CENTER FOR DISEASE CONTROL

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MORBIDITY AND MORTALITY WEEKLY REPORT

Recommendation of the Public Health Service

Advisory Committee on Immunization Practices

Diphtheria and Tetanus Toxoids and Pertussis Vaccine

INTRODUCTION

Routine immunization against diphtheria, tetanus, and pertussis in infancy or childhood has been widely advocated and generally practiced in the United States for the past 30 years. Its effectiveness is reflected in the marked decrease in cases and deaths from these 3 diseases.

DIPHTHERIA

Reported cases of diphtheria in the United States remain at 200-300 annually with some variation due to a few local epidemics. (In 1970, for instance, there were 435 cases.) While diphtheria is generally uncommon, localized outbreaks continue to occur in many parts of the United States. Many of the reported cases are severe, and 10% of respiratory diphtheria cases are fatal.

Although outbreaks of diphtheria in adults (including cutaneous diphtheria) are becoming increasingly common in urban areas, most diphtheria cases occur in children. The majority of cases are in unimmunized or inadequately immunized persons. Diphtheria immunity does not prevent pharyngeal carriage of the organism, but it does significantly reduce the occurrence and severity of clinical disease. Antitoxin persists at protective levels for 10 years or more in adequately immunized persons.

TETANUS

Although its incidence in the United States has declined in recent years, tetanus remains an important health problem. In 1975, 102 cases of tetanus were reported. All occurred in unimmunized persons, partially immunized persons, or persons whose immunization history was uncertain. More than half of the patients were 50 years of age or older.

Since the tetanus organism is ubiquitous and there is no natural immunity to the tetanus toxin, immunization is a universal necessity regardless of age. Immune pregnant women provide maternal antibodies to their infants, thus protecting them against neonatal tetanus.

Tetanus toxoid has proved to be an excellent immunizing agent. It is highly effective and provides long-lasting protection. Hypersensitivity reactions are uncommon with primary immunization. They do occasionally occur in persons who have received an excessive number of booster injections.

PERTUSSIS

The severe complications and high mortality from pertussis in infancy are the major reasons for immunization early in life. Pertussis is highly communicable, and attack rates of up to 90% are reported for unimmunized household contacts. Most cases occur in infants and young children. In 1972, a typical year, two-thirds of the reported pertussis deaths occurred in infants less than 1 year of age.

Cases and consequently deaths from pertussis have declined dramatically with increasingly widespread use of standardized pertussis vaccines beginning in the late 1940s. Because the incidence, severity, and fatality of pertussis decrease with age, routine pertussis vaccination is not generally needed or recommended for persons 7 years of age or older. (See "Vaccine Usage.")

PREPARATIONS USED FOR IMMUNIZATION

Diphtheria and tetanus toxoids are prepared by formaldehyde treatment of the respective toxins. Pertussis vaccine is a killed suspension of bacteria or a bacterial fraction.

The toxoids are available in both fluid and adsorbed forms. Comparative tests show that adsorbed toxoids induce higher antitoxin titers and more durable protection than fluid toxoid, although the rate of appearance of antibody is essentially equivalent. Thus, adsorbed toxoids are preferable.

The toxoids and pertussis vaccine are available in various combinations and concentrations for specific purposes. Three preparations are important for public health use:

1. Diphtheria and Tetanus Toxoids and Pertussis Vaccine (DTP)
2. Tetanus and Diphtheria Toxoids, Adult Type (Td)
3. Tetanus Toxoid (T)

All preparations contain comparable amounts of tetanus toxoid, but the diphtheria component in the adult type of tetanus toxoids (Td) is only about 10-25% of that in standard DTP.

VACCINE USAGE

Primary Immunization

Age: *For children 6 weeks through 6 years (up to the seventh birthday),* the manufacturers' recommended dose

of DTP should be given intramuscularly on 4 occasions, 3 doses at 4- to 8-week intervals and a fourth dose approximately 1 year after the third. Ideally, immunization should begin at 2-3 months of age or at the 6-week check-up, if this is an established routine.

For schoolchildren and adults, a series of 3 doses of Td should be given intramuscularly with the second dose 4-8 weeks after the first, and the third dose 6 months to 1 year after the second. Td is considered the agent of choice for immunization of school-age children (above school-entering age) on the basis of data regarding its adequacy in primary immunization of older children and adults and because of increasing frequency of reactions to full doses of diphtheria toxoid with age.

With regard to adult immunity, prior military service should not be considered as a guarantee of diphtheria immunity since diphtheria toxoid was not regularly administered until the early to mid-1960s.

Dose: The concentration of antigens varies in different manufacturers' products. The package literature gives specific information on the proper volume of a single dose.

Booster Immunization

Age: *For children 3 through 6 years (up to the seventh birthday — preferably at the time of entrance to kindergarten or elementary school),* a single injection of the recommended dose of DTP should be given intramuscularly.

Thereafter and for all other persons, the recommended dose of Td should be given intramuscularly every 10 years. If a dose is given sooner as part of wound management, the next booster is not needed for 10 years thereafter. (See "Tetanus Prophylaxis in Wound Management.") More frequent booster doses are not indicated and may be associated with increased incidence and severity of side effects.

DIPHTHERIA ANTITOXIN FOR CASE CONTACTS

All *asymptomatic, unimmunized* household contacts of patients with diphtheria should be managed with: 1) prompt prophylaxis using either an intramuscular injection of 600,000 units of benzathine penicillin or a 7-day course of oral erythromycin with bacteriologic cultures before and after treatment, 2) vaccination with diphtheria toxoid, and 3) daily surveillance for 7 days for evidence of diphtheria.

