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Epidemiologic Notes and Reports

Imported Measles with Subsequent Airborne Transmission in a Pediatrician's Office — Michigan

An outbreak of seven cases of measles was reported in Muskegon County, Michigan; rash onsets occurred from November 14 through December 10, 1982. The outbreak began with an international importation in a 7-month-old baby who arrived in the United States from Korea on October 29 for adoption. She infected four other children in a pediatrician's office; two additional measles cases occurred subsequently in family members of these four children (Figure 1).

The index patient (Patient A) had onset of rash on November 14 and visited a pediatrician's office on November 16. She was in the office waiting room from 11 a.m. to noon and in a single examination room from noon to 12:30 p.m. After measles was diagnosed, the pediatrician reviewed the immunization records of all children known to be in the office at the same time and offered immune globulin (IG) to the three unimmunized children, all of whom were less than 15 months of age. Two received IG, while the third, a 6-month-old infant did not. No cases occurred among these children. However, cases did occur in patients not known to have been in the office at the same time as Patient A. One child who was subsequently infected arrived approximately 5 minutes before Patient A left the office but did not have face-to-face contact with her; the other three arrived in the office 60-75 minutes after Patient A left. Only one of these four children used the same examining room as Patient A, but all four shared the same waiting room. None of the children were in contact with any other persons who had rash illnesses. No other common activities or contacts with individuals or shared objects could be identified to account for these cases. The last-known measles cases in Muskegon County had been reported in February 1981.

The patients with secondary cases ranged in age from 4 months to 2½ years; none had been immunized. Two of these children transmitted measles to family members—a 14-year-old, with a history of measles vaccination at 11 months and 5 years, and a 24-year-old, whose immunization status was unknown.

Of 29 children who were in the office when Patient A was present or who arrived within 90 minutes of her departure, 19 were 15 months of age or older, the recommended age for routine measles vaccination. Two of these children had not been vaccinated; both developed measles. None of the 17 vaccinated children developed measles. Of 10 children less than 15 months of age, all unvaccinated, two were infected, two received IG, and six remained well. Four of the six well patients were 6 months of age or less.

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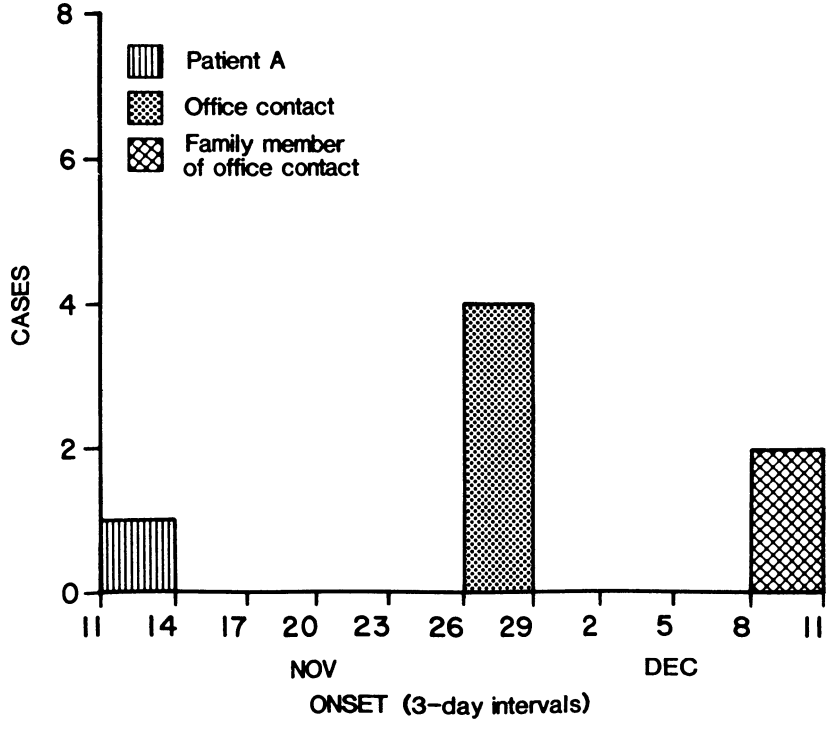
Measles – Continued

fectious Diseases; Surveillance, Investigations, and Research Br, Div of Immunization, Center for Prevention Services, CDC.

Editorial Note: The index case in this outbreak was an international importation, a child who was too young to have received routine vaccination against measles. Transmission from this importation was limited because the immunity level in this physician's practice and the community was high. Protection afforded by measles vaccine was demonstrated by the lack of secondary cases in children who had been vaccinated. Record reviews in Muskegon County schools (enrollment approximately 10,000) showed that over 99% of students were immune to measles.

The outbreak appears to have been caused by airborne transmission in the pediatrician's office; none of the secondary cases were in children who had face-to-face contact with Patient A. Transmission probably occurred when droplet nuclei were aerosolized by the coughing child, remained suspended and were subsequently inhaled by the other children when they arrived; this phenomenon has been described in a medical office, an airport, and other settings (*2-4*). This outbreak indicates that transmission in medical offices can occur up to 75 minutes after an infectious patient has left the office. Survival of measles virus in droplet nuclei for over 2 hours has been demonstrated in laboratory studies (*5*). Although the exact mode of transmission in this instance cannot be proven, transmission via fomites seems less likely than airborne transmission because measles virus is believed to survive only for a short time on dry surfaces (*6*).

FIGURE 1. Measles cases, by date of rash onset – Muskegon County, Michigan, November-December 1982



Measles — Continued

When patients with illnesses compatible with measles present for medical care, they should be cared for in a way that minimizes contact with other patients. Considering the high communicability of measles, it seems reasonable to keep such patients in respiratory isolation (*7*), to attend them promptly, and to consider postexposure prophylaxis for susceptible office contacts—staff as well as patients. Such prophylaxis should be administered to persons who had direct face-to-face contact with the infectious patient. Prophylaxis is not generally offered to persons who did not have face-to-face contact but were in the office with the patient or arrived after the patient departed. The risk of measles in the latter group is uncertain because data are not available to accurately determine the frequency of airborne transmission in medical offices. The fact that airborne transmission has only rarely been documented suggests that the risk is low and that, ordinarily, postexposure prophylaxis is unnecessary for such persons.

Measles vaccination may provide protection if given within 72 hours of exposure (*8*). Because there is no evidence of adverse reactions following vaccination of immune individuals, combined measles-mumps-rubella vaccine (MMR) should be used whenever a person is likely to be susceptible to more than one component. IG may prevent or modify measles if given within 6 days of exposure. IG may be especially indicated for susceptible close contacts of measles patients, particularly contacts under 1 year of age, for whom the risk of complications is highest. If IG is used, measles vaccine should be given about 3 months later if the child is at least 15 months of age.

