CENTER FOR DISEASE CONTROL

August 5, 1977 / Vol. 26 / No. 31

MMWR

MORBIDITY AND MORTALITY WEEKLY REPORT

Epidemiologic Notes and Reports

Follow-up on Rabies — New York

On June 3, a case of laboratory-associated rabies in a New York State Health Department laboratory technician was reported (*1*). The patient, a 32-year-old man, was hospitalized in Albany, New York, on April 20; he remains hospitalized but is showing continued improvement. Motor function recovery has been particularly remarkable since mid-July; he is ambulatory but has occasional periods of agitation and spasticity. Although he remains aphasic, he is awake and appears to recognize family members. He has experienced mild recurring urinary tract infections; *Escherichia coli* has been isolated in each instance, and he has responded to therapy.

Serum antibody levels are being monitored at approximately 2-week intervals; the antibody titer remains at approximately 1:175,000 — unchanged since it peaked at that level in mid-May.

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Editorial Note: This case of laboratory-associated rabies, in which infection may have resulted from exposure to an aerosol, raises several questions regarding current laboratory practices. This is the second case of probable airborne infection with a laboratory-adapted strain of virus and the first case of rabies in an immunized individual with pre-existing serum neutralizing rabies antibodies.

Important issues raised by this rabies case are: 1) the risk of airborne exposure to rabies virus for laboratory personnel; 2) the protective value of serum neutralizing antibodies against airborne exposure; and 3) the human pathogenicity of laboratory-adapted strains of rabies virus, both fixed and attenuated.

There is only limited information available on the risk of airborne exposure. Three earlier human cases have been reported, 2 following exposure in bat caves and 1 resulting from exposure to an aerosol generated by a tissue homogenizer (*2*). These cases and the limited data on airborne infection in animals (*3*) indicate that persons exposed to airborne virus appear to be at increased risk.

Serum neutralizing antibody is well documented as a conventional protective measure against subsequent challenge by inoculation or bite exposure. The relationship between serum neutralizing antibody levels and protection against aerosol exposure is not known.

It is known that fixed virus strains (challenge virus standard [CVS] and production virus [PV]) are pathogenic for man. The pathogenicity of attenuated vaccine strains varies with the site of inoculation, strain of virus, and species exposed. Attenuated strains which have been further manipulated, as by tissue culture or animal passage, are of unknown virulence and must be considered pathogenic until proven otherwise.

In view of the above findings the following safety practices will be implemented in CDC laboratories:

1. Any procedure which can produce virus aerosols will be performed in a biological safety cabinet or other physical containment system. Such procedures would include homogenization, pellet resuspension, and sonication. Centrifugation, which can also generate aerosols, will utilize sealed safety cups opened only in a biological safety cabinet or similar barrier system.

2. Activities involving work with large volumes of rabies virus, regardless of viral strain or titer, will be conducted in a biological safety cabinet or other physical containment system.

3. Protective gloves will be worn when performing any operation which might result in spillage of an infectious virus.

4. No person will work with rabies virus in the laboratory, even on a temporary basis, who has not demonstrated a seroconversion following immunization; a titer of $\geq$1:16 by the rapid fluorescent focus inhibition (RFFI) test or an equivalent titer by another test is considered as evidence of seroconversion.

5. Antibody levels in persons working with rabies virus will be tested at least annually; revaccination will be given if the titer is below 1:16.

6. Earlier safety recommendations (*4*) regarding rabies laboratory hazards will remain valid.

These additional steps to reduce the hazard to personnel in rabies laboratories are a result of a review of CDC's procedures and practices, a review prompted by this case. It is suggested that other laboratories conduct similar assessments of their rabies laboratory procedures.

Rabies — continued

References
1. MMWR 26:183, 1977
2. MMWR 26:113-114, 1972
3. Winkler WG, Baker EF, Hopkins CC: An outbreak of non-bite transmitted rabies in a laboratory animal colony. Am J Epidemiol 95:267-277, 1972
4. MMWR 21:179, 1972

Pertussis — Maine, Georgia

Two recent outbreaks of pertussis — one in Maine, the other in Georgia — have been reported to CDC. Details of these outbreaks follow.

Maine: Pertussis was diagnosed in a 2-year-old girl from Bridgton, Maine, in April 1977 after a 6-week history of cough. The child had been seen on several occasions as an outpatient and in the hospital, where diagnoses of asthma, bronchitis, and cystic fibrosis were entertained before the diagnosis of pertussis was considered. Direct fluorescent antibody (FA) stain of a nasopharyngeal smear from the patient and from an ill sibling confirmed the diagnosis of pertussis in both. Two other siblings, the parents, and a neighbor's child had also had a clinical illness compatible with pertussis. The children had all received the recommended number of immunizations for diphtheria and tetanus toxoids and pertussis vaccine (DTP) for their age. The cases were treated with erythromycin, and an immunization clinic was held in the community.

