



MORBIDITY AND MORTALITY WEEKLY REPORT

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Epidemiologic Notes and Reports

Trichinosis — Texas

On April 3, 1984, a private physician reported four cases of trichinosis among Laotians living in Amarillo, Texas, to the Bureau of Epidemiology, Texas Department of Health. The four patients were members of three households and had onset of illness between February 21 and March 12. Because of the large Laotian population resettled in this area and its previously noted practice of inadequately cooking pork (1), an investigation was begun to determine the extent of the outbreak. A survey, seeking a history of symptoms commonly seen with trichinosis (fever, muscle pain, periorbital edema, and malaise), was undertaken in households of known patients and their Laotian neighbors. If symptoms of trichinosis were present, serum was obtained for serodiagnosis.

During the investigation, five additional cases of trichinosis were found. Three persons with possible trichinosis were also identified but had moved to California to an unknown address and could not be contacted. All nine patients were Laotian, living in four unrelated households. All reported consuming pork purchased at a small local pig farm. Incubation periods for six patients ranged from 4 days to 2 weeks; for three who frequently consumed pork from the implicated farm, they were indeterminable. All patients were asymptomatic when interviewed but reported having the following symptoms: fever (all nine persons [100%]), muscle pain (six [67%]), malaise (six [67%]), periorbital edema (five [56%]), vomiting (two [22%]), and diarrhea (two [22%]). One person was pregnant. Laboratory studies of those seen by a physician during acute illness revealed eosinophilia and elevated creatine kinase. Five of the six patients tested for antibody to *Trichinella* sp. with the bentonite flocculation test had titers of 1:10 or greater, compatible with recent infection, and the remaining patient had a titer of 1:5. No patients had previous serologic testing to demonstrate seroconversion. A muscle biopsy performed on one patient was negative for *Trichinella* sp. but had areas of slight basophilic degenerative changes with focal eosinophilic infiltration. Of the five patients treated during acute disease, three received prednisone and thiabendazole; one, prednisone only; and one, thiabendazole only. The patient treated with thiabendazole developed pruritis after 2 days of therapy, but it disappeared when the drug was discontinued.

Investigation by the Texas Department of Health revealed that the pigs on the farm were occasionally fed untreated restaurant refuse; in addition, the animals wandered freely, allowing potential contact with rodent and other animal carcasses. The Texas Animal Health Commission inspected the farm but saw no evidence that garbage was being fed to the pigs at the time. The farm had previously been implicated as the source of a *Trichinella* sp. infection in 1981.

No further cases have been reported. None of the patients developed complications; the outcome of the pregnancy is unknown. Serum from pigs at the implicated farm is being sent to the U.S. Department of Agriculture to test for trichinosis antibody. In an effort to educate

Trichinosis — Continued

the Laotian population, the Texas Department of Health is developing a pamphlet on trichinosis and its prevention written in Laotian.

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Editorial Note: *Trichinella spiralis*, first noted to be pathogenic for humans in 1859 (2), remains a public health problem in the United States. Infection occurs when raw or inadequately cooked meat, most commonly pork, is ingested. Of cases reported during 1975-1981, where an infected meat item was identified, pork was implicated in 79.1%; wild meat, in 13.9%; and ground beef, in 7.0%. The incriminated ground beef was believed to have been adulterated by pork products (3).

Commercially or privately slaughtered pigs are not inspected for trichinae in the United States (4). Nevertheless, the reported incidence of trichinosis has declined in the United States from 300 to 400 cases annually in the late 1940s to about 100-150 cases per year (3). This can be attributed, in part, to: (1) state and federal laws that prohibit feeding untreated garbage to swine (5); (2) consumer awareness of the need to cook pork products adequately; and (3) the widespread practice of freezing pork, which kills trichinae (6). An estimated one million garbage-fed swine reach the market annually (4); law enforcement concerning feeding untreated garbage to swine varies from state to state. Moreover, it has been shown that swine readily feed on barnyard rodents that may harbor *Trichinella* sp. and may thus become infected (6). Consequently, trichinosis control depends almost entirely on the way consumers store and prepare pork.

Groups whose food preferences include raw or inadequately cooked pork have a higher risk of trichinosis (3). This is reflected in the ethnic-related prevalence of trichinosis. In an autopsy survey, the prevalence of infection among German and Italian immigrants in the United States was nearly twice the national rate (28.3%, 29.7%, and 16.1%, respectively) (7). Recent reports of trichinosis outbreaks (2) involve groups, especially such recent immigrants as Southeast Asian refugees, who do not treat, freeze, or thoroughly cook American pork. To help prevent future outbreaks, special health-education programs may be necessary for these new consumers.

References

1. CDC. Common-source outbreaks of trichinosis—New York City, Rhode Island. MMWR 1982; 31:161-4.
2. Campbell WC. Historical introduction. In: Campbell WC, ed. *Trichinella* and trichinosis. New York: Plenum Press, 1983:1-30.
3. Schantz PM. Trichinosis in the United States—1947-1981. Food Technology 1983;March:83-6.
4. Leighty JC. Public-health aspects (with special reference to the United States). In: Campbell WC, ed. *Trichinella* and trichinosis. New York: Plenum Press, 1983:501-13.
5. Juranek DD, Schultz MG. Trichinellosis in humans in the United States: epidemiologic trends. In: Kim CW, Pawlowski ZS. Trichinellosis. Hanover, New Hampshire: University Press of New England, 1978:523-8.
6. Murrell KD, Gamble HR, Schad GA. Experimental transmission of *Trichinella spiralis* to swine by infected fats. Proc. Helminthol. Soc. Wash. 1984;51:66-8.
7. Wright WH, Jacobs L, Walton AC. Studies on trichinosis. XVI. Epidemiological considerations based on the examination for trichinae of 5,313 diaphragms from 189 hospitals in 37 states and the District of Columbia. Public Health Rep 1944;59:669-81.

*International Notes***Heat-Related Mortality — Latium Region, Italy, Summer 1983**

During the 16-day period July 19-August 3, 1983, temperatures recorded in various parts of Italy remained consistently above the 1946-1970 average (1). Maximum temperatures

Heat-Related Mortality – Continued

recorded in the center of Rome were 34 C (93.2 F) or higher on 13 consecutive days and 36 C (96.8 F) or higher on 5 consecutive days (July 25-July 29) (2).

To assess the impact of the heat wave on the health status of the population, members of the Regional Epidemiologic Unit (Osservatorio Epidemiologico Regionale) for the Latium Region,* analyzed mortality during the heat wave and during a control period. Rome residents comprise about 60% of the approximately 5 million people living in the region; the rest are distributed among small towns and villages of 10,000-100,000 inhabitants. Region-wide mortality data are usually available only after considerable delay. To acquire more timely information, directors of all hospitals and clinics of the region were requested to report all patients who died each week during both July and August of 1982 and 1983 and to fill out a questionnaire for each patient who died from hyperpyrexia during the summer of 1983. Data from death certificates of Rome residents who died during these periods were also analyzed.

A death from heatstroke was defined as any death from July 19, to August 4, 1983, in which the patient's temperature before death measured at any site was 41.1 C (106 F) or 40.6 C (105 F) or higher if altered mental status and/or anhidrosis was also present. Patients with any of the following causes of fever were excluded: cerebral hemorrhage, neoplasia, x-ray-documented bronchopneumonia, bacteremia proven by blood culture, or laboratory-documented urinary-tract infection.

