

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

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Current Trends

Elimination of Indigenous Measles — United States

An effort is underway to eliminate indigenous measles* from the United States; a target date of October 1, 1982 has been set (1). This article summarizes the successes of that effort and the current measles situation in the United States.

The measles elimination strategy has three major aspects: achievement and maintenance of high immunization levels, development of strong and effective surveillance systems, and aggressive response to the occurrence of disease. Implementation of this strategy has involved numerous private agencies, professional organizations, teachers, parents, and students, as well as governmental agencies at all levels.

All states now have laws requiring measles immunization as a condition of first entry to school; in 40 states and the District of Columbia, these laws extend to all grade levels (kindergarten through 12th grade). In the fall of 1981, the national measles immunization level was 97% for children entering kindergarten or first grade for the first time. Every state has strengthened its surveillance systems; in 43 states, active surveillance systems in which health departments regularly contact health care providers likely to see suspected cases of measles have been instituted. Suspected cases of measles are usually investigated within 24 hours of notification. Routine aggressive responses to suspected cases and outbreaks include rapid identification of susceptibles, provision of vaccination services, and the exclusion of susceptibles from school.

To reduce the importation of measles into this country, all offices issuing United States visas abroad currently provide information on the importance of assuring measles immunization. Although no vaccination requirement currently exists for entry into the United States, visa applicants are advised that children cannot enter school in the United States without proof of immunization. The U.S. Armed Services have instituted a policy of routinely vaccinating susceptible recruits against measles.

These program elements are largely responsible for the marked progress that has been made to date (Table 1, Figure 1). Impressive declines have been seen in the reported occurrence of measles. The number of measles cases reported in the first 37 weeks of 1982 is < 3% of the number reported in the same period of 1977 and < 0.3% of the number reported during the same period of 1962 (the year before measles vaccine was introduced). For the past 66 weeks, < 100 cases per week have been reported.[†] By contrast, in no year before 1977 had < 100 cases per week been reported for as many as 10 weeks.

*A measles case that occurs within the United States and cannot be related to an imported case or a measles case that occurs more than two generations after an imported case to which it is epidemiologically linked.

[†]provisional information

Measles — Continued

Just as the overall number of measles cases has declined dramatically, so has the geographic extent of measles in the United States (Table 2). Only 10% of the nation's counties reported measles at any time during 1981, and provisional data indicate that only 5.3% of counties have reported measles thus far in 1982, suggesting that indigenous transmission has been eliminated from most of the United States.

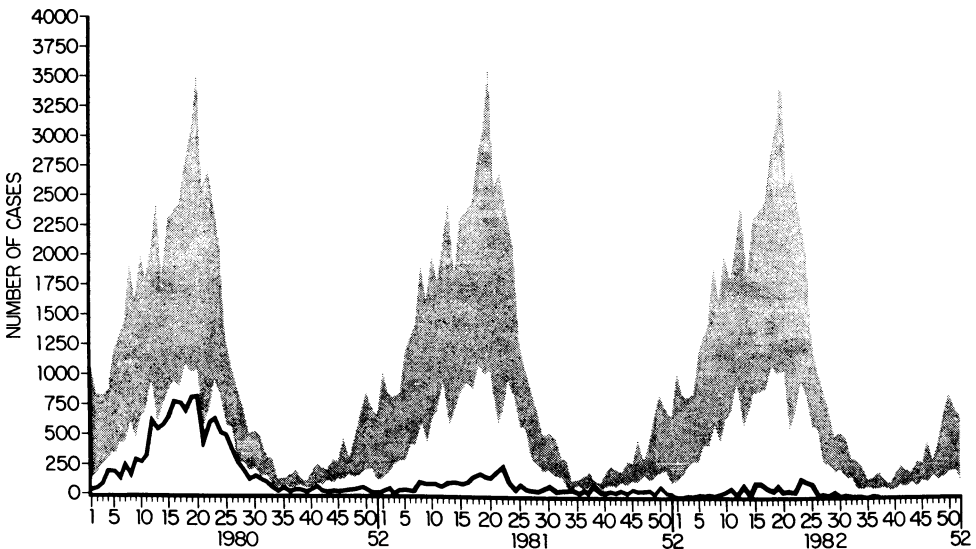
Increasing effort is being made to identify the source of every reported measles case and to confirm each case serologically or epidemiologically by linkage to other measles cases. In the 12-week period from July 3 through September 24, 1982, a source was identified for 57% of the measles cases provisionally reported, and 23% of the cases have been confirmed serologically.

In 1982, imported measles cases have been reported at a rate of approximately 2.5 cases per week; most have resulted in little or no secondary spread. During the past 12 weeks, there

TABLE 1. Number of measles cases reported, weeks 1-37, 1977-1982 — United States

Year (Weeks 1-37)	No. of cases	Change from previous year (%)
1977	53,023	
1978	22,904	-56.8
1979	12,135	-47.0
1980	12,843	+5.8
1981	2,668	-79.2
1982	1,230	-53.9

FIGURE 1. Reported measles cases,* 1980-1982 — United States



* Shaded area represents maximum and minimum weekly values during 5 year period, 1975-1979

Source: MMWR weekly reports

CDC, CPS, IM

Measles — Continued

were 33 imported cases—only 3 of which resulted in any identified secondary spread.[†] In May and June, however, a measles outbreak occurred in Dutchess and Ulster Counties, New York, with 89 cases linked to a student who had traveled to the U.S.S.R. with his high school class. Since such importations are likely to continue, they will challenge the maintenance of measles-free status in the United States, necessitating the continued maintenance of high immunization levels and aggressive surveillance systems and responses to the occurrence of suspected cases. Sporadic cases of measles-like illness in which neither an apparent source nor spread can be identified will also continue and must be investigated promptly with efforts made to confirm the diagnosis serologically.

