CENTERS FOR DISEASE CONTROL

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Epidemiologic Notes and Reports

Measles — Florida, 1981

A total of 88 confirmed cases of measles, with onset of rash from July 16 through November 11, 1981, were reported from Lee County, Florida.

The source of the outbreak was not clearly determined, although at least 3 independent introductions of measles into the county have been documented. Most of the cases were attributed to transmission from an 11-year-old Lee County resident who infected several other children at an indoor skating rink. The child also exposed members of a drum and bugle corps. Following several generations of the disease during the summer months, an outbreak with school-based transmission developed within 1 incubation period after the opening of schools on August 24.

Of 88 persons with measles, 18 (20.5%) were 0-4 years old, 19 (21.6%) were 5-9 years old, 14 (15.9%) were 10-14 years old, 27 (30.7%) were 15-19 years old, and 10 (11.4%) were ≥20 years old. Fifty persons (56.8%) were attending school or day-care centers at the time they became ill with measles: 21 in high schools, 2 in middle schools, 20 in elementary schools, and 7 in day-care centers.

Local authorities initially responded to the outbreak by ordering a review of 35,000 student immunization records to identify all students who did not have adequate evidence of immunity to measles.* Three high schools in which there were measles cases excluded susceptible students. Ultimately, students from 5 high schools, 2 middle schools, 11 elementary schools, and 3 day-care centers throughout the county had measles. On October 12 a county-wide school-exclusion order went into effect. Students, including those with medical or religious exemptions from vaccination, who could not show adequate evidence of immunity were not allowed to enter school. Special programs were conducted to review records and to administer vaccines.

At the time of initial record review in the 3 high schools, approximately 50% of the students lacked adequate evidence of immunity to measles. Many records were merely certificates of immunization without vaccination dates and thus were unacceptable documentation of immunity. By the first day of school exclusion, however, only 5%-10% of the students lacked adequate records.

Daily adjustments were made to each school's exclusion list as students returned with completed vaccination records (Figure 1). A sharp decline in the number of students excluded from school occurred over the first 3 school days after the exclusion policy was implemented. According to data from all 5 high schools, 7 of 9 middle schools, and 25 of 28 elementary schools, by the end of the third day, less than 1% of enrolled students were out of school be-

*Defined by the state of Florida as a record of measles vaccination with date of administration on or after the first birthday and after December 31, 1967, or a history of physician-diagnosed measles illness.

Measles — Continued

cause of inadequate evidence of immunity to measles. The number of excluded students declined on each subsequent day. Implementation of the school-exclusion policy resulted in only minimal disruption of school attendance and activities.

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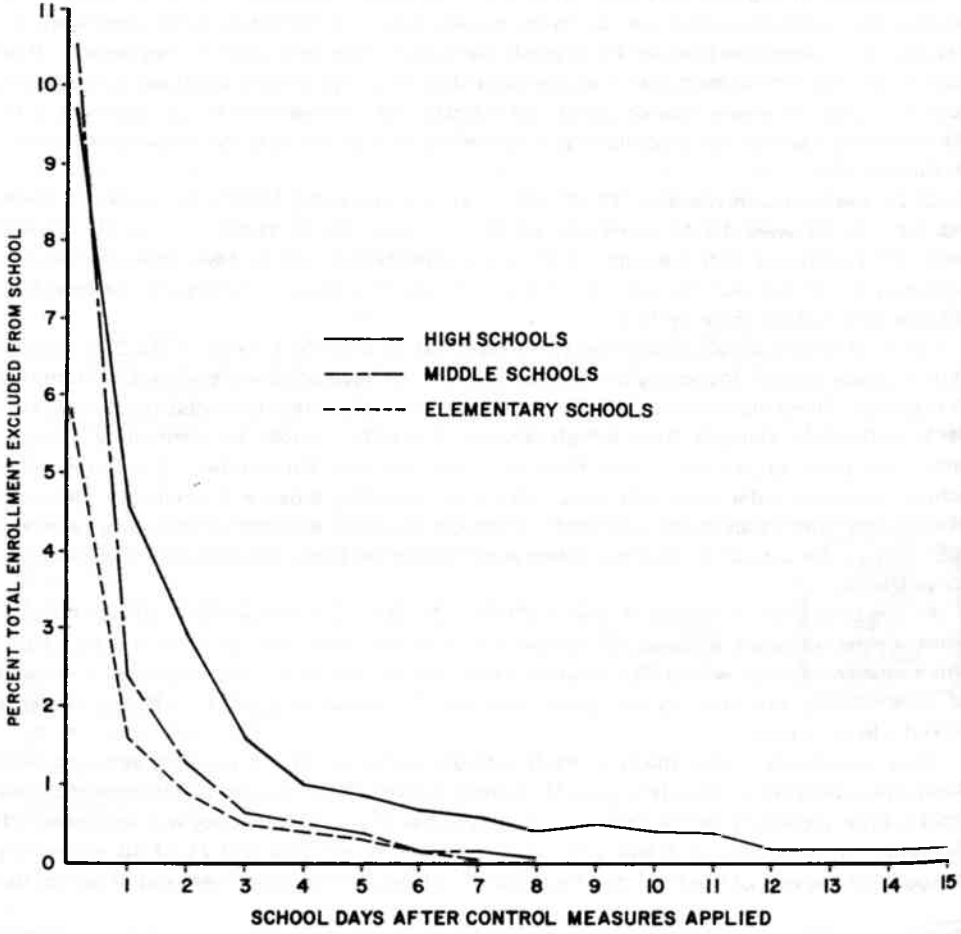
Editorial Note: The outbreak in Lee County illustrates that schools are an important source of measles transmission in Florida, where a strengthened school immunization law was enacted this year (*1*). Although widespread transmission of measles occurred in schools through-

FIGURE 1. Susceptible students excluded from attending Lee County schools*, measles outbreak control program, September-October 1981



*Exclusion data from 5 schools not available.