Where close surveillance of unimmunized household contacts is impossible, they should receive intramuscular benzathine penicillin, diphtheria toxoid, and, in addition, diphtheria antitoxin. Intramuscular benzathine penicillin is preferred to oral erythromycin to avoid the problem of non-compliance with an oral drug regimen. Diphtheria antitoxin is recommended because: 1) intramuscular penicillin is not totally effective in eradicating the organism, 2) antibiotics may not prevent development or progression of disease due to toxin, 3) the factors that make surveillance difficult may contribute to delay in administering anti-

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Table I. Summary—Cases of Specified Notifiable Diseases: United States

[Cumulative totals include revised and delayed reports through previous weeks]

DISEASE	48th WEEK ENDING		MEDIAN 1972–1976	CUMULATIVE, FIRST 48 WEEKS		MEDIAN 1972–1976
	December 3, 1977	December 4, 1976		December 3, 1977	December 4, 1976	
Aseptic meningitis	74	79	79	4,262	3,023	3,855
Brucellosis	4	1	1	206	273	174
Chickenpox	2,137	3,229	---	171,110	166,804	---
Diphtheria	–	1	3	79	137	179
Encephalitis, Primary	20	23	23	992	1,335	1,335
Encephalitis, Post-Infectious	5	5	4	190	251	252
Hepatitis, Viral, Type B	287	271	188	14,862	13,746	9,156
Hepatitis, Viral, Type A	535	639	639	28,166	30,648	38,548
Hepatitis, Viral, Type unspecified	174	152		8,434	7,444	
Malaria	7	6	5	486	428	387
Measles (rubeola)	132	455	249	54,045	37,151	25,781
Meningococcal infections, total	38	31	21	1,630	1,416	1,254
Civilian	38	31	20	1,619	1,397	1,234
Military	–	–	1	11	19	28
Mumps	329	462	999	18,766	36,149	54,046
Pertussis	47	7	---	1,661	868	---
Rubella (German measles)	146	127	115	19,561	11,619	15,770
Tetanus	2	3	1	67	63	87
Tuberculosis	575	579	---	27,792	30,051	---
Tularemia	5	–	1	154	128	132
Typhoid fever	11	2	4	355	380	380
Typhus, tick-borne (Rky. Mt. spotted fever)	4	7	3	1,100	873	757
Venereal Diseases:						
Gonorrhea, Civilian	20,210	19,191	---	923,529	930,856	---
Gonorrhea, Military	505	476	---	24,530	26,960	---
Syphilis, primary and secondary, Civilian	437	470	---	18,906	22,139	---
Syphilis, primary and secondary, Military	10	4	---	287	317	---
Rabies in animals	54	42	42	2,806	2,737	2,737

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	–	Poliomyelitis, total:	11
Botulism:	95	Paralytic:	10
Congenital rubella syndrome:*	14	Psittacosis: NYC 1	59
Leprosy: NYC 1	116	Rabies in man:	1
Leptospirosis: Okla 1	46	Trichinosis: NYC 1, Va. 1	102
Plague:*	15	Typhus, murine:	70

