CENTERS FOR DISEASE CONTROL

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Current Trends

Measles — United States, 1983

In 1983, the reported occurrence of measles reached its lowest level since national reporting of measles began in 1912. A provisional total of 1,436 cases was reported, for a record low incidence rate of 0.6 cases per 100,000 population for all ages (Figure 1). This is a 99.7% reduction from the prevaccine era, when, from 1950 to 1962, an annual average of 525,730 cases was reported (315.2 cases/100,000 population), and a 16.2% reduction from the 1,714 cases reported in 1982, the previous year of record low incidence (0.7/100,000) (*1*). Fewer than 100 indigenous cases* were reported each week in 1983, except week 12, when 138 such cases were reported. Fewer than 50 such cases were reported during 45 weeks, and fewer than 10 were reported during 22 weeks.

Of 1,136 indigenous cases, 877 (77.2%) were reported from four states—Indiana (402), Illinois (173), California (153), and Florida (149). Most other areas reported few or no measles cases (Figure 2). Twenty-six states and the District of Columbia reported no indigenous cases all year, compared to 22 states in 1982. Of the remaining 24 states, 20 states and New York City reported fewer than 50 indigenous cases, and 15 states reported fewer than 10 such cases. Of the nation's 3,139 counties, 3,002 (95.6%) reported no measles cases during the entire year, compared to 2,944 (93.8%) in 1982. Every county was free of reported measles for at least 6 consecutive weeks in 1983. Only six counties (0.2%) reported measles during the last 4 weeks of 1983. The three chains of transmission that occurred during the last 2 months of the year were concentrated in certain subpopulations that either refused immunization for religious or philosophic reasons or did not routinely seek medical care or immunization (*3*).

Most transmission in 1983 was concentrated in settings other than primary or secondary schools. Of 31 discrete chains of transmission† involving 1,233 cases, five chains accounted for 62.7% (900/1,436) of all cases reported in 1983. All five occurred primarily in settings other than primary or secondary schools. The largest chain, which accounted for 32.4% (465/1,436) of all cases in 1983, was concentrated among college students (*4*). Three additional chains (362 cases) occurred primarily among children less than 5 years old (*5*). The fifth chain (73 cases) involved schoolchildren and other age groups, but most transmission occurred when schools were not in session. Eleven of the 26 smaller chains of transmission were concentrated in groups other than schoolchildren. The remaining 15 smaller chains (209 cases) principally or partially involved schoolchildren. Of these, 10 chains (90 cases)

*Defined in CDC measles case classification (*2*).

†Chain of transmission defined as a series of measles cases consisting of an index case followed by at least two generations of epidemiologically-linked cases.

Measles — Continued

lasted two to three generations, and five chains (119 cases) lasted four to seven generations. Thus, chains of transmission in primary and secondary schools accounted for only 14.6% (209/1,436) of reported cases in 1983.

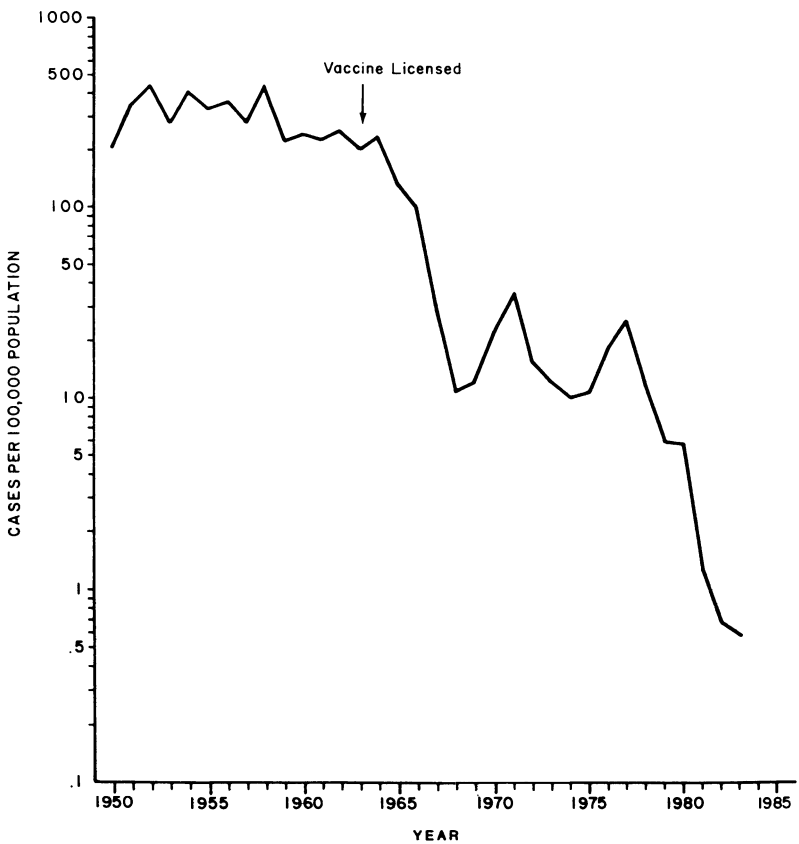
According to detailed information received by CDC's Division of Immunization, international importations and associated cases together accounted for 14.7% (211/1,436) of all measles cases reported in 1983. Ninety (6.3%) cases were international importations,* with sources from 30 different countries—an average of 1.7 international importations per week. In addition, 121 cases were epidemiologically linked to 26 international importations within two generations of infection.