As long as measles cases continue to occur or are imported into the United States, persons who visit physicians' offices and other medical settings may have some risk of exposure; infection may follow exposure to patients or health-care personnel (*9*). Ideally, both groups should be immune to measles to minimize this risk, especially for patients who are too young for routine vaccination or who cannot be vaccinated because of medical contraindications.

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Vaccinia Outbreak — Nevada

In April 1983, seven cases of contact vaccinia infection were identified in Nevada following exposure to a recently vaccinated military dependent. On April 14, the vaccinee, an 11-year-old girl, mistakenly received a smallpox vaccination during immunization clearance for travel to Germany. The vaccinee had a "primary" reaction.

Vaccinia Outbreak — Continued

The primary pustule was present when the vaccinee attended a slumber party with seven other girls on April 17. Activities included exchanging and wearing articles of clothing. On April 22, the other seven girls presented at a U.S. Air Force clinic with primary lesions distributed widely on their bodies. The girls were quarantined at their homes for 14 days, during which the lesions resolved. The illnesses were mild. No additional cases were reported.

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Editorial Note: This outbreak demonstrates again that there are risks associated with smallpox vaccination and illustrates the relative ease of person-to-person transmission of vaccinia virus. Although these cases were mild, vaccinia infection can be fatal, especially in individuals with compromised immunologic mechanisms. The last reported outbreak of contact-spread vaccinia followed exposure to a recently vaccinated member of the Canadian armed forces in Newfoundland in 1981 (*1*).

In May 1980, the World Health Organization declared the world free of smallpox. The January 1982 revision of the International Health Regulations removed smallpox from the list of quarantinable diseases. As a result, the revised International Certificate of Vaccination does not include smallpox vaccination. Smallpox vaccination should not be given for international travel.

Civilian smallpox vaccination is now recommended only for laboratory workers directly involved with smallpox virus or closely related orthopox viruses (e.g., monkeypox, vaccinia) (*2*) and should not be used in attempts to treat or prevent diseases such as herpes. Wyeth Laboratories, the only licensed producer of smallpox vaccine in the United States, discontinued distribution for general use in May 1983 (*3*).

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Toxic-Shock Syndrome in a Patient Using a Continuous Subcutaneous Insulin Infusion Pump—Idaho

In May 1983, a 12-year-old, pre-menarchal, diabetic girl from Idaho developed a *Staphylococcus aureus* abscess at a needle insertion site and toxic-shock syndrome (TSS).

The patient had onset of Type I (insulin-dependent) diabetes mellitus at age 9 but had no evidence of the chronic complications of diabetes, such as retinopathy, neuropathy, nephropathy, or atherosclerotic cardiovascular disease. She began continuous subcutaneous insulin infusion (CSII) pump therapy at age 11 because of poor control of her diabetes mellitus. She was instructed to swab the infusion site with povidone-iodine solution before inserting the subcutaneous needle, to apply povidone-iodine ointment and a plastic dressing to the insertion site, and to change the site every 3 days. However, frequently she did not change the site more than every 10 days. For 1-2 weeks before she was admitted to the hospital, she noted intermittent purulent drainage from several subcutaneous needle insertion sites.

The day before admission, the patient had onset of generalized muscle pain and puffiness

Toxic-Shock Syndrome — Continued

of the face and hands. The day of admission, she presented with diabetic ketoacidosis, severe abdominal pain, diarrhea, and fever. Because of abdominal tenderness, an exploratory laparotomy was performed; no abnormality was found. Before and after surgery, her systolic blood pressure was as low as 70 mm Hg, and her temperature was 39.4 C (103 F). Four hours after surgery, she had marked diffuse erythroderma and conjunctival suffusion. She was irritable and lethargic but coherent. Vaginal examination was normal. Two subcutaneous needle-insertion sites had 1-2 cm areas of induration with no purulent discharge or erythema. Laboratory tests revealed a white blood cell count of 21,000 and platelet count of 367,000. Hemoglobin declined from an admission value of 15.8 g/dl to 10.6 g/dl. Blood urea nitrogen, serum creatinine, and liver function tests were normal. Prothrombin and partial thromboplastin times were normal. Antistreptolysin-O titer was negative. Urinalysis showed 15-18 leukocytes/hpf and was culture-negative. Chest x-ray was normal. A throat culture was positive for *S. aureus* and negative for Group A beta-hemolytic streptococci. Blood, vaginal, and stool cultures were negative.

The patient was treated with intravenous doxycycline and cefamandole and showed significant clinical improvement by the second day of therapy with resolution of her hypotension, diarrhea, erythroderma, and fever. After 7 days of therapy, she was discharged from the hospital. Two days later, there was a 5-10 cc purulent drainage from one of her CSII sites. Gram stain showed white cells and gram-positive cocci, and culture yielded *S. aureus*. Seven days after onset of illness, she began to have desquamation of the skin from the palms of her hands. She had an uneventful recovery.

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Editorial Note: CSII pumps are external, battery-powered devices that administer insulin through subcutaneous needles. In an effort to improve glycemic control among patients with diabetes mellitus, use of these pumps has increased rapidly in recent years. Infection at the infusion site is among the most frequently encountered complications of CSII pump therapy (*1,2*). The present case, as well as a previously reported death attributed to endocarditis secondary to an abscess at a CSII needle insertion site (*3*), show that serious disease can result.

This patient met CDC's revised case definition of TSS (*4*). Her CSII needle insertion site abscesses were not cultured until after her discharge from the hospital, but they were the most likely sites of *S. aureus* infection. It was unlikely that her surgical wound was the source, since most of the TSS symptoms were present before surgery. *S. aureus* cultured from her throat may have been the source of TSS, but the abscesses were a much more likely source. Twenty-nine of 130 non-menstrual cases of TSS have been previously associated with nonsurgical cutaneous or subcutaneous lesions (*5*).

No specific procedural guidelines—including optimum frequency of needle and administration changes—are available to minimize the risk of subcutaneous infections associated with CSII pumps. In the absence of such information, physicians are encouraged to educate patients using these devices to the following recommendations (modified from CDC's Guideline for Prevention of Intravascular Infections [*6*]).

1. Patients should wash their hands before inserting a subcutaneous needle.
2. The infusion site should be scrubbed with an antiseptic before needle insertion. Tincture of iodine (1%-2%), chlorhexidine, iodophor, or 70% alcohol can be used. The antiseptic

Toxic-Shock Syndrome – Continued

should be applied liberally and allowed to remain in contact for at least 30 seconds before needle insertion. Aqueous benzalkonium-like compounds should not be used to scrub the catheter site.