*Delayed report: Cong. rubella syndrome: UPS. NY 1; Plague: N. Mex. 1

Table III

Cases of Specified Notifiable Diseases: United States

Weeks Ending December 3, 1977 and December 4, 1976 – 48th Week

AREA REPORTING	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS, VIRAL			MALARIA	
						Primary: Arthropod-borne and Unspecified		Post Infectious	Type B	Type A	Type Unspecified		
	1977	1977	1977	1977	CUM. 1977	1977	1976	1977	1977	1977	1977	1977	CUM. 1977
UNITED STATES	74	4	2,137	–	79	20	23	5	287	535	174	7	486
NEW ENGLAND	3	–	197	–	–	–	–	–	11	8	9	–	25
Maine	–	–	18	–	–	–	–	–	–	–	–	–	1
New Hampshire	–	–	13	–	–	–	–	–	1	2	–	–	3
Vermont	–	–	44	–	–	–	–	–	–	–	–	–	2
Massachusetts	3	–	91	–	–	–	–	–	4	4	9	–	4
Rhode Island	–	–	5	–	–	–	–	–	1	–	–	–	5
Connecticut	–	–	26	–	–	–	–	–	5	2	–	–	10
MIDDLE ATLANTIC	10	1	208	–	5	3	2	–	42	44	19	3	116
Upstate New York*	5	1	57	–	–	–	–	–	10	11	6	–	24
New York City	3	–	34	–	5	3	1	–	17	11	8	2	55
New Jersey*	2	–	NN	–	–	–	–	–	15	22	5	–	17
Pennsylvania	–	–	117	–	–	–	1	–	NA	NA	NA	1	20
EAST NORTH CENTRAL	6	–	951	–	–	5	–	–	52	82	16	1	37
Ohio	1	–	90	–	–	2	–	–	17	26	–	–	13
Indiana	–	–	105	–	–	–	–	–	1	5	11	–	2
Illinois	–	–	155	–	–	1	–	–	11	22	3	–	2
Michigan	5	–	406	–	–	2	–	–	22	27	1	1	17
Wisconsin*	–	–	195	–	–	–	–	–	1	2	1	–	3
WEST NORTH CENTRAL	2	1	303	–	1	1	1	–	23	34	9	1	36
Minnesota	–	–	–	–	–	–	–	–	10	10	–	1	13
Iowa*	–	–	150	–	–	–	–	–	–	3	1	–	1
Missouri*	1	1	63	–	1	–	1	–	8	18	7	–	16
North Dakota	1	–	6	–	–	–	–	–	–	–	–	–	1
South Dakota*	–	–	29	–	–	–	–	–	–	1	1	–	1
Nebraska	–	–	3	–	–	–	–	–	1	1	–	–	–
Kansas	–	–	52	–	–	1	–	–	4	1	–	–	4
SOUTH ATLANTIC	13	1	197	–	–	3	6	–	36	79	16	1	93
Delaware	–	–	4	–	–	–	–	–	1	2	–	–	–
Maryland	–	–	21	–	–	–	–	–	3	11	3	1	23
District of Columbia	–	–	–	–	–	–	–	–	2	–	–	–	6
Virginia*	4	1	2	–	–	–	4	–	5	8	–	–	22
West Virginia	–	–	147	–	–	–	–	–	–	5	–	–	2
North Carolina	1	–	NN	–	–	2	1	–	7	9	2	–	10
South Carolina	–	–	2	–	–	–	1	–	1	2	–	–	–
Georgia	–	–	–	–	–	1	–	–	3	19	–	–	8
Florida*	8	–	21	–	–	–	–	–	14	23	11	–	22
EAST SOUTH CENTRAL	3	–	42	–	–	5	9	3	18	38	8	–	11
Kentucky*	–	–	26	–	–	–	1	–	3	12	6	–	4
Tennessee	1	–	NN	–	–	1	3	–	11	15	1	–	1
Alabama*	2	–	11	–	–	–	5	2	1	3	1	–	5
Mississippi	–	–	5	–	–	4	–	1	3	8	–	–	1
WEST SOUTH CENTRAL	4	–	45	–	3	–	4	–	16	48	32	–	27
Arkansas	–	–	6	–	–	–	–	–	1	13	6	–	2
Louisiana	–	–	NN	–	–	–	–	–	3	4	–	–	2
Oklahoma	–	–	5	–	–	–	1	–	2	3	1	–	–
Texas	4	–	34	–	3	–	3	–	10	28	25	–	23
MOUNTAIN	–	–	71	–	5	–	–	–	6	45	13	–	14
Montana*	–	–	13	–	–	–	–	–	1	7	1	–	2
Idaho	–	–	25	–	–	–	–	–	–	1	–	–	–
Wyoming	–	–	–	–	–	–	–	–	–	–	–	–	2
Colorado	–	–	19	–	–	–	–	–	1	9	3	–	7
New Mexico*	–	–	12	–	4	–	–	–	4	14	3	–	1
Arizona	–	–	NN	–	1	–	–	–	–	11	6	–	2
Utah	–	–	2	–	–	–	–	–	–	3	–	–	–
Nevada*	–	–	–	–	–	–	–	–	–	–	–	–	–
PACIFIC	33	1	123	–	65	3	1	2	83	157	52	1	127
Washington	1	–	111	–	59	–	–	1	2	9	3	–	5
Oregon	9	1	2	–	–	–	–	–	7	21	7	–	2
California*	21	–	–	–	4	2	1	1	72	120	42	1	114
Alaska	1	–	5	–	2	1	–	–	–	2	–	–	2
Hawaii	1	–	5	–	–	–	–	–	2	5	–	–	4
Guam*	NA	NA	NA	NA	–	NA	–	–	–	NA	NA	NA	–
Puerto Rico	–	–	16	1	1	–	–	–	1	3	1	–	2
Virgin Islands	–	–	–	–	–	–	–	–	–	–	–	–	–

NN: Not notifiable
NA: Not available
*Delayed reports: Asep. meng.: Va. +2, Ala. +1, Nev. +1; Bruc.: Ups NY –1, Wisc. +1; Chickenpox: Calif. +16, Guam +6; Diph.: N. Mex. +1; Enceph.: Fla. +49, N. Mex. +3; Hep. B: N.J. +1, S. Dak. –1, Mont. –1; Hep. A: N.J. –2, Wisc. –7, Iowa –1, Mo. –1, S. Dak. +1, Ky. –1, Ala. –1, N. Mex. +47, Nev. +2; Hep. unsp: N.J. –2, Va. –1, N.Mex. –2; Malaria: Fla. –1, N. Mex. +1.

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending December 3, 1977 and December 4, 1976 – 48th Week

