich.	6	635	1	-	7	-	1	597	23,958	25,389	3	265	292	13
Wis.	4	144	-	-	2	-	-	267	9,987	10,530	-	70	68	105
W.N. CENTRAL	20	684	27	1	17	4	47	719	34,776	33,942	28	471	245	2,201
Minn.	-	119	-	-	2	-	1	NA	5,234	5,643	5	155	86	385
Iowa	-	71	-	-	3	1	7	109	3,824	3,694	3	19	14	718
Mo.	14	306	22	1	7	2	26	307	16,276	14,789	17	257	118	194
N. Dak.	3	26	-	-	-	-	-	13	437	487	-	8	3	320
S. Dak.	3	51	1	-	1	-	-	24	968	1,033	-	2	4	259
Nebr.	-	20	3	-	2	-	3	54	2,604	2,615	1	7	6	161
Kans.	-	91	1	-	2	1	10	212	5,433	5,681	2	23	14	164
S. ATLANTIC	111	4,290	15	-	51	19	616	5,386	180,613	180,260	203	5,892	4,604	431
Del.	2	56	1	-	-	-	2	111	2,886	2,587	-	11	10	1
Md.	15	444	-	-	14	2	56	918	21,130	19,355	8	436	330	28
D.C.	5	262	-	-	1	-	-	285	10,321	12,807	25	484	350	-
Va.	13	441	3	-	1	3	102	592	16,649	16,280	19	514	412	89
W. Va.	6	133	-	-	5	-	5	60	2,717	2,409	-	17	15	21
N.C.	15	757	4	-	1	13	274	929	27,814	25,975	34	463	316	11
S.C.	15	399	3	-	1	-	99	509	17,567	17,064	15	394	265	30
Ga.	10	701	4	-	4	-	69	1,048	37,512	35,232	41	1,487	1,334	173
Fla.	30	1,097	-	-	24	1	9	934	44,017	48,551	61	2,086	1,572	78
E.S. CENTRAL	56	1,731	8	-	7	5	120	1,557	60,547	59,212	58	1,475	1,584	351
Ky.	8	433	3	-	-	-	2	125	7,475	8,617	-	69	105	104
Tenn.	19	578	5	-	3	1	75	659	23,108	21,321	25	547	663	170
Ala.	18	459	-	-	2	3	19	282	18,248	17,693	12	432	337	77
Miss.	11	261	-	-	2	1	24	491	11,716	11,581	21	427	479	-
W.S. CENTRAL	46	2,218	87	-	48	2	159	2,715	96,899	92,253	142	5,370	3,854	902
Ark.	9	243	49	-	4	1	34	187	7,213	7,262	5	117	138	123
La.	10	398	2	-	2	-	-	475	16,825	16,712	38	1,248	920	30
Okla.	-	261	24	-	4	-	93	229	10,411	9,248	3	118	71	182
Tex.	27	1,316	12	-	38	1	32	1,824	62,450	59,031	96	3,887	2,725	567
MOUNTAIN	11	558	35	-	22	-	26	855	28,530	28,194	13	560	447	209
Mont.	1	28	5	-	4	-	12	26	1,029	1,063	-	11	2	97
Idaho	-	7	4	-	-	-	5	46	1,305	1,213	-	17	15	5
Wyo.	-	9	1	-	-	-	5	-	680	818	-	7	9	14
Colo.	-	66	8	-	8	-	-	217	7,659	7,574	1	170	120	34
N. Mex.	1	106	3	-	-	-	-	178	3,080	3,420	7	103	75	26
Ariz.	7	257	-	-	9	-	-	162	8,522	7,682	-	135	154	23
Utah	2	44	13	-	1	-	1	67	1,414	1,407	-	21	13	6
Nev.	-	41	1	-	-	-	3	159	4,841	5,017	5	96	59	4
PACIFIC	115	3,973	6	-	107	1	6	3,683	114,985	119,563	108	3,140	3,685	470
Wash.	2	281	1	-	3	-	1	293	9,346	10,203	-	112	185	13
Oreg.	4	140	-	-	4	-	-	154	6,759	8,199	4	74	81	9
Calif.	104	3,395	5	-	99	1	5	3,071	93,704	95,863	99	2,888	3,290	432
Alaska	-	45	-	-	-	-	-	104	2,899	2,894	1	12	7	16
Hawaii	5	112	-	-	1	-	-	61	2,277	2,404	4	54	122	-
Guam	NA	23	-	NA	-	NA	-	NA	66	97	NA	-	5	-
P.R.	9	306	-	-	4	-	-	90	2,465	2,301	22	505	442	61
V.I.	-	1	-	-	6	-	-	6	168	108	1	16	10	-
Pac. Trust Terr.	NA	43	-	NA	-	NA	-	NA	284	304	NA	-	-	-