Georgia: An outbreak of pertussis occurred among students of a Decatur, Georgia, elementary school over a 5-week period in May and June 1977. Twenty-six of the school's 580 students had a clinical syndrome of fever and catarrhal symptoms followed by prolonged cough, as did 4 preschool siblings of sick children. None developed clinical pneumonia or required hospitalization, and most had a relatively mild cough. Twenty-six of the 30 cases were in students in the third grade or in their contacts.

Nasopharyngeal swabs were obtained for culture and FA staining from 28 ill school children and their siblings. *Bordetella pertussis* was isolated from 6 children; *B. pertussis* was identified by FA staining in 1 culture-positive child and in 3 other children.

Among ill children and their siblings, the immunization histories of the ill children were compared with those of the well children. Eighteen of 75 children who gave a history of complete DTP immunization for their age were ill. Twelve of 19 children who had a history of incomplete immunization became ill; no child had a certain history of no prior pertussis immunization. The majority of children with incomplete immunization lacked a preschool booster or had received Td instead of DTP for this booster. Thus,

(Continued on page 255)

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

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

DISEASE	30th WEEK ENDING		MEDIAN 1972–1976	CUMULATIVE, FIRST 30 WEEKS		
	July 30, 1977	July 31, 1976		July 30, 1977	July 31, 1976	MEDIAN 1972–1976
Aseptic meningitis	164	79	97	1,622	1,249	1,315
Brucellosis	7	19	7	117	166	108
Chickenpox	793	499	---	156,067	144,642	---
Diphtheria	–	1	1	52	120	120
Encephalitis: Primary	20	44	22	389	510	490
Encephalitis: Post-Infectious	8	4	7	123	173	179
Hepatitis, Viral: Type B	308	292	230	9,340	8,563	5,416
Hepatitis, Viral: Type A	564	664	811	17,954	20,069	24,671
Hepatitis, Viral: Type unspecified	178	134		5,309	4,939	
Malaria	18	13	9	279	243	218
Measles (rubeola)	534	401	227	51,796	33,547	23,429
Meningococcal infections, total	21	24	23	1,147	1,026	949
Civilian	21	24	23	1,141	1,010	928
Military	–	–	–	6	16	23
Mumps	148	223	481	14,845	31,134	44,831
Pertussis	51	29	---	489	539	---
Rubella (German measles)	154	48	108	18,087	10,307	14,380
Tetanus	1	2	2	30	29	47
Tuberculosis	551	744	---	17,465	19,347	---
Tularemia	5	1	2	74	80	80
Typhoid fever	9	9	9	206	216	216
Typhus, tick-borne (Rky. Mt. spotted fever)	52	50	45	655	461	451
Venereal Diseases:						
Gonorrhea: Civilian	21,474	21,319	---	551,345	564,872	---
Gonorrhea: Military	465	686	---	15,447	16,444	---
Syphilis, primary and secondary: Civilian	353	486	---	11,856	14,017	---
Syphilis, primary and secondary: Military	7	15	---	177	207	---
Rabies in animals	55	78	78	1,663	1,621	1,692

Table II. Notifiable Diseases of Low Frequency: United States

	CUM.		CUM.
Anthrax:	–	Poliomyelitis, total:	6
Botulism:	72	Paralytic:	5
Congenital rubella syndrome: Fla. +2	10	Psittacosis: NYC +1	42
Leprosy: Calif. +1, Hawaii +3	72	Rabies in man:	1
Leptospirosis: Ore. +1	26	Trichinosis:	52
Plague:	5	Typhus, murine: *MD. +1, N.C. +1, Tex. +2	42