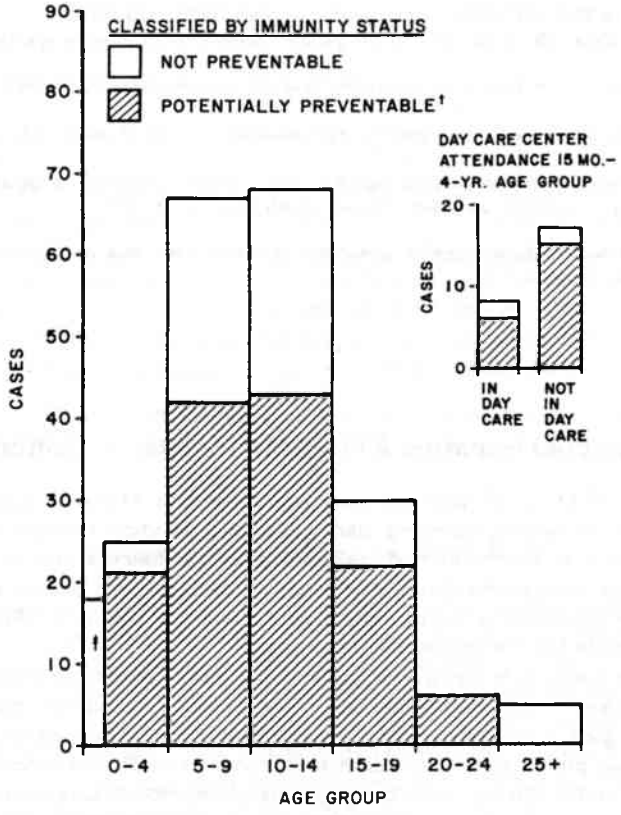
Measles — Continued

out the county, application of the emergency provisions of the law effected swift control of the outbreak. Control measures were successful because of close cooperation among the county school board, the county health department, private physicians, and the public.

Exclusion from school attendance resulted in only brief absences for most of the susceptible students. In several schools the number of medical and religious exemptions also declined, suggesting that some individuals reconsidered the importance of vaccination in the face of a measles outbreak. Most students lacking evidence of measles immunity complied with the requirements and were quickly readmitted to school (Figure 1). This has been noted in other outbreaks where a school-exclusion policy has been employed (*2-4*).

Additional evidence from Florida demonstrates the importance of school-based control measures (Figure 2). In a review of 219 of the 222 confirmed measles cases in Florida reported during the first 34 weeks of 1981, ending August 29, cases were studied with respect to

FIGURE 2. Reported measles cases, by age group and immunity status, Florida*, January-August 1981



*219 cases, weeks 1-34, 1981

†A potentially preventable case is defined as measles illness in a person at least 15 months of age, born after 1956, who lacks adequate evidence of immunity to measles.

‡< 15 mo.

Measles — Continued

age, school and day-care center attendance, and immunity status. Of 219 persons with measles, 165 (75.3%) were between 5 and 19 years of age. The school-age population therefore accounted for the majority of measles cases. Of the 165 measles cases among school children, 107 (64.8%) were potentially preventable because the students lacked adequate evidence of immunity to measles.* An additional 43 patients (19.6% of 219 cases studied) were under 5 years of age. Of these, only 8 who were enrolled in day-care centers and were old enough to receive measles vaccine potentially could have been reached by school-based control measures.

The available data suggest that Florida has chosen the most effective way to prevent measles—vigorous application of the new school immunization law with exclusion of noncompliant students from school (*5*). Beginning with the 1982-83 school year another provision of the law will require all students from kindergarten through 12th grade to show adequate evidence of immunity to measles and other vaccine-preventable diseases in order to attend school. Widespread use of the powers granted by the school immunization law will be an important part of the strategy to eliminate measles in Florida.

References

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2. Middaugh JP, Zyla LD. Enforcement of school immunization law in Alaska. JAMA 1978; 239:2128-30.
3. CDC. Enforcement of a state's immunization law for entering school children—Detroit. MMWR 1978;27:7.
4. CDC. School immunization requirements for measles—United States, 1981. MMWR 1981; 30:158-60.
5. Robbins KB, Brandling-Bennett AD, Hinman AR. Low measles incidence: association with enforcement of school immunization laws. Am J Public Health 1981;71:270-4.

*Documentation of live measles vaccine administered on or after the first birthday or history of physician-diagnosed measles.

Suspected Hepatitis A in a Food Handler — California

On April 28, 1981, a 35-year-old man was seen in a Modesto, California, hospital emergency room for nausea, vomiting, dark urine, and jaundice. He reported contact 2-3 weeks earlier with an ill friend who had "yellow eyes." Liver-function studies were consistent with hepatocellular damage. His serum was negative for hepatitis B surface antigen (HBsAg); no test was done for hepatitis A immunoglobulin M antibody (IgM anti-HAV). A diagnosis of hepatitis A was made, but the case was not reported.

On May 1 the man's wife came to a public health clinic requesting immunoglobulin (IG). She reported the same contact with the sick friend as her husband had, and she had noted light stools, dark urine, right-upper-quadrant abdominal pain, and malaise for 2 days. She was referred to her own physician for evaluation. Liver-function studies were not done. Her serum tests were negative for HBsAg. A clinical diagnosis of hepatitis A was made on the basis of symptoms, recent contact with a jaundiced person, and a negative HBsAg test.

The woman had worked at a local restaurant preparing salads and sandwiches until May 1. Health-department investigation revealed questionable hygienic practices at the restaurant. About 100-500 meals were served daily by the 4-person staff. The other staff members had

Hepatitis — Continued

no symptoms but ate food prepared by the ill employee. Based on this information, consideration was given to recommending IG administration to the staff and to all customers who had eaten at the restaurant in the preceding 14 days. However, since more-specific diagnostic tests for hepatitis were available, with results possible within 48 hours, confirmation of the clinical impression was sought before public-health action was taken. Test results for the woman were negative for HBsAg, antibody to hepatitis B surface antigen (anti-HBs), antibody to hepatitis B core antigen (anti-HBc), and IgM anti-HAV, but positive for anti-HAV (total IgM and immunoglobulin G [IgG] antibody to hepatitis A virus). Liver-function tests were normal. The positive anti-HAV and negative IgM anti-HAV results indicated previous hepatitis A infection and immunity to reinfection. Therefore, administration of IG to the other employees at the restaurant and to recent customers was not required.

Reported by D Fredson, RN, K Kelly, MD, Stanislaus County Dept of Public Health, RR Roberto, California Dept of Health Svcs, in the California Morbidity Weekly Report No. 30, August 7, 1981.

Editorial Note: Although no other diagnosis was made, laboratory tests of the female patient described above did not confirm current hepatitis A infection. This report illustrates 2 important points: 1) the need to confirm a clinical impression of viral hepatitis-like illness with appropriate liver-function tests, and 2) the role that specific hepatitis A antibody tests can play in the diagnosis and public health management of food handlers with suspected hepatitis.

In hepatitis A infection, IgM anti-HAV is usually present at the onset of symptoms and remains detectable for 2-3 months. IgG antibody to HAV appears 2-4 weeks after onset of illness and usually persists for life. Two hepatitis A serologic tests are currently available: 1) The IgM anti-HAV test (HAVAB-M*) is specific for IgM antibody. A positive IgM anti-HAV test is diagnostic of acute or very recent hepatitis A infection. 2) The anti-HAV test (HAVAB) measures total antibody (IgM and IgG). Since the anti-HAV test does not differentiate between IgM and IgG antibodies, a positive result is not specific for acute hepatitis A. The test is positive both for persons with acute hepatitis A and for persons who have had hepatitis A in the past. To diagnose acute hepatitis A, the IgM anti-HAV test is required. The commercially marketed HAVAB-M and HAVAB tests are available in many clinical and some public health laboratories which have the capability to do radioimmunoassay (RIA) tests.