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 September 26, 1981 (38th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	619	409	156	29	15	10	43
Boston, Mass.	198	117	59	12	8	2	22
Bridgeport, Conn.	38	27	9	–	–	2	4
Cambridge, Mass.	28	20	4	3	1	–	4
Fall River, Mass.	21	20	1	–	–	–	–
Hartford, Conn.	49	35	9	3	1	1	–
Lowell, Mass.	23	15	8	–	–	–	–
Lynn, Mass.	21	14	6	1	–	–	–
New Bedford, Mass.	26	18	6	2	–	–	4
New Haven, Conn.	43	25	13	4	–	1	–
Providence, R.I.	19	13	6	–	–	–	–
Somerville, Mass.	14	11	1	2	–	–	–
Springfield, Mass.	49	31	12	1	2	3	–
Waterbury, Conn.	29	17	10	1	1	–	3
Worcester, Mass.	61	46	12	–	2	1	6
MID. ATLANTIC	2,399	1,561	534	166	62	76	84
Albany, N.Y.	53	37	7	4	1	4	–
Allentown, Pa.	22	15	7	–	–	–	2
Buffalo, N.Y.	100	64	23	7	4	2	8
Camden, N.J.	31	19	10	1	–	1	–
Elizabeth, N.J.	35	27	4	3	–	1	2
Erie, Pa.†	45	26	10	6	1	2	3
Jersey City, N.J.	59	38	12	8	–	1	–
N.Y. City, N.Y.	1,282	843	272	91	38	38	28
Newark, N.J.	44	23	12	6	1	2	2
Paterson, N.J.	13	9	1	1	–	2	1
Philadelphia, Pa.†	191	113	52	13	6	7	9
Pittsburgh, Pa.†	181	108	50	9	3	11	9
Reading, Pa.	30	22	7	1	–	–	3
Rochester, N.Y.	100	71	16	8	4	1	9
Schenectady, N.Y.	23	20	2	–	1	–	–
Scranton, Pa.†	28	18	9	1	–	–	3
Syracuse, N.Y.	82	52	21	4	3	2	3
Trenton, N.J.	31	21	8	–	–	2	–
Utica, N.Y.	24	17	6	1	–	–	–
Yonkers, N.Y.	25	18	5	2	–	–	2
E.N. CENTRAL	2,252	1,356	576	153	73	94	46
Akron, Ohio	52	31	13	5	2	1	–
Canton, Ohio	53	31	19	1	2	–	–
Chicago, Ill.	507	301	118	46	20	22	11
Cincinnati, Ohio	175	117	43	8	–	7	4
Cleveland, Ohio	145	73	39	12	10	11	–
Columbus, Ohio	133	78	35	11	4	5	4
Dayton, Ohio	112	59	36	6	5	6	4
Detroit, Mich.	246	135	72	19	9	11	4
Evansville, Ind.	43	26	12	4	–	1	2
Fort Wayne, Ind.	58	39	14	2	3	–	3
Gary, Ind.	20	12	3	5	–	–	–
Grand Rapids, Mich.	45	32	7	4	1	1	3
Indianapolis, Ind.	147	86	38	8	6	9	–
Madison, Wis.	40	23	8	5	1	3	3
Milwaukee, Wis.	154	108	34	5	2	5	1
Peoria, Ill.	41	25	10	1	2	3	–
Rockford, Ill.	48	31	13	–	2	2	–
South Bend, Ind.	54	33	16	2	2	1	1
Toledo, Ohio	119	81	28	7	–	3	4
Youngstown, Ohio	60	35	18	2	2	3	2
W.N. CENTRAL	759	499	172	42	24	22	21
Des Moines, Iowa	52	34	13	3	1	1	1
Duluth, Minn.	52	41	6	2	1	2	4
Kansas City, Kans.	30	19	8	3	–	–	–
Kansas City, Mo.	127	79	31	6	4	7	4
Lincoln, Nebr.	28	20	3	1	2	2	2
Minneapolis, Minn.	84	63	15	4	1	1	1
Omaha, Nebr.	86	50	26	3	4	3	3