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

Editorial Note: The target date for measles elimination was October 1, 1982. Although elimination has not yet been achieved, these provisional data demonstrate substantial changes in the epidemiology of measles in the United States in 1983. The lack of measles transmission in over 95% of counties and the lack of reported incidence in every county for 6 or more weeks indicate that transmission was at least temporarily interrupted in every community in

*Defined in CDC measles case classification (*2*).

FIGURE 1. Reported measles incidence — United States, 1950-1983



Measles – Continued

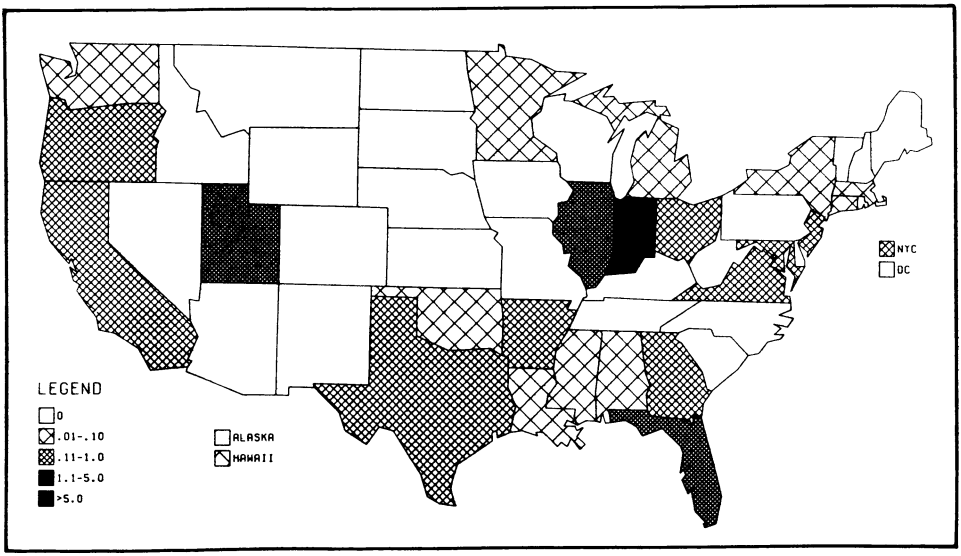
the United States during 1983. The data also suggest that less than 15% of documented measles transmission in 1983 involved primary and secondary schools, reflecting the dramatic success of state school immunization requirements in raising measles immunization levels and lowering measles incidence rates in schoolchildren. In the 1982-1983 school year, immunity to measles was documented§ for 97% of children in the United States entering school for the first time.

Nevertheless, several important challenges to elimination remain. Four of the five largest outbreaks occurred primarily among preschoolers under 5 years old and college students who are not directly affected by state immunization requirements. Outbreaks among preschoolers were not concentrated in licensed day-care centers, where immunization requirements have been implemented by 45 states and the District of Columbia. Outbreaks among college and university students indicate that sufficient numbers of susceptibles may exist to sustain transmission when measles is introduced. Many may have missed needed vaccinations or may have escaped natural infection because of decreasing transmission during their childhood. Outbreaks on campuses were difficult to control because susceptible students could not be identified readily. Few campuses required or systematically recorded documentation of immunity. In the future, measles cases among young adults may be difficult to identify because physicians who commonly treat this group may not consider measles as a likely diagnosis (*6*).

The exact date of the elimination of indigenous measles transmission from the United States will only be known in retrospect (*7*). The available data demonstrate that the measles elimination strategy—achievement and maintenance of high immunization levels, develop-

§Written documentation of date of administration of live measles vaccine on or after the first birthday or of physician-diagnosed measles illness.

FIGURE 2. Indigenous measles rates per 100,000 population, by state — United States, 1983*



*Provisional data

Measles – Continued

ment of strong and effective surveillance systems, and aggressive response to the occurrence of disease—remains valid. Although it is not clear how important preschool- and college-aged populations are in sustaining transmission independently, recent outbreaks among these groups suggest that additional efforts may be required to implement the elements of the strategy in these groups before measles is completely eliminated in the United States.

References

1. Amler RW, Bloch AB, Orenstein WA, et al. Measles in the United States: chains of transmission. 18th Immunization Conference Proceedings, Atlanta, Georgia, CDC, May 16-19, 1983, pp. 17-21.
2. CDC. Classification of measles cases and categorization of measles elimination programs. MMWR 1982;31:707-11.
3. CDC. Interstate transmission of measles in a Gypsy population—Washington, Idaho, Montana, California. MMWR 1983;32:659-62.
4. Amler RW, Kim-Farley RF, Orenstein WA, et al. Measles on campus. J Am College Health 1983;32:53-7.
5. CDC. Measles among children of migrant workers—Florida. MMWR 1983;32:471-2, 477-8.
6. Amler RW, Orenstein WA. Measles in young adults. Postgraduate Med (in press).
7. CDC. Elimination of indigenous measles—United States. MMWR 1982;31:517-9.