*Use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

Influenza A Isolation — New Jersey

CDC has received the first report of an isolation of influenza A virus in the United States for the 1981-1982 season. On November 10, 1981, a patient at a psychiatric facility in Burlington County, New Jersey, complained of dizziness and was noted to have an upper respiratory infection with a nonproductive cough and 100 F (37.8 C) temperature. His condition worsened overnight, and the patient, a 78-year-old man with diabetes, became cyanotic and short of breath on November 11. He was admitted to Burlington County Memorial Hospital in respiratory distress and was observed to be hypotensive and febrile and to have diffuse alveolar infiltrates. His condition deteriorated rapidly, and he required mechanical ventilation. During the next 2 weeks his clinical condition improved, and by December 4, he was alert and clinically stable, but on respiratory support.

On October 21, this patient and 38 others on his ward in the psychiatric facility had been

Influenza A — Continued

against influenza according to recommendations (*1*) on October 21. No other patients contracted respiratory infections, but 9 unvaccinated employees of the 135 who attended patients on the ward had influenza-like illnesses during November. Four employees, ranging in age from 23 to 56 had onset of illness on November 10, the same day the patient was noted to have symptoms. The other 5 employees had onset of illness on November 12, 19, 20 (2 employees), and 28.

Influenza virus type A(H1N1), isolated by the New Jersey State Department of Health Laboratories from throat washings collected from the psychiatric patient after hospitalization on November 11, has been characterized at CDC as similar to A/England/333/80 (*1*). Serum samples collected from this patient on November 11 and 25 demonstrated hemagglutination-inhibition antibody titers of 160-320 to recently prevalent strains of influenza A(H1N1). No specimens were collected from the ill employees for virus isolation, but their convalescent serum specimens will be compared with those from a group of well employees of similar age for evidence of recent infection with influenza.

Reported by C Seymour, RN, Burlington County Memorial Hospital, W Pizzuti, B Taylor, PhD, B Mojica MD, V Traister, BSN, R Altman, MD, W Parkin DVM, State Epidemiologist, New Jersey State Dept of Health; Field Services Div, Epidemiology Program Office, Viral Diseases Div, Center for Infectious Diseases, CDC.

References

1. ACIP. Influenza vaccine 1981-82. MMWR 1981;30:279-82, 287-8.

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

DISEASE	48th WEEK ENDING			CUMULATIVE, FIRST 48 WEEKS		
	December 5 1981	November 29 1980	MEDIAN 1976-1980	December 5 1981	November 29 1980	MEDIAN 1976-1980
Aseptic meningitis	125	127	127	8,574	7,262	6,074
Brucellosis	3	—	1	150	167	169
Chickenpox	2,300	2,711	2,622	182,413	171,458	171,458
Encephalitis: Primary (arthropod-borne & unspec.)	14	23	20	1,317	1,122	1,113
Post-infectious	4	1	5	81	202	202
Gonorrhea: Civilian	17,175	16,913	19,839	923,482	929,698	929,698
Military	464	263	461	25,143	24,753	24,753
Hepatitis: Type A	504	502	598	23,089	26,096	27,392
Type B	475	353	307	19,033	16,785	13,758
Type unspecified	219	214	214	10,103	10,743	8,145
Leprosy	11	7	5	229	202	145
Malaria	21	54	8	1,241	1,876	691
Measles (rubeola)	37	49	152	2,961	13,255	25,859
Meningococcal infections: Total	67	49	44	3,209	2,485	2,225
Civilian	66	49	44	3,196	2,467	2,198
Military	1	—	—	13	18	19
Mumps	181	81	288	4,189	7,984	15,315
Pertussis	16	30	34	1,111	1,568	1,568
Rubella(German measles)	29	33	91	1,957	3,581	11,619
Syphilis (Primary & Secondary): Civilian	563	515	470	28,510	25,166	22,139
Military	5	6	6	349	290	290
Tuberculosis	539	422	596	25,214	24,918	26,803
Tularemia	5	4	2	246	209	151
Typhoid fever	8	12	12	537	478	478
Typhus fever, tick-borne (RMSF)	5	2	6	1,160	1,140	1,029
Rabies, animal	106	89	73	6,684	5,934	2,957

TABLE II. Notifiable diseases of low frequency, United States

	CUM. 1981		CUM. 1981
Anthrax	—	Poliomyelitis: Total	7
Botulism	76	Paralytic	6
Cholera	19	Psittacosis (Ark. 1)	96
Congenital rubella syndrome	11	Rabies, human	1
Diphtheria	4	Tetanus (Calif. 1)	57
Leptospirosis (Wash. 1)	47	Trichinosis (R.I. 5, Tex. 1, Calif. 1)	127
Plague	9	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	44

TABLE III. Cases of specified notifiable diseases, United States, weeks ending December 5, 1981 and November 29, 1980 (48th week)