A total of 2,182 Rome residents died in Rome during July 1983 from all causes, but only 1,774 in July 1982, an increase of 408 (23%); in August 1983 and 1982, 1,534 and 1,468 residents died, respectively. Four hundred thirty-seven more deaths among persons aged 65 years and older occurred in July 1983 than in July 1982—a 35% increase. Only eight more persons aged 45-64 years died in 1983 than in 1982. Deaths decreased among infants and among persons under 45 years old. The percentage increase in deaths during July 1983 over 1982 was similar for both sexes among those aged 65-74 years and 85 years and older; it was higher for women (55.1%) than for men (25.8%) aged 75-84 years.

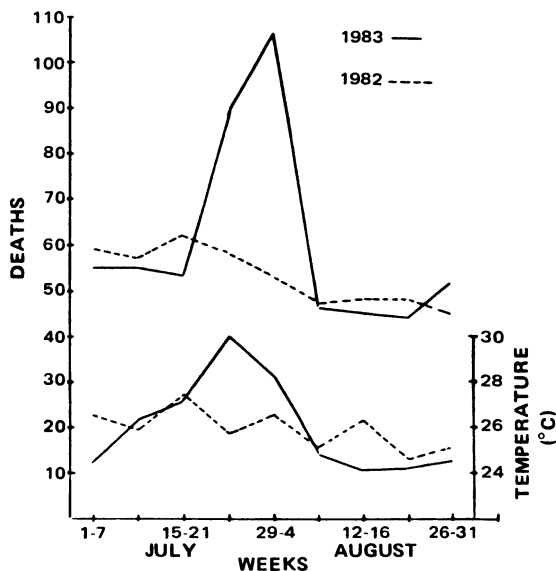
There were 369 more cardiovascular-related deaths (including deaths from cerebrovascular accidents) in July 1983 than in July 1982, a 58.7% increase. A smaller increase occurred in deaths from neoplastic disease—68, up 13.2% from the previous year. All other major causes of death showed slight decreases. The increase in deaths occurred during the 2 weeks of July 22-August 4, when the highest temperatures were recorded (Figure 1).

Data were available from 55 of the region's 91 hospitals (representing 79% of 28,822 hospital beds) and 90 of its 156 clinics. A total of 1,692 deaths were recorded in July 1983, 384 more than in July 1982, a 29.3% increase. The increase was more pronounced in hospitals and clinics situated outside Rome (48.5%) than in Rome (25.3%). Eighty-four cases met the temperature criteria for heatstroke death, but 19 were excluded because another cause of fever was present; among the remaining 65 heatstroke deaths, 23 were of males, and 42, of females. Sixty-two heatstroke deaths occurred during July 22-August 4, representing 18% of the 338 excess hospital deaths recorded during the same period. The temporal distribution of deaths and the maximum daily temperatures recorded for the center of Rome are shown in Figure 2. Of the 60 cases for which age was specified, 45 persons (75%) were aged 65 years and older, and 33 (55%), aged 75 years and older. Of previously reported risk factors for heatstroke (3), information was available only on the use of major tranquilizers and anticholinergic drugs. These medications were used by eight (53.3%) of the 15 patients under age 65 and by 10 (22.2%) of the 45 patients aged 65 years or older. Death followed the onset of symptoms by less than 48 hours in three-fourths of the cases.

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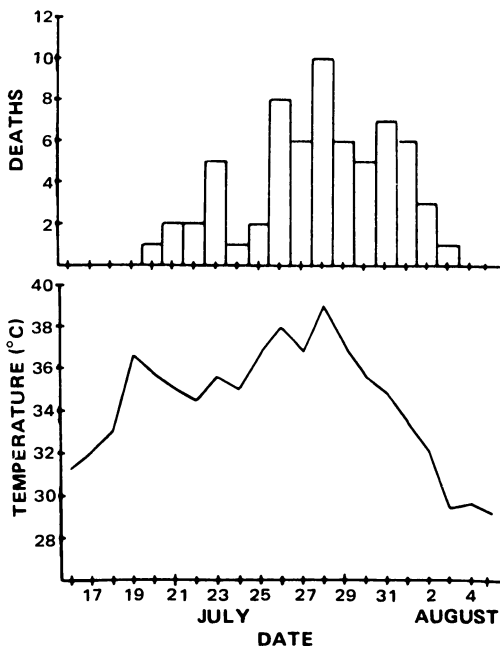
*One of 20 regions into which Italy is geographically and administratively divided.

FIGURE 1. Mean daily registered deaths among Rome residents, by date of registration, mean weekly temperatures, and weekly intervals — Italy, July-August 1982 and July-August 1983



Source: Register Office, Municipality of Rome, and Weather Bureau, Ministry of Agriculture

FIGURE 2. Deaths from heatstroke and maximum daily temperatures — Latium Region, Italy, July 19-August 4, 1983



Source: Directors of Hospitals and Clinics and Weather Bureau, Ministry of Agriculture

Heat-Related Mortality – Continued

Editorial Note: Sharp increases in total mortality during periods of sustained high temperatures (heat waves) have been reported from the United States (4-8), Australia (9), and Europe (10,11). Increased mortality associated with a heat wave was recently reported in New York City (12). As in previous reports, the increase in deaths noted here occurred primarily among elderly persons. Diagnosed heatstroke deaths accounted for only a small portion of that increase. This finding is consistent with results usually found in previous studies—deaths recognized by physicians as being heat-related account for fewer than 50% of excess deaths associated with a heat wave. The marked increase in deaths attributable to cardiovascular and cerebrovascular events accounted for much of the increase in total mortality during the 1983 heat wave in the Latium Region. Deaths attributed to these causes also increase during heat waves in the United States (13,14). In contrast, the geographic pattern of heat-wave casualties in this report differs from that of the United States, where rates of heat-related adverse health consequences are much higher in urban than in suburban or rural areas (4).

References

1. Aeronautica Militare Italiana. Bollettino Meteorologico.
2. Ministero dell'agricoltura. Ufficio Meteorologico.
3. Kilbourne EM, Choi K, Jones TS, Thacker SB. Risk factors for heatstroke. A case-control study. *JAMA* 1982;247:3332-6.
4. Jones TS, Liang AP, Kilbourne EM, et al. Morbidity and mortality associated with the July 1980 heat wave in St. Louis and Kansas City, Missouri. *JAMA* 1982;247:3327-31.
5. Gover M. Mortality during periods of excessive temperature. *Public Health Rep* 1938;53:1122-43.
6. Kutschenreuter PH. A study of the effect of weather on mortality. *Trans NY Acad Sci* 1959;22:126-38.
7. Oechsli RW, Buechley WB. Excess mortality associated with three Los Angeles September hot spells. *Environ Res* 1970;3:277-84.
8. Ellis FP. Mortality from heat illness and heat-aggravated illness in the United States. *Environ Res* 1972;5:1-58.
9. Macpherson RK, Ofner F, Welch JA. Effect of the prevailing air temperature on mortality. *Br J Prev Soc Med* 1967;21:17-21.
10. Ellis FP, Prince HP, Lovatt G, Whittington RM. Mortality and morbidity in Birmingham during the 1976 heatwave. *Quart J Med* 1980;49:1-8.
11. Liedermann A. Hitze und sterberisiko in einer grossstadt. Analyse der sterbefälle, die sich während der hitze welle in sommer 1976 in stuttgart ereigneten (elevated temperatures and risk of death in large cities). *Bundesgesundheitsblatt* 1979;22:289-92.
12. CDC. Heat-associated mortality—New York City. *MMWR* 1984;33:430-2.
13. Schuman SH. Patterns of urban heat-wave deaths and implications for prevention: Data from New York and St. Louis during July, 1966. *Environ Res* 1972;5:59-75.
14. Schuman SH, Anderson CP, Oliver JT. Epidemiology of successive heat waves in Michigan in 1962 and 1963. *JAMA* 1964;189:733-8.