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

Disease	8th Week Ending			Cumulative, 8th Week Ending		
	February 25, 1984	February 26, 1983	Median 1979-1983	February 25, 1984	February 26, 1983	Median 1979-1983
Acquired Immunodeficiency Syndrome (AIDS)	84	N	N	457	N	N
Aseptic meningitis	62	59	62	631	655	516
Encephalitis: Primary (arthropod-borne & unspec.)	7	16	16	92	133	123
Post-infectious	-	1	1	5	6	13
Gonorrhea: Civilian	13,669	16,562	16,901	124,617	140,971	145,280
Military	221	443	460	3,034	3,831	4,248
Hepatitis: Type A	497	590	590	3,269	3,679	3,679
Type B	431	454	422	3,212	3,187	2,715
Non A, Non B	77	73	N	482	444	N
Unspecified	144	170	196	922	1,065	1,458
Legionellosis	13	17	N	63	82	N
Leprosy	5	7	1	29	40	30
Malaria	10	15	23	74	97	111
Measles: Total*	19	26	82	196	88	315
Indigenous	14	18	N	184	61	N
Imported	5	8	N	12	27	N
Meningococcal infections: Total	75	59	73	448	460	497
Civilian	75	59	73	448	451	494
Military	-	-	-	-	9	3
Mumps	59	80	215	497	602	813
Pertussis	28	33	33	222	174	172
Rubella (German measles)	13	21	49	72	121	348
Syphilis (Primary & Secondary): Civilian	586	676	669	4,376	5,269	4,661
Military	7	3	8	52	82	64
Toxic Shock syndrome	5	9	N	43	64	N
Tuberculosis	394	421	476	2,814	3,008	3,381
Tularemia	1	5	2	9	22	13
Typhoid fever	13	14	8	40	56	56
Typhus fever, tick-borne (RMSF)	-	-	-	7	10	8
Rabies, animal	94	122	109	564	732	717

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1984		Cum. 1984
Anthrax	-	Plague	2
Botulism: Foodborne	-	Poliomyelitis: Total	-
Infant (Oreg. 1, Calif. 1)	7	Paralytic	-
Other	1	Psittacosis	10
Brucellosis (Mass. 1, Va. 1, Fla. 1, Calif. 2)	19	Rabies, human	-
Cholera	-	Tetanus	3
Congenital rubella syndrome	-	Trichinosis	2
Diphtheria	-	Typhus fever, flea-borne (endemic, murine)	4
Leptospirosis (Tex. 1)	3		

*Four of the 19 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 February 25, 1984 and February 26, 1983 (8th Week)