REPORTING AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKEN POX	ENCEPHALITIS		GONORRHEA (Civilian)		HEPATITIS (Viral), by type			LEPROSY
				Primary	Post-infectious			A	B	Unspecified	
	1981	CUM. 1981	1981	CUM. 1981	CUM. 1981	CUM. 1981	CUM. 1980	1981	1981	1981	CUM. 1981
UNITED STATES	125	150	2,300	1,317	81	923,482	929,698	504	475	219	229
NEW ENGLAND	2	5	336	43	8	22,677	23,438	13	17	7	5
Maine	–	–	87	1	–	1,204	1,329	1	1	–	–
N.H.	–	–	32	4	–	832	817	–	–	–	1
Vt.	–	–	–	–	–	410	522	–	–	–	–
Mass.	–	3	159	17	1	9,433	9,874	5	6	7	3
R.I.	–	1	2	1	2	1,367	1,517	2	1	–	–
Conn.	2	1	56	20	5	9,431	9,379	5	9	–	1
MID. ATLANTIC	12	7	38	108	9	111,464	105,210	86	78	26	14
Upstate N.Y.	4	3	27	32	3	19,738	18,708	21	26	1	3
N.Y. City	1	1	10	19	–	45,328	42,137	23	36	13	9
N.J.	3	1	N	17	–	20,914	18,998	42	16	12	2
Pa.	4	2	1	40	6	25,484	25,367	U	U	U	–
E.N. CENTRAL	9	7	1,062	471	11	137,150	144,078	72	78	18	22
Ohio	1	1	105	230	2	42,808	37,410	12	4	2	1
Ind.	–	1	170	143	8	11,402	15,302	5	9	6	–
Ill.	–	–	266	9	–	40,196	45,574	22	45	2	19
Mich.	8	2	379	64	1	30,331	32,538	32	19	8	2
Wis.	–	3	142	25	–	12,413	13,254	1	1	–	–
W.N. CENTRAL	8	21	219	98	6	44,740	44,314	15	17	6	3
Minn.	–	5	–	39	3	6,911	7,320	1	3	–	1
Iowa	–	7	79	30	2	4,893	4,690	2	2	–	–
Mo.	5	4	6	10	–	20,971	19,497	4	10	3	–
N. Dak.	1	–	11	1	–	560	629	–	–	–	–
S. Dak.	–	1	84	1	–	1,187	1,282	4	–	–	–
Nebr.	2	1	6	4	–	3,341	3,433	1	2	1	–
Kans.	–	3	33	13	1	6,877	7,463	3	–	2	2
S. ATLANTIC	23	32	230	141	21	227,364	233,158	42	97	22	12
Del.	–	1	1	–	–	3,632	3,277	–	6	–	–
Md.	4	–	28	24	2	27,127	24,999	4	20	10	2
D.C.	–	–	–	–	–	12,982	15,994	1	7	–	–
Va.	4	9	8	37	5	20,857	21,528	2	12	3	3
W. Va.	2	1	127	21	–	3,363	3,159	–	2	1	–
N.C.	6	1	N	34	1	35,162	35,683	5	10	1	–
S.C.	1	–	1	4	–	22,096	21,614	1	4	–	7
Ga.	1	6	2	2	–	47,236	45,524	8	9	–	–
Fla.	5	14	63	19	13	54,909	61,380	21	27	7	–
E.S. CENTRAL	11	13	11	142	7	76,917	75,574	32	24	10	–
Ky.	2	1	1	21	2	9,662	10,960	14	3	–	–
Tenn.	2	5	N	81	1	29,289	27,458	10	10	2	–
Ala.	2	4	10	22	2	23,092	22,544	5	11	8	–
Miss.	5	3	–	18	2	14,874	14,612	3	–	–	–
W.S. CENTRAL	9	45	228	115	4	121,568	116,964	87	37	65	28
Ark.	–	6	120	6	–	9,280	9,490	7	1	–	1
La.	1	2	N	7	1	21,575	20,808	18	12	36	–
Okla.	–	7	–	24	1	13,348	11,715	1	7	3	–
Tex.	8	30	108	78	2	77,365	74,951	61	17	26	27
MOUNTAIN	3	5	6	48	5	36,511	35,502	19	7	7	5
Mont.	–	–	–	3	–	1,331	1,350	1	1	–	–
Idaho	–	–	–	–	–	1,602	1,558	3	–	–	1
Wyo.	1	–	6	1	–	955	1,020	1	1	–	–
Colo.	1	1	–	14	1	9,583	9,717	3	3	1	–
N. Mex.	–	–	–	–	–	4,001	4,275	9	–	–	–
Ariz.	–	1	N	20	2	11,144	9,397	2	2	4	3
Utah	1	–	–	9	2	1,809	1,796	–	–	1	–
Nev.	–	3	–	1	–	6,086	6,389	–	–	1	1
PACIFIC	48	15	170	151	10	145,091	151,460	138	120	58	140
Wash.	–	–	120	13	1	11,917	12,993	34	10	7	5
Oreg.	2	–	–	6	1	8,578	10,364	10	7	3	5
Calif.	41	15	34	123	8	118,022	121,425	80	92	48	87
Alaska	–	–	8	5	–	3,756	3,683	–	3	–	–
Hawaii	5	–	8	4	–	2,818	2,995	14	8	–	43
Guam	U	–	U	–	–	81	124	U	U	U	–
P.R.	–	–	4	1	–	3,097	2,553	11	2	2	2
V.I.	–	–	–	–	–	249	109	–	–	–	–
Pac. Trust Terr.	U	–	U	–	–	364	391	U	U	U	16

N: Not notifiable U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending December 5, 1981 and November 29, 1980 (48th week)

REPORTING AREA	MALARIA		MEASLES (RUBEOLA)			MENINGOCOCCAL INFECTIONS (Total)		MUMPS		PERTUSSIS	RUBELLA		
	1981	CUM. 1981	1981	CUM. 1981	CUM. 1980	1981	CUM. 1981	1981	CUM. 1981	1981	1981	CUM. 1981	CUM. 1980
UNITED STATES	21	1,241	37	2,961	13,255	67	3,209	181	4,189	16	29	1,957	3,581
NEW ENGLAND	2	65	1	87	675	3	206	16	242	–	–	125	217
Maine	1	2	–	5	33	–	24	3	43	–	–	33	70
N.H.	–	3	1	9	331	–	21	–	23	–	–	51	41
Vt.	–	6	–	3	226	–	13	1	10	–	–	–	3
Mass.	–	29	–	60	58	–	65	10	91	–	–	28	73
R.I.	–	3	–	–	2	1	19	–	28	–	–	–	9
Conn.	1	22	–	10	25	2	64	2	47	–	–	13	21
MID. ATLANTIC	2	164	17	963	3,868	16	488	6	658	1	3	230	574
Upstate N.Y.	–	35	3	230	717	4	157	2	144	1	3	114	220
N.Y. City	–	61	1	103	1,199	3	79	1	90	–	–	55	101
N.J.	–	49	–	58	852	5	105	–	103	–	–	48	101
Pa.	2	19	13	572	1,100	4	147	3	321	–	–	13	152
E.N. CENTRAL	3	64	–	90	2,447	5	392	119	1,300	5	5	406	860
Ohio	–	8	–	20	380	1	154	97	385	–	–	3	8
Ind.	–	9	–	9	93	–	46	1	126	–	–	137	362
Ill.	2	19	–	25	348	2	97	8	213	5	1	103	180
Mich.	1	28	–	33	250	2	88	9	361	–	3	40	129
Wis.	–	–	–	3	1,376	–	7	4	215	–	1	123	181
W.N. CENTRAL	2	35	–	10	1,339	1	148	8	236	–	1	80	211
Minn.	–	14	–	3	1,103	–	47	–	8	–	–	8	28
Iowa	1	5	–	1	20	1	27	6	76	–	–	4	9
Mo.	1	4	–	1	66	–	45	–	22	–	–	2	45
N. Dak.	–	1	–	–	–	–	2	–	–	–	–	–	6
S. Dak.	–	1	–	–	–	–	9	–	1	–	–	–	2
Nebr.	–	2	–	4	83	–	–	–	3	–	–	1	4
Kans.	–	8	–	1	67	–	18	2	126	–	1	65	117
S. ATLANTIC	2	151	12	486	1,984	16	732	12	567	2	3	145	346
Del.	–	1	–	–	3	–	4	–	10	–	–	1	1
Md.	–	35	–	5	83	2	55	1	98	–	–	1	68
D.C.	–	9	–	1	5	1	7	–	3	–	–	–	1
Va.	–	33	–	9	339	3	99	1	128	–	–	7	41
W. Va.	–	4	–	9	10	2	29	7	112	–	–	22	26
N.C.	–	13	–	3	130	1	110	–	22	–	–	5	47
S.C.	–	2	–	2	159	–	89	–	18	–	–	8	58
Ga.	–	8	–	111	835	–	109	–	38	–	2	39	–
Fla.	2	46	12	346	420	7	230	3	138	2	1	62	104
E.S. CENTRAL	–	12	1	6	333	2	220	1	96	2	2	40	88
Ky.	–	–	1	2	57	–	61	1	47	1	2	26	43
Tenn.	–	–	–	2	170	1	66	–	24	–	–	13	40
Ala.	–	10	–	2	22	1	68	–	19	–	–	1	3
Miss.	–	2	–	–	84	–	25	–	6	1	–	–	2
W.S. CENTRAL	2	99	4	898	974	17	500	7	235	2	5	186	146
Ark.	–	4	–	24	16	–	30	–	8	1	–	7	4
La.	1	11	–	4	13	5	115	–	5	–	–	9	13
Okla.	–	9	–	7	775	1	48	–	–	–	1	3	6
Tex.	1	75	4	863	170	11	307	7	222	1	4	167	123
MOUNTAIN	2	44	1	38	488	3	129	–	143	4	–	95	166
Mont.	–	1	–	–	2	1	10	–	14	4	–	4	45
Idaho	–	4	–	1	–	1	7	–	7	–	–	4	27
Wyo.	–	–	–	1	–	–	4	–	3	–	–	12	1
Colo.	–	20	1	11	24	–	45	–	47	–	–	27	12
N. Mex.	–	3	–	8	12	–	7	–	–	–	–	5	5
Ariz.	2	9	–	7	393	–	21	–	36	–	–	22	41
Utah	–	4	–	–	47	–	6	–	20	–	–	9	29
Nev.	–	3	–	10	10	1	29	–	16	–	–	12	6
PACIFIC	6	607	1	383	1,147	4	394	12	712	–	10	650	973
Wash.	–	25	–	3	177	1	71	3	164	–	–	93	86
Oreg.	–	19	–	5	1	2	59	–	69	–	–	51	65
Calif.	6	551	1	368	957	1	247	8	435	–	10	494	806
Alaska	–	3	–	–	6	–	13	1	19	–	–	1	12
Hawaii	–	9	–	7	6	–	4	–	25	–	–	11	4
Guam	U	2	U	5	6	U	–	U	8	U	U	1	2
P.R.	–	11	4	298	174	–	13	1	151	–	–	5	26
V.I.	–	4	–	25	6	–	1	–	18	–	–	1	–
Pac. Trust Terr.	U	–	U	1	12	U	–	U	17	U	U	1	1