The exact date of the elimination of indigenous measles transmission from the United States will only be known in retrospect. Currently, only 3 chains of transmission are known to exist, one of which involves four states.[†] With the interruption of these last indigenous chains, future measles cases in the United States should be related to measles importations from other countries.

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

Reference

1. CDC. Goal to eliminate measles from the United States. MMWR 1978;27:391.

[†]provisional information

TABLE 2. Number of counties reporting measles, 1977-1981 and weeks 1-37, 1982*—United States

Year	No. of counties reporting measles	Percentage of counties [§]
1977	1,429	45.5
1978	977	31.1
1979	889	28.3
1980	714	22.8
1981	316	10.1
1982 (weeks 1-37)	165	5.3

*Provisional data

[§]n = 3,144 (1977-79); n = 3,137 (1980-82)

*Epidemiologic Notes and Reports***Group A Streptococcal Abscesses after DTP Immunization — Georgia**

From July 19 to July 20, 1982, a cluster of severe local reactions with prolonged fever occurred among children immunized with diphtheria-tetanus-pertussis (DTP) vaccine at a private pediatric office in Atlanta, Georgia. Twelve children developed abscesses at the injection site within 2 weeks of vaccination; four of these were hospitalized because of the severity of symptoms or for incision and drainage of their abscesses.

Group A streptococci were cultured from the abscesses of nine of the 12 children. The remaining three had been on antibiotics for at least 5 days before being cultured. In addition, two of the hospitalized children had blood cultures positive for Group A streptococcus. All 11 isolates were of the same type: T-28, M-nontypeable, serum opacity reaction (SOR) positive.

Streptococcal Abscesses — Continued

Eleven children had temperatures > 102 F (38.9 C) lasting 2 or more days; eleven had irritability and four had vomiting. Three had generalized rash, which in one patient clinically resembled scarlatina. Eight children were < 6 months old; two were 6 to 11 months old; and two were > 1 year old. All 12 children had received DTP vaccine from the same lot between 2:00 p.m. July 19 and 12:00 noon July 20. Two additional children who received DTP vaccine during this interval did not develop abscesses; one developed a moderate to severe local reaction that resolved spontaneously without therapy or abscess formation; the other had no fever or local reaction. The attack rate for abscess development during this time was 12 of 14 or 86%. Seventy-seven children, seen at the same office, had received other vaccines during this period or had received DTP vaccine on the 2 days before or the 2 days after this period; their parents were interviewed and reported no abscesses among any of the children.

The pediatric office has five pediatricians and eight nurses. The pediatricians do not give vaccinations. During the period of risk, six of the nurses were known to have given vaccinations. A single 7.5-ml vial of DTP vaccine was probably used for all patients; normal disinfection procedure consisted of wiping vaccine vials with cotton balls saturated with 70% ethanol. The vaccine was left out of the refrigerator between immunizations. At the end of the day, any unused vaccine was returned to the refrigerator and used the next day. On July 30, throat, ear, scalp, vaginal, rectal, and appropriate skin cultures were taken from all nurses and from one child's mother who claimed to be a "strep carrier." Cultures were also taken of unused disposa-

*(Continued on page 525)***TABLE I. Summary—cases of specified notifiable diseases, United States**

Disease	38th Week Ending			Cumulative, First 38 Weeks		
	September 25, 1982	September 26, 1981	Median 1977-1981	September 25, 1982	September 26, 1981	Median 1977-1981
Aseptic meningitis	364	490	321	5,615	6,500	4,858
Bruceellosis	2	5	4	117	118	130
Encephalitis: Primary (arthropod-borne & unsp.)	50	55	52	888	969	745
Post-infectious	-	1	4	48	70	162
Gonorrhea: Civilian	18,530	21,723	23,723	686,105	731,671	722,734
Military	459	452	567	18,346	21,007	20,066
Hepatitis: Type A	484	569	607	16,050	18,305	20,974
Type B	474	428	306	15,296	14,681	12,046
Non A, Non B	48	N	N	1,581	N	N
Unspecified	219	235	235	6,539	7,973	7,376
Legionellosis	28	N	N	383	N	N
Leprosy	4	7	2	143	185	117
Malaria	23	32	29	763	1,055	542
Measles (rubeola)	51	65	68	1,277	2,649	12,895
Meningococcal infections: Total	33	42	28	2,217	2,663	2,010
Civilian	33	41	28	2,205	2,652	1,992
Military	-	1	-	12	11	15
Mumps	31	51	100	4,213	3,301	11,267
Pertussis	47	36	49	1,057	905	1,161
Rubella (German measles)	21	20	46	2,018	1,780	10,734
Syphilis (Primary & Secondary): Civilian	680	718	538	23,836	22,236	17,689
Military	9	10	10	320	276	231
Tuberculosis	572	540	547	18,584	19,556	20,144
Tularemia	7	10	8	181	198	154
Typhoid fever	9	6	10	290	364	357
Typhus fever, tick-borne (RMSF)	15	31	25	861	1,067	992
Rabies, animal	114	164	121	4,612	5,650	3,727