St. Louis, Mo.	148	96	33	9	7	3	4
St. Paul, Minn.	86	52	26	4	1	3	–
Wichita, Kans.	66	45	11	7	3	–	2
S. ATLANTIC	1,044	619	266	77	35	45	38
Atlanta, Ga.	147	75	40	16	6	10	4
Baltimore, Md.	159	90	46	11	7	5	1
Charlotte, N.C.	69	42	14	6	6	1	4
Jacksonville, Fla.	82	48	20	6	3	5	4
Miami, Fla.	103	58	29	6	4	6	3
Norfolk, Va.	55	26	15	8	–	5	3
Richmond, Va.	67	42	20	5	–	–	4
Savannah, Ga.	41	26	9	4	–	2	3
St. Petersburg, Fla.	91	74	15	–	–	2	7
Tampa, Fla.	55	31	14	4	4	2	5
Washington, D.C.	129	67	44	9	4	5	–
Wilmington, Del.§	46	40	–	2	1	2	–
E.S. CENTRAL	709	395	201	53	30	30	22
Birmingham, Ala.	105	52	34	11	5	3	2
Chattanooga, Tenn.	53	33	12	4	1	3	5
Knoxville, Tenn.	40	28	8	3	–	1	–
Louisville, Ky.	128	63	46	8	5	6	1
Memphis, Tenn.	159	82	41	16	11	9	9
Mobile, Ala.	78	52	19	2	2	3	3
Montgomery, Ala.	35	23	7	3	–	2	–
Nashville, Tenn.	111	62	34	6	6	3	2
W.S. CENTRAL	1,351	747	360	122	59	63	46
Austin, Tex.	71	45	17	4	1	4	2
Baton Rouge, La.	47	31	6	4	–	6	1
Corpus Christi, Tex.	52	32	6	3	2	9	1
Dallas, Tex.	179	96	49	18	9	7	–
El Paso, Tex.	53	30	16	2	2	3	5
Fort Worth, Tex.	60	37	16	3	2	2	7
Houston, Tex.	357	168	109	39	28	13	8
Little Rock, Ark.	65	43	13	4	2	3	2
New Orleans, La.	163	89	51	15	3	5	2
San Antonio, Tex.	190	112	41	22	5	10	13
Shreveport, La.	31	20	9	–	2	–	–
Tulsa, Okla.	83	44	27	8	3	1	5
MOUNTAIN	580	336	135	43	45	21	20
Albuquerque, N. Mex.	76	31	23	5	17	–	2
Colo. Springs, Colo.	39	26	9	2	2	–	6
Denver, Colo.	106	58	24	9	8	7	3
Las Vegas, Nev.	53	32	11	5	2	3	1
Ogden, Utah	22	12	7	1	2	–	1
Phoenix, Ariz.	129	82	30	10	2	5	2
Pueblo, Colo.	14	7	5	1	–	1	–
Salt Lake City, Utah	57	33	7	8	6	3	–
Tucson, Ariz.	84	55	19	2	6	2	5
PACIFIC	1,696	1,070	377	139	60	50	64
Berkeley, Calif.	13	6	3	2	–	2	–
Fresno, Calif.	70	38	20	4	6	2	2
Glendale, Calif.	28	21	5	2	–	–	2
Honolulu, Hawaii	70	45	17	5	–	3	5
Long Beach, Calif.	73	47	19	5	1	1	2
Los Angeles, Calif.	472	305	101	49	14	3	24
Oakland, Calif.	92	53	27	3	1	8	5
Pasadena, Calif.	22	15	4	–	2	1	1
Portland, Oreg.	128	82	25	8	7	6	1
Sacramento, Calif.	66	52	6	4	1	3	5
San Diego, Calif.	162	99	34	15	9	5	3
San Francisco, Calif.	157	97	39	17	1	3	5
San Jose, Calif.	154	85	39	12	11	7	5
Seattle, Wash.	103	69	19	9	3	3	2
Spokane, Wash.	50	30	12	3	3	2	1
Tacoma, Wash.	36	26	7	1	1	1	1
TOTAL	11,409††	6,992	2,777	824	403	411	384