U: Unavailable

TABLE III (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending December 5, 1981 and November 29, 1980 (48th week)

REPORTING AREA	SYPHILIS (Civilian) (Primary & Secondary)		TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS FEVER (Tick-borne) (RMSF)		RABIES, Animal
	CUM. 1981	CUM. 1980	1981	CUM. 1981	CUM. 1981	1981	CUM. 1981	1981	CUM. 1981	CUM. 1981
UNITED STATES	28,510	25,166	539	25,214	246	8	537	5	1,160	6,684
NEW ENGLAND	546	481	17	732	5	–	16	–	9	40
Maine	5	6	–	49	–	–	1	–	–	14
N.H.	16	6	–	19	–	–	–	–	–	7
Vt.	17	6	2	26	1	–	–	–	–	–
Mass.	342	293	10	431	3	–	8	–	5	11
R.I.	33	31	3	54	–	–	–	–	2	2
Conn.	133	139	2	153	1	–	7	–	2	6
MID. ATLANTIC	4,050	3,450	76	3,902	10	1	80	–	41	113
Upstate N.Y.	370	291	19	654	10	–	13	–	14	76
N.Y. City	2,416	2,245	34	1,487	–	1	45	–	3	–
N.J.	577	408	7	828	–	–	13	–	11	24
Pa.	687	506	16	933	–	–	9	–	13	13
E.N. CENTRAL	2,157	2,568	80	3,462	6	1	40	–	52	1,000
Ohio	299	344	11	610	–	–	11	–	39	66
Ind.	275	182	9	379	4	–	3	–	6	86
Ill.	1,153	1,580	39	1,440	–	–	15	–	6	532
Mich.	348	370	15	856	1	1	9	–	1	16
Wis.	82	92	6	177	1	–	2	–	–	300
W.N. CENTRAL	630	340	26	865	34	1	20	–	54	2,579
Minn.	183	111	12	157	–	–	2	–	2	453
Iowa	29	31	–	80	–	–	3	–	7	844
Mo.	361	151	11	398	28	1	10	–	30	232
N. Dak.	11	4	–	30	–	–	–	–	–	349
S. Dak.	2	6	1	60	1	–	1	–	–	310
Nebr.	10	12	2	28	3	–	2	–	3	195
Kans.	34	25	–	112	2	–	2	–	12	196
S. ATLANTIC	7,591	6,043	112	5,338	13	1	62	4	659	615
Del.	13	19	–	55	1	–	–	–	3	1
Md.	542	411	10	549	–	–	14	2	62	46
D.C.	613	447	7	309	–	–	2	–	1	–
Va.	650	539	9	548	3	–	1	–	106	152
W. Va.	27	16	1	176	–	–	6	–	6	35
N.C.	605	445	14	918	2	–	5	2	295	19
S.C.	523	357	14	510	3	1	2	–	102	47
Ga.	1,836	1,718	23	881	4	–	4	–	74	217
Fla.	2,782	2,091	34	1,392	–	–	28	–	10	98
E.S. CENTRAL	1,860	2,080	57	2,250	10	–	11	1	134	467
Ky.	89	123	16	563	3	–	1	–	2	125
Tenn.	657	873	21	747	7	–	3	–	82	228
Ala.	558	444	11	602	–	–	5	1	23	110
Miss.	556	640	9	338	–	–	2	–	27	4
W.S. CENTRAL	6,883	5,028	60	2,866	119	4	138	–	175	1,051
Ark.	152	203	7	321	55	–	7	–	35	148
La.	1,569	1,250	8	501	5	–	2	–	1	33
Okla.	165	101	8	310	38	–	4	–	100	210
Tex.	4,997	3,474	37	1,734	21	4	125	–	39	660
MOUNTAIN	710	611	18	697	38	–	24	–	28	250
Mont.	11	3	7	39	6	–	4	–	12	120
Idaho	18	16	–	10	4	–	–	–	5	7
Wyo.	17	12	–	12	1	–	–	–	5	17
Colo.	217	166	3	89	9	–	9	–	1	35
N. Mex.	125	105	5	135	3	–	–	–	–	27
Ariz.	174	209	3	317	1	–	10	–	–	27
Utah	27	16	–	53	13	–	1	–	2	11
Nev.	121	84	–	42	1	–	–	–	3	6
PACIFIC	4,083	4,565	93	5,102	11	–	146	–	8	569
Wash.	158	231	12	358	1	–	4	–	1	15
Oreg.	111	104	9	179	1	–	4	–	–	10
Calif.	3,731	4,082	70	4,312	9	–	134	–	7	512
Alaska	13	8	–	73	–	–	–	–	–	32
Hawaii	70	140	2	180	–	–	4	–	–	–
Guam	–	5	U	33	–	U	–	U	–	–
P.R.	596	571	11	489	–	–	4	–	–	81
V.I.	18	10	–	1	–	–	6	–	–	–
Pac. Trust Terr.	–	–	U	55	–	U	–	U	–	–