REPORTING AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS TOTAL			MUMPS		PERTUSSIS	RUBELLA		TETANUS
	1977	CUMULATIVE		1977	CUMULATIVE		1977	CUM. 1977	1977	1977	CUM. 1977	CUM. 1977
		1977	1976		1977	1976						
UNITED STATES	132	54,045	37,151	38	1,630	1,416	329	18,766	47	146	19,561	67
NEW ENGLAND	–	2,498	497	2	70	69	8	740	–	2	1,230	1
Maine	–	173	9	–	3	1	3	81	–	–	70	–
New Hampshire*	–	512	9	–	3	6	–	92	–	–	247	–
Vermont	–	294	143	1	7	6	–	8	–	–	65	–
Massachusetts	–	644	37	1	23	21	4	134	–	–	389	–
Rhode Island	–	64	15	–	2	7	1	66	–	1	136	–
Connecticut	–	811	284	–	32	28	–	359	–	1	323	1
MIDDLE ATLANTIC	5	8,484	7,146	8	237	208	13	1,417	2	24	6,112	7
Upstate New York*	4	3,861	2,960	4	59	79	8	335	1	–	3,381	2
New York City	1	797	481	1	58	53	2	518	1	2	334	1
New Jersey	–	197	620	3	53	31	1	367	–	–	1,785	2
Pennsylvania	–	3,629	3,085	–	67	45	2	197	–	22	612	2
EAST NORTH CENTRAL	70	11,718	15,914	2	172	176	133	6,335	12	40	4,053	7
Ohio*	–	1,861	579	1	66	68	29	776	7	2	1,143	3
Indiana	3	4,365	3,806	–	15	13	5	358	–	5	976	1
Illinois	9	1,857	1,731	–	26	20	32	1,193	2	10	352	1
Michigan	54	1,165	5,997	1	49	63	56	2,175	1	15	1,044	2
Wisconsin*	4	2,470	3,801	–	16	12	11	1,833	2	8	538	–
WEST NORTH CENTRAL	4	9,404	1,563	1	81	94	52	4,297	4	1	623	10
Minnesota*	–	2,634	426	–	25	14	5	23	–	–	17	2
Iowa*	1	4,316	45	–	10	10	4	1,334	–	–	177	1
Missouri*	–	917	264	–	33	44	15	1,569	4	–	44	4
North Dakota*	–	31	3	–	1	3	–	20	–	1	19	–
South Dakota	–	75	4	–	4	3	–	59	–	–	89	–
Nebraska	–	214	55	–	2	6	–	83	–	–	3	–
Kansas	3	1,217	766	1	6	14	28	1,209	–	–	274	3
SOUTH ATLANTIC	9	4,695	2,219	8	355	279	22	935	6	12	1,717	13
Delaware	–	22	130	–	7	9	2	149	–	–	29	–
Maryland	–	372	715	2	25	22	3	80	–	–	6	–
District of Columbia	–	14	13	–	1	4	–	6	–	–	–	–
Virginia	–	2,748	787	–	35	41	4	116	1	2	584	1
West Virginia	5	267	208	1	10	8	6	212	–	2	162	–
North Carolina	–	65	17	1	76	52	2	68	1	1	448	1
South Carolina	2	159	4	1	37	36	3	20	3	7	237	–
Georgia	–	768	4	1	53	32	1	34	1	–	57	1
Florida	2	280	341	2	111	75	1	250	–	–	194	10
EAST SOUTH CENTRAL	15	2,033	931	4	167	131	29	1,133	4	3	1,962	6
Kentucky	–	1,191	758	–	32	23	–	117	2	1	92	1
Tennessee	3	714	156	2	44	58	27	629	2	2	1,751	3
Alabama	–	78	–	–	55	36	2	344	–	–	110	2
Mississippi	12	50	17	2	36	14	–	43	–	–	9	–
WEST SOUTH CENTRAL	12	2,195	852	8	306	210	28	1,680	–	4	830	13
Arkansas	–	33	18	–	18	15	7	140	–	–	3	2
Louisiana	–	80	284	2	136	39	–	60	–	–	27	3
Oklahoma	–	66	304	–	15	21	5	557	–	3	36	–
Texas	12	2,016	246	6	137	135	16	923	–	1	764	8
MOUNTAIN	5	2,549	5,274	1	37	40	15	650	–	3	390	2
Montana	–	1,163	327	1	6	6	–	12	–	–	17	1
Idaho	–	163	2,023	–	5	6	1	130	–	–	13	–
Wyoming	–	19	4	–	1	–	–	4	–	–	6	1
Colorado	3	507	372	–	1	6	14	291	–	3	244	–
New Mexico*	–	256	16	–	10	4	–	106	–	–	11	–
Arizona	2	325	229	–	10	10	–	–	–	–	19	–
Utah	–	23	2,237	–	3	6	–	91	–	–	71	–
Nevada	–	93	66	–	1	2	–	16	–	–	9	–
PACIFIC	12	10,469	2,755	4	205	209	29	1,579	19	57	2,644	8
Washington	1	559	357	2	32	35	8	323	1	12	464	–
Oregon	–	367	175	–	17	18	5	298	13	14	134	–
California	10	9,447	2,206	–	119	131	15	890	5	31	1,631	8
Alaska	–	60	11	1	33	22	–	31	–	–	1	–
Hawaii	1	36	6	1	4	3	1	37	–	–	414	–
Guam*	NA	9	16	–	1	–	NA	7	NA	NA	11	–
Puerto Rico	3	1,029	485	–	1	5	6	884	–	–	35	11
Virgin Islands	–	14	17	–	–	2	–	195	–	–	2	–

NA: Not available
*Delayed reports: Measles: Wisc. –1, Iowa –1, Mo. –1, N. Dak. –2. Men. inf.: Ups.NY –9, Ohio +1, Mo. +2; Mumps: Guam +1. Pertussis: N. Hamp. +3, Minn. +1, Mo. +4, N. Mex. +7; Rubella: N. Dak. +2.