3. The needle should be secured to stabilize it at the insertion site.
4. A sterile dressing should be applied to cover the insertion site. The dressing, not tape, should cover the wound, unless the tape is sterile.
5. The infusion site and administration set should be changed and a new needle inserted at least every 48-72 hours.
6. Patients with CSII devices should be instructed to evaluate the insertion site at least daily for evidence of needle-related infections. This evaluation should include gentle palpation of the insertion site through the intact dressing. If the patient has an unexplained fever or pain or tenderness at the insertion site, the dressing should be removed and the insertion site inspected. If a draining abscess or cellulitis is noted, the administration set and needle should be changed immediately; the patient should seek appropriate medical attention, and appropriate cultures should be obtained.

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

Disease	31st Week Ending			Cumulative, 31st Week Ending		
	August 6, 1983	August 7, 1982	Median 1978-1982	August 6, 1983	August 7, 1982	Median 1978-1982
Aseptic meningitis	366	290	244	3,790	3,507	2,666
Encephalitis: Primary (arthropod-borne & unspec.)	55	43	38	627	642	482
Post-infectious	2	1	2	48	54	130
Gonorrhea: Civilian	17,337	19,892	20,929	520,240	560,890	573,920
Military	474	613	613	13,976	16,103	16,103
Hepatitis: Type A	374	414	548	12,676	13,141	16,279
Type B	426	442	357	13,280	12,489	10,146
Non A, Non B	72	53	N	1,999	1,358	N
Unspecified	147	163	202	4,614	5,037	5,946
Legionellosis	22	14	N	433	290	N
Leprosy	6	5	5	152	126	110
Malaria	15	25	22	443	609	609
Measles: Total	12	33	129	1,149	1,124	11,374
Indigenous	9	N	N	955	N	N
Imported*	3	N	N	194	N	N
Meningococcal infections: Total	40	43	37	1,869	2,012	1,792
Civilian	40	43	37	1,854	2,000	1,774
Military	-	-	-	15	12	13
Mumps	31	31	55	2,276	4,084	6,805
Pertussis	62	49	49	1,202	748	785
Rubella (German measles)	8	23	57	728	1,863	3,085
Syphilis (Primary & Secondary): Civilian	753	655	474	18,976	19,447	15,250
Military	6	4	5	246	248	185
Toxic-shock syndrome	3	N	N	261	N	N
Tuberculosis	448	492	492	13,749	15,004	15,900
Tularemia	11	3	8	177	131	115
Typhoid fever	11	5	15	218	226	272
Typhus fever, tick-borne (RMSF)	60	48	49	736	633	633
Rabies, animal	88	84	111	3,646	3,759	3,759

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1983		Cum. 1983
Anthrax	-	Plague	21
Botulism: Foodborne	12	Poliomyelitis: Total	2
Infant	37	Paralytic	2
Other	-	Psittacosis (Mich. 1, Calif. 1)	74
Brucellosis (Tex. 3)	112	Rabies, human	2
Cholera	1	Tetanus (La. 1)	44
Congenital rubella syndrome	16	Trichinosis	24
Diphtheria	-	Typhus fever, flea-borne (endemic, murine) (Tex. 1)	28
Leptospirosis (Ala. 1, Hawaii 1)	29		

*One of the 12 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending August 6, 1983 and August 7, 1982 (31st week)

Reporting Area	Aseptic Meningitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionellosis	Leprosy	Malaria
		Primary	Post-infectious			A	B	NA,NB	Unspecified			
	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1982	1983	1983	1983	1983	1983	Cum. 1983	Cum. 1983
UNITED STATES	366	627	48	520,240	560,890	374	426	72	147	22	152	443
NEW ENGLAND	13	25	-	13,260	13,306	6	23	-	11	7	3	23
Maine	1	-	-	678	625	-	-	-	-	-	-	1
N.H.	2	4	-	410	456	-	2	-	-	-	2	-
Vt.	1	1	-	245	253	1	-	-	-	-	-	1
Mass.	4	10	-	5,626	6,110	3	14	-	11	1	-	10
R.I.	1	-	-	737	871	1	1	-	-	6	-	3
Conn.	4	10	-	5,564	4,991	1	6	-	-	-	1	8
MID ATLANTIC	43	68	4	66,679	68,946	38	34	13	8	2	20	62
Upstate N.Y.	16	19	-	10,114	11,027	6	10	-	3	-	-	19
N.Y. City	1	7	-	27,030	28,854	21	4	-	2	-	19	16
N.J.	15	15	-	12,759	12,687	5	15	12	2	-	-	21
Pa.	11	27	4	16,776	16,378	6	5	1	1	2	1	6
E.N. CENTRAL	36	152	11	70,618	79,780	25	39	7	7	6	5	30
Ohio	5	57	7	19,192	21,789	5	9	3	1	5	1	5
Ind.	15	31	1	7,470	9,333	7	4	1	4	-	-	-
Ill.	-	-	-	17,252	22,796	2	2	1	-	-	2	11
Mich.	16	50	-	20,143	18,667	11	24	2	2	1	2	12
Wis.	-	14	3	6,561	7,195	-	-	-	-	-	-	2
W.N. CENTRAL	18	56	5	24,202	26,362	6	12	2	3	3	5	19
Minn.	-	19	1	3,451	3,992	1	5	1	-	-	4	6
Iowa	3	28	-	2,704	2,768	1	-	1	-	1	-	3
Mo.	7	5	-	11,681	12,342	3	6	-	3	1	-	2
N. Dak.	1	-	-	253	353	-	-	-	-	-	-	2
S. Dak.	1	-	2	668	718	1	-	-	-	-	-	1
Nebr.	1	3	-	1,505	1,595	-	1	-	-	1	-	1
Kans.	5	1	2	3,940	4,594	-	-	-	-	-	1	4
S. ATLANTIC	63	97	15	135,194	146,224	38	84	13	8	2	8	62
Del.	1	-	-	2,425	2,321	1	-	-	-	-	-	-
Md.	7	13	-	17,312	18,311	2	17	5	1	-	1	12
D.C.	-	-	-	9,187	8,042	-	-	-	-	-	-	8
Va.	12	22	2	11,745	11,852	3	12	1	2	1	1	9
W. Va.	1	7	-	1,402	1,626	3	5	1	-	-	-	1
N.C.	18	25	-	20,001	23,010	-	6	-	1	-	-	3
S.C.	1	2	-	12,854	14,314	2	3	1	1	-	-	5
Ga.	4	4	1	27,504	27,974	4	15	-	-	-	1	5
Fla.	19	24	12	32,764	38,774	23	26	5	3	1	5	19
E.S. CENTRAL	27	23	1	43,934	47,942	36	35	1	4	-	-	7
Ky.	8	-	-	5,064	6,460	25	3	-	1	-	-	-
Tenn.	6	4	-	18,026	18,656	2	22	1	3	-	-	-
Ala.	11	18	-	13,712	14,470	7	8	-	-	-	-	5
Miss.	2	1	1	7,132	8,356	2	2	-	-	-	-	2
W.S. CENTRAL	98	86	2	75,197	77,445	99	45	6	70	1	14	44
Ark.	3	6	-	5,682	6,280	4	-	1	9	1	-	1
La.	14	8	-	14,564	14,022	6	3	-	3	-	1	4
Okla.	14	20	1	8,723	8,546	12	5	5	1	-	-	8
Tex.	67	52	1	46,228	48,597	77	37	-	57	-	13	31
MOUNTAIN	12	33	4	16,434	18,870	21	33	4	12	-	12	21
Mont.	-	-	-	715	780	2	3	-	-	-	-	-
Idaho	-	-	-	719	900	1	-	-	-	-	-	2
Wyo.	-	2	-	437	553	-	-	-	1	-	-	1
Colo.	9	18	-	4,640	4,962	3	7	-	-	-	2	7
N. Mex.	1	1	-	2,032	2,423	1	3	-	-	-	-	5
Ariz.	-	4	4	4,594	5,104	8	13	2	6	-	9	3
Utah	2	8	-	802	901	1	2	2	3	-	1	3
Nev.	-	-	-	2,495	3,247	5	5	-	2	-	-	-
PACIFIC	56	87	6	74,722	82,015	105	121	26	24	1	85	175
Wash.	4	6	1	5,682	6,762	4	4	-	-	-	11	5
Oreg.	-	-	2	4,016	4,598	8	5	-	-	-	1	6
Calif.	44	75	3	61,580	67,191	91	111	26	24	1	49	164
Alaska	2	-	-	1,903	1,999	-	1	-	-	-	-	-
Hawaii	6	6	-	1,541	1,465	2	-	-	-	-	24	-
Guam	U	-	-	69	88	U	U	U	U	U	-	2
P.R.	1	-	1	1,601	1,722	3	-	-	4	-	-	1
V.I.	-	-	-	160	165	-	-	-	-	-	-	-
Pac. Trust Terr.	U	-	-	-	258	U	U	U	U	U	-	-