Reporting Area	AIDS	Aseptic Menin-gitis	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	457	62	92	5	124,617	140,971	497	431	77	144	13	29
NEW ENGLAND	15	1	4	-	4,106	3,538	5	15	1	5	2	1
Maine	-	-	-	-	156	213	-	-	-	-	-	-
N.H.	-	-	1	-	84	104	-	1	-	-	-	-
Vt.	-	-	-	-	59	62	-	1	-	-	-	-
Mass.	8	1	3	-	1,541	1,522	3	8	1	4	-	1
R.I.	-	-	-	-	246	202	-	-	-	-	-	-
Conn.	7	-	-	-	2,020	1,435	2	5	-	1	2	-
MID ATLANTIC	225	12	8	-	15,908	17,545	54	80	7	17	-	2
Upstate N.Y.	-	5	4	-	2,291	2,405	2	17	4	4	-	2
N.Y. City	202	1	-	-	7,067	7,208	41	19	-	4	-	-
N.J.	22	3	2	-	2,152	3,443	11	44	3	9	-	-
Pa.	1	3	2	-	4,398	4,489	-	-	-	-	-	-
E.N. CENTRAL	16	11	21	1	15,857	20,187	46	23	8	8	1	1
Ohio	8	8	9	1	4,542	5,274	36	6	3	5	1	-
Ind.	-	-	1	-	2,102	2,532	-	-	-	-	-	-
Ill.	7	-	2	-	2,348	5,291	6	4	-	1	-	-
Mich.	1	3	6	-	4,990	5,376	4	13	5	2	-	1
Wis.	-	-	3	-	1,875	1,714	-	-	-	-	-	-
W.N. CENTRAL	1	2	3	-	5,746	6,547	10	13	1	1	3	-
Minn.	-	1	-	-	839	1,035	5	3	-	-	1	-
Iowa	1	1	2	-	713	674	-	5	-	-	-	-
Mo.	-	-	-	-	2,483	3,044	1	3	-	1	-	-
N. Dak.	-	-	-	-	71	65	-	-	-	-	-	-
S. Dak.	-	-	-	-	193	186	1	-	-	-	-	-
Nebr.	-	-	-	-	419	384	-	-	1	-	1	-
Kans.	-	-	1	-	1,028	1,159	3	2	-	-	1	-
S. ATLANTIC	43	12	18	4	32,075	34,947	35	81	7	5	1	2
Del.	1	-	1	-	560	694	8	2	1	-	-	-
Md.	12	-	4	-	4,208	4,585	1	9	2	-	-	-
D.C.	6	1	-	-	2,308	2,324	-	2	-	-	-	-
Va.	2	1	7	3	3,181	3,183	3	11	-	-	-	1
W. Va.	-	-	2	-	348	360	1	2	-	-	-	-
N.C.	-	3	1	1	5,314	4,937	1	13	1	-	-	-
S.C.	-	2	1	-	2,893	3,526	-	9	-	-	-	-
Ga.	-	-	2	-	6,389	6,762	4	12	1	-	-	-
Fla.	22	5	-	-	6,874	8,576	17	21	2	5	1	1
E.S. CENTRAL	4	2	4	-	10,641	12,570	22	41	5	9	-	-
Ky.	2	-	-	-	1,323	1,613	11	5	-	5	-	-
Tenn.	-	2	1	-	4,342	4,790	2	20	4	3	-	-
Ala.	1	-	3	-	3,413	3,960	4	12	1	1	-	-
Miss.	1	-	-	-	1,563	2,207	5	4	-	-	-	-
W.S. CENTRAL	4	6	7	-	17,920	19,811	74	52	2	50	1	2
Ark.	-	-	-	-	1,554	1,599	1	2	-	5	-	-
La.	-	3	2	-	4,240	3,052	6	12	-	7	-	-
Okla.	1	-	-	-	1,973	2,407	16	6	-	-	1	-
Tex.	3	3	5	-	10,153	12,753	51	32	2	38	-	2
MOUNTAIN	4	2	1	-	3,787	4,065	75	17	7	11	5	4
Mont.	-	-	-	-	197	206	7	2	2	-	3	-
Idaho	-	-	-	-	170	182	4	2	-	-	-	-
Wyo.	-	-	-	-	97	126	-	-	-	-	-	-
Colo.	-	1	-	-	959	1,173	9	1	1	-	-	-
N. Mex.	-	-	-	-	505	553	5	4	-	2	1	-
Ariz.	4	1	-	-	983	937	12	6	2	7	1	4
Utah	-	-	1	-	214	195	17	-	-	-	-	-
Nev.	-	-	-	-	662	693	21	2	2	2	-	-
PACIFIC	145	14	26	-	18,577	21,761	176	109	39	38	-	17
Wash.	1	2	-	-	1,185	1,525	10	6	7	1	-	1
Oreg.	-	-	-	-	1,102	1,056	35	13	7	-	-	1
Calif.	143	12	26	-	15,573	18,289	131	88	25	37	-	12
Alaska	-	-	-	-	439	464	-	1	-	-	-	-
Hawaii	1	-	-	-	278	427	-	1	-	-	-	3
Guam	-	U	-	-	-	40	U	U	U	U	U	-
P.R.	-	1	-	-	488	489	3	9	-	7	-	-
V.I.	-	-	-	-	68	41	-	-	-	-	-	-
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 February 25, 1984 and February 26, 1983 (8th 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	74	14	184	5	12	88	448	59	497	28	222	174	13	72	121
NEW ENGLAND	9	-	-	-	-	-	23	3	25	3	6	10	-	2	1
Maine	-	-	-	-	-	-	-	1	7	-	-	-	-	1	-
N.H.	-	-	-	-	-	-	3	-	3	-	1	3	-	-	-
Vt.	1	-	-	-	-	-	3	-	1	3	4	1	-	-	1
Mass.	5	-	-	-	-	-	9	-	11	-	-	5	-	1	-
R.I.	-	-	-	-	-	-	3	-	1	-	1	1	-	-	-
Conn.	3	-	-	-	-	-	5	2	2	-	-	-	-	-	-
MID ATLANTIC	3	-	3	-	-	3	52	3	79	1	17	43	-	-	9
Upstate N.Y.	2	-	-	-	-	1	20	3	19	1	9	23	-	-	6
N.Y. City	-	-	3	-	-	1	1	-	3	-	-	5	-	-	2
N.J.	-	-	-	-	-	1	14	-	50	-	-	5	-	-	1
Pa.	1	-	-	-	-	-	17	-	7	-	8	10	-	-	-
E.N. CENTRAL	7	2	103	1§	1	22	69	29	158	3	46	50	5	9	20
Ohio	4	-	-	1§	1	-	29	5	40	-	12	21	-	-	1
Ind.	-	-	-	-	-	-	7	-	11	-	20	3	-	-	-
Ill.	1	-	15	-	-	17	9	8	48	3	6	19	5	8	6
Mich.	1	2	88	-	-	5	17	16	52	-	4	1	-	1	4
Wis.	1	-	-	-	-	-	7	-	7	-	4	6	-	-	9
W.N. CENTRAL	4	-	-	-	-	-	31	2	24	3	45	9	2	6	9
Minn.	-	-	-	-	-	-	2	-	1	-	2	-	-	-	2
Iowa	1	-	-	-	-	-	12	2	7	-	3	2	-	-	-
Mo.	2	-	-	-	-	-	10	-	4	-	1	2	-	-	-
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