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending December 3, 1977 and December 4, 1976 – 48th Week

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
	1977	CUM. 1977	CUM. 1977	1977	CUM. 1977	1977	CUM. 1977	1977	CUMULATIVE 1977	CUMULATIVE 1976	1977	CUMULATIVE 1977	CUMULATIVE 1976	CUM. 1977
UNITED STATES	575	27,792	154	11	355	4	1,100	20,210	923,529	930,856	437	18,906	22,139	2,806
NEW ENGLAND	16	1,021	2	–	18	–	11	509	24,872	26,104	14	755	760	49
Maine	–	76	–	–	–	–	–	48	1,885	2,229	–	28	22	32
New Hampshire *	–	25	–	–	–	–	–	24	1,040	805	–	4	10	1
Vermont	–	33	–	–	–	–	–	14	620	661	–	7	9	–
Massachusetts	13	579	2	–	13	–	5	213	10,540	12,300	10	526	542	8
Rhode Island	–	84	–	–	3	–	3	44	1,946	1,876	1	9	19	–
Connecticut	3	224	–	–	2	–	3	166	8,841	8,233	3	181	158	8
MIDDLE ATLANTIC	102	4,484	3	1	69	–	83	1,825	96,646	106,314	51	2,680	3,697	106
Upstate New York *	20	774	3	–	8	–	41	378	16,740	17,677	5	250	222	59
New York City	29	1,413	–	1	28	–	2	591	37,369	46,543	38	1,638	2,346	–
New Jersey	9	1,118	–	–	22	–	11	94	17,024	16,233	5	352	524	28
Pennsylvania	44	1,179	–	–	11	–	29	762	25,513	25,861	3	390	605	19
EAST NORTH CENTRAL	86	4,302	3	1	33	1	40	3,458	146,968	146,822	68	1,963	1,936	141
Ohio *	47	772	1	–	10	1	20	1,357	39,266	36,515	2	437	459	–
Indiana	6	490	–	–	3	–	2	149	13,580	14,371	–	143	98	11
Illinois	–	1,645	–	–	6	–	16	1,008	47,468	50,721	62	1,050	1,033	41
Michigan *	28	1,199	–	1	13	–	2	660	33,869	32,163	4	231	241	6
Wisconsin	5	196	2	–	1	–	–	284	12,786	13,052	–	102	105	83
WEST NORTH CENTRAL	17	933	28	–	22	–	33	955	47,878	49,298	13	413	432	711
Minnesota	2	186	–	–	5	–	–	–	8,327	8,556	9	138	97	257
Iowa	2	85	–	–	–	–	1	189	5,652	6,122	1	40	41	122
Missouri *	9	412	25	–	12	–	18	386	19,986	19,765	3	162	168	52
North Dakota	–	27	–	–	1	–	–	15	896	780	–	–	–	114
South Dakota *	1	48	2	–	–	–	2	61	1,484	1,461	–	9	6	120
Nebraska *	3	38	1	–	1	–	1	168	4,204	4,097	–	24	37	3
Kansas *	–	137	–	–	3	–	11	136	7,329	8,517	–	40	83	43
SOUTH ATLANTIC	142	6,046	12	4	56	2	579	4,963	226,762	226,453	117	5,109	6,628	340
Delaware	–	53	–	–	–	–	3	41	3,064	3,149	–	19	63	2
Maryland *	18	859	2	1	5	2	77	826	28,396	29,353	6	306	517	–
District of Columbia	7	313	–	–	1	–	–	276	14,823	15,368	10	515	521	–
Virginia *	23	696	3	–	10	–	154	722	23,824	23,968	18	506	634	5
West Virginia	2	216	–	–	5	–	5	98	3,160	2,924	1	5	22	9
North Carolina *	23	993	2	1	5	–	221	577	34,122	32,858	18	681	1,184	13
South Carolina	24	567	2	2	6	–	53	463	21,479	21,540	6	230	350	36
Georgia	27	821	3	–	5	–	65	979	43,470	43,061	30	1,151	1,011	201
Florida *	18	1,528	–	–	19	–	1	981	54,424	54,232	28	1,696	2,326	74
EAST SOUTH CENTRAL	50	2,605	9	–	10	1	176	1,925	81,268	82,194	19	737	837	78
Kentucky	12	677	3	–	5	–	43	233	11,075	10,826	2	104	118	29
Tennessee	9	826	5	–	2	1	105	668	32,129	33,051	6	235	279	37
Alabama	19	642	1	–	1	–	19	846	22,564	22,774	7	159	176	12
Mississippi	10	460	–	–	2	–	9	178	15,500	15,543	4	239	264	–
WEST SOUTH CENTRAL	67	3,261	76	2	32	–	159	2,501	116,720	117,047	47	2,703	2,639	734
Arkansas	14	355	52	–	7	–	53	131	8,792	10,977	–	62	94	108
Louisiana	8	574	1	–	1	–	6	310	17,600	16,886	2	614	537	22
Oklahoma *	3	272	12	–	2	–	72	185	11,226	11,412	3	75	90	230
Texas	42	2,060	11	2	22	–	28	1,875	79,102	77,772	42	1,952	1,918	374
MOUNTAIN	11	767	15	1	28	–	14	743	37,339	38,090	6	428	549	181
Montana	–	48	1	–	–	–	6	40	1,978	1,900	1	6	11	45
Idaho	–	29	–	–	–	–	5	45	1,733	2,070	–	12	23	–
Wyoming	–	19	1	–	–	–	2	23	899	780	–	3	7	1
Colorado	–	104	3	–	8	–	1	166	9,746	9,487	2	116	129	57
New Mexico *	2	145	1	–	–	–	–	96	5,501	6,763	–	117	132	20
Arizona	6	324	3	1	14	–	–	186	10,228	11,318	3	148	195	47
Utah	–	42	6	–	5	–	–	36	2,241	2,159	–	10	20	11
Nevada	3	56	–	–	1	–	–	151	5,043	3,613	–	16	32	–
PACIFIC	84	4,373	6	2	87	–	5	3,331	145,076	138,534	102	4,118	4,661	466
Washington	NA	272	–	–	2	–	–	174	11,242	11,661	NA	216	159	2
Oregon	1	165	1	–	3	–	1	351	10,011	10,306	2	132	101	8
California	75	3,320	5	2	80	–	4	2,605	116,238	109,996	98	3,707	4,295	419
Alaska	–	76	–	–	–	–	–	145	4,607	4,031	2	27	25	37
Hawaii	8	540	–	–	2	–	–	56	2,978	2,540	–	36	81	–
Guam *	NA	53	–	NA	1	NA	–	NA	192	315	NA	2	2	–
Puerto Rico	2	359	–	–	7	–	–	59	2,931	2,483	10	501	568	51
Virgin Islands	–	2	–	–	–	–	–	4	202	216	–	9	51	–