*Epidemiologic Notes and Reports***Chronic Diarrhea Associated with Raw Milk Consumption — Minnesota**

On July 10, 1984, the Minnesota Department of Health was informed by Brainerd, Minnesota, physicians that 20-50 patients in that area had experienced onset of chronic diarrhea since January 1984; they were unaware of any patients who had recovered. Initial investigation by the Minnesota Department of Health identified 23 persons who met the case definition of acute onset of diarrhea, lasting at least 4 weeks, in a person with no underlying illness known to cause chronic diarrhea. A case-control study of these case-patients and 46 gender- and age-matched neighborhood controls revealed that illness was strongly associated with drinking raw milk from a local dairy ($p < 0.1 \times 10^{-5}$); no other risk factors were identified, and

Chronic Diarrhea — Continued

the dairy voluntarily stopped selling raw milk. Based on a study of 94 families (394 persons) who were regular customers of the dairy, the attack rate for chronic diarrhea with onset between November 1, 1983, and September 1, 1984, was 8%. All age groups were affected, but the attack rate was lowest for children (3%) and highest for adults 61-80 years of age (23%).

A review of medical records for patients hospitalized with diarrhea at the community hospital since January 1982 and interviews of regular and occasional customers of the dairy identified 122 outbreak-related case-patients. The first case-patient had onset of illness in December 1983 with onsets continuing through July 1984 (Figure 3). All case-patients had consumed raw milk from the implicated dairy during the 3 weeks before onsets of illness. To date there is no evidence of person-to-person transmission of illness. Illness was characterized by acute onset of watery diarrhea (frequently 10-20 stools per day) often associated with marked urgency that greatly limited patients' activities. Over 50% of the case-patients also experienced abdominal cramping. Nausea, vomiting, and/or systemic symptoms occurred infrequently. Seven patients who drank raw milk only on 1 day or 2 consecutive days had onsets of illness 4-23 days after exposure (median 15 days). Although many patients have noted gradual improvement in the frequency of diarrheal episodes, only 11 (9%) have fully

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

Disease	37th Week Ending			Cumulative, 37th Week Ending		
	Sept. 15, 1984	Sept. 17, 1983	Median 1979-1983	Sept. 15, 1984	Sept. 17, 1983	Median 1979-1983
Acquired Immunodeficiency Syndrome (AIDS)*	72	44	N	2,886	1,360	N
Aseptic meningitis	293	553	400	4,843	7,690	5,707
Encephalitis: Primary (arthropod-borne and unspc.)	27	85	70	701	1,199	963
Post-infectious	3	4	4	70	71	71
Gonorrhea: Civilian	17,476	17,807	20,701	585,422	632,924	697,809
Military	337	542	542	15,111	17,270	19,590
Hepatitis: Type A	344	354	518	14,719	14,643	17,776
Type B	480	411	378	17,962	16,769	14,342
Non A, Non B	62	52	N	2,602	2,407	N
Unspecified	92	151	179	3,888	5,054	7,139
Legionellosis	18	11	N	445	503	N
Leprosy	8	5	2	159	177	148
Malaria	23	16	15	652	565	785
Measles: Total**	17	7	N	2,298	1,229	2,557
Indigenous	15	7	N	2,044	1,019	N
Imported	2	-	N	254	210	N
Meningococcal infections: Total	17	34	34	2,029	2,045	2,045
Civilian	17	34	34	2,024	2,030	2,030
Military	-	-	-	5	15	14
Mumps	20	22	52	2,212	2,443	4,261
Pertussis	71	36	37	1,499	1,668	1,068
Rubella (German measles)	5	4	21	556	774	2,001
Syphilis (Primary & Secondary): Civilian	469	672	618	19,589	22,864	21,518
Military	4	6	9	229	289	266
Toxic Shock syndrome	12	9	N	318	315	N
Tuberculosis	470	511	507	15,026	16,516	19,014
Typhoid fever	8	4	6	232	218	177
Typhus fever, tick-borne (RMSF)	5	12	12	226	296	332
Rabies, animal	22	34	27	690	971	967
	77	119	119	3,751	4,539	4,588

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1984		Cum. 1984
Anthrax	1	Plague (Colo. 1)	21
Botulism: Foodborne (Calif. 1)	8	Poliomyelitis: Total	2
Infant	66	Paralytic	2
Other	79	Psittacosis (Tex. 1, Hawaii 1)	62
Brucellosis (Mich. 1, Iowa 1, Tex. 2)	79	Rabies, human	1
Cholera	-	Tetanus	44
Congenital rubella syndrome	3	Trichinosis	60
Diphtheria (Calif. 1)	1	Typhus fever, flea-borne (endemic, murine) (N.Y. City 1, Tex. 2)	18
Leptospirosis (N.Y. City 1, La. 2)	22		

*The 1983 reports which appear in this table were collected before AIDS became a notifiable condition.

**Two of the 17 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
September 15, 1984 and September 17, 1983 (37th Week)**