S. Dak.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-
Kans.	1	-	-	-	-	-	4	-	11	3	39	5	2	5	7
S. ATLANTIC	11	-	-	2	2	20	116	4	43	4	30	25	-	6	8
Del.	2	-	-	-	-	-	1	-	1	-	-	-	-	-	-
Md.	4	-	-	-	-	-	10	1	9	-	1	4	-	-	-
D.C.	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Va.	2	-	-	1†	1	2	6	-	2	-	5	7	-	-	1
W. Va.	-	-	-	-	-	-	2	-	6	-	3	1	-	-	-
N.C.	1	-	-	-	-	-	18	2	5	4	12	-	-	-	-
S.C.	1	-	-	-	-	3	13	-	1	-	1	2	-	-	-
Ga.	-	-	-	-	-	1	29	-	3	-	2	9	-	1	2
Fla.	1	-	-	1†	1	14	35	1	16	-	6	2	-	5	5
E.S. CENTRAL	-	-	-	-	2	-	21	-	8	-	2	1	-	-	1
Ky.	-	-	-	-	-	-	4	-	3	-	1	-	-	-	1
Tenn.	-	-	-	-	2	-	7	-	-	-	1	1	-	-	-
Ala.	-	-	-	-	-	-	6	-	3	-	-	-	-	-	-
Miss.	-	-	-	-	-	-	4	-	2	-	-	-	-	-	-
W.S. CENTRAL	2	8	41	-	-	10	59	7	21	8	19	18	2	11	21
Ark.	-	-	-	-	-	10	4	-	-	-	10	1	-	1	-
La.	-	-	-	-	-	-	14	-	-	1	1	2	-	-	-
Okla.	1	-	-	-	-	-	9	N	N	6	7	5	-	-	-
Tex.	1	8	41	-	-	-	32	7	21	1	1	10	2	10	21
MOUNTAIN	2	2	20	-	-	1	18	4	54	-	33	13	-	3	4
Mont.	-	-	-	-	-	-	1	-	1	-	18	1	-	-	1
Idaho	-	-	-	-	-	-	3	1	4	-	1	-	-	1	-
Wyo.	-	-	-	-	-	-	-	1	1	-	-	-	-	-	1
Colo.	-	-	-	-	-	1	7	2	3	-	11	7	-	-	-
N. Mex.	-	-	-	-	-	-	3	N	N	-	2	4	-	-	-
Ariz.	1	-	-	-	-	-	1	-	44	-	-	-	-	-	1
Utah	1	2	20	-	-	-	3	-	1	-	1	1	-	2	1
Nev.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC	36	2	17	2	7	32	59	7	85	6	24	5	4	35	48
Wash.	2	-	5	-	-	1	4	-	13	-	6	1	-	-	-
Oreg.	1	-	-	-	-	2	11	N	N	-	4	-	-	-	2
Calif.	30	2	12	2†	5	28	42	7	68	3	11	4	4	34	46
Alaska	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-
Hawaii	3	-	-	-	2	1	-	-	1	3	3	-	-	1	-
Guam	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
P.R.	2	-	-	-	-	16	1	27	47	-	-	2	-	1	1
V.I.	-	-	-	-	-	5	-	-	-	-	-	-	-	-	1
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 February 25, 1984 and February 26, 1983 (8th 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	4,376	5,269	5	2,814	3,008	9	40	7	564
NEW ENGLAND	104	119	-	78	61	-	-	-	2
Maine	1	1	-	4	5	-	-	-	2
N.H.	-	2	-	6	5	-	-	-	-
Vt.	-	1	-	3	1	-	-	-	-
Mass.	62	81	-	36	25	-	-	-	-
R.I.	4	2	-	10	6	-	-	-	-
Conn.	37	32	-	19	19	-	-	-	-
MID ATLANTIC	596	598	-	530	568	-	8	-	44
Upstate N.Y.	38	37	-	86	103	-	4	-	1
N.Y. City	340	352	-	209	222	-	1	-	-
N.J.	128	113	-	108	146	-	3	-	-
Pa.	90	96	-	127	97	-	-	-	43
E.N. CENTRAL	149	309	-	384	466	-	4	1	16
Ohio	37	84	-	90	74	-	2	1	2
Ind.	32	38	-	37	74	-	1	-	3
Ill.	30	136	-	146	214	-	-	-	5
Mich.	35	35	-	92	82	-	-	-	1
Wis.	15	16	-	19	22	-	1	-	5
W.N. CENTRAL	69	61	2	59	99	4	2	2	79
Minn.	13	29	2	10	16	-	2	-	11
Iowa	5	2	-	9	16	-	-	-	22
Mo.	40	21	-	25	53	4	-	2	6
N. Dak.	-	-	-	2	-	-	-	-	14
S. Dak.	-	-	-	1	5	-	-	-	12
Nebr.	4	1	-	5	2	-	-	-	5
Kans.	7	8	-	7	7	-	-	-	9
S. ATLANTIC	1,336	1,356	-	654	588	1	2	1	213
Del.	2	10	-	4	1	-	-	-	-
Md.	60	75	-	80	51	-	-	-	153
D.C.	45	57	-	19	21	-	-	-	-
Va.	73	100	-	48	36	-	1	-	38
W. Va.	5	4	-	22	31	-	-	-	3
N.C.	151	133	-	121	57	-	-	-	-
S.C.	134	115	-	89	54	-	-	-	-
Ga.	233	225	-	77	117	1	-	-	18
Fla.	633	637	-	194	220	-	1	1	1
E.S. CENTRAL	304	378	-	271	297	-	2	2	23
Ky.	16	23	-	71	88	-	-	-	4
Tenn.	66	105	-	84	83	-	2	1	10
Ala.	111	155	-	95	77	-	-	1	9
Miss.	111	95	-	21	49	-	-	-	-
W.S. CENTRAL	1,079	1,299	-	245	289	1	2	1	118
Ark.	43	23	-	11	13	-	1	1	10
La.	225	231	-	36	62	-	1	-	-
Okla.	27	41	-	27	43	1	-	-	12
Tex.	784	1,004	-	171	171	-	-	-	96
MOUNTAIN	90	117	1	42	88	3	2	-	15
Mont.	-	2	-	1	6	-	1	-	9
Idaho	5	1	-	3	5	-	-	-	-
Wyo.	1	2	-	-	2	-	-	-	-
Colo.	17	26	-	-	5	-	-	-	-
N. Mex.	13	47	1	13	16	-	1	-	2
Ariz.	31	19	-	21	40	1	-	-	4
Utah	3	6	-	3	7	2	-	-	-
Nev.	20	14	-	1	7	-	-	-	-
PACIFIC	649	1,032	2	551	552	-	18	-	54
Wash.	12	39	-	21	33	-	1	-	-
Oreg.	19	16	-	21	27	-	-	-	-
Calif.	602	953	2	464	449	-	14	-	52
Alaska	-	6	-	8	4	-	1	-	2
Hawaii	16	18	-	37	39	-	2	-	-
Guam	-	-	U	-	1	-	-	-	-
P.R.	149	97	-	29	85	-	1	-	8
V.I.	4	1	-	-	-	-	-	-	-
Pac. Trust Terr.	-	-	U	-	-	-	-	-	-