NA: Not available

*Delayed reports: TB: N. Hamp. +1, Ups NY –25, Ohio, –4, Mich. –2, Kans.–1, Md. –2, N.C. –6, Fla. –9, N. Mex. +5; RMSF: Nebr +1, Va. –1, Okla –1. GC: N. Hamp. +1 mil.. UPS. NY. +151 civ. –1 mil., Nebr. –1 civ., Fla. +10 civ., N. Mex. +12 civ. –8 mil., Guam +5 civ.; Syphilis: Ups NY –1 civ., Mo. –1 civ., N. Mex. –35 civ. – 1 mil.; An. rabies: Ohio +14, S. Dak. +14, N. Mex. +1.

Table IV
Deaths in 121 United States Cities*
Week Ending December 3, 1977 – 48th Week

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza
	ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year	ALL AGES
NEW ENGLAND	635	420	142	28	28	59
Boston, Mass.	173	105	42	6	15	10
Bridgeport, Conn.	36	25	7	2	1	2
Cambridge, Mass.	21	14	7	–	–	3
Fall River, Mass.	21	13	7	–	–	–
Hartford, Conn.	51	31	12	4	4	3
Lowell, Mass.	26	20	6	–	–	–
Lynn, Mass.	22	18	2	2	–	4
New Bedford, Mass.	32	25	3	1	1	2
New Haven, Conn.	54	36	8	4	2	1
Providence, R.I.	64	38	18	4	1	6
Somerville, Mass.	7	5	1	1	–	1
Springfield, Mass.	41	25	9	2	4	–
Waterbury, Conn.	36	28	7	1	–	5
Worcester, Mass.	51	37	13	1	–	2
MIDDLE ATLANTIC	3,126	1,982	784	187	89	169
Albany, N. Y.	60	39	16	1	1	4
Allentown, Pa.	16	9	5	2	–	–
Buffalo, N. Y.	138	83	39	6	5	8
Camden, N. J.	33	20	9	3	1	1
Elizabeth, N. J.	39	30	6	3	–	1
Erie, Pa.	34	22	8	2	2	3
Jersey City, N. J.	66	37	25	–	3	1
Newark, N. J.	38	19	9	8	1	1
New York City, N. Y.	1,625	1,032	365	134	44	58
Paterson, N. J.	32	24	5	2	1	9
Philadelphia, Pa.	418	243	112	34	16	32
Pittsburgh, Pa.	196	119	62	8	5	11
Reading, Pa.	39	30	9	–	–	1
Rochester, N. Y.	132	97	20	7	4	21
Schenectady, N. Y.	30	19	7	1	1	1
Scranton, Pa.	44	33	8	1	–	5
Syracuse, N. Y.	86	55	26	1	3	5
Trenton, N. J.	44	32	9	2	1	1
Utica, N. Y.	30	23	7	–	–	4
Yonkers, N. Y.	26	16	7	2	1	2
EAST NORTH CENTRAL	2,660	1,613	738	142	75	81
Akron, Ohio	87	54	21	1	7	–
Canton, Ohio	44	28	13	–	1	2
Chicago, Ill.	654	372	189	43	16	12
Cincinnati, Ohio	168	94	54	5	8	4
Cleveland, Ohio	231	114	60	16	5	9
Columbus, Ohio	136	92	30	8	3	5
Dayton, Ohio	132	76	43	11	1	4
Detroit, Mich.	302	187	77	20	7	13
Evansville, Ind.	61	46	11	2	2	3
Fort Wayne, Ind.	76	49	17	6	1	4
Gary, Ind.	27	13	11	1	–	2
Grand Rapids, Mich.	64	40	15	3	3	4
Indianapolis, Ind.	208	124	60	10	6	5
Madison, Wis.	41	26	9	2	2	4
Milwaukee, Wis.	134	87	40	3	2	2
Peoria, Ill.	46	27	15	1	1	2
Rockford, Ill.	63	35	21	6	1	3
South Bend, Ind.	50	38	9	1	2	2
Toledo, Ohio	95	59	30	1	3	1
Youngstown, Ohio	71	52	13	2	4	–
WEST NORTH CENTRAL	877	604	194	33	25	43
Des Moines, Iowa	79	57	16	1	4	3
Duluth, Minn.	27	18	8	–	–	4
Kansas City, Kans.	40	19	11	7	1	1
Kansas City, Mo.	164	107	41	3	5	7
Lincoln, Nebr.	48	32	11	–	1	2
Minneapolis, Minn.	94	70	20	3	1	2
Omaha, Nebr.	74	51	17	2	2	1
St. Louis, Mo.	206	145	40	10	8	14
St. Paul, Minn.	65	53	10	2	–	2
Wichita, Kans.	80	52	20	5	3	7