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1982		Cum. 1982
Anthrax	-	Poliomyelitis: Total	3
Botulism (Calif. 1)	56	Paralytic	3
Cholera	-	Psittacosis	85
Congenital rubella syndrome	5	Rabies, human	-
Diphtheria	2	Tetanus (N.C. 1, Fla. 1)	61
Leptospirosis (Mo. 1)	43	Trichinosis	72
Plague	15	Typhus fever, flea-borne (endemic, murine) (Tex. 3)	30

TABLE III. Cases of specified notifiable diseases, United States, weeks ending
September 25, 1982 and September 26, 1981 (38th week)

Reporting Area	Aseptic Meningi- tits	Brucel- losis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel- losis	Leprosy
			Primary	Post-in- fectious			A	B	NA,NB	Unspeci- fied		
			Cum. 1982	Cum. 1982	Cum. 1982	Cum. 1981	1982	1982	1982	1982		
UNITED STATES	364	117	888	48	686,105	731,671	484	474	48	219	28	143
NEW ENGLAND	11	3	34	5	16,490	17,958	8	22	-	4	-	1
Maine	-	-	-	-	855	938	-	-	-	-	-	-
N.H.	1	-	5	-	483	648	1	2	-	-	-	-
Vt.	-	-	-	-	314	303	1	1	-	-	-	-
Mass.	2	-	13	-	7,400	7,569	3	7	-	4	-	-
R.I.	1	-	-	1	1,113	1,056	-	1	-	-	-	-
Conn.	7	3	16	4	6,325	7,444	3	11	-	-	-	1
MID. ATLANTIC	59	3	97	10	86,296	87,651	71	108	4	26	10	7
Upstate N.Y.	16	3	36	3	14,366	14,764	11	17	3	3	-	1
N.Y. City	13	-	15	-	35,294	36,442	20	40	-	3	-	4
N.J.	15	-	18	-	15,841	16,444	14	28	1	12	2	1
Pa.	15	-	28	7	20,775	20,001	26	23	-	8	8	1
E.N. CENTRAL	81	1	189	10	94,897	109,670	59	54	5	16	10	3
Ohio	31	1	81	4	27,271	34,692	24	20	3	10	3	-
Ind.	9	-	47	3	12,223	9,452	9	4	1	3	6	-
Ill.	-	-	9	1	22,632	31,581	2	4	1	-	-	3
Mich.	41	-	47	-	23,806	23,958	24	26	-	3	1	-
Wis.	-	-	5	2	8,965	9,987	-	-	-	-	-	-
W.N. CENTRAL	25	14	72	4	32,714	34,553	14	20	1	4	-	4
Minn.	3	1	27	1	4,728	5,234	3	6	1	1	-	2
Iowa	4	3	31	1	3,453	3,824	-	4	-	-	-	-
Mo.	11	4	6	-	15,608	16,053	10	7	-	2	-	1
N. Dak.	-	-	-	-	436	437	-	1	-	-	-	-
S. Dak.	-	-	-	1	888	968	-	-	-	-	-	1
Nebr.	1	2	4	-	1,998	2,604	-	-	-	-	-	-
Kans.	6	3	4	1	5,603	5,433	1	2	-	1	-	-
S. ATLANTIC	63	23	134	8	176,873	180,595	55	83	5	18	6	9
Del.	-	-	-	-	2,937	2,905	1	-	-	-	-	-
Md.	6	-	19	-	22,207	21,093	4	18	1	1	-	3
D.C.	-	-	-	-	10,582	10,321	-	5	-	-	-	-
Va.	-	7	28	1	14,302	16,649	1	6	2	1	5	1
W. Va.	2	-	15	-	2,073	2,717	2	4	-	2	-	-
N.C.	22	-	15	1	28,651	27,814	1	9	-	3	-	-
S.C.	2	2	-	-	17,874	17,567	-	1	-	-	-	-
Ga.	2	3	8	-	31,389	37,512	12	15	-	-	-	1
Fla.	23	11	49	6	46,858	44,017	34	25	2	11	1	4
E.S. CENTRAL	9	11	46	2	60,597	60,687	16	19	-	3	-	-
Ky.	1	-	-	-	8,179	7,475	8	5	-	-	-	-
Tenn.	2	6	21	-	23,768	23,106	3	10	-	-	-	-
Ala.	6	4	15	2	17,969	18,247	4	4	-	3	-	-
Miss.	-	1	10	-	10,681	11,859	1	-	-	-	-	-
W.S. CENTRAL	36	35	153	1	96,757	96,899	119	32	1	74	-	24
Ark.	7	7	16	-	7,958	7,213	-	1	-	4	-	-
La.	3	8	15	-	17,700	16,825	15	5	1	4	-	-
Okla.	4	5	31	-	10,562	10,411	19	6	-	7	-	-
Tex.	22	15	91	1	60,537	62,450	85	20	-	59	-	24
MOUNTAIN	8	-	30	3	23,697	28,445	35	21	4	24	2	2
Mont.	-	-	-	-	961	1,029	-	1	-	-	-	-
Idaho	1	-	-	-	1,159	1,305	-	-	2	1	1	1
Wyo.	-	-	-	-	696	696	-	3	2	4	-	-
Colo.	3	-	14	1	6,419	7,659	3	-	-	2	-	-
N. Mex.	-	-	1	-	3,138	3,079	6	-	-	4	-	-
Ariz.	-	-	6	-	6,197	8,420	19	12	-	5	1	-
Utah	2	-	5	2	1,147	1,414	5	1	-	6	-	1
Nev.	2	-	4	-	3,980	4,843	2	4	-	2	-	-
PACIFIC	72	27	133	5	97,784	115,213	107	115	28	50	-	93
Wash.	8	1	11	-	8,186	9,574	3	2	-	4	-	6
Oreg.	-	-	3	-	5,775	6,759	9	12	1	1	-	1
Calif.	53	25	113	5	79,519	93,704	94	101	27	45	-	64
Alaska	5	1	4	-	2,455	2,899	-	-	-	-	-	1
Hawaii	6	-	2	-	1,849	2,277	1	-	-	-	-	21
Guam	U	-	-	-	81	87	U	U	U	U	U	-
P.R.	1	-	1	-	2,040	2,465	9	15	-	10	-	1
V.I.	-	-	-	-	173	163	-	2	-	1	-	-
Pac. Trust Terr.	U	-	-	-	297	329	U	U	U	U	U	13