N: Not notifiable U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 6, 1983 and August 7, 1982 (31st week)

Reporting Area	Measles (Rubeola)					Menin-gococcal Infections	Mumps			Pertussis			Rubella		
	Indigenous		Imported*		Total										
	1983	Cum. 1983	1983	Cum. 1983	Cum. 1982	Cum. 1983	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982
UNITED STATES	9	955	3	194	1,124	1,869	31	2,276	4,084	62	1,202	748	8	728	1,863
NEW ENGLAND	-	2	-	13	11	94	5	91	153	1	40	36	-	10	14
Maine	-	-	-	-	-	8	-	15	35	-	4	3	-	-	-
N.H.	-	-	-	3	2	3	1	17	13	-	5	4	-	2	8
Vt.	-	-	-	-	2	7	2	14	7	-	7	2	-	3	-
Mass.	-	2	-	2	2	31	1	21	68	1	20	15	-	5	2
R.I.	-	-	-	-	-	7	1	12	14	-	4	10	-	-	1
Conn.	-	-	-	8	5	38	-	12	16	-	-	2	-	-	3
MID ATLANTIC	1	61	1	23	151	316	6	176	254	6	261	124	-	126	90
Upstate N.Y.	-	-	-	7	106	99	4	68	57	3	86	69	-	23	43
N.Y. City	1	35	1 †	12	37	56	-	24	42	1	40	20	-	86	31
N.J.	-	26	-	1	4	53	2	33	36	-	15	13	-	3	16
Pa.	-	-	-	3	4	108	-	51	119	2	120	22	-	14	-
E.N. CENTRAL	2	554	-	56	67	345	2	1,153	2,222	12	257	189	2	105	170
Ohio	-	72	-	13	1	106	-	529	1,552	4	85	46	1	2	-
Ind.	-	382	-	4	2	42	-	28	37	3	31	12	1	23	26
Ill.	-	98	-	33	23	101	2	119	242	4	97	84	-	43	63
Mich.	2	2	-	5	41	64	-	417	294	1	17	15	-	15	47
Wis.	-	-	-	1	-	32	-	60	97	-	27	32	-	22	34
W.N. CENTRAL	-	-	-	-	49	106	-	134	534	3	71	38	-	30	55
Minn.	-	-	-	-	-	16	-	25	414	1	30	12	-	6	5
Iowa	-	-	-	-	-	12	-	35	30	-	5	5	-	-	-
Mo.	-	-	-	-	2	53	-	21	8	-	9	10	-	-	38
N. Dak.	-	-	-	-	-	2	-	-	-	-	1	-	-	-	-
S. Dak.	-	-	-	-	-	4	-	-	1	-	3	4	-	-	1
Nebr.	-	-	-	-	3	1	-	2	-	-	-	1	-	-	-
Kans.	-	-	-	-	44	18	-	51	81	2	23	6	-	24	11
S. ATLANTIC	-	154	-	26	36	378	7	150	229	4	161	134	-	88	67
Del.	-	-	-	-	-	-	-	8	10	-	2	4	-	-	1
Md.	-	2	-	4	2	41	-	23	23	-	14	24	-	1	33
D.C.	-	-	-	-	1	4	-	-	-	-	-	1	-	-	-
Va.	-	10	-	13	14	57	3	28	32	-	45	17	-	1	12
W. Va.	-	-	-	-	2	3	1	34	84	-	5	4	-	-	1
N.C.	-	-	-	1	-	79	1	7	11	-	18	17	-	10	1
S.C.	-	-	-	4	-	40	-	8	13	-	13	14	-	1	1
Ga.	-	8	-	-	-	59	2	42	12	3	42	26	-	11	6
Fla.	-	134	-	4	17	95	-	-	44	1	22	27	-	64	12
E.S. CENTRAL	-	1	-	5	7	116	-	42	38	-	17	25	-	10	43
Ky.	-	-	-	1	1	25	-	18	12	-	5	4	-	9	25
Tenn.	-	-	-	-	6	40	-	19	14	-	5	11	-	-	2
Ala.	-	1	-	4	-	34	-	2	6	-	3	1	-	1	-
Miss.	-	-	-	-	-	17	-	3	6	-	4	9	-	-	16
W.S. CENTRAL	-	39	-	34	28	209	1	149	154	22	211	52	1	101	86
Ark.	-	5	-	7	-	17	-	2	6	-	14	3	-	-	1
La.	-	-	-	25	2	43	-	-	5	-	5	9	-	9	1
Okla.	-	1	-	-	12	25	-	-	-	21	152	3	-	-	3
Tex.	-	33	-	2	14	124	1	147	143	1	40	37	1	92	81
MOUNTAIN	-	1	-	3	8	67	1	95	75	8	126	45	-	29	72
Mont.	-	-	-	-	-	6	-	2	3	-	1	1	-	5	5
Idaho	-	-	-	-	-	6	-	6	3	1	4	7	-	8	6
Wyo.	-	-	-	-	1	2	-	-	2	-	5	2	-	2	7
Colo.	-	-	-	2	6	25	-	10	14	5	84	14	-	-	6
N. Mex.	-	-	-	-	-	6	-	-	-	1	9	4	-	-	6
Ariz.	-	-	-	1	1	13	1	67	33	-	14	16	-	6	12
Utah	-	-	-	-	-	8	-	6	15	1	9	1	-	7	20
Nev.	-	1	-	-	-	1	-	4	5	-	-	-	-	1	10
PACIFIC	6	143	2	34	767	238	9	286	425	6	58	105	5	229	1,266
Wash.	-	1	-	3	37	32	-	38	61	2	10	18	-	9	37
Oreg.	2	7	-	2	6	37	-	-	-	-	6	23	-	13	6
Calif.	4	134	-	27	719	162	6	221	350	4	41	64	5	206	1,211
Alaska	-	-	2 §	2	1	-	2	12	6	-	-	-	-	1	5
Hawaii	-	1	-	-	4	7	1	15	8	-	1	-	-	-	7
Guam	U	1	U	1	6	1	U	-	3	U	-	-	U	-	2
P.R.	-	82	-	-	83	11	1	103	49	-	7	16	-	3	8
V.I.	-	-	-	5	-	-	-	-	1	-	-	-	-	2	-
Pac. Trust Terr.	U	-	U	-	-	-	U	-	4	U	-	-	U	-	-