REPORTING AREA	ALL CAUSES					Pneumonia and Influenza
	ALL AGES	65 Years and Over	45-64 Years	25-44 Years	Under 1 Year	ALL AGES
SOUTH ATLANTIC	1,293	784	343	85	49	58
Atlanta, Ga.	127	74	32	12	4	1
Baltimore, Md.	209	107	69	16	11	1
Charlotte, N. C.	80	40	25	8	5	6
Jacksonville, Fla.	142	74	42	10	11	7
Miami, Fla.	123	80	34	6	1	6
Norfolk, Va.	52	35	11	3	3	6
Richmond, Va.	101	60	27	5	5	8
Savannah, Ga.	48	28	13	5	–	3
St. Petersburg, Fla.	100	86	10	2	2	5
Tampa, Fla.	88	60	20	4	2	7
Washington, D. C.	157	95	44	13	2	4
Wilmington, Del.	66	45	16	1	3	4
EAST SOUTH CENTRAL	738	436	191	60	23	32
Birmingham, Ala.	76	43	16	10	2	2
Chattanooga, Tenn.	66	38	20	3	–	4
Knoxville, Tenn.	47	35	11	–	1	1
Louisville, Ky.	138	75	42	10	8	13
Memphis, Tenn.	209	128	54	12	7	4
Mobile, Ala.	64	33	19	9	2	1
Montgomery, Ala.	33	23	4	2	1	2
Nashville, Tenn.	105	61	25	14	2	5
WEST SOUTH CENTRAL	1,355	762	363	105	62	34
Austin, Tex.	59	28	22	3	2	1
Baton Rouge, La.	34	19	10	2	2	1
Corpus Christi, Tex.	43	30	5	3	1	1
Dallas, Tex.	171	87	56	17	4	2
El Paso, Tex.	53	32	10	5	3	7
Fort Worth, Tex.	71	43	20	3	2	–
Houston, Tex.	288	147	92	26	9	1
Little Rock, Ark.	71	36	18	7	8	3
New Orleans, La.	215	133	44	14	17	4
San Antonio, Tex.	179	106	45	13	6	5
Shreveport, La.	79	42	20	8	4	2
Tulsa, Okla.	92	59	21	4	4	7
MOUNTAIN	585	355	132	46	25	11
Albuquerque, N. Mex. †	63	37	14	7	2	2
Colorado Springs, Colo.	32	23	7	–	–	3
Denver, Colo.	137	80	29	15	7	2
Las Vegas, Nev.	27	15	8	2	–	1
Ogden, Utah	16	10	5	–	–	–
Phoenix, Ariz.	149	86	36	15	7	3
Pueblo, Colo.	25	18	6	–	–	–
Salt Lake City, Utah	48	29	11	1	5	–
Tucson, Ariz.	88	57	16	6	4	–
PACIFIC	1,584	1,012	407	82	42	42
Berkeley, Calif.	29	23	5	1	–	–
Fresno, Calif.	72	45	16	6	3	2
Glendale, Calif.	27	21	4	1	–	–
Honolulu, Hawaii	57	35	16	3	2	1
Long Beach, Calif.	82	50	22	2	4	1
Los Angeles, Calif.	317	210	67	26	6	9
Oakland, Calif.	92	58	27	5	2	2
Pasadena, Calif.	35	25	7	–	1	–
Portland, Oreg.	119	71	32	6	6	1
Sacramento, Calif.	82	50	21	3	3	5
San Diego, Calif.	167	96	53	7	4	–
San Francisco, Calif.	181	105	58	13	4	4
San Jose, Calif.	59	45	10	3	–	1
Seattle, Wash.	160	104	44	4	5	12
Spokane, Wash.	59	46	10	1	1	4
Tacoma, Wash.	46	28	15	1	1	–
TOTAL	12,853	7,968	3,294	768	418	509
Expected Number	11,695	7,181	3,005	732	382	407

*By place of occurrence and week of filing certificate. Excludes fetal deaths.
†(Albuquerque) Estimate based on average percent of regional total.

The Morbidity and Mortality Weekly Report, circulation 70,000, is published by the Center for Disease Control, Atlanta, Georgia. The data in this report are provisional, based on weekly telegraphs 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. Send reports to: Center for Disease Control, Attn.: Editor, Morbidity and Mortality Weekly Report, Atlanta, Georgia 30333.

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Diphtheria — continued

toxin therapy should diphtheria develop, and 4) the first dose of diphtheria toxoid in an unimmunized person does not result in protective levels of antitoxin.

Although some experts recommend diphtheria antitoxin routinely for asymptomatic, unimmunized, exposed persons, the risk of allergic reactions to horse serum has led others to recommend its more limited use. The proportion of immediate hypersensitivity reactions in adults receiving large doses of an equine antitoxin is reported to be 7% and of serum sickness reactions, 5%. This risk must be weighed against the risk of diphtheria in unimmunized household contacts — about 20% before the antibiotic era — and the risk of death from diphtheria which increases significantly each day treatment with antitoxin is delayed.

The possible adverse effects of equine antitoxin and the severity of diphtheria underscore the need for prompt investigation, antibiotic prophylaxis of contacts, and daily surveillance of diphtheria cases.

This recommendation for household contacts should also apply to other unimmunized diphtheria contacts whose exposures were unusually intimate (for example, mouth-to-mouth resuscitation).