N: Not notifiable

U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending September 25, 1982 and September 26, 1981 (38th week)

Reporting Area	Malaria		Measles (Rubeola)			Meningococcal Infections (Total)		Mumps		Pertussis	Rubella		
	1982	Cum. 1982	1982	Cum. 1982	Cum. 1981	1982	Cum. 1982	1982	Cum. 1982	1982	1982	Cum. 1982	Cum. 1981
UNITED STATES	23	763	51	1,277	2,649	33	2,217	31	4,213	47	21	2,018	1,780
NEW ENGLAND	-	39	1	12	79	-	116	5	176	5	2	20	115
Maine	-	-	-	-	5	-	9	-	39	-	-	-	33
N.H.	-	1	1	3	6	-	15	-	14	1	2	10	47
Vt.	-	-	-	2	3	-	8	-	7	-	-	-	-
Mass.	-	24	-	4	55	-	29	5	84	-	-	6	23
R.I.	-	3	-	-	-	-	13	-	15	1	-	1	-
Conn.	-	11	-	3	10	-	42	-	17	3	-	3	12
MID. ATLANTIC	5	128	1	160	826	3	396	2	267	14	-	98	209
Upstate N.Y.	-	25	1	111	208	1	140	-	61	6	-	48	100
N.Y. City	5	51	-	41	78	2	74	-	45	-	-	32	52
N.J.	-	26	-	4	56	-	81	1	39	1	-	17	46
Pa.	-	26	-	4	484	-	101	1	122	7	-	1	11
E.N. CENTRAL	1	53	2	76	80	5	264	6	2,174	11	1	166	372
Ohio	1	12	-	1	16	2	93	1	1,563	5	-	-	3
Ind.	-	2	-	2	8	-	26	-	37	2	-	27	129
Ill.	-	11	-	23	23	1	72	2	176	2	1	59	93
Mich.	-	25	2	50	30	2	59	2	298	1	-	48	34
Wis.	-	3	-	-	3	-	14	1	100	1	-	32	113
W.N. CENTRAL	-	19	-	49	10	3	98	-	564	-	2	58	76
Minn.	-	2	-	-	3	1	25	-	437	-	-	5	7
Iowa	-	6	-	-	1	2	9	-	31	-	-	-	4
Mo.	-	5	-	2	1	-	26	-	16	-	-	38	2
N. Dak.	-	1	-	-	-	-	6	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	4	-	1	-	-	1	-
Nebr.	-	3	-	3	4	-	12	-	-	-	-	-	1
Kans.	-	2	-	44	1	-	16	-	79	-	2	14	62
S. ATLANTIC	2	109	-	41	407	9	462	6	249	10	2	78	134
Del.	-	4	-	-	-	-	-	3	13	-	-	1	1
Md.	1	17	-	3	5	5	33	1	28	4	-	34	1
D.C.	-	4	-	1	1	-	2	-	-	-	-	-	-
Va.	1	33	-	14	9	-	55	-	33	1	-	13	6
W. Va.	-	7	-	3	9	-	9	-	88	-	-	1	22
N.C.	-	3	-	-	3	3	87	-	12	4	-	1	5
S.C.	-	4	-	-	2	-	52	-	15	-	-	1	8
Ga.	-	14	-	-	111	-	94	2	15	1	1	12	36
Fla.	-	23	-	20	267	1	130	-	45	-	1	15	55
E.S. CENTRAL	-	7	-	8	5	-	141	2	49	1	1	45	35
Ky.	-	4	-	1	1	-	24	1	16	-	1	27	21
Tenn.	-	-	-	6	2	-	61	1	19	-	-	2	13
Ala.	-	-	-	-	2	-	46	-	8	-	-	-	1
Miss.	-	3	-	1	-	-	10	-	6	1	-	16	-
W.S. CENTRAL	3	56	1	46	844	7	272	4	177	3	5	100	149
Ark.	-	4	-	-	11	-	13	1	7	-	-	1	3
La.	-	4	-	2	4	5	57	-	6	1	-	1	9
Okla.	-	8	-	29	5	-	25	-	-	-	-	3	1
Tex.	3	40	1	15	824	2	177	3	164	2	5	95	136
MOUNTAIN	2	25	8	19	34	-	99	-	86	-	1	77	87
Mont.	-	1	-	-	-	-	4	-	3	-	-	5	3
Idaho	-	2	-	-	1	-	7	-	4	-	-	6	4
Wyo.	-	-	-	-	-	-	5	-	2	-	-	7	10
Colo.	1	10	-	6	10	-	41	-	15	-	-	6	30
N. Mex.	-	3	-	-	8	-	14	-	-	-	-	6	5
Ariz.	1	6	8	13	5	-	18	-	37	-	-	14	20
Utah	-	3	-	-	-	-	8	-	19	-	-	21	5
Nev.	-	-	-	-	10	-	2	-	6	-	1	12	10
PACIFIC	10	327	38	866	364	6	369	6	471	3	7	1,376	603
Wash.	1	18	1	40	3	2	42	-	64	-	-	38	89
Oreg.	-	11	6	19	5	1	69	-	-	-	-	6	53
Calif.	7	293	31	801	349	3	243	5	390	3	7	1,319	445
Alaska	-	1	-	1	-	-	11	-	7	-	-	5	1
Hawaii	2	4	-	5	7	-	4	1	10	-	-	8	15
Guam	U	1	U	6	6	U	2	U	3	U	U	2	1
P.R.	-	4	7	110	275	-	8	-	57	1	U	11	4
V.I.	-	-	-	-	24	-	-	-	3	-	-	-	1
Pac. Trust Terr.	U	-	U	-	1	U	2	U	5	U	U	-	1