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

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending August 6, 1983 and August 7, 1982 (31st week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic-shock Syndrome	Tuberculosis		Tula-remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1983	Cum. 1982	1983	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983
UNITED STATES	18,976	19,447	3	448	13,749	177	218	736	3,646
NEW ENGLAND	411	332	-	14	394	2	10	4	16
Maine	11	1	-	3	27	-	-	-	3
N.H.	14	3	-	1	28	-	-	1	2
Vt.	2	1	-	1	9	-	-	-	-
Mass.	257	221	-	7	198	1	8	2	7
R.I.	14	18	-	-	27	1	-	-	-
Conn.	113	88	-	2	105	-	2	1	4
MID ATLANTIC	2,339	2,677	-	81	2,468	-	37	13	136
Upstate N.Y.	134	289	-	17	406	-	6	-	45
N.Y. City	1,417	1,593	-	46	1,002	-	15	1	-
N.J.	464	359	-	18	524	-	11	5	12
Pa.	324	436	-	-	536	-	5	7	79
E.N. CENTRAL	920	1,198	1	52	1,828	2	35	56	318
Ohio	276	180	1	9	277	-	9	38	37
Ind.	74	116	-	12	182	-	1	4	26
Ill.	387	667	-	15	806	1	16	10	170
Mich.	138	176	-	16	474	1	9	4	6
Wis.	45	59	-	-	89	-	-	-	79
W.N. CENTRAL	224	346	-	14	441	55	13	33	568
Minn.	92	67	-	5	88	-	2	-	98
Iowa	10	18	-	2	38	-	-	-	146
Mo.	82	209	-	-	226	43	6	18	80
N. Dak.	2	6	-	-	5	-	-	1	56
S. Dak.	9	-	-	-	30	3	-	4	81
Nebr.	11	11	-	-	16	5	-	1	51
Kans.	18	35	-	7	38	4	5	9	56
S. ATLANTIC	5,009	5,234	-	88	2,788	13	26	305	1,245
Del.	20	9	-	-	27	-	-	2	2
Md.	322	285	-	15	233	5	5	30	517
D.C.	219	294	-	6	110	-	1	-	1
Va.	339	367	-	9	277	1	5	41	449
W. Va.	17	20	-	1	86	-	2	11	90
N.C.	464	386	-	6	391	6	1	116	14
S.C.	313	299	-	7	251	-	1	52	17
Ga.	921	1,071	-	16	529	1	1	50	136
Fla.	2,394	2,503	-	28	884	-	10	3	19
E.S. CENTRAL	1,299	1,345	-	41	1,244	11	4	51	259
Ky.	85	74	-	13	309	-	1	3	60
Tenn.	369	354	-	10	371	9	1	29	159
Ala.	523	497	-	10	325	-	1	16	40
Miss.	322	420	-	8	239	2	1	3	-
W.S. CENTRAL	5,138	5,025	1	60	1,603	81	27	268	731
Ark.	123	125	-	7	188	53	1	21	122
La.	1,148	1,123	-	-	242	2	3	-	20
Okla.	130	111	1	-	126	21	2	176	79
Tex.	3,737	3,666	-	53	1,047	5	21	71	510
MOUNTAIN	404	485	1	7	366	9	7	4	126
Mont.	5	3	-	-	34	2	1	1	66
Idaho	6	22	-	1	20	2	-	1	4
Wyo.	9	12	-	2	10	2	-	2	5
Colo.	97	132	-	3	48	-	1	-	13
N. Mex.	120	113	-	-	76	1	-	-	6
Ariz.	96	107	-	1	142	1	3	-	28
Utah	13	14	1	-	24	1	1	-	3
Nev.	58	82	-	-	12	-	1	-	1
PACIFIC	3,232	2,805	-	91	2,617	4	59	2	247
Wash.	95	98	-	4	134	2	3	-	2
Oreg.	77	68	-	2	114	1	3	-	-
Calif.	3,013	2,557	-	85	2,187	1	51	2	230
Alaska	8	8	-	-	36	-	-	-	15
Hawaii	39	74	-	-	146	-	2	-	-
Guam	-	1	U	U	2	-	-	-	-
P.R.	400	369	-	18	281	-	-	-	29
V.I.	12	20	-	-	1	-	-	-	-
Pac. Trust Terr.	-	-	U	U	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending August 6, 1983 (31st week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	597	391	137	38	12	19	23
Boston, Mass.	161	97	39	11	5	9	-
Bridgeport, Conn.	47	30	11	5	1	-	2
Cambridge, Mass.	22	17	5	-	-	-	4
Fall River, Mass.	22	15	5	1	1	-	-
Hartford, Conn.	49	30	8	6	2	3	-
Lowell, Mass.	20	17	2	1	-	-	1
Lynn, Mass.	20	14	5	1	-	-	-
New Bedford, Mass.	28	19	8	1	-	-	-
New Haven, Conn.	43	24	14	2	1	2	3
Providence, R.I. §	60	39	14	4	-	3	5
Somerville, Mass.	2	2	-	-	-	-	-
Springfield, Mass.	37	26	8	2	-	1	3
Waterbury, Conn.	32	24	5	1	2	-	4
Worcester, Mass.	54	37	13	3	-	1	1
MID. ATLANTIC	2,551	1,725	540	187	54	45	114
Albany, N.Y.	51	35	14	1	-	1	2
Allentown, Pa.	17	13	4	-	-	-	-
Buffalo, N.Y.	122	85	23	7	5	2	7
Camden, N.J.	40	26	10	3	-	1	-
Elizabeth, N.J.	26	18	6	2	-	-	-
Erie, Pa.†	41	30	7	3	-	1	3
Jersey City, N.J.	51	34	14	2	-	1	1
N.Y. City, N.Y.	1,312	873	263	127	29	20	46
Newark, N.J.	59	26	21	7	1	4	4
Paterson, N.J.	14	11	3	-	-	-	-
Philadelphia, Pa.†	406	267	102	22	9	6	22