Reporting Area	AIDS	Aseptic Mening- itis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel- losis	Leprosy
			Primary	Post-in- fectious			A	B	NA,NB	Unspeci- fied		
	Cum. 1984	1984	Cum. 1984	Cum. 1984	Cum. 1984	Cum. 1983	1984	1984	1984	1984	1984	Cum. 1984
UNITED STATES	2,886	293	701	70	585,422	632,924	344	480	62	92	18	159
NEW ENGLAND	95	8	32	1	16,655	15,882	11	38	5	16	-	8
Maine	-	1	-	-	692	798	4	-	-	-	-	-
N.H.	1	-	6	-	495	521	-	1	-	-	-	-
Vt.	-	-	4	-	273	316	-	2	1	-	-	-
Mass.	53	2	14	-	6,856	6,859	5	16	-	16	-	6
R.I.	6	-	-	-	1,184	894	-	-	-	-	-	2
Conn.	35	5	8	1	7,155	6,494	2	19	4	-	-	-
MID ATLANTIC	1,263	68	92	10	79,088	80,161	47	117	11	11	5	30
Upstate N.Y.	121	19	32	7	12,073	12,858	4	10	1	-	-	2
N.Y. City	907	5	7	-	32,369	32,021	23	70	-	6	-	28
N.J.	173	13	25	-	13,417	15,054	14	19	2	4	5	-
Pa.	62	31	28	3	21,229	20,228	6	18	8	1	-	-
EN. CENTRAL	128	69	186	17	82,160	91,342	27	56	8	5	7	6
Ohio	16	24	55	9	21,596	23,531	13	11	1	-	4	2
Ind.	20	11	40	-	8,718	9,170	-	7	2	3	1	-
Ill.	63	-	22	6	18,653	26,072	2	-	-	-	-	2
Mich.	19	34	43	-	24,017	24,512	12	38	5	2	2	2
Wis.	10	-	26	2	9,176	8,057	-	-	-	-	-	-
W.N. CENTRAL	29	17	57	1	28,763	30,251	16	9	4	1	1	1
Minn.	7	1	21	-	4,364	4,182	4	2	1	-	-	-
Iowa	1	10	24	-	3,139	3,240	-	3	-	1	-	1
Mo.	16	5	7	-	13,839	14,933	4	4	3	-	1	-
N. Dak.	-	-	-	-	274	310	-	-	-	-	-	-
S. Dak.	-	1	1	1	670	779	-	-	-	-	-	-
Nebr.	2	-	1	-	1,992	1,926	8	-	-	-	-	-
Kans.	3	-	3	-	4,485	4,881	-	-	-	-	-	-
S. ATLANTIC	408	78	108	15	148,986	163,574	20	108	11	9	5	6
Del.	4	-	1	-	2,769	2,946	1	2	-	-	3	-
Md.	29	17	23	-	17,103	20,873	2	10	3	4	1	-
D.C.	67	-	-	-	10,622	11,210	1	4	-	-	-	1
Va.	26	9	23	5	14,081	14,629	2	11	1	-	-	4
W. Va.	4	1	15	-	1,834	1,764	1	2	-	-	-	-
N.C.	9	15	21	7	24,331	25,201	-	14	1	2	-	-
S.C.	6	5	4	-	14,926	15,390	-	10	1	1	1	-
Ga.	40	20	2	1	27,150	32,574	4	20	1	1	-	-
Fla.	223	11	19	2	36,170	38,987	9	35	4	1	-	1
E.S. CENTRAL	21	11	36	6	51,758	53,188	8	22	3	2	-	-
Ky.	9	4	6	-	6,269	6,261	4	1	-	-	-	-
Tenn.	5	3	11	1	21,342	22,128	-	16	2	2	-	-
Ala.	5	4	17	5	16,395	16,185	2	4	1	-	-	-
Miss.	2	-	2	-	7,752	8,614	2	1	-	-	-	-
W.S. CENTRAL	193	11	47	4	79,610	89,386	57	23	3	27	-	17
Ark.	1	-	-	2	6,999	6,961	2	4	1	1	-	1
La.	25	-	6	-	17,906	16,892	12	2	-	2	-	1
Okla.	7	1	16	1	8,762	10,423	5	3	-	5	-	-
Tex.	160	10	25	1	45,943	55,110	38	14	2	19	-	15
MOUNTAIN	46	9	23	8	19,055	20,140	57	25	9	2	-	8
Mont.	-	-	-	-	789	840	6	-	-	-	-	-
Idaho	-	1	-	-	934	850	-	1	-	-	-	-
Wyo.	1	-	-	-	527	530	-	-	-	-	-	-
Colo.	25	-	7	-	5,465	5,663	8	3	1	-	-	-
N. Mex.	-	-	-	-	2,281	2,500	10	-	-	-	-	-
Ariz.	10	2	9	3	5,125	5,695	16	12	2	-	-	6
Utah	5	6	7	5	928	953	12	4	1	1	-	1
Nev.	5	-	-	-	3,006	3,109	5	5	5	1	-	1
PACIFIC	703	22	120	8	79,347	89,000	101	82	8	19	-	83
Wash.	34	3	7	-	5,801	6,921	1	3	-	2	-	3
Oreg.	7	-	-	-	4,618	4,782	14	3	1	-	-	1
Calif.	649	17	111	8	65,569	73,217	86	76	7	17	-	64
Alaska	1	-	-	-	1,993	2,319	-	-	-	-	-	-
Hawaii	12	2	2	-	1,366	1,761	-	-	-	-	-	15
Guam	-	U	-	-	95	114	U	U	U	U	U	-
P.R.	33	1	3	1	2,436	2,082	1	22	-	1	-	2
V.I.	-	-	-	-	348	197	-	-	-	-	-	-
Pac. Trust Terr.	-	U	-	-	-	-	U	U	U	U	U	-

N: Not notifiable

U: Unavailable

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending
September 15, 1984 and September 17, 1983 (37th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin- gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported *		Total									
	Cum. 1984	1984	Cum. 1984	1984	Cum. 1984	Cum. 1983	Cum. 1984	1984	Cum. 1984	1984	Cum. 1984	Cum. 1983	1984	Cum. 1984	Cum. 1983
UNITED STATES	652	15	2,044	2	254	1,229	2,029	20	2,212	71	1,499	1,668	5	556	774
NEW ENGLAND	39	-	93	-	11	16	136	-	69	3	41	52	-	18	15
Maine	-	-	-	-	-	-	1	-	22	1	2	4	-	1	-
N.H.	-	-	33	-	3	3	7	-	15	-	6	7	-	1	4
Vt.	4	-	2	-	5	-	26	-	5	1	19	7	-	-	5
Mass.	22	-	48	-	-	5	60	-	10	1	11	28	-	16	6
R.I.	4	-	-	-	-	-	11	-	8	-	2	5	-	-	-
Conn.	9	-	10	-	3	8	31	-	9	-	1	1	-	-	-
MID ATLANTIC	101	-	111	2	32	94	344	4	259	14	139	310	1	215	134
Upstate N.Y.	23	-	21	1 †	11	9	116	2	68	4	75	95	1	99	25
N.Y. City	25	-	86	-	14	55	75	-	20	1	6	48	-	97	86
N.J.	30	-	4	-	2	27	69	-	130	-	11	19	-	15	3
Pa.	23	-	-	1 †	5	3	84	2	41	9	47	148	-	4	20
E.N. CENTRAL	60	1	611	-	70	647	322	11	889	8	365	384	2	81	115
Ohio	15	-	3	-	6	85	108	2	436	2	64	109	-	2	2
Ind.	2	-	2	-	1	400	39	3	53	3	225	44	2	5	23
Ill.	20	-	177	-	1	154	72	3	167	-	22	138	-	47	48
Mich.	12	1	408	-	54	7	61	3	160	2	25	26	-	19	15
Wis.	11	-	21	-	8	1	42	-	73	1	29	67	-	8	27
W.N. CENTRAL	19	-	38	-	7	7	121	1	90	2	110	103	-	34	37
Minn.	6	-	35	-	3	1	23	-	4	-	12	37	-	4	7
Iowa	2	-	-	-	-	-	21	1	21	-	10	6	-	1	-
Mo.	6	-	3	-	-	1	36	-	9	2	18	20	-	-	-
N. Dak.	1	-	-	-	-	-	1	-	2	-	-	1	-	3	-
S. Dak.	1	-	-	-	-	-	6	-	-	-	8	7	-	-	-
Nebr.	1	-	-	-	-	-	11	-	4	-	11	-	-	-	-
Kans.	2	-	-	-	4	5	23	-	50	-	51	32	-	26	30
S. ATLANTIC	98	1	16	-	28	195	418	-	165	2	112	209	-	21	91
Del.	4	-	-	-	-	-	3	-	2	-	2	3	-	-	-
Md.	24	-	6	-	14	10	33	-	33	-	8	26	-	1	3
D.C.	1	-	-	-	5	-	7	-	-	-	-	-	-	-	-
Va.	27	-	1	-	2	23	47	-	16	-	13	45	-	-	2
W. Va.	1	-	-	-	-	-	5	-	35	1	11	7	-	-	-
N.C.	7	-	-	-	-	1	61	-	17	1	23	23	-	-	10
S.C.	2	-	-	-	-	4	44	-	4	-	1	13	-	-	1
Ga.	8	-	-	-	1	8	84	-	17	-	10	62	-	2	11
Fla.	24	1	9	-	6	149	134	-	41	-	44	30	-	18	64
E.S. CENTRAL	6	-	1	-	2	6	119	1	45	-	12	24	-	9	11
Ky.	-	-	1	-	-	1	48	-	9	-	1	11	-	3	10
Tenn.	2	-	-	-	2	-	30	1	15	-	7	5	-	-	-
Ala.	4	-	-	-	-	5	28	-	6	-	-	4	-	3	1
Miss.	-	-	-	-	-	-	13	-	15	-	4	4	-	3	-
W.S. CENTRAL	60	10	509	-	25	74	214	1	117	10	269	315	-	13	99
Ark.	-	8	8	-	-	13	29	1	7	-	15	19	-	3	-
La.	9	-	8	-	-	25	44	-	-	-	6	5	-	-	9
Okla.	8	-	-	-	8	1	23	N	N	10	231	237	-	-	-
Tex.	43	2	493	-	17	35	118	-	110	-	17	54	-	10	90
MOUNTAIN	21	-	111	-	32	4	68	-	206	-	97	173	-	16	29
Mont.	1	-	-	-	-	-	2	-	7	-	19	1	-	-	3
Idaho	2	-	-	-	23	-	6	-	9	-	7	15	-	1	8
Wyo.	-	-	-	-	-	1	2	-	2	-	3	6	-	2	4
Colo.	4	-	-	-	6	2	24	-	16	-	34	105	-	2	-
N. Mex.	1	-	88	-	-	-	7	N	N	-	6	11	-	-	-
Ariz.	9	-	-	-	1	1	15	-	165	-	20	17	-	1	6
Utah	4	-	23	-	2	-	7	-	5	-	6	18	-	6	7
Nev.	-	-	-	-	-	-	5	-	2	-	2	-	-	4	1
PACIFIC	248	3	554	-	47	186	287	2	372	32	354	98	2	149	243
Wash.	8	-	125	-	13	5	44	1	38	21	158	16	-	1	9
Oreg.	10	-	-	-	-	9	41	N	N	-	14	6	-	2	13
Calif.	227	3	276	-	30	169	194	1	308	11	111	70	2	141	219
Alaska	-	-	-	-	-	2	7	-	8	-	-	4	-	1	1
Hawaii	3	-	153	-	4	1	1	-	18	-	71	2	-	4	1
Guam	1	U	83	U	2	2	1	U	5	U	-	-	U	2	-
P.R.	4	-	1	-	-	94	3	14	128	-	-	11	1	8	4
V.I.	-	-	-	-	-	5	-	-	5	-	-	-	-	-	2
Pac. Trust Terr.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N Not notifiable U Unavailable †International §Out-of-state

**TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending
September 15, 1984 and September 17, 1983 (37th Week)**

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1984	Cum. 1983	1984	Cum. 1984	Cum. 1983	Cum. 1984	Cum. 1984	Cum. 1984	Cum. 1984
UNITED STATES	19,589	22,864	12	15,026	16,516	232	226	690	3,751
NEW ENGLAND	367	475	-	427	477	4	13	5	39
Maine	3	15	-	21	26	-	-	-	11
N.H.	12	19	-	25	30	-	-	-	14
Vt.	1	1	-	9	6	-	-	-	-
Mass.	211	295	-	226	260	4	11	4	9
R.I.	15	16	-	30	35	-	-	-	-
Conn.	125	129	-	116	120	-	2	1	5
MID ATLANTIC	2,655	2,932	-	2,751	2,903	-	37	20	307
Upstate N.Y.	215	265	-	453	459	-	12	7	58
N.Y. City	1,642	1,725	-	1,084	1,161	-	10	2	-
N.J.	474	561	-	623	632	-	9	3	24
Pa.	324	381	-	591	656	-	6	8	225
E.N. CENTRAL	921	1,232	4	2,002	2,169	6	33	51	169
Ohio	174	316	4	370	342	-	6	34	15
Ind.	95	89	-	236	243	-	3	5	19
Ill.	315	598	-	825	958	6	11	9	62
Mich.	285	165	-	442	512	-	5	3	20
Wis.	52	64	-	129	114	-	8	-	53
W.N. CENTRAL	282	276	3	471	538	73	6	44	579
Minn.	77	108	-	79	103	1	2	-	59
Iowa	11	16	1	48	51	-	-	6	120
Mo.	143	104	-	242	274	37	3	12	41
N. Dak.	10	2	2	10	6	-	-	-	122
S. Dak.	-	11	-	17	33	32	-	4	151
Nebr.	11	11	-	22	20	-	-	4	38
Kans.	30	24	-	53	51	3	1	18	48
S. ATLANTIC	5,806	6,116	-	3,159	3,329	5	32	322	1,087
Del.	14	25	-	39	31	-	-	1	4
Md.	363	379	-	321	262	-	3	28	594
D.C.	237	276	-	132	135	-	6	-	-
Va.	293	419	-	348	345	-	8	49	165
W. Va.	13	20	-	94	106	-	-	6	34
N.C.	606	580	-	465	494	1	1	124	24
S.C.	552	389	-	372	304	-	1	71	41
Ga.	993	1,111	-	447	609	4	1	40	142
Fla.	2,735	2,917	-	941	1,043	-	12	3	83
E.S. CENTRAL	1,355	1,576	-	1,384	1,482	4	5	70	182
Ky.	74	103	-	331	354	-	2	15	46
Tenn.	370	439	-	427	460	4	2	36	62
Ala.	447	627	-	409	381	-	1	12	74
Miss.	464	407	-	217	287	-	-	7	-
W.S. CENTRAL	4,785	5,956	2	1,699	2,040	105	12	162	764
Ark.	136	143	-	184	227	78	-	28	83
La.	859	1,225	-	222	325	7	1	2	47
Okl.	156	152	2	157	183	16	2	108	87
Tex.	3,634	4,436	-	1,136	1,305	4	9	24	547
MOUNTAIN	439	474	2	398	457	27	11	12	220
Mont.	2	7	-	17	34	3	1	8	99
Idaho	19	6	1	24	24	6	-	1	9
Wyo.	4	10	-	-	11	1	-	3	13
Colo.	117	112	1	50	63	6	2	-	37
N. Mex.	60	129	-	80	86	2	3	-	11
Ariz.	156	119	-	178	178	3	4	-	37
Utah	14	18	-	30	34	3	-	-	2
Nev.	67	73	-	19	27	3	1	-	12
PACIFIC	2,979	3,827	1	2,735	3,116	8	77	4	404
Wash.	106	139	-	140	175	2	2	-	2
Oreg.	81	99	1	108	128	2	1	1	1
Calif.	2,733	3,527	-	2,293	2,597	4	69	2	393
Alaska	4	10	-	43	42	-	1	1	8
Hawaii	55	52	-	151	174	-	4	-	-
Guam	-	-	U	5	5	-	-	-	-
P.R.	575	724	-	270	362	-	3	-	43
V.I.	8	16	-	2	2	-	3	-	-
Pac. Trust Terr.	-	-	U	-	-	-	-	-	-

U Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending
September 15, 1984 (37th Week Ending)