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending December 5, 1981 (48th week)

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	706	478	165	27	15	21	50
Boston, Mass.	221	146	54	9	5	7	29
Bridgeport, Conn.	43	32	7	2	2	–	3
Cambridge, Mass.	20	18	1	–	–	1	2
Fall River, Mass.	24	16	6	1	–	1	–
Hartford, Conn.	58	38	16	3	1	–	3
Lowell, Mass.	33	25	8	–	–	–	3
Lynn, Mass.	25	17	7	–	1	–	–
New Bedford, Mass.	19	12	7	–	–	–	1
New Haven, Conn.	49	25	14	5	2	3	1
Providence, R.I.	66	45	14	3	–	4	2
Somerville, Mass.	12	9	2	1	–	–	2
Springfield, Mass.	50	37	10	1	1	1	1
Waterbury, Conn.	38	25	8	2	2	1	2
Worcester, Mass.	48	33	11	–	1	3	1
MID. ATLANTIC	2,968	1,956	688	175	85	63	123
Albany, N.Y.	62	43	13	2	3	1	–
Allentown, Pa.	25	20	5	–	–	–	2
Buffalo, N.Y.	100	62	30	2	3	3	–
Camden, N.J.	67	44	15	7	–	1	2
Elizabeth, N.J.	31	24	6	–	1	–	1
Erie, Pa.†	37	24	10	2	1	–	1
Jersey City, N.J.	60	33	19	2	5	1	2
N.Y. City, N.Y.	1,697	1,121	372	125	48	31	70
Newark, N.J.	85	43	25	7	3	6	5
Paterson, N.J.	32	22	8	1	1	–	2
Philadelphia, Pa.†	223	141	61	9	5	7	9
Pittsburgh, Pa.†	153	91	47	9	2	4	5
Reading, Pa.	45	35	7	2	1	–	5
Rochester, N.Y.	116	85	20	1	7	3	7
Schenectady, N.Y.	30	20	9	1	–	–	2
Scranton, Pa.†	30	24	5	–	1	–	2
Syracuse, N.Y.	88	63	17	2	4	2	2
Trenton, N.J.	36	20	11	2	–	3	–
Utica, N.Y.	22	18	2	1	–	1	3
Yonkers, N.Y.	29	23	6	–	–	–	3
E.N. CENTRAL	2,539	1,633	608	132	61	105	78
Akron, Ohio	67	43	18	3	1	2	–
Canton, Ohio	52	38	10	4	–	–	2
Chicago, Ill.	597	375	134	53	18	17	10
Cincinnati, Ohio	128	79	30	2	2	15	12
Cleveland, Ohio	159	94	43	11	–	11	1
Columbus, Ohio	131	78	38	5	4	6	4
Dayton, Ohio	136	78	40	6	6	6	1
Detroit, Mich.	360	231	82	18	11	18	11
Evansville, Ind.	47	35	4	2	1	5	2
Fort Wayne, Ind.	67	46	16	3	–	2	7
Gary, Ind.	15	5	6	–	1	3	1
Grand Rapids, Mich.	60	49	9	1	–	1	1
Indianapolis, Ind.	203	125	52	9	9	8	1
Madison, Wis.	48	32	10	4	1	1	6
Milwaukee, Wis.	171	121	36	7	3	4	–
Peoria, Ill.	40	23	14	–	2	1	8
Rockford, Ill.	57	40	15	1	–	1	4
South Bend, Ind.	59	43	15	–	1	–	4
Toledo, Ohio	98	68	22	3	1	4	1
Youngstown, Ohio	44	30	14	–	–	–	2
W.N. CENTRAL	747	498	159	42	24	24	27
Des Moines, Iowa	56	34	17	2	–	3	–
Duluth, Minn.	24	17	4	–	3	–	–
Kansas City, Kans.	36	24	6	2	2	2	7
Kansas City, Mo.	89	55	26	6	1	1	2
Lincoln, Nebr.	36	28	8	–	–	–	1
Minneapolis, Minn.	88	61	14	8	3	2	2
Omaha, Nebr.	84	60	16	6	2	–	2
St. Louis, Mo.	187	130	32	11	8	6	9
St. Paul, Minn.	85	57	17	5	2	4	–
Wichita, Kans.	62	32	19	2	3	6	4