Pittsburgh, Pa.†	81	51	24	2	1	3	8
Reading, Pa.	34	26	4	2	1	1	4
Rochester, N.Y.	126	99	19	4	2	2	11
Schenectady, N.Y.	26	19	7	-	-	-	-
Scranton, Pa.†	14	13	1	-	-	-	-
Syracuse, N.Y.	64	47	7	2	6	2	4
Trenton, N.J.	31	22	5	3	-	1	-
Utica, N.Y.	17	15	2	-	-	-	-
Yonkers, N.Y.	19	15	4	-	-	-	2
E.N. CENTRAL	2,188	1,429	508	127	76	48	71
Akron, Ohio	58	44	10	-	-	4	-
Canton, Ohio	45	33	10	1	1	-	1
Chicago, Ill	486	308	109	41	17	11	10
Cincinnati, Ohio	156	100	42	6	6	2	11
Cleveland, Ohio	150	97	37	6	6	4	4
Columbus, Ohio	128	93	22	7	5	1	4
Dayton, Ohio	116	87	22	2	2	3	3
Detroit, Mich.	256	153	69	26	7	1	5
Evansville, Ind.	50	35	10	3	1	1	2
Fort Wayne, Ind.	39	28	7	2	1	1	2
Gary, Ind. §	32	16	12	1	2	1	1
Grand Rapids, Mich.	51	38	8	4	1	-	3
Indianapolis, Ind.	185	106	46	14	10	9	4
Madison, Wis.	37	17	14	2	3	1	3
Milwaukee, Wis.	110	83	22	1	2	2	3
Peoria, Ill.	35	20	8	-	4	3	2
Rockford, Ill.	46	30	9	3	2	2	4
South Bend, Ind.	40	26	7	4	1	2	1
Toledo, Ohio	113	78	28	2	5	-	8
Youngstown, Ohio	55	37	16	2	-	-	-
W.N. CENTRAL	735	514	134	37	30	20	39
Des Moines, Iowa	73	50	15	3	5	-	3
Duluth, Minn.	26	24	1	-	1	-	-
Kansas City, Kans.	28	20	3	3	1	1	1
Kansas City, Mo.	100	71	16	4	3	6	8
Lincoln, Nebr.	37	28	6	2	-	1	3
Minneapolis, Minn.	86	64	11	5	2	4	2
Omaha, Nebr.	74	52	15	5	1	1	2
St. Louis, Mo.	151	90	37	11	10	3	9
St. Paul, Minn.	82	59	14	2	4	3	3
Wichita, Kans.	78	56	16	2	3	1	8

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,387	859	342	96	37	52	56
Atlanta, Ga.	131	83	29	11	3	5	4
Baltimore, Md.	385	242	105	19	7	12	5
Charlotte, N.C.	69	42	17	3	6	1	5
Jacksonville, Fla.	111	69	27	6	4	5	5
Miami, Fla.	96	49	27	12	3	5	1
Norfolk, Va.	45	33	7	3	2	-	9
Richmond, Va.	63	28	26	7	1	1	3
Savannah, Ga.	59	40	13	1	1	4	3
St. Petersburg, Fla.	85	73	7	3	1	1	5
Tampa, Fla.	75	39	17	10	1	7	5
Washington, D.C.	220	125	58	19	7	11	7
Wilmington, Del.	48	36	9	2	1	-	4
E.S. CENTRAL	713	423	177	49	30	34	22
Birmingham, Ala.	95	46	29	11	5	4	-
Chattanooga, Tenn.	71	55	12	-	4	-	3
Knoxville, Tenn.	46	25	16	3	-	2	-
Louisville, Ky.	109	69	25	7	4	4	4
Memphis, Tenn.	192	111	42	13	8	18	11
Mobile, Ala.	42	26	10	2	4	-	1
Montgomery, Ala.	38	21	10	4	2	1	-
Nashville, Tenn.	120	70	33	9	3	5	3
W.S. CENTRAL	1,227	703	292	126	67	39	34
Austin, Tex.	50	28	7	6	3	6	1
Baton Rouge, La.	39	19	14	4	1	1	4
Corpus Christi, Tex.	37	22	11	3	-	1	-
Dallas, Tex.	157	90	38	19	6	4	1
El Paso, Tex.	54	32	13	6	3	-	2
Fort Worth, Tex.	84	52	19	10	1	2	2
Houston, Tex.	295	144	73	43	28	7	6
Little Rock, Ark.	74	46	17	7	2	2	1
New Orleans, La.	148	85	40	14	6	3	-
San Antonio, Tex.	157	92	38	7	12	8	10
Shreveport, La.	49	34	8	3	1	3	3
Tulsa, Okla.	83	59	14	4	4	2	4
MOUNTAIN	592	354	141	54	24	19	28
Albuquerque, N.Mex.	58	31	14	11	1	1	3
Colo. Springs, Colo.	40	22	11	6	1	-	5
Denver, Colo.	125	74	31	8	8	4	5
Las Vegas, Nev.	66	39	17	5	1	4	5
Ogden, Utah	17	11	4	-	2	-	1
Phoenix, Ariz.	139	84	36	12	2	5	2
Pueblo, Colo.	17	11	4	1	1	-	-
Salt Lake City, Utah	47	26	8	5	4	4	1
Tucson, Ariz.	83	56	16	6	4	1	6
PACIFIC	1,606	1,018	379	120	44	45	86
Berkeley, Calif.	9	5	2	-	-	2	1
Fresno, Calif.	70	51	11	2	1	5	9
Glendale, Calif.	31	23	6	1	1	-	2
Honolulu, Hawaii	67	43	11	7	4	2	7
Long Beach, Calif.	101	61	31	6	1	2	5
Los Angeles, Calif.	443	268	106	38	16	15	12
Oakland, Calif.	64	42	17	3	1	1	5
Pasadena, Calif.	22	17	4	-	-	1	2
Portland, Oreg.	115	76	24	9	3	3	9
Sacramento, Calif.	74	47	18	5	2	2	9
San Diego, Calif.	90	64	18	4	4	-	4
San Francisco, Calif.	117	72	24	17	2	2	4
San Jose, Calif.	143	77	45	12	4	5	6
Seattle, Wash.	123	75	34	9	4	1	6
Spokane, Wash.	56	43	9	-	1	3	2
Tacoma, Wash.	81	54	19	7	-	1	3
TOTAL	11,596††	7,416	2,650	834	374	321	473