Reporting Area	All Causes, By Age (Years)						P&I** Total	Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	652	446	141	37	14	14	38	S. ATLANTIC	1,322	779	319	136	49	39	56
Boston, Mass.	188	119	44	14	5	6	16	Atlanta, Ga.	145	85	34	14	8	4	3
Bridgeport, Conn.	44	34	4	5	-	1	3	Baltimore, Md.	195	113	54	17	3	8	2
Cambridge, Mass.	25	20	4	1	-	-	1	Charlotte, N.C.	91	46	29	12	3	1	6
Fall River, Mass.	25	16	6	1	1	1	-	Jacksonville, Fla.	97	60	17	14	2	4	8
Hartford, Conn.	62	41	14	3	3	1	3	Miami, Fla.	116	66	28	16	4	2	2
Lowell, Mass.	25	15	6	4	-	-	-	Norfolk, Va.	60	33	14	5	6	2	6
Lynn, Mass.	14	10	4	-	-	-	-	Richmond, Va.	88	54	23	2	2	7	10
New Bedford, Mass.	23	15	6	2	-	-	-	Savannah, Ga.	17	11	3	1	1	1	2
New Haven, Conn.	38	23	12	1	1	1	2	St. Petersburg, Fla.	87	74	9	1	2	1	4
Providence, R.I.	74	54	15	2	-	3	8	Tampa, Fla.	59	36	18	4	-	1	2
Somerville, Mass.	12	11	1	-	-	-	-	Washington, D.C.	320	169	81	46	17	7	6
Springfield, Mass.	50	34	13	2	-	1	3	Wilmington, Del.	47	32	9	4	1	1	5
Waterbury, Conn.	23	18	5	-	-	-	2								
Worcester, Mass.	49	36	7	2	4	-	-	E.S. CENTRAL	781	450	186	57	34	54	31
MID. ATLANTIC	2,587	1,697	570	181	64	75	96	Birmingham, Ala.	132	69	32	13	11	7	3
Albany, N.Y.	45	26	14	2	1	2	-	Chattanooga, Tenn.	59	36	15	6	2	-	2
Allentown, Pa.	12	10	2	-	-	-	-	Knoxville, Tenn.	70	44	17	3	4	2	2
Buffalo, N.Y.	88	52	23	6	2	5	7	Louisville, Ky.	91	56	23	3	-	9	-
Camden, N.J.	49	31	9	3	3	3	-	Memphis, Tenn.	212	130	43	15	9	15	14
Elizabeth, N.J.	29	24	4	1	-	-	2	Mobile, Ala.	56	34	9	2	3	8	4
Erie, Pa.†	40	26	12	2	-	-	1	Montgomery, Ala.	33	19	11	1	-	2	-
Jersey City, N.J.	36	23	6	5	1	1	2	Nashville, Tenn.	128	62	36	14	5	11	6
N.Y. City, N.Y.	1,406	923	297	111	34	41	50	W.S. CENTRAL	1,482	842	356	136	75	73	49
Newark, N.J.	98	48	19	18	7	6	9	Austin, Tex.	59	33	15	5	6	-	8
Paterson, N.J.	22	14	4	1	2	1	-	Baton Rouge, La.	45	24	5	5	3	8	-
Philadelphia, Pa.†	297	204	73	13	3	4	13	Corpus Christi, Tex.	77	38	19	8	6	6	1
Pittsburgh, Pa.†	67	40	23	3	1	-	-	Dallas, Tex.	196	108	41	26	13	8	4
Reading, Pa.	32	25	4	-	2	1	1	El Paso, Tex.	72	45	9	9	6	3	1
Rochester, N.Y.	108	74	26	3	1	4	6	Fort Worth, Tex.	98	61	21	8	2	6	7
Schenectady, N.Y.	40	31	8	-	-	1	2	Houston, Tex.	369	188	98	40	26	17	7
Scranton, Pa.†	30	21	7	2	-	-	1	Little Rock, Ark.	56	41	9	1	2	3	3
Syracuse, N.Y.	110	73	22	5	4	6	-	New Orleans, La.	149	84	46	13	2	4	-
Trenton, N.J.	29	18	6	5	-	-	-	San Antonio, Tex.	203	120	57	10	5	11	5
Utica, N.Y.	27	20	5	1	1	-	1	Shreveport, La.	50	32	10	4	1	3	4
Yonkers, N.Y.	22	14	6	-	2	-	1	Tulsa, Okla.	108	68	26	7	3	4	9
E.N. CENTRAL	2,277	1,448	522	161	79	67	71	MOUNTAIN	640	403	133	48	35	21	28
Akron, Ohio	74	52	17	2	1	2	-	Albuquerque, N.Mex.	66	39	22	2	2	1	3
Canton, Ohio	51	33	15	1	2	-	-	Colo. Springs, Colo.	42	24	7	5	4	2	3
Chicago, Ill.	497	307	116	45	17	12	16	Denver, Colo.	101	67	19	6	6	3	5
Cincinnati, Ohio	161	103	33	9	6	10	13	Las Vegas, Nev.	96	57	24	13	-	2	4
Cleveland, Ohio	192	114	49	13	9	7	1	Ogden, Utah	21	15	3	2	1	-	2
Columbus, Ohio	121	78	30	7	2	4	7	Phoenix, Ariz.	142	80	33	14	11	4	2
Dayton, Ohio	101	71	19	6	3	2	3	Pueblo, Colo.	30	24	5	-	1	-	4
Detroit, Mich.	269	150	73	30	11	5	8	Salt Lake City, Utah	48	31	7	1	5	4	-
Evansville, Ind.	43	33	7	3	-	-	-	Tucson, Ariz.	94	66	13	5	5	5	5
Fort Wayne, Ind.	56	34	14	3	2	3	-								
Gary, Ind.	9	4	3	2	-	-	-	PACIFIC	2,063	1,314	429	166	81	66	123
Grand Rapids, Mich.	42	24	14	2	2	-	-	Berkeley, Calif.	17	13	3	1	-	-	-
Indianapolis, Ind.	165	102	37	10	10	6	2	Fresno, Calif.	91	56	24	4	1	6	6
Madison, Wis.	34	22	4	2	3	3	1	Glendale, Calif.	13	10	2	1	-	-	-
Milwaukee, Wis.	133	86	35	6	2	4	11	Honolulu, Hawaii	61	37	14	5	2	3	4
Peoria, Ill.	52	33	10	4	3	2	1	Long Beach, Calif.	86	58	14	6	3	5	13
Rockford, Ill.	53	37	7	6	2	1	2	Los Angeles, Calif.	619	374	135	65	26	12	18
South Bend, Ind.	56	51	2	-	2	1	1	Oakland, Calif.	76	51	14	6	2	3	9
Toledo, Ohio	107	72	24	6	2	3	5	Pasadena, Calif.	41	32	6	1	2	-	1
Youngstown, Ohio	61	42	13	4	-	2	-	Portland, Oreg.	130	80	32	7	5	6	10
W.N. CENTRAL	724	481	154	40	19	30	30	Sacramento, Calif.	159	97	35	16	7	4	10
Des Moines, Iowa	76	51	13	4	3	5	2	San Diego, Calif.	131	85	22	13	7	4	14
Duluth, Minn.	19	16	3	-	-	-	-	San Francisco, Calif.	160	98	34	16	5	7	11
Kansas City, Kans.	44	31	7	3	2	1	2	San Jose, Calif.	175	123	32	8	8	4	14
Kansas City, Mo.	113	80	22	6	3	2	4	Seattle, Wash.	165	112	29	10	8	6	5
Lincoln, Nebr.	23	17	5	-	1	-	1	Spokane, Wash.	56	39	10	2	1	4	4
Minneapolis, Minn.	99	71	12	9	4	3	6	Tacoma, Wash.	83	49	23	5	4	2	4
Omaha, Nebr.	87	49	24	7	2	5	4								
St. Louis, Mo.	127	76	33	6	3	9	4								
St. Paul, Minn.	77	48	22	4	-	3	1								
Wichita, Kans.	59	42	13	1	1	2	5								
TOTAL	12,528 ^{††}	7,860	2,810	962	450	439	522								