U: Unavailable

TABLE III. (Cont. d). Cases of specified notifiable diseases, United States, weeks ending
September 25, 1982 and September 26, 1981 (38th week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Tuberculosis		Tula- remia	Typhoid Fever		Typhus Fever (Tick-borne) (RMSF)		Rabies, Animal
	Cum. 1982	Cum. 1981	1982	Cum. 1982	Cum. 1982	1982	Cum. 1982	1982	Cum. 1982	Cum. 1982
UNITED STATES	23,836	22,236	572	18,584	181	9	290	15	861	4,612
NEW ENGLAND	409	434	17	517	5	-	16	1	9	37
Maine	4	5	2	44	-	-	-	-	-	26
N.H.	1	12	1	18	-	-	-	-	1	1
Vt.	2	13	-	13	-	-	2	-	-	1
Mass.	275	282	9	329	5	-	12	1	5	5
R.I.	19	24	-	23	-	-	-	-	2	-
Conn.	108	98	5	90	-	-	2	-	1	4
MID. ATLANTIC	3,242	3,224	74	3,084	7	2	53	1	34	154
Upstate N.Y.	316	294	12	547	7	-	7	1	12	76
N.Y. City	1,941	1,920	33	1,138	-	1	27	-	1	-
N.J.	453	452	21	621	-	-	11	-	13	14
Pa.	532	558	8	778	-	1	8	-	8	64
E.N. CENTRAL	1,315	1,632	86	2,797	1	1	23	-	77	472
Ohio	228	221	11	470	-	-	11	-	72	69
Ind.	153	205	-	347	-	-	-	-	-	69
Ill.	645	871	47	1,175	-	-	3	-	5	248
Mich.	218	265	28	655	-	1	8	-	-	4
Wis.	71	70	-	150	1	-	1	-	-	82
W.N. CENTRAL	412	476	31	545	28	2	12	2	33	987
Minn.	88	155	15	102	-	1	6	-	-	170
Iowa	24	19	2	56	2	-	1	-	4	317
Mo.	242	263	12	263	20	1	3	-	10	97
N. Dak.	7	7	2	11	-	-	-	-	-	83
S. Dak.	1	2	-	22	1	-	-	-	4	81
Nebr.	11	7	-	20	2	-	1	-	2	108
Kans.	39	23	-	71	3	-	1	2	13	131
S. ATLANTIC	6,511	5,897	112	3,854	10	-	35	7	468	835
Del.	17	11	1	36	-	-	-	-	-	2
Md.	351	441	12	444	1	-	9	2	46	35
D.C.	360	484	6	150	-	-	-	-	-	-
Va.	442	514	8	417	2	-	3	2	74	441
W. Va.	22	17	5	121	-	-	3	1	8	37
N.C.	522	463	14	620	-	-	1	2	200	59
S.C.	384	394	7	367	6	-	3	-	97	46
Ga.	1,367	1,487	35	605	-	-	-	-	40	157
Fla.	3,046	2,086	24	1,094	1	-	16	-	3	58
E.S. CENTRAL	1,669	1,483	63	1,710	8	-	16	1	77	543
Ky.	86	78	12	449	-	-	1	-	1	110
Tenn.	468	546	22	550	6	-	3	1	49	300
Ala.	624	432	14	473	-	-	9	-	12	126
Miss.	491	427	15	238	2	-	3	-	15	7
W.S. CENTRAL	6,282	5,370	67	2,257	91	-	27	2	146	875
Ark.	158	117	7	252	56	-	3	-	25	117
La.	1,421	1,248	-	337	3	-	3	-	2	31
Okla.	130	118	4	257	26	-	2	-	69	159
Tex.	4,573	3,887	56	1,411	6	-	19	2	50	568
MOUNTAIN	586	562	11	521	22	1	12	1	11	236
Mont.	3	11	1	33	2	-	-	1	4	80
Idaho	24	17	-	25	1	-	-	-	2	9
Wyo.	15	8	-	2	2	-	-	-	1	21
Colo.	162	170	4	62	4	-	3	-	1	44
N. Mex.	149	103	1	95	2	-	-	-	1	20
Ariz.	124	135	5	221	-	1	6	-	-	44
Utah	18	21	-	34	11	-	2	-	-	15
Nev.	91	97	-	49	-	-	1	-	2	3
PACIFIC	3,410	3,158	111	3,299	9	3	96	-	6	473
Wash.	109	131	7	209	1	-	6	-	-	6
Oreg.	84	74	4	127	1	-	4	-	1	2
Calif.	3,127	2,888	94	2,682	6	3	82	-	5	387
Alaska	10	11	-	65	1	-	1	-	-	78
Hawaii	80	54	6	216	-	-	3	-	-	-
Guam	1	-	U	34	-	U	-	U	-	-
P.R.	520	505	2	297	-	-	2	-	-	43
V.I.	21	14	-	1	-	-	-	-	-	-
Pac. Trust Terr.	-	-	U	91	-	U	-	U	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending
September 25, 1982 (38th week)