* 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.

TABLE V. Years of potential life lost, deaths, and death rates, by cause of death, and estimated number of physician contacts, by principal diagnosis, United States

Cause of morbidity or mortality (Ninth Revision ICD, 1975)	Years of potential life lost before age 65 by persons dying in 1981[1]	Estimated mortality March 1983		Estimated number of physician contacts March 1983[4]
		Number[2]	Annual Rate/100,000[3]	
ALL CAUSES (TOTAL)	9,879,590	178,460	901.8	109,346,000
Accidents and adverse effects (E800-E949)	2,587,140	6,670	33.7	4,835,000
Malignant neoplasms (140-208)	1,821,900	36,650	185.2	2,116,000
Diseases of heart (390-398, 402, 404-429)	1,621,290	70,150	354.5	6,317,000
Suicides, homicides (E950-E978)	1,403,560	3,660	18.5	—
Cerebrovascular diseases (430-438)	275,000	13,990	70.7	818,000
Chronic liver disease and cirrhosis (571)	267,350	2,530	12.8	181,000
Pneumonia and influenza[5] (480-487)	123,420	6,310	31.9	1,971,000
Chronic obstructive pulmonary diseases and allied conditions (490-496)	116,280	6,490	32.8	1,893,000
Diabetes mellitus (250)	105,960	3,070	15.5	2,777,000
Prenatal care[6]				2,277,000
Infant mortality[6]		3,400	11.0 /1,000 live births	

[1]Years of potential life lost for persons between 1 year and 65 years old at the time of death are derived from the number of deaths in each age category as reported by the National Center for Health Statistics, *Monthly Vital Statistics Report* (MVSR), Vol. 30, No. 13, December 20, 1982, multiplied by the difference between 65 years and the age at the midpoint of each category. As a measure of mortality, "Years of potential life lost" underestimates the importance of diseases that contribute to death without being the underlying cause of death.

[2]The number of deaths is estimated by CDC by multiplying the estimated annual mortality rates (MVSR Vol. 32, No. 4, July 13, 1983, pp. 8-9) and the provisional U.S. population in that month (MVSR Vol. 32, No. 3, June 17, 1983, p.1) and dividing by the days in the month as a proportion of the days in the year.

[3]Annual mortality rates are estimated by NCHS (MVSR Vol. 32, No. 4, July 13, 1983, pp. 8-9), using the underlying cause of death from a 10% systematic sample of death certificates received in state vital statistics offices during the month and population estimates from the Bureau of the Census.

[4]IMS America *National Disease and Therapeutic Index* (NDTI), Monthly Report, March 1983, Section III. This estimate comprises the number of office, hospital, and nursing home visits and telephone calls prompted by each medical condition based on a stratified random sample of office-based physicians (2,100) who record all private patient contacts for 2 consecutive days each quarter.

[5]Data for "infectious diseases and their sequelae" as a cause of death and physician visits comparable to other multiple-code categories (e.g., "malignant neoplasms") are not presently available.

[6]"Prenatal care" (NDTI) and "Infant mortality" (MVSR Vol. 32, No. 3, June 17, 1983, p.1) are included in the table because "Years of potential life lost" does not reflect deaths of children <1 year.

Toxic-Shock Syndrome — Continued

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International Notes

Surveillance of Health Status of Kampuchean Refugees — Khao I-Dang Holding Center, Thailand, December 1981-June 1983

In November 1979, the Khao I-Dang Holding Center (KIDHC) was opened to house some of the thousands of Kampuchean refugees who fled into Thailand (*1,2*). The average monthly KIDHC population between December 1981 and November 1982 was approximately 42,700. A census in December 1982 showed a population of 40,134. Subsequently, an additional large number of refugees were transferred to the camp after closure of other Khmer holding centers by Thai authorities. As of mid-June 1983, approximately 57,500 Kampuchean refugees were still living at KIDHC; twenty-one agencies and 1,377 workers (including 1,287 Kampuchean and 18 Thai workers) have supported their health, nutritional, and other needs.

During the 12 months beginning in December 1981, 2,323 births were recorded in KIDHC (*3*); 1,682 (72.4%) of these infants were born in the hospital, representing a crude birth rate of 54.4/1,000 population. Mean birth weight was 2,980 g for 118 consecutive live infants born in the KIDHC hospital during early January 1983. Of these, 11 (9.3%) weighed less than 2,500 g.

During the same 12-month period, 182 resident deaths were reported (Table 1) (*3*), for a crude resident death rate of 3.97/1,000 residents. Ninety-nine resident deaths occurred among children under 1 year of age, for an infant mortality rate of 42.6/1,000 live births.