*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.

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

Tuberculin Skin-Test Conversions Among Indochinese Refugees — Monroe County, New York

In the period July 1, 1979-January 1, 1981, the Monroe County Health Department, New York, screened 664 Indochinese refugees—41% within 28 days of arrival—by tuberculin skin testing (5 TU strength Mantoux skin test). Twenty-four (4%) of these refugees had been identified in Asia as having abnormal chest X rays consistent with current or past tuberculosis, 307 (46%) had significant (defined, for purposes of skin testing this population, as ≥10 mm induration) reactions to tuberculin, and 333 (50%) did not have significant reactions to tuberculin (<10 mm induration). Refugees with significant reactions were further screened by chest X ray.

Because of concern about possible tuberculosis transmission both in refugee camps and in transit, the Monroe County Health Department adopted a policy of retesting refugees who lacked initial significant reactions to detect those who might have been infected too recently to react significantly. Of 217 refugees who were located and retested, 94 (43%) had converted (increase of ≥6 mm, from <10 mm to ≥10 mm). None of the 94 had clinical evidence of disease or chest X-ray changes. Preventive therapy was prescribed for 90 (96%) of the converters.

Explanations were sought for the unusually high skin-test conversion rate. A review of clinic policies and procedures demonstrated that the skin tests were administered and read by 2 nurses who were experienced in the procedure. All measurements were made in millimeters and all reactions were confirmed by the clinic physician. Tuberculin had been obtained from 2 licensed manufacturers, had been stored properly, and was used before the stated expiration date. No evidence of error was found in either the administration or reading of tuberculin tests.

Next, an in-depth retrospective and prospective investigation of all refugees' records was initiated. Converters were slightly older than nonconverters (mean age 19.2 vs. 14.1 years), and a somewhat higher percentage were males (53% vs. 43%). Laotians constituted a larger proportion of converters than of the overall refugee population (62% vs. 51%). Converters and nonconverters were comparable in rarely having had a tuberculin test before leaving Asia, and were similarly distributed by country of first asylum, individual camp, history of BCG (Bacillus of Calmette and Guérin) vaccination, presence of BCG scars, history of tuberculosis exposure, illness at the time of testing, and immunization with live-virus vaccines immediately before tuberculin testing. Characteristics of the 116 refugees who could not be retested were not substantially different from those who were retested.

The detection of skin-test conversions fluctuated somewhat from month to month but continued throughout the study period: 40% of those retested converted in 1979, as did 45% in 1980. There was no relationship between conversion and length of time after arrival in the United States. The mean change in reaction size was 12.2 mm for all converters; 40% of the converters had readings that changed from 0 to at least 10 mm.

Reported by G Swalbach, MD, S Redmond, MD, R Hyde, MD, Monroe County Health Department, New York; J Grabau, PhD, D Morse, MD, R Rothenberg, MD, State Epidemiologist, New York State Dept of Health; Center for Prevention Services, CDC.

Editorial Note: The American Thoracic Society and CDC have defined skin-test converters as persons whose reactions to 5 TU tuberculin PPD (purified protein derivative), on 2 tests given within a 24-month period, increase by at least 6 mm—from <10 mm to ≥10 mm (*1*). Skin-test conversions may represent newly acquired infection with *Myco-*

Tuberculin Skin-Test Conversions — Continued

bacterium tuberculosis, but other potential causes include: errors in administering and reading tests; problems with the antigen used for testing; anergy on initial testing because of recent vaccination with live-virus vaccines, poor nutrition, stress, or other factors; and boosting of sensitivity resulting from previous infection with *M. tuberculosis* or nontuberculous mycobacteria or from earlier vaccination with BCG (*2*).

The high conversion rates could not be explained by errors in administering and reading tests, errors in record keeping, or problems with the antigen. Furthermore, reports to CDC of high conversion rates in refugee populations in both Allegheny County, Pennsylvania (21% conversion rate), and Pinellas County, Florida (27% conversion rate), provide supporting evidence that these conversions are not artifactual. However, not enough information is currently available to determine the reason(s) for the high rate of skin-test conversions. The Monroe County data do not support the hypothesis that prior BCG vaccinations account for most of the skin-test conversions; of 42 converters examined, only 7 had a BCG scar, and of 43 questioned, only 5 gave a history of BCG vaccination. Because live-virus vaccines have been shown to suppress tuberculin sensitivity temporarily, it was suspected that vaccine given to refugees before they left Southeast Asia might have depressed tuberculin sensitivity on the initial test in the United States. Repeat testing would then have detected the sensitivity previously depressed and caused a spurious skin-test conversion. However, this hypothesis is also not supported by the Monroe County data. These vaccines are primarily given to refugees <20 years old, but the conversion rate was higher among older refugees.

It is important to determine the cause(s) of these conversions because their impact on public health depends on the proportion of conversions attributable to 1) recent *M. tuberculosis* infection; 2) boosting related to remote *M. tuberculosis* infection; or 3) boosting related to earlier BCG vaccination or to nontuberculous mycobacterial infection. Persons recently infected with *M. tuberculosis* are at high risk of developing tuberculosis and should receive preventive therapy; persons with old *M. tuberculosis* infection are at lower risk and may not need preventive therapy; persons without *M. tuberculosis* infection, who are sensitized to BCG or nontuberculous mycobacteria, are at low risk and do not need preventive therapy.