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	587	372	134	33	19	29	41	S. ATLANTIC	1,240	738	308	96	41	57	48
Boston, Mass.	187	107	50	8	10	12	18	Atlanta, Ga.	130	76	31	6	3	14	4
Bridgeport, Conn.	40	27	10	2	-	-	5	Baltimore, Md.	289	170	67	31	12	9	1
Cambridge, Mass.	16	14	1	1	-	-	-	Charlotte, N.C.	57	30	13	7	2	5	3
Fall River, Mass.	26	18	5	3	-	-	-	Jacksonville, Fla.	104	70	24	7	2	1	5
Hartford, Conn.	69	43	14	6	2	4	3	Miami, Fla.	110	54	38	9	6	3	5
Lowell, Mass.	17	9	6	1	1	-	-	Norfolk, Va.	40	14	21	-	2	3	4
Lynn, Mass.	13	12	1	-	-	-	-	Richmond, Va.	63	29	22	6	2	4	3
New Bedford, Mass.	17	14	2	1	-	-	-	Savannah, Ga.	49	36	8	3	1	1	3
New Haven, Conn.	48	31	5	-	2	10	-	St. Petersburg, Fla.	102	85	10	4	1	2	9
Providence, R.I.	43	25	13	3	1	1	6	Tampa, Fla.	69	45	16	2	3	3	5
Somerville, Mass.	8	5	2	1	-	-	-	Washington, D.C.	177	98	47	18	5	9	3
Springfield, Mass.	39	22	13	3	1	-	5	Wilmington, Del.	50	31	11	3	2	3	3
Waterbury, Conn.	29	20	5	3	1	-	2	E.S. CENTRAL	678	431	163	42	13	28	29
Worcester, Mass.	35	25	7	1	1	1	2	Birmingham, Ala.	73	46	17	6	3	1	5
MID. ATLANTIC	2,244	1,454	524	152	62	52	86	Chattanooga, Tenn.	63	35	17	8	2	1	2
Albany, N.Y.	38	24	4	4	-	6	2	Knoxville, Tenn.	59	37	17	1	1	3	2
Allentown, Pa.	17	13	4	-	-	-	1	Louisville, Ky.	81	57	17	1	2	4	7
Buffalo, N.Y.	120	71	36	6	2	5	15	Memphis, Tenn.	216	137	57	15	2	4	8
Camden, N.J.	33	19	6	1	2	5	-	Mobile, Ala.	29	19	6	2	-	2	2
Elizabeth, N.J.	42	31	9	2	-	-	3	Montgomery, Ala.	47	28	10	4	-	5	-
Erie, Pa.†	40	25	11	2	2	-	-	Nashville, Tenn.	110	72	22	5	3	8	3
Jersey City, N.J.	43	29	10	3	-	1	-	W.S. CENTRAL	1,377	780	332	118	91	56	40
N.Y. City, N.Y.	1,309	859	296	98	33	23	41	Austin, Tex.	45	28	8	5	2	2	1
Newark, N.J.	67	31	21	6	4	5	2	Baton Rouge, La.	55	34	10	6	3	2	3
Paterson, N.J.	24	12	6	3	1	2	-	Corpus Christi, Tex.	45	26	7	5	6	1	1
Philadelphia, Pa.†	113	77	25	6	3	2	6	Dallas, Tex.	165	96	45	10	8	6	4
Pittsburgh, Pa.†	67	37	21	4	4	1	-	El Paso, Tex.	54	33	10	1	6	4	1
Reading, Pa.	25	19	3	-	3	-	2	Fort Worth, Tex.	106	65	21	9	9	2	6
Rochester, N.Y.	112	78	24	9	1	-	8	Houston, Tex.	430	199	118	59	35	19	16
Schenectady, N.Y.	28	17	8	2	1	-	-	Little Rock, Ark.	69	39	23	2	3	2	2
Scranton, Pa.†	22	18	3	-	1	-	1	New Orleans, La.	128	81	27	7	7	6	-
Syracuse, N.Y.	81	57	19	2	3	-	1	San Antonio, Tex.	148	96	31	10	7	4	4