* 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 1982*†	Estimated mortality April 1984		Estimated number of physician contacts April 1984*¶
		Number*§	Annual Rate/100,000*§	
ALL CAUSES (TOTAL)	9,429,000	174,320	900.2	117,600,000
Accidents and adverse effects (E800-E949)	2,367,000	7,180	37.1	6,100,000
Malignant neoplasms (140-208)	1,809,000	36,370	187.8	2,300,000
Diseases of heart (390-398, 402, 404-429)	1,566,000	66,810	345.0	7,300,000
Suicides, homicides (E950-E978)	1,314,000	3,780	19.5	—
Cerebrovascular diseases (430-438)	256,000	13,380	69.1	1,100,000
Chronic liver disease and cirrhosis (571)	252,000	2,090	10.8	100,000
Pneumonia and influenza (480-487)	118,000	5,790	29.9	1,600,000
Chronic obstructive pulmonary diseases and allied conditions (490-496)	114,000	7,090	36.6	1,900,000
Diabetes mellitus (250)	106,000	3,200	16.5	3,500,000
Prenatal care*				2,600,000
Infant mortality*††		3,200	10.6 / 1,000 live births	

*For details of calculation, see footnotes for Table V, *MMWR* 1984;33:2.

†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* (MVSRI), Vol. 31, No. 13, October 5, 1983.

§National Center for Health Statistics, *Monthly Vital Statistics Report* (MVSRI), Vol. 33, No. 5, August 22, 1984, pp. 8-9.

¶IMS America *National Disease and Therapeutic Index* (NDTI), Monthly Report, April 1984, Section III.

††MVSRI Vol. 33, No. 4, July 26, 1984, p. 1.

Chronic Diarrhea — Continued

recovered. Twenty-two patients have received empiric therapy with at least one antimicrobial agent for at least 7 days. Metronidazole (14 patients), erythromycin (eight), tetracycline (two), trimethoprim/sulfamethoxazole (two), and cephalexin (one) were used; no one responded to treatment. Continuing microbiologic and toxicologic studies performed at CDC of clinical specimens, raw milk samples, and environmental samples from this dairy have not yielded any known enteric pathogens or toxins.

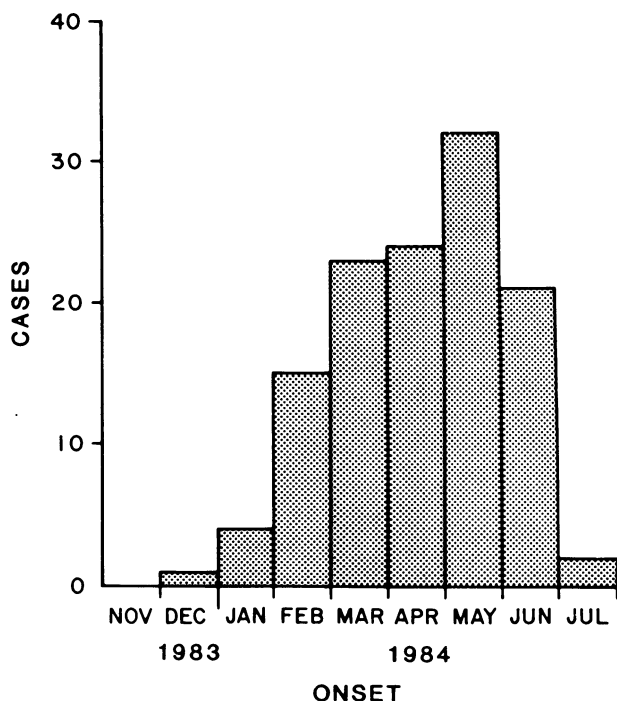
Reported by Acute Disease Epidemiology Section, Minnesota Dept of Health; Enteric Diseases Br, Div of Bacterial Diseases, Center for Infectious Diseases, CDC.

Editorial note: The etiologic agent of this illness has not yet been identified, but available data suggest an infectious etiology. Raw milk was implicated as the vehicle of transmission in this outbreak. However, as with other enteric pathogens, such as *Salmonella* sp., and *Campylobacter jejuni*, for which raw milk is an important vehicle, other as yet unidentified vehicles

Chronic Diarrhea — Continued

may also be associated with this illness. To aid in further understanding this syndrome, outbreaks of diarrheal illness similar to that reported here should be reported to CDC through local and state health departments.

FIGURE 3. Chronic diarrhea associated with raw milk consumption, by month of onset — Brainerd, Minnesota, 1983-1984



Current Trends

Rubella and Congenital Rubella Syndrome — United States, 1983-1984

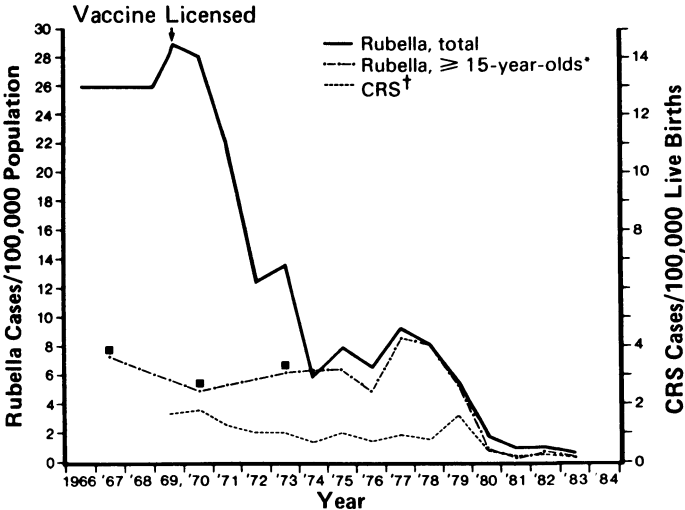
Rubella: During the first 33 weeks of 1984, a provisional total of 500 cases of rubella has been reported to CDC; this is a 33% decline from the 745 cases reported during the same period of 1983. To date, 16 states are reported free of rubella.

In 1983, a provisional total of 970 rubella cases was reported to CDC. This is a 58% decrease over the 1982 total of 2,325 cases and the lowest reported number of cases since rubella became a nationally notifiable disease in 1966 (Figures 4 and 5). The 1983 incidence rate of 0.4 cases per 100,000 population is a 54% decline from the previous all-time low incidence rate in 1981 of 0.9/100,000 (Table 1) and a 98% decline from 1969, the year of rubella vaccine licensure.

Thirteen states and the District of Columbia reported no rubella cases in 1983, compared to seven states and the District of Columbia in 1982. The number of counties reporting rubella continued to decline from 366 (11.7%) in 1982 to 284 (9.0%) in 1983.