Under 1 month of age, prematurity (23 cases), sepsis (19), and congenital anomalies (7) were the most common causes of death, accounting for 75.4% of 65 deaths in this age group. The most common categories in the 1- to 11-month age group were "unknown" (12 cases) and congenital anomalies (4). In the 1- to 4-year age range, pneumonia (6) and sepsis (4) together accounted for 71.4% of all deaths. Eight accidental deaths in all age groups were recorded. Nine adults died of malignancies. In addition, 206 deaths occurred among other Kampuchean refugee patients referred for medical care from refugee camps on the Kampuchean border (Table 1). More deaths occurred among non-resident young adults than among neonates and older adults (45 years or older).

Kampuchean Refugees — Continued

A total of 4,345 hospital discharges of KIDHC residents occurred during this recording period, most of which—1,609—were normal or complicated births. Serious pediatric infections (pneumonia and cellulitis, 249 cases) and gynecologic problems (188) were the second and third most common causes for hospitalization. The annual hospitalization rate was 101.8/1,000 residents.

Two hundred eighty-seven *Plasmodium vivax* malaria cases and 78 *P. falciparum* malaria cases were reported among KIDHC residents during 1982. Most, if not all, of the *P. falciparum* cases occurred among persons transferred to KIDHC when another holding center, located in a malaria-endemic region was closed.

In October 1982, a health and nutrition survey (*4*) of a random sample of children under 5 years old in KIDHC revealed evidence of acute malnutrition in five (1.5%) of 328 children (*5*).* Evidence of chronic malnutrition was found in 22 children (6.7%).† Conjunctival xerosis or other ophthalmologic signs of recent or healed vitamin A deficiency were seen in 14 children (4.3%). All surveyed children less than 1 year old (75) were breastfed. Of 63 children 12- to 17-months-old, 58 (92.1%) were breastfed; 41.1% of 56 of 18- to 23-month-olds were breastfed.

During the latter half of 1982, increases in the numbers of beriberi (vitamin B_1 deficiency) cases were noted by health workers. In addition, several children were admitted to the hospital during that time with corneal involvement compatible with severe vitamin A deficiency.

Because of these problems, undermilled rice was introduced in March 1983 as a total substitute for white rice in the KIDHC food distribution system. Also, as of June 1983, all non-breastfeeding children 6 months to 5 years of age and all lactating women attending the maternal- and child-health centers were given 200,000 International Units of vitamin A. Younger children received 100,000 International Units. Neither beriberi nor vitamin A deficiency are currently reported to be prevalent problems at KIDHC.

The current childhood immunization recommendations in the camp include one dose of measles vaccine and three doses each of trivalent oral polio vaccine and diphtheria-tetanus-pertussis vaccine. A survey in the maternal- and child-health facilities in December 1982 showed that 84% of the population had complete immunizations. No outbreaks of vaccine-preventable diseases were reported in 1982 or thus far in 1983. A major catchup immunization program was undertaken in May 1983 to complete immunizations of all residents.

*Weight-for-height less than 80% of the mean of World Health Organization/National Center for Health Statistics standards.

†Height-for-age less than 90% of WHO/NCHS standards.

TABLE 1. Age distribution for residents and non-residents who died — Khao I-Dang Holding Center, Thailand, December 1981-November 1982

Age	Resident deaths		Non-resident deaths	
	Number	%	Number	%
< 1 mo	69	37.9	31	15.0
1-11 mo	30	16.5	52	25.2
1-4 yrs	20	11.0	23	11.2
5-14 yrs	6	3.3	6	2.9
15-44 yrs	24	13.2	83	40.3
≥ 45 yrs	33	18.1	11	5.3
Total	182	100.0	206	100.0

Kampuchean Refugees – Continued

Including patients transferred to KIDHC from other recently closed refugee camps, 303 newly diagnosed tuberculosis (TB) patients were placed on therapy in 1982. Of the 298 who left the TB treatment program during the same period, 226 (75.8%) did so because they had completed the prescribed course of four-drug therapy (streptomycin and pyrizinamide for the initial 2 months plus rifampin and isoniazid for all 6 months). Another 41 (13.8%) were transferred on medication and with records to other refugee processing centers; seven (2.3%) died, and 24 (8.1%) are assumed to have defaulted from their treatment program because of departure to refugee camps nearer the Kampuchean border where adequate follow-up is more difficult. Of those with smear-positive pulmonary TB completing the treatment regimen, 96% had favorable outcomes, as judged by persistence of smear-negativity over the final 3 months of treatment; 3% had uncertain bacteriologic response, and 1% appeared resistant to the above drug combination.

As of February 1983, four traditional medicine centers and 31 Krou Khmer (traditional healers) were serving the camp population. Including follow-up visits, nearly 3,000 patients per day were being seen in these facilities at this time. Cooperation and cross-referrals between Western trained health workers and traditional healers were reported.

In addition to training for provision of basic health care, current training programs for KIDHC residents include water jar and soap production, bread making, carpentry, woodcarving, sewing, weaving, fish farming, blacksmithing, tinsmithing, rice milling, classical Khmer ballet and music, and theater.

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Editorial Note: The original health surveillance system at KIDHC was organized in 1979 by staff of the International Committee of the Red Cross (ICRC) with the assistance of several volunteer agencies, primarily the International Rescue Committee.

Although the ICRC is no longer involved at KIDHC (except for the hospital surgical ward) and volunteer agency staffs have changed several times since the holding center opened, the surveillance system has continued to evolve and to function efficiently. Kampuchean health workers have taken over much of the responsibility for the surveillance system. In June 1983, information gathered by Krou Khmer was included in the KIDHC surveillance report for the first time.

Although the population of KIDHC has fluctuated as some refugees continue to enter and as others depart for resettlement or return to Kampuchea, these and other recent data suggest that general health conditions have improved since KIDHC opened: the current mean birth weight of 2,980 g was greater than that of 2,810 g noted among the first 154 infants born at KIDHC from November 16, 1979, to January 11, 1980 (*2*), and the crude mortality rate of 3.0/1,000 residents/year (*3*) is lower than the rate noted at KIDHC in 1979 and early 1980 and is lower than what is generally observed in many developing countries (*6*). This low rate is probably due to the relatively low infant mortality rate, usually a major component of overall (crude) mortality, and deaths before their arrival at KIDHC of many among this population who might otherwise have died in 1982 (e.g., the elderly, the chronically ill).

The age distribution for residents and non-residents who died (Table 1) probably differed in part because the KIDHC hospital is the major referral facility for seriously ill Kampucheans in the nearby border area. Ill or premature neonates in this environment are not often candi-

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dates for referral. The large proportion of deaths among young adult non-residents is partly due to a large number of injuries from land mines or other weapons.

These data and observations indicate that a relatively simple, population-based surveillance system can function over several years in a refugee camp environment, providing information needed by administrators and health workers to maintain or improve health conditions in the camp.

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

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