Trenton, N.J.	24	14	9	1	-	-	2	Shreveport, La.	48	26	15	2	1	4	1
Utica, N.Y.	19	13	4	1	1	-	2	Tulsa, Okla.	84	57	17	2	4	4	1
Yonkers, N.Y.	20	10	5	2	1	2	-	MOUNTAIN	581	342	138	51	29	19	20
E.N. CENTRAL	2,224	1,371	532	142	93	86	72	Albuquerque, N.Mex.	68	40	17	6	1	4	1
Akron, Ohio	94	63	15	5	6	5	-	Colorado Springs, Colo.	38	22	8	3	4	1	4
Canton, Ohio	31	20	6	3	2	-	-	Denver, Colo.	127	71	31	17	6	2	1
Chicago, Ill.	513	301	128	34	20	30	13	Las Vegas, Nev.	56	26	20	6	4	-	2
Cincinnati, Ohio	158	103	38	9	5	3	13	Ogden, Utah	19	13	3	-	2	1	-
Cleveland, Ohio	164	94	49	11	8	2	6	Phoenix, Ariz.	112	75	19	7	8	3	4
Columbus, Ohio	141	87	36	7	5	6	2	Pueblo, Colo.	28	15	9	1	1	2	2
Dayton, Ohio	108	62	32	9	-	5	4	Salt Lake City, Utah	56	33	9	6	1	5	-
Detroit, Mich.	260	159	64	19	10	8	6	Tucson, Ariz.	77	47	22	5	2	1	6
Evansville, Ind.	43	31	10	2	-	4	-	PACIFIC	1,626	1,082	340	101	55	47	86
Fort Wayne, Ind.	56	34	12	4	3	3	4	Berkeley, Calif.	23	20	1	2	-	-	1
Gary, Ind.	10	4	2	1	2	1	-	Fresno, Calif.	57	34	14	2	4	3	4
Grand Rapids, Mich.	35	22	6	3	2	2	-	Glendale, Calif.	25	21	2	-	1	1	2
Indianapolis, Ind.	201	113	47	15	16	10	1	Honolulu, Hawaii	58	33	15	5	2	3	6
Madison, Wis.	26	14	8	1	-	3	3	Long Beach, Calif.	88	60	17	3	5	3	6
Milwaukee, Wis.	145	99	27	10	3	6	6	Los Angeles, Calif.	435	297	87	23	17	11	28
Peoria, Ill.	32	25	5	1	1	-	4	Oakland, Calif.	49	32	8	5	2	2	2
Rockford, Ill.	36	20	12	2	-	2	-	Pasadena, Calif.	27	19	6	2	-	2	2
South Bend, Ind.	42	29	7	2	4	-	2	Portland, Ore.	106	69	23	7	5	2	6
Toledo, Ohio	65	46	13	2	4	-	2	Sacramento, Calif.	65	37	15	9	3	1	4
Youngstown, Ohio	64	45	15	2	2	-	2	San Diego, Calif.	127	87	26	6	3	5	7
W.N. CENTRAL	693	458	138	46	22	29	24	San Francisco, Calif.	145	99	33	8	2	3	5
Des Moines, Iowa	23	17	3	1	1	1	1	San Jose, Calif.	166	104	35	17	3	7	4
Duluth, Minn.	34	23	9	-	1	1	3	Seattle, Wash.	152	99	40	7	4	2	5
Kansas City, Kans.	44	30	9	4	-	1	-	Spokane, Wash.	66	46	8	4	3	4	5
Kansas City, Mo.	122	81	23	7	5	6	4	Tacoma, Wash.	37	25	10	1	1	-	2
Lincoln, Neb.	17	12	2	2	-	1	-	TOTAL	11,250 ^{††}	7,028	2,609	781	425	403	446
Minneapolis, Minn.	106	69	18	6	4	9	4								
Omaha, Neb.	85	49	27	5	2	2	2								
St. Louis, Mo.	136	100	18	9	6	3	9								
St. Paul, Minn.	69	47	14	4	2	2	-								
Wichita, Kans.	57	30	15	8	1	3	1								