REPORTING AREA	ALL CAUSES, BY AGE (YEARS)						P&I** TOTAL
	ALL AGES	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,293	784	303	112	43	51	43
Atlanta, Ga.	118	68	27	14	3	6	2
Baltimore, Md.	155	89	37	15	8	6	3
Charlotte, N.C.	103	54	20	20	5	4	4
Jacksonville, Fla.	154	89	47	8	4	6	1
Miami, Fla.	101	55	36	5	2	3	–
Norfolk, Va.	70	42	19	6	1	2	2
Richmond, Va.	93	60	13	9	5	6	8
Savannah, Ga.	39	24	9	4	1	1	2
St. Petersburg, Fla.	104	87	14	1	2	–	6
Tampa, Fla.	93	64	14	9	4	2	11
Washington, D.C.	198	104	55	18	6	15	3
Wilmington, Del.	65	48	12	3	2	–	1
E.S. CENTRAL	766	481	200	51	14	20	41
Birmingham, Ala.	104	64	28	8	2	2	3
Chattanooga, Tenn.	56	32	18	4	2	–	4
Knoxville, Tenn.	39	28	9	1	–	1	1
Louisville, Ky.	138	96	29	7	1	5	13
Memphis, Tenn.	171	107	47	13	4	–	10
Mobile, Ala.	51	28	15	6	1	1	4
Montgomery, Ala.	53	32	11	3	–	7	1
Nashville, Tenn.	154	94	43	9	4	4	5
W.S. CENTRAL	1,445	821	355	111	68	88	34
Austin, Tex.	53	37	11	1	2	2	2
Baton Rouge, La.	63	35	12	9	1	6	2
Corpus Christi, Tex.	37	22	7	5	2	1	–
Dallas, Tex.	209	119	56	15	9	10	5
El Paso, Tex.	72	38	20	5	5	4	1
Fort Worth, Tex.	93	64	19	3	–	7	5
Houston, Tex.	260	115	76	23	21	25	2
Little Rock, Ark.	85	50	21	6	3	3	–
New Orleans, La.	188	114	34	17	5	18	–
San Antonio, Tex.	220	124	58	12	19	7	10
Shreveport, La.	85	55	22	5	–	3	3
Tulsa, Okla.	80	48	19	10	1	2	4
MOUNTAIN	728	446	169	65	26	21	23
Albuquerque, N.Mex.	83	29	30	22	2	–	1
Colo. Springs, Colo.	41	30	5	1	4	1	7
Denver, Colo.	161	107	38	10	2	4	3
Las Vegas, Nev.	63	30	23	5	3	2	–
Ogden, Utah	24	12	6	1	1	4	2
Phoenix, Ariz.	174	111	38	12	9	4	1
Pueblo, Colo.	21	18	2	1	–	–	2
Salt Lake City, Utah	57	38	8	5	1	4	–
Tucson, Ariz.	104	71	19	8	4	2	7
PACIFIC	1,571	1,029	340	96	45	58	82
Berkeley, Calif.	30	23	7	–	–	–	–
Fresno, Calif.	73	46	19	4	1	3	4
Glendale, Calif.	13	10	2	1	–	–	1
Honolulu, Hawaii	68	41	19	4	3	1	5
Long Beach, Calif.	82	48	21	3	5	5	5
Los Angeles, Calif.	336	222	61	24	13	16	8
Oakland, Calif.	68	41	19	4	1	3	1
Pasadena, Calif.	36	31	4	1	–	–	7
Portland, Oreg.	110	75	19	4	5	5	–
Sacramento, Calif.	67	39	15	7	2	4	5
San Diego, Calif.	133	89	35	4	2	3	19
San Francisco, Calif.	169	117	32	12	3	4	4
San Jose, Calif.	176	114	38	16	6	2	13
Seattle, Wash.	110	74	26	3	2	5	4
Spokane, Wash.	50	30	13	3	1	3	4
Tacoma, Wash.	50	29	10	6	1	4	2
TOTAL	12,763††	8,126	2,987	811	381	451	501

*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.

Current Trends

Tuberculosis Among Indochinese Refugees — An Update

State tuberculosis control programs have reported that 3,895 Indochinese refugees were treated for tuberculosis during 1979 and 1980. The states reporting these cases received 96% of the 262,602 refugees who entered the United States during the 2-year period. Of the 3,895 patients, 3,330 (85.5%) entered the United States in 1979 or 1980, 103 (2.6%) entered in the period 1975-1978, and for 462 (11.9%) the year of entry was unknown. The states included 2,850 (73.2%) of these patients in their official tuberculosis morbidity count. The remaining 1,045 (26.8%) were added to tuberculosis case registers but were not counted as new or recurrent cases. Most areas also reported the number of refugees given preventive treatment. Geographic areas that received 90% of the refugees reported that 16.1% (42,217) had been given preventive therapy.

Indochinese refugees are screened overseas for tuberculosis and categorized in 1 of 3 ways: active or suspected active disease (Class A-TB), disease not considered active (Class B-TB), and no evidence of tuberculous disease (*1*). Refugees with Class A-TB may travel only if their disease is noncontagious (i.e., 2 consecutive negative sputum smears on separate days). Upon arrival in the United States, all refugees with Class A-TB and Class B-TB are referred to a local health department for medical evaluation. Refugees certified to have Class A-TB accounted for about 2% of all entering refugees and 57% of the cases of tuberculosis among refugees; refugees certified to have Class B-TB accounted for about 2% of all entering refugees and 20% of the cases among refugees; the remaining refugees accounted for 23% of the reported cases.

The estimated prevalence of tuberculosis among refugees at the time of entry was 1,138 cases/100,000 refugees. The annual incidence after arrival in the United States for refugees with no evidence of disease when screened overseas was 407/100,000 (Table 1). Prevalence rates were higher for males (1,371) than for females (852), as were the annual incidence rates (430 compared with 381). For refugees born in Laos, the prevalence and annual incidence rates of tuberculosis were about half the rates observed for refugees born in Vietnam and Kampuchea. For refugees who entered the United States in 1979, the annual incidence was greater in 1979 (719/100,000) than in 1980 (231/100,000).

TABLE 1. Estimated prevalence of tuberculosis at the time of entry and annual incidence after entry among Indochinese refugees, United States, 1979-1980

Age group (years)	Prevalence of tuberculosis at entry*	Incidence of tuberculosis after arrival†	Incidence of tuberculosis in the United States, excluding refugee cases, 1980
0-4	197.0	438.5	4.9
5-14	173.1	301.1	1.4
15-24	736.5	293.1	4.5
25-44	1,840.1	488.3	10.3
45-64	4,059.3	768.6	18.4
65+	6,833.5	1,584.9	30.2
All ages	1,137.8	407.4	11.3

*Cases per 100,000.
†Cases per 100,000 per year.

Tuberculosis — Continued

Approximately 92% of the reported cases were pulmonary tuberculosis, 7% were extrapulmonary disease, and for 1% the site was not reported. Bacteriologic tests were positive for 26% of the patients and were negative for 53%; the bacteriologic status was not reported for 20% of the cases.

Ten states accounted for >70% of the total number of cases (California, 1,348; Washington, 289; Illinois, 260; Texas, 163; Minnesota, 149; Michigan, 135; Florida, 117; Virginia, 116; Colorado, 112; and Oregon, 103). Overall, the refugees constituted about 7% of all cases added to case registers in the 2-year period, but the percentage varied markedly by geographic area. In 5 states, the refugees accounted for over 25% of the estimated cases added to case registers, and in 3 major urban areas the refugees accounted for 50% or more of the estimated cases added to case registers (Table 2).

Considerable variation existed among and within individual states in terms of the proportion of tuberculosis cases counted as new or recurrent. In 14 states, >90% of the cases in refugees added to case registers were included in the official morbidity count; 15 states included <50%. Variation among cities was also apparent. San Francisco, for example, counted 282 (99.6%) of 283 cases, Long Beach counted 36 (60.0%) of 60, Sacramento 32 (39.0%) of 82, and Chicago 0 (0.0%) of 149.

Although bacteriologic confirmation of cases was generally low, 4 states reported 70% or more with positive bacteriologic results; 13 areas reported less than 20% confirmed. Within California, Los Angeles reported 64% with positive bacteriologic results, while nearby Orange County reported 4%.

Reported by Tuberculosis Control Div, Quarantine Div, Center for Prevention Svcs, CDC.