U: Unavailable

TABLE IV. Deaths in 121 U.S. cities,* week ending February 25, 1984 (8th Week)

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	698	478	137	40	16	26	50
Boston, Mass.	176	109	34	15	5	12	16
Bridgeport, Conn.	43	31	8	1	3	-	2
Cambridge, Mass.	30	21	7	1	1	-	1
Fall River, Mass.	35	24	7	3	1	-	1
Hartford, Conn.	64	38	20	3	-	3	3
Lowell, Mass.	30	24	5	-	1	-	4
Lynn, Mass.	25	20	4	1	-	-	1
New Bedford, Mass.	21	17	3	1	-	-	2
New Haven, Conn.	68	45	13	3	1	6	1
Providence, R.I.	68	49	10	6	2	1	8
Somerville, Mass.	9	7	1	1	-	-	1
Springfield, Mass.	39	28	6	1	2	2	4
Waterbury, Conn.	40	29	8	3	-	-	2
Worcester, Mass.	50	36	11	1	-	2	4
MID. ATLANTIC	2,672	1,723	614	218	48	66	138
Albany, N.Y.	40	28	6	-	2	4	1
Allentown, Pa.	22	18	4	-	-	-	-
Buffalo, N.Y.	135	88	31	10	3	3	11
Camden, N.J.	36	26	7	1	1	1	-
Elizabeth, N.J.	20	13	5	1	1	-	-
Erie, Pa.†	40	29	8	1	2	-	3
Jersey City, N.J.	42	25	9	5	2	1	2
N.Y. City, N.Y.	1,382	871	324	124	24	39	67
Newark, N.J.	115	48	31	25	3	5	9
Paterson, N.J.	33	22	4	4	1	2	2
Philadelphia, Pa.†	403	256	111	28	4	4	14
Pittsburgh, Pa.†	66	46	18	2	-	-	2
Reading, Pa.	30	25	5	-	-	-	3
Rochester, N.Y.	112	88	17	4	-	3	9
Schenectady, N.Y.	21	16	4	1	-	-	3
Scranton, Pa.†	22	18	4	-	-	-	3
Syracuse, N.Y.	63	41	13	3	3	3	2
Trenton, N.J.	28	19	4	3	1	1	-
Utica, N.Y.	21	17	3	-	1	-	2
Yonkers, N.Y.	41	29	6	6	-	-	5
E.N. CENTRAL	2,242	1,351	579	145	72	95	103
Akron, Ohio	47	36	9	1	-	1	-
Canton, Ohio	46	28	16	2	-	-	5
Chicago, Ill	540	281	158	41	27	33	12
Cincinnati, Ohio	133	88	29	7	4	5	22
Cleveland, Ohio	166	109	37	10	7	3	6
Columbus, Ohio	138	82	36	14	3	3	4
Dayton, Ohio	107	70	30	3	1	3	6
Detroit, Mich.	258	147	64	29	8	10	5
Evansville, Ind.	51	36	7	4	3	1	2
Fort Wayne, Ind.	43	32	8	1	1	1	2
Gary, Ind.	13	5	5	1	2	-	-
Grand Rapids, Mich.	32	26	6	-	-	-	2
Indianapolis, Ind.	170	89	56	7	7	11	4
Madison, Wis.	48	28	14	4	-	2	6
Milwaukee, Wis.	146	90	31	10	6	9	4
Peoria, Ill.	37	18	13	3	-	3	6
Rockford, Ill.	31	19	5	3	2	2	5
South Bend, Ind.	47	28	13	1	1	4	3
Toledo, Ohio	127	96	25	3	-	3	6
Youngstown, Ohio	62	43	17	1	-	1	3
W.N. CENTRAL	739	508	155	32	24	20	36
Des Moines, Iowa	67	46	14	3	3	1	7
Duluth, Minn.	31	24	4	1	1	1	4
Kansas City, Kans.	22	14	6	1	-	1	-
Kansas City, Mo.	119	80	27	9	1	2	4
Lincoln, Nebr.	35	22	11	-	2	-	2
Minneapolis, Minn.	86	66	9	4	4	3	2
Omaha, Nebr.	97	62	23	5	3	4	8
St. Louis, Mo.	171	112	41	6	6	6	8
St. Paul, Minn.	42	36	3	-	3	-	1
Wichita, Kans.	69	46	17	3	1	2	-

Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1	
S. ATLANTIC	1,218	780	283	93	31	30	77
Atlanta, Ga.	143	85	38	12	5	3	5
Baltimore, Md.	150	102	34	6	1	7	5
Charlotte, N.C.	86	59	19	6	1	-	7
Jacksonville, Fla.	110	74	27	5	3	1	13
Miami, Fla.	97	53	22	13	4	5	3
Norfolk, Va.	60	33	12	7	4	4	5
Richmond, Va.	71	44	21	5	-	1	4
Savannah, Ga.	43	25	10	7	1	-	9
St. Petersburg, Fla.	138	121	10	4	1	2	10
Tampa, Fla.	83	53	22	4	1	3	6
Washington, D.C.	164	97	42	12	10	3	5
Wilmington, Del.	73	34	26	12	-	1	5
E.S. CENTRAL	825	533	203	45	25	19	45
Birmingham, Ala.	106	60	28	10	5	3	2
Chattanooga, Tenn.	54	37	14	1	1	1	8
Knoxville, Tenn.	46	36	10	-	-	-	3
Louisville, Ky.	112	75	29	3	1	4	12
Memphis, Tenn.	218	146	48	14	9	1	11
Mobile, Ala.	88	52	22	8	2	4	3
Montgomery, Ala.	82	54	18	4	3	3	1
Nashville, Tenn.	119	73	34	5	4	3	5
W.S. CENTRAL	1,535	916	394	116	61	48	91
Austin, Tex.	77	44	11	12	6	4	10
Baton Rouge, La.	32	17	9	1	2	3	-
Corpus Christi, Tex.	64	39	14	2	3	6	-
Dallas, Tex.	206	126	56	13	9	2	6
El Paso, Tex.	72	43	18	5	3	3	3
Fort Worth, Tex.	120	84	25	6	3	2	21
Houston, Tex.	377	194	128	37	9	9	10
Little Rock, Ark.	71	49	14	5	-	3	4
New Orleans, La.	133	82	34	11	4	2	-
San Antonio, Tex.	219	139	44	14	12	10	20
Shreveport, La.	86	53	22	6	3	2	9
Tulsa, Okla.	78	46	19	4	7	2	8
MOUNTAIN	652	409	148	43	23	29	40
Albuquerque, N.Mex.	80	52	18	5	4	1	7
Colo. Springs, Colo.	32	22	8	-	-	2	2
Denver, Colo.	110	68	25	7	5	5	5
Las Vegas, Nev.	81	47	23	6	3	2	9
Ogden, Utah	11	7	2	-	-	2	-
Phoenix, Ariz.	150	91	27	18	7	7	6
Pueblo, Colo.	24	18	5	-	-	1	5
Salt Lake City, Utah	57	36	14	2	-	5	2
Tucson, Ariz.	107	68	26	5	4	4	4
PACIFIC	1,874	1,261	341	163	48	60	92
Berkeley, Calif.	17	13	-	2	1	1	-
Fresno, Calif.	105	71	22	11	1	-	11
Glendale, Calif.	25	20	5	-	-	-	-
Honolulu, Hawaii	65	36	13	9	2	5	6
Long Beach, Calif.	85	58	18	6	-	3	2
Los Angeles, Calif.	557	357	95	60	19	26	7
Oakland, Calif.	77	50	13	6	6	2	8
Pasadena, Calif.	25	19	4	1	-	1	1
Portland, Oreg.	125	91	18	13	-	3	10
Sacramento, Calif.	90	65	17	5	1	2	6
San Diego, Calif.	118	81	20	11	4	2	10
San Francisco, Calif.	147	104	21	14	4	3	8
San Jose, Calif.	178	115	42	14	3	4	11
Seattle, Wash.	139	99	26	8	1	5	4
Spokane, Wash.	47	31	10	1	2	3	1
Tacoma, Wash.	74	51	17	2	4	-	7
TOTAL	12,455††	7,959	2,854	895	348	393	672

* 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.

Epidemiologic Notes and Reports

Porphyria Cutanea Tarda and Sarcoma in a Worker Exposed to 2,3,7,8-Tetrachlorodibenzodioxin — Missouri

In a recent survey of workers employed at St. Louis, Missouri, trucking terminals contaminated with 2,3,7,8-tetrachlorodibenzodioxin (TCDD), the National Institute for Occupational Safety and Health (NIOSH) found that a former worker had developed porphyria cutanea tarda and sarcoma (*1*).

In the early 1970s, three trucking terminals in St. Louis were sprayed with TCDD-contaminated waste oil to control dust. To evaluate potential health effects to the approximately 600 workers employed at these sites, NIOSH investigators interviewed past and current employees at the terminals. During the initial interviews in December 1983, the investigators were contacted by a former worker at one of the firms. The worker, a 59-year-old male, had been in good health until June 1982, when he developed blistering and increased hair growth over the dorsa of his hands. Subsequent medical investigation confirmed a diagnosis of porphyria cutanea tarda. The patient's symptoms improved with phlebotomy, avoidance of sun, and cessation of alcohol ingestion. He had previously consumed one case of beer weekly for many years.

In February 1983, after complaining of right groin pain and right leg weakness for a few months, the man was found (by CAT scan) to have multiple lytic lesions of his proximal right femur and pelvis, with involvement of adjacent soft tissue. Biopsy of the right ilium revealed a sarcoma. Two consultant pathologists concluded that the tumor was an angiosarcoma; it was not possible, however, to determine whether the tumor arose from bone or soft tissue.

The patient had worked as a truck driver for over 21 years, and in the early 1970s, worked for several years at one of the TCDD-contaminated trucking terminals. (Soil samples taken at this terminal in 1983 had shown that TCDD was present in subsurface soil at concentrations as high as 17 parts per billion [ppb].) For several months during the 1970s, he had worked unhooking trailers from trucks in the sprayed area of the terminal and thus had potentially higher exposure to TCDD than in his usual work as a driver. He reported that his feet, legs, hands, and arms frequently became covered with oil from the terminal. He continued to work at the terminal through early 1980. Also, he occasionally made deliveries to a chemical plant and to other trucking terminals now known to be contaminated with TCDD. He had no history of other exposure to TCDD either at work or at home.

Reported by W Hope, ScD, St. Louis City Health Div, D Lischwe, MD, St. Louis, Missouri; W Russell, MD, North Ridge General Hospital, Ft. Lauderdale, Florida; S Weiss, MD, Armed Forces Institute of Pathology, Washington, DC; Hazard Evaluations and Technical Assistance Br, Div of Surveillance, Hazard Evaluations, and Field Studies, NIOSH, CDC.

Editorial Note: Although this worker was probably exposed to TCDD through cutaneous absorption of contaminated oil and also by inhalation of aerosolized dust containing TCDD, the possible relationship between this exposure and the development of subsequent disease is far from clear. Chronic alcohol ingestion has been reported to result in porphyria cutanea tarda (*2*). Also, porphyria cutanea tarda has been reported in two groups of workers exposed occupationally to TCDD (and possibly also to hexachlorobenzene). In both instances, all cases of porphyria appeared during the time of actual chemical exposure (*3,4*).