TETANUS PROPHYLAXIS IN WOUND MANAGEMENT

The physician often needs to consider active and passive immunization in managing a patient with a wound. The decision should be based on the history of previous tetanus vaccinations and the condition of the wound.

Available evidence indicates that complete primary immunization with tetanus toxoid provides long-lasting, protective antitoxin levels. Few documented cases of tetanus have occurred in persons with adequate primary immunization. After a person is completely immunized (that is, has received 4 doses of tetanus toxoid), antitoxin persists at sufficiently high levels that in managing his or her wounds it is unnecessary to give booster injections more than every 5 years.

For some persons without a full series of tetanus toxoid injections in the past, tetanus toxoid plus simultaneous passive immunization may be needed at the time of wound cleansing and debridement. A guide to wound management is given in Table 1. It is based on observations that antitoxic antibodies develop rapidly following a dose of tetanus toxoid in persons who have previously received at least 2 doses. The condition of the wound further influences the recommended practice. For persons whose tetanus immunization is still incomplete following wound management, the remainder of the recommended series of toxoid injections should be given.

If passive immunization is to be used, tetanus immune globulin (TIG) is the product of choice. It provides longer protection than does antitoxin of animal origin and causes no undesirable reactions. The currently recommended prophylactic dose of TIG is 250 units for wounds of average severity. When tetanus toxoid and TIG are given concurrently, separate syringes and separate sites should be used. (Adsorbed Td or tetanus toxoid is preferred over fluid toxoid for concurrent administration with TIG.)

TABLE 1. Guide to tetanus prophylaxis in wound management

History of tetanus immunization (doses)	Clean, minor wounds		All other wounds	
	Td	TIG	Td	TIG
Uncertain	Yes	No	Yes	Yes
0–1	Yes	No	Yes	Yes
2	Yes	No	Yes	No[1]
3 or more	No[2]	No	No[3]	No

[1] Unless wound more than 24 hours old
[2] Unless more than 10 years since last dose
[3] Unless more than 5 years since last dose

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Epidemiologic Notes and Reports

Follow-up on Sporadic Cases of Legionnaires' Disease — United States

One-hundred-thirty sporadic confirmed cases of Legionnaires' disease with onset since August 1976 have been reported to CDC from 30 states and the District of Columbia; 30 of these were fatal. The cases include 94 men and 33 women. The median age of the sporadic cases is 53.5 years, with a range from 17 to 82.

Detailed reports on all cases are not yet available, but at least 5 are known to have been in recipients of renal homografts. Surveillance at a hospital in California has detected 5 cases of pneumonia with onset between May 6 and November 12 with 4-fold or greater rises in indirect fluorescent-antibody titers to the agent of Legionnaires' disease or a demonstration of this bacterium by the direct fluorescent-antibody technique in lung tissue obtained at autopsy; 4 of the 5 were in renal homograft recipients, who developed pneumonia 6 to 24 days after transplantation.

Reported by J Chin, MD, State Epidemiologist, California State Dept of Health, and 30 other State Epidemiologists; Bacteriology Div and Virology Div, Bur of Laboratories, and Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Cases of Legionnaires' disease in recipients of renal homografts have also been reported from Ohio (*1,2*) and Vermont (*3-6*). Cases of Legionnaires' disease occurring in patients with renal transplants may be likely to be detected because of the prompt and thorough diagnostic efforts usually made when transplant recipients develop pneumonia, but Legionnaires' disease may prove to be a particularly frequent cause of illness in the immunosuppressed.

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International Notes

Influenza — United States, Canada

United States: A total of 3 influenza A viruses have been isolated by the Student Health Service at Marquette University, Milwaukee, Wisconsin, where an infection with an A/Texas/1/77-like virus had been confirmed previously (*1*). In Oregon, where no influenza viruses had been isolated since September 1977 (*2*), 2 influenza A strains have been recovered from patients with onset of illness on November 22 and 28, respectively; one patient was a student at a boarding school. Four influenza A viruses have been isolated in Colorado from unrelated sporadic cases, including a 64-year-old Denver resident, a 60-year-old man from a rural area, a 19-year-old man from Lowry Air Force Base, and a 7-month-old infant; all had onset of illness in November. Strain characterization of one of the new Oregon isolates and of the previously reported New Jersey and New York City isolates (*1*) indicates that the viruses are closely related to A/Texas/1/77. Studies with other U.S. isolates are in progress.

Nationwide, there is no evidence of an increased incidence of influenza-like illness as reported by surveillance sites.

Canada: An influenza A virus has been isolated from a sporadic case in Toronto. The patient, a 34-year-old woman, had onset of illness about November 10. Preliminary tests indicate the isolate is closely related to A/Texas/1/77.

Reported by H Dobbs, MD, Marquette University Student Health Service; G Sedmak, PhD, Milwaukee City Health Dept; I Imm, Wisconsin State Dept of Health and Social Services; K McIntosh, MD, G Meikeljohn, MD, University of Colorado Medical Center; S Mostow, MD, Veterans Administration Hospital, Denver; TM Vernon Jr, MD, State Epidemiologist, Colorado State Dept of Health; JA Googins, MD, State Epidemiologist, W Murphey, PhD, Oregon State Health Div; Laboratory Centre for Disease Control, Ottawa, Canada; WHO Collaborating Center for Influenza, Respiratory Virology Br, Virology Div, Bur of Laboratories, Surveillance and Assessment Br, Immunization Div, Bur of State Services, CDC.

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