The Monroe County Health Department is continuing its study with 2 modifications designed to help distinguish recent tuberculous infection from other possible causes of conversion: 1) testing for anergy with mumps and *Candida* antigens to indicate whether any factor is suppressing the general ability to react to the first but not the second tuberculin test and 2) repeating the tuberculin test after 1 week to measure the proportion of conversions produced by boosting. There is evidence to suggest that boosted reactions result more often from nontuberculous mycobacterial infections or BCG vaccination than from remote tuberculous infections (*3*). Nonspecific tuberculin sensitivity (caused by nontuberculous mycobacterial infection) has long been known to exist in Southeast Asia (*4*).

Through extensive efforts of the Monroe County Health Department and other cooperating sites, more specific evidence about the cause(s) of these conversions is being sought. Until this evidence is available, CDC does not recommend that health-department, tuberculosis-control, or refugee health-assessment programs divert resources from current priority activities to retest refugees who do not react significantly to an initial tuberculin screening test. Current priorities are 1) identifying and treating patients with tuberculosis and their contacts and 2) screening newly arrived Indochinese refugees and other high-risk

Tuberculin Skin-Test Conversions – Continued

groups for tuberculosis. In localities where these priorities are being met satisfactorily and available resources permit, however, CDC encourages repeating the 5 TU PPD test after 1 week for a consecutive sample of refugees (<35 years old) who did not react significantly to an initial test. This sampling should be done over a consecutive 4-8 week period. The results of these tests should be reported to the appropriate local or state health departments, who can then report them to CDC.

References

1. American Thoracic Society. Diagnostic standards and classification of tuberculosis and other mycobacterial diseases (14th edition). Am Rev Respir Dis 1981;123:343-58.
2. Comstock GW. False tuberculin test results. Chest 1975;68:465-9.
3. Dahlstrom AW. The instability of the tuberculin reaction. Am Rev Tuberc 1940;42:471-87.
4. WHO Tuberculosis Disease Office. Sensitivity of human populations to human and avian tuberculins. Bull WHO 1955;12:85-99.

International Notes

U.S. and Canadian Cooperative Agreement on Health Risk Appraisal

The Centers for Disease Control (CDC) and the Canadian Department of National Health and Welfare have agreed on a formal collaborative working relationship for developing, refining, testing, and promulgating Health Risk Appraisal (HRA) as an instrument for health education. The agreement was recently signed by M.M. Law, MD, Assistant Deputy Minister, Department of National Health and Welfare, and William H. Foege, Jr., MD, Director, CDC.

HRA denotes a process in which an individual completes a questionnaire to assess family health history, personal risk behaviors (smoking, alcohol consumption, seat belt usage, obesity, stress, exercise, etc.), and specific biomedical measurements (blood pressure, cholesterol, pap smear, breast examination, weight, height, etc.) as they relate to the leading causes of death. The responses are compared with national mortality data by age, race, sex and are reported to the individual in terms of appraised and achievable ages.

The key features of the formal agreement are

- updating and documenting precursors and risk factors used in HRA;
- developing and maintaining cooperative working relationships with federal agencies, professional societies, and other national health agencies to obtain satisfactory data;

The Morbidity and Mortality Weekly Report, circulation 93,000, is published by the Centers 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: Attn: Editor, Morbidity and Mortality Weekly Report, Centers for Disease Control, Atlanta, Georgia 30333.

Send mailing list additions, deletions and address changes to: Attn: Distribution Services, Management Analysis and Services Office, 1-SB-419, Centers for Disease Control, Atlanta, Georgia 30333. When requesting changes be sure to give your former address, including zip code and mailing list code number, or send an old address label.

Health Risk Appraisal – Continued

- sharing results of conferences, working groups, and appropriate staff work; developing and conducting a research program for HRA; sharing methodology for producing computer software;
- developing guidelines and standards bearing on the technical, educational, and promotional aspects of HRA; and
- collecting, reviewing, and disseminating information and materials relevant to HRA-oriented, lifestyle health-education programs.

Single copies of the full agreement are available from the Center for Health Promotion and Education, CDC, Atlanta, Georgia 30333.

Reported by the Center for Health Promotion and Education, CDC.

Errata, Vol. 30, No. 36

p453. In the article, "Vaccinia Outbreak – Newfoundland," one of the countries requiring smallpox vaccination as a condition of entry was incorrectly listed as the Democratic Republic of Kampuchea. It should read: Democratic Kampuchea.

Vol. 30, No. 37

p465. In the article, "Acute Hemorrhagic Conjunctivitis – Florida," two names in the credits were incorrectly spelled. They should read: D Bodé, MD, Miami, and MB Enriquez, MD, MPH, Dade County Health Department.

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