Although this patient's tumor was clearly a sarcoma, it was not possible to determine whether it had arisen from bone or soft tissue. Soft-tissue sarcoma is a rare tumor, with an incidence in the general U.S. population of 3.9 per 100,000 (*5*). Two recent case-control

TCDD — Continued

studies in Sweden have shown an approximate sixfold increase in the risk of death from soft-tissue sarcoma among workers with histories of occupational exposures to TCDD-contaminated phenoxy acid herbicides or chlorophenols (*6,7*). Other epidemiologic studies have been inconclusive because of their small study populations and consequent low statistical power (*8,9*). Additionally, a recent analysis of data from three cohort mortality studies of workers exposed at chemical manufacturing plants to TCDD-contaminated trichlorophenol or to the herbicide 2,4,5-trichlorophenoxy acetic acid suggests the existence of an association between TCDD exposure and soft-tissue sarcoma (*10*).

As part of a series of studies of persons in Missouri exposed to TCDD, NIOSH is continuing to interview and examine workers from TCDD-contaminated trucking sites. In addition, NIOSH is conducting a mortality study and a cross-sectional medical study of workers exposed to TCDD at several chemical plants.

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Current Trends

Update: Influenza Activity — United States

Influenza outbreaks in schools and colleges, associated with influenza types A(H1N1) or B, have occurred in all regions of the United States this year. However, there has been no consistent elevation of deaths attributable to pneumonia and influenza in the 121 reporting cities through mid-February, suggesting that older populations have been only slightly affected by the outbreaks.

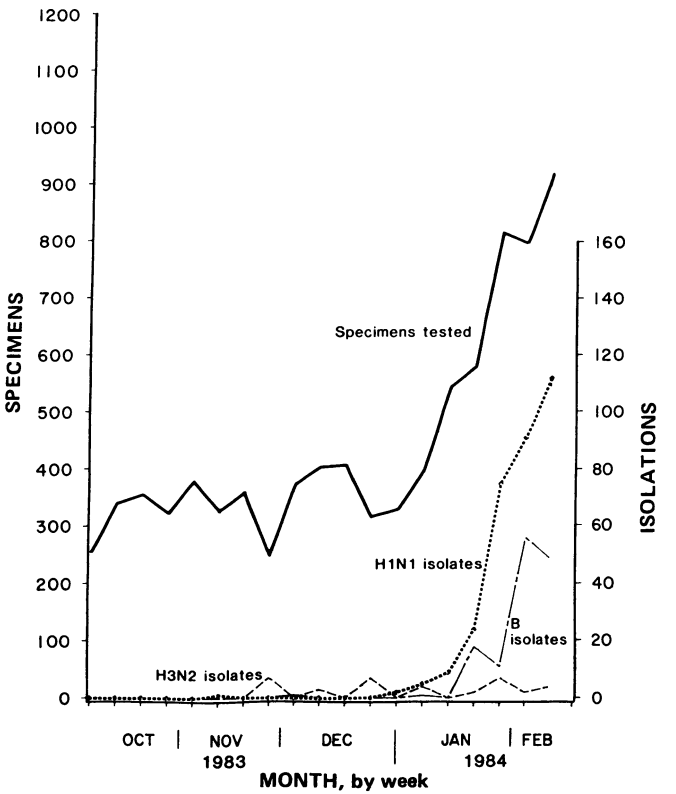
A cumulative total of 590 influenza virus isolates has been reported this season through February 10, 1984; 381 (65%) were identified as type A(H1N1); 171 (29%), as type B; and 38 (6%), as type A(H3N2) (Figure 3). Results of virus laboratory testing are reported according to three broad age categories—patients less than 31 years of age, patients 31-65 years of

Influenza — Continued

age, and patients over 65 years of age. Of the 7,125 specimens tested by February 10 for which ages of patients were reported, 85%, 10%, and 5%, respectively, were from patients in these age brackets. Ninety-seven percent of the A(H1N1) isolates have been from persons in the youngest age group, representing 5% of specimens tested from these persons. In contrast, 0.5% of specimens from persons over 65 years of age were positive for A(H1N1) virus. In 1982-1983, however, when activity was predominantly caused by type A(H3N2) virus, 62% of A(H3N2) isolates were from persons in the youngest age group, and the proportion of specimens positive for influenza type A(H3N2) increased from 7% in the under-31-years group to 20% in the over-65-years group. While findings for the current season may change, the preliminary results are consistent with the paucity of reported outbreaks of influenza among the elderly this year, despite the prevalence of type A(H1N1) outbreaks in younger age groups.

Reported by State Epidemiologists and Laboratory Directors; Statistical Svcs Br, Div of Surveillance and Epidemiologic Studies, Epidemiology Program Office, Statistical Svcs Activity, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

FIGURE 3. Influenza cases, by number of specimens submitted and virus isolations* — United States, 1983-1984



*Reported to CDC by WHO collaborating laboratories (including military sources).

Notice to Readers

Announcement of International Symposium

An International Symposium on Yaws and Other Endemic Treponematoses, sponsored by the Fogarty International Center of the National Institutes of Health and others, will be held at the Pan American Health Organization headquarters, 525 23rd Street, N.W., Washington, D.C., on April 16-18, 1984. For further information, write or call:

Mrs. Nancy Shapiro
Conference Coordinator
International Studies Branch
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The data in this report are provisional, based on weekly reports to CDC by state health departments. The reporting week concludes at close of business on Friday; compiled data on a national basis are officially released to the public on the succeeding Friday.

The editor welcomes accounts of interesting cases, outbreaks, environmental hazards, or other public health problems of current interest to health officials. 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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