TABLE 2. The 10 states and 10 major urban areas in which refugees accounted for the largest percentage of tuberculosis cases, United States, 1979-1980

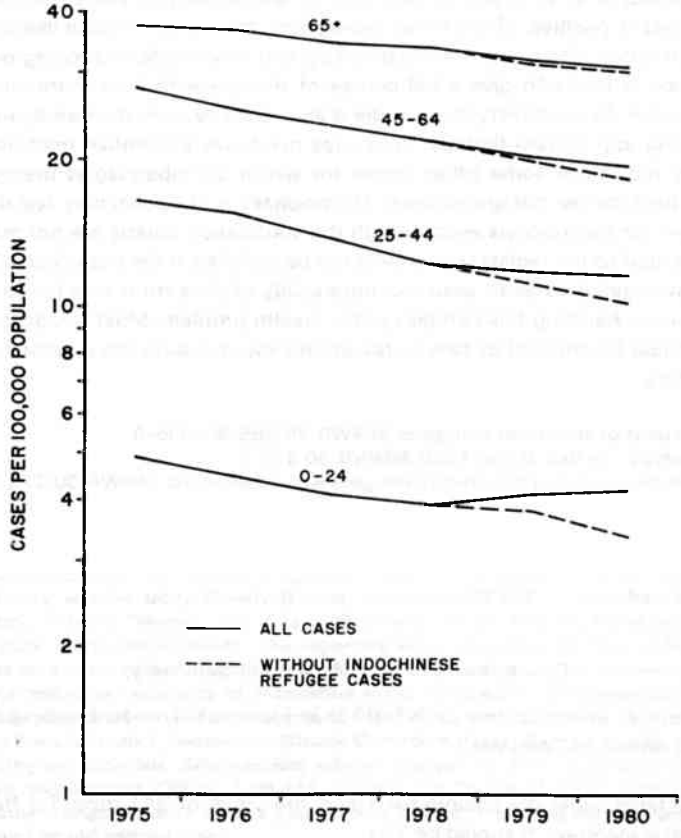
Area	Refugees with tuberculosis	Estimated percentage of cases added to registers
States		
1. Utah	53	36
2. Minnesota	149	34
3. Washington	289	33
4. Colorado	112	32
5. Kansas	20	27
6. Oregon	103	23
7. Nevada	25	22
8. California	1,348	17
9. Idaho	9	15
10. Iowa	23	14
Metropolitan Areas		
1. St. Paul,MN	68	60
2. Wichita, KS	41	55
3. Orange County, CA	368	50
4. Long Beach, CA	60	42
5. Seattle, WA	106	38
6. Minneapolis, MN	37	38
7. San Francisco, CA	283	33
8. Sacramento, CA	82	30
9. Denver, CO	49	30
10. San Diego, CA	133	30

Tuberculosis — Continued

Editorial Note: Based on these figures, it is estimated that of the Indochinese refugees who entered the United States in 1979 and 1980, approximately 1.5% either had tuberculosis at the time of entry or developed it before the end of 1980; approximately 18% were started on preventive treatment for tuberculous infection. The tuberculosis case rates for these refugees are rivaled in this country only by the tuberculosis case rate of close contacts of persons with recently diagnosed cases (about 1.4%). Considering only those cases included in the official morbidity count, the Indochinese refugees accounted for 2.8% of the tuberculosis cases counted nationally in 1979 and 7.8% in 1980 (5.3% over the 2-year period). The leveling off of the total number of reported tuberculosis cases observed in the United States over the past 2 1/2 years (*2*) is accounted for by cases in refugees being added to the slowly declining number of indigenous cases. The influence of Indochinese refugees on tuberculosis case rates has been greater in the younger age groups than the older (Figure 3).

The 3-fold decrease in incidence from 1979 to 1980 for refugees who entered in 1979 probably reflects a combination of the natural decrease in risk of disease for those infected before arrival and successful efforts to reduce transmission of tuberculosis after arrival. Re-

FIGURE 3. Tuberculosis case rates, by age group, United States, 1975-1980



Tuberculosis — Continued

duced transmission is due to several factors: refugees with infectious tuberculosis (positive smear) are started on treatment in Asia; most refugees with Class A-TB have been evaluated promptly after arrival and, if necessary, continued or started on treatment; over 46,000 refugees (about 18% of the total) have been given preventive treatment; and, presumably, a high level of suspicion in the medical community has led to the prompt evaluation and treatment of refugees with symptoms compatible with tuberculosis. Because of the reduced transmission, tuberculosis case rates among the refugees are expected to continue to fall. Nevertheless, they will remain higher than the rates of other persons in the United States for years to come because so many have been infected before arrival. Treatment of these persons requires special attention because about one-third of all Indochinese patients whose cultures were positive when tested in the United States had organisms resistant to at least 1 antituberculosis drug (*3*).

The large differences among areas in the proportion of refugee cases included in the official morbidity count and the proportion with positive bacteriologic results may indicate inconsistencies in counting and diagnostic procedures. Only verified cases should be included in the national morbidity count and the same verification criteria should be used for refugees as for other persons with tuberculosis. Cases are verified by meeting 1 of 2 criteria: 1) a culture is positive for *Mycobacterium tuberculosis* or a smear is positive when a culture has not or cannot be obtained, or 2) all 4 of the following: a) diagnostic procedures are completed, b) the tuberculin test is positive, c) the chest radiograph, the current clinical illness, or both are compatible with tuberculosis and the chest radiograph is unstable (improving or worsening), and d) a decision is made to give a full course of therapy with 2 or more antituberculosis drugs. Patients who do not satisfy these criteria should be evaluated carefully to be sure that they are receiving appropriate therapy. They may need only preventive treatment for tuberculosis, or they may have some other illness for which antituberculosis therapy is not appropriate (e.g., lung cancer, paragonimiasis). Occasionally, a physician may feel it is necessary to treat a patient for tuberculosis even though the verification criteria are not met. These patients may be added to the register but should not be included in the case count. These procedures are recommended so as to assure comparability of data from area to area and year to year and to assist in handling this complex public health problem. Most refugees with verified tuberculosis should be counted as new or recurrent cases because the disease has been verified in this country.

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3. CDC. Drug resistance among Indochinese refugees with tuberculosis. MMWR;30:273-5.

Errata, Vol. 29, No. 54 (Annual Summary)

pvii. In the first sentence the date (1978) is incorrect. The sentence should read, "In 1878 an Act of Congress ..."

p121. In the table under the column for 1972, the figure of 341 given for Number (Thousands) is incorrect. It should be 391.

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p581. There was an omission in the credits for the report "Sudden, Unexpected, Nocturnal Deaths among Southeast Asian Refugees." Quarantine Div, Center for Prevention Svcs, CDC, should be added.

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