* 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.

Streptococcal Abscesses — Continued

ble syringes, vaccine preparation areas, vaccine storage area of the refrigerator, and laboratory incubator. None of the cultures of the staff or environment were positive for Group A streptococcus.

The vaccine was packaged in 7.5-ml vials, which in this practice usually yield 13 or 14, 0.5-ml doses of DTP vaccine. Approximately one-half million doses of this lot had been released for distribution in December 1981. Active surveillance has been established in Milwaukee, Wisconsin, Atlanta, Georgia, and South Carolina, where this lot is actively being used. No cases of abscesses due to Group A streptococcus have been reported from South Carolina or Wisconsin; no further cases have been reported from Georgia.

The pediatric office discontinued use of the particular vaccine lot on Thursday, July 22. Eight unopened vials remaining from this lot were recovered for testing and yielded no bacteria on culture. Thimerosal, the preservative, was present within accepted limits.

Laboratory studies were conducted at CDC to determine the survival of the isolated strain of streptococcus in DTP vaccine from the implicated lot. A varying number of colony-forming units (140 CFU up to 10,000 CFU) of this strain were inoculated into previously unused DTP vaccine vials. Vials were sampled on a regular basis. At 3 days, 29 of 30 vials contained viable streptococci in substantially reduced numbers; at 15 days, one of 30 vials contained one colony of viable streptococci. Initial testing of the lot in 1981, both by the manufacturer and the Office of Biologics, National Center for Drugs and Biologics (NCDB), indicated that the vaccine satisfied requirements for sterility. Additional testing for sterility and Thimerosal content was performed on other vials of the same lot by both the NCDB and the manufacturer after the episode occurred. These results were similarly satisfactory.

Reported by WR Elsea, MD, Fulton County Public Health Dept, JD Lockridge, CC Turner, JW Alley, MD, RK Sikes, DVM, State Epidemiologist, Georgia Dept of Human Resources; Respiratory and Special Pathogens Br, Bacterial Disease Div, Center for Infectious Diseases, Surveillance, Investigations, and Research Br, Immunization Div, Center for Prevention Svcs, CDC.

Editorial Note: Sterile abscesses are known to occur after administration of DTP vaccine, especially when the injection is given subcutaneously (1). However, the occurrence of pyogenic abscesses, especially in clusters, appears to be rare following DTP vaccination. The investigation of this group of abscesses suggests that one multi-dose vial of the lot had become contaminated with Group A streptococci. The source of contamination could not be determined.

Bacterial contamination of multi-dose vials has resulted in cases of serious infections. This is the second cluster of abscesses caused by Group A streptococcus following DTP immunization reported to CDC during the past 18 months. In the other outbreak, seven children developed abscesses after vaccination with DTP vaccine from a different manufacturer (2). The strain isolated from these cases and from the remaining vaccine in the multi-dose vial was Group A, T-1, M-1. Neither the nurse nor the physician who had administered this vaccine yielded Group A streptococci when cultured. As in the present outbreak, no source of contamination could be identified.

The choice of a preservative for inclusion in a vaccine is limited on the one hand by possible deleterious effects on the vaccine's antigenicity, and on the other by the vaccine's safety for humans. Thimerosal, the preservative used in the production of DTP, is bacteriostatic, but only weakly bactericidal. The laboratory experiments in this investigation have shown prolonged survival of at least one strain of Group A streptococcus in multi-dose DTP vials.

Use of sterile technique in withdrawing medications and vaccines is critical to preventing contamination of multi-dose vials. Reports of pyogenic abscesses after vaccination should be followed up to determine if vaccine-vial contamination may have occurred; such episodes should be reported to local public health authorities for inclusion in the existing system for

Streptococcal Abscesses — Continued

monitoring illnesses following immunization so that the risk of contamination of multi-dose vaccine vials can be evaluated.

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1. Bernier RH, Frank JA Jr, Nolan TF Jr. Abscesses complicating DTP vaccination. *Am J Dis Child* 1981;135:826-8.
2. Greaves WL, Hinman AR, Facklam RR, Allman KC, Barrett CL, Stetler HC. Streptococcal abscesses following DTP vaccination. *Pediatric Infectious Disease*. (In press)

Notice to Readers

MMWR Subscriptions

In the July 23, 1982, *MMWR*, it was announced that CDC will no longer provide unrestricted free distribution of the *MMWR* after October 1, 1982. Free distribution will be provided to specific groups including, among others, state health officials, deans of schools of public health, and disseminators of public health information. Other individuals and organizations now receiving the publication free of charge will be able to purchase it through the National Technical Information Service (NTIS).

This decision was reached after careful evaluation of the costs of the *MMWR*. Despite an annual renewal requirement, the number of recipients has more than doubled during the past five years. Currently, the cost of printing and postage exceeds \$1 million a year.

After determining who should receive the *MMWR* free of charge, CDC began discussions with NTIS to arrange for the development of a paid subscription list. NTIS was created as an agency of the U. S. Department of Commerce as a central source for the public sale of scientific and technical information. The law that established NTIS directs it to be self-sustaining and to recover all costs from the sale of products and services. NTIS made the decision on the cost of the *MMWR* and ancillary publications, and the revenue generated will be used by NTIS to cover its costs. CDC will not pay NTIS for the subscription service, and NTIS will not return any of the revenue to CDC.

The decision to restrict free distribution has been a painful departure from our tradition. It was our judgment that alternatives would have been more damaging to public health.

William H. Foege, M.D.
Director
Centers for Disease Control

Announcement of Poliomyelitis Symposium

An international symposium on poliomyelitis control, sponsored by the Fogarty International Center of the United States National Institutes of Health, and other national and international organizations, will be held March 14-17, 1983, at the Pan American Health Organization's headquarters in Washington, D.C.

For further information contact:

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