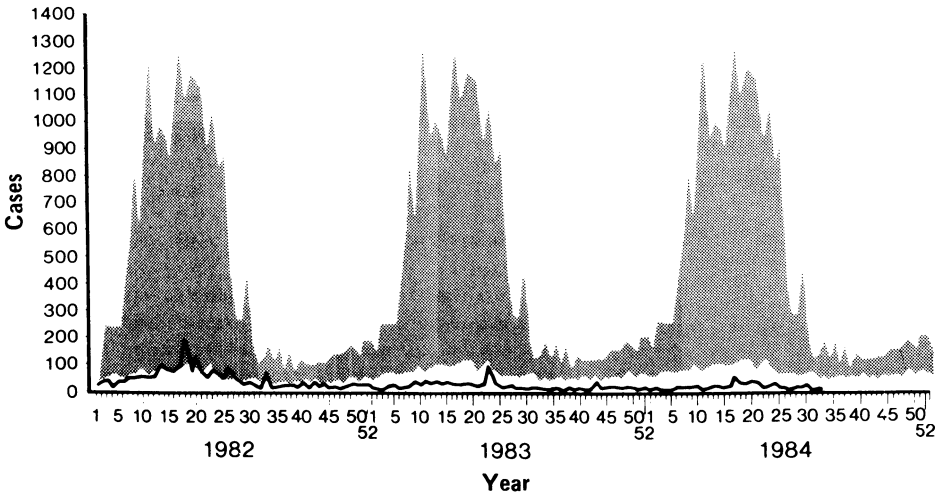
Rubella and CRS – Continued

FIGURE 4. Incidence rate of reported rubella and congenital rubella syndrome (CRS) cases – United States, 1966-1983



*Includes proration of unknown age cases in ≥ 15-year-olds. 1983 data are not available.
†Rate per 100,000 births of confirmed and compatible cases of CRS by year of birth. Reporting for recent years is provisional, as cases may not be diagnosed until later in childhood.
■Average annual United States estimate based on data from Illinois, Massachusetts, and New York City for the 3-year periods 1966-1968, 1969-1971, and 1972-1974. Age specific data were not available for U.S. totals until 1975.

FIGURE 5. Reported rubella cases* – United States, 1982-1984



*Shaded area represents maximum and minimum weekly values during 5-year period, 1977-1981.
Source: MMWR weekly reports.

Rubella and CRS — Continued

Compared to both 1981 and 1982, the 1983 age-specific incidence rates decreased for all ages (Table 1). Children under 5 years of age continued to have the highest reported incidence rate (1.8 cases/100,000 population) and accounted for one-third of the 1983 cases for which ages were known. The increased incidence rate for persons 15 years of age or older noted from 1981 (0.4 cases/100,000 population) to 1982 (0.8/100,000) was reversed in 1983 (0.2/100,000). This age group accounted for 44% of cases for which ages were known in 1983, compared with 62% in 1982.

Congenital Rubella Syndrome (CRS): Three CRS cases were reported to the *MMWR* and the National Congenital Rubella Syndrome Register (NCRSR) in 1984. All were from California, and all are confirmed cases, based on the NCRSR criteria (1, 2). Two of these infants were born in 1984, and one, in 1983. This brings to six the 1983 provisional number of confirmed and compatible cases reported to the NCRSR, compared to 11 for 1982, 10 for 1981, 14 for 1980, and 57 for 1979.

Reported by Div of Immunization, Center for Prevention Svcs, CDC.

Editorial Note: Since licensure in 1969, over 123 million doses of rubella vaccine have been distributed in the United States. During that time, rubella occurrence decreased by 90% or more in all age groups (1) (Figure 6). Since initial implementation of the U.S. rubella vaccination program focused on controlling rubella in preschool-aged and young school-aged children, declines in rubella occurrence were greatest for persons under 15 years of age. Although epidemic rubella and CRS were prevented, endemic CRS remained problematic, since rubella among childbearing-aged females was not adequately controlled. Because of intensified efforts to identify and vaccinate susceptible persons of childbearing age, the reported incidence rate in the postpubertal population has recently declined. Since 1979, the decline in incidence rates for persons 15 years of age or older has been associated with a significant decline in CRS occurrence (Figure 4). However, the occurrence of widespread rubella outbreaks in postpubertal populations, as recently as 1982, is evidence that the potential for increased rubella and subsequent CRS still exists (1,3).

TABLE 1. Age distribution of reported rubella cases and estimated incidence rates* — United States, 1981-1983

Age group (years)	1981			1982			1983 [†]			Rate change 1981-1983 (%)
	No.	%	Rate	No.	%	Rate	No.	%	Rate	
< 1	287	17.1	9.9	177	8.5	5.4	127	15.0	4.0	-59.6
1-4	339	20.3	3.2	249	12.0	2.1	149	17.6	1.2	-62.5
5-9	277	16.5	2.1	214	10.3	1.5	102	12.1	0.7	-66.7
10-14	153	9.1	1.0	155	7.4	1.0	93	11.0	0.6	-40.0
15-19	210	12.5	1.3	288	13.8	1.6	95	11.2	0.6	-53.9
20-24	162	9.7	0.9	375	18.0	1.9	117	13.8	0.6	-33.3
25-29	102	6.1	0.6	298	14.3	1.6	83	9.8	0.5	-16.7
≥ 30	144	8.6	0.2	327	15.7	0.3	80	9.5	0.1	-50.0
Age known (total)	1,674	80.6	—	2,083	89.6	—	846	87.2	—	—
Age unknown (total)	403	19.4	—	242	10.4	—	124	12.8	—	—
Total	2,077	100.0	0.9	2,325	100.0	1.0	970	100.0	0.4	-54.2

*Cases per 100,000 population (projected census data) extrapolated from the age distribution of cases for which ages were known.

[†]Provisional data.

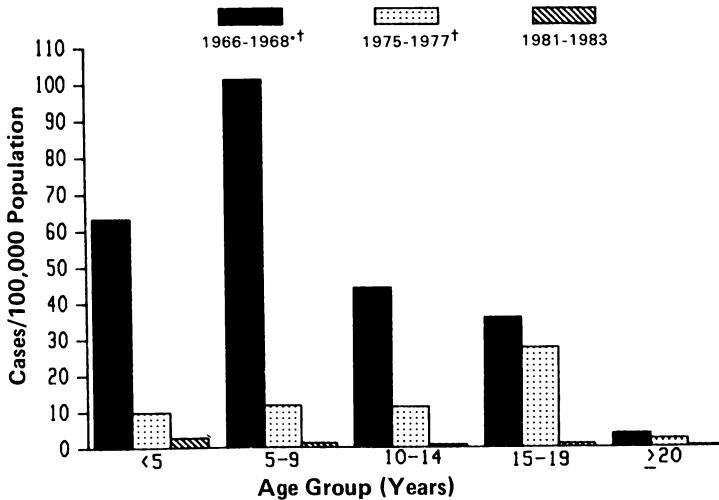
Rubella and CRS — Continued

The current approach to controlling rubella and CRS can eventually lead to elimination, although this process may take 10-30 years and result in the birth of infants with preventable CRS (4). Expanded efforts to vaccinate susceptible postpubertal women can hasten the elimination of rubella and CRS (4,5). A concerted effort by both the private and public sectors will be needed to effectively reach this population.

References

1. CDC. Rubella and congenital rubella—United States, 1980-1983. MMWR 1983;32:505-9.
2. CDC. Rubella and congenital rubella—United States, 1983. MMWR 1984;33:237-42, 247.
3. Dales LG, Chin J. Public health implications of rubella antibody levels in California. Am J Public Health 1982;72:167-72.
4. Orenstein WA, Bart KJ, Hinman AR, et al. The opportunity and obligation to eliminate rubella from the United States. JAMA 1984;251:1988-94.
5. ACIP. Rubella prevention. MMWR 1984 33;301-10, 315-8.

FIGURE 6. Average annual incidence rate of rubella, by age group — United States, 1966-1983



*Prevaccine years.

†Illinois, Massachusetts, New York City only. Total U.S. age data not available.

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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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