*Delayed report: Typhus, murine: Ark. +2

Table III

Cases of Specified Notifiable Diseases: United States

Weeks Ending July 30, 1977 and July 31, 1976 – 30th 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	164	7	793	–	52	20	44	8	308	564	178	18	279
NEW ENGLAND	20	–	95	–	–	–	1	–	11	14	15	2	13
Maine	–	–	–	–	–	–	–	–	–	–	–	–	–
New Hampshire*	1	–	–	–	–	–	–	–	–	–	–	1	2
Vermont	–	–	1	–	–	–	–	–	–	–	–	–	1
Massachusetts	1	–	28	–	–	–	1	–	1	5	11	–	2
Rhode Island	2	·	59	–	–	–	–	–	5	1	–	1	4
Connecticut	16	–	7	–	–	–	–	–	5	8	4	–	4
MIDDLE ATLANTIC	13	–	291	–	5	2	1	–	59	42	30	1	64
Upstate New York	2	–	228	–	–	–	–	–	9	3	–	–	15
New York City	2	–	62	–	5	–	–	–	9	4	1	1	28
New Jersey*	6	–	NN	–	–	2	1	–	24	21	24	–	9
Pennsylvania*	3	–	1	–	–	–	–	–	17	14	5	–	12
EAST NORTH CENTRAL	25	–	238	–	–	8	8	2	49	90	16	2	24
Ohio*	6	–	44	–	–	5	–	1	19	51	–	–	7
Indiana*	13	–	10	–	–	1	5	–	5	5	9	–	2
Illinois	1	–	16	–	–	–	–	1	16	23	5	–	2
Michigan	3	–	102	–	–	2	3	–	8	5	2	2	10
Wisconsin	2	–	66	–	–	–	–	–	1	6	–	–	3
WEST NORTH CENTRAL	10	–	11	–	1	1	–	1	15	48	2	1	25
Minnesota	–	–	–	–	–	–	–	1	8	21	–	–	9
Iowa	–	–	–	–	–	1	–	–	–	1	1	–	–
Missouri*	10	–	1	–	1	–	–	–	2	19	1	1	11
North Dakota*	–	–	–	–	–	–	–	–	–	–	–	–	1
South Dakota	–	–	–	–	–	–	–	–	–	–	–	–	1
Nebraska	–	–	10	–	–	–	–	–	3	–	–	–	–
Kansas	–	–	–	–	–	–	–	–	2	7	–	–	3
SOUTH ATLANTIC	25	5	39	–	–	3	4	1	46	87	26	6	42
Delaware	–	–	3	–	–	–	–	–	–	2	–	–	–
Maryland	5	–	4	–	–	1	–	–	17	11	7	1	8
District of Columbia*	–	–	–	–	–	–	–	–	–	–	–	1	3
Virginia*	8	5	5	–	–	–	2	1	9	7	7	–	4
West Virginia*	3	–	12	–	–	1	–	–	1	8	1	–	1
North Carolina	5	–	NN	–	–	1	–	–	4	10	2	–	4
South Carolina	–	–	–	–	–	–	–	–	2	2	3	–	–
Georgia	–	–	–	–	–	–	–	–	3	14	–	1	8
Florida	4	–	15	–	–	–	2	–	10	33	6	3	14
EAST SOUTH CENTRAL	13	–	12	–	–	–	27	–	13	33	1	–	7
Kentucky	–	–	1	–	–	–	–	–	2	8	1	–	4
Tennessee	–	–	NN	–	–	–	–	–	5	18	–	–	1
Alabama	13	–	–	–	–	–	7	–	3	2	–	–	2
Mississippi	–	–	11	–	–	–	20	–	3	5	–	–	–
WEST SOUTH CENTRAL	13	2	17	–	2	1	–	–	31	62	25	1	13
Arkansas*	1	1	2	–	–	–	–	–	1	5	2	–	–
Louisiana*	2	–	NN	–	–	–	–	–	8	9	2	–	1
Oklahoma	–	–	–	–	–	1	–	–	3	4	3	–	–
Texas	10	1	15	–	2	–	–	–	19	44	18	1	12
MOUNTAIN	4	–	55	–	3	–	1	–	10	37	9	–	9
Montana	2	–	7	–	–	–	–	–	–	11	1	–	–
Idaho	–	–	–	–	–	–	–	–	1	–	–	–	–
Wyoming	–	–	–	–	–	–	–	–	–	–	–	–	1
Colorado	1	–	18	–	–	–	1	–	1	9	1	–	6
New Mexico	–	–	–	–	2	–	–	–	–	1	2	–	1
Arizona	–	–	NN	–	1	–	–	–	8	13	5	–	1
Utah	1	–	30	–	–	–	–	–	–	3	–	–	–
Nevada*	–	–	–	–	–	–	–	–	–	–	–	–	–
PACIFIC	41	–	35	–	41	5	2	4	74	151	54	5	82
Washington	–	–	25	–	38	–	–	–	8	25	7	–	4
Oregon	14	–	1	–	–	1	–	1	5	12	7	–	1
California*	27	–	–	–	1	4	2	3	60	112	40	5	71
Alaska	–	–	–	–	2	–	–	–	–	1	–	–	2
Hawaii	–	–	9	–	–	–	–	–	1	1	–	–	4
Guam	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–
Puerto Rico	–	–	6	–	–	–	–	–	–	1	4	–	1
Virgin Islands	NA	NA	NA	NA	–	NA	–	–	NA	NA	NA	NA	–

NN: Not notifiable
NA: Not available
*Delayed reports: Asep. meng.: N.J. +1, Pa. –1, D.C. +47, Va. +2, La. –2, Bruc.: Ark. +1; Chickenpox: Mo. +5, Ark. –3, Calif +4; Enceph, prim.: Ark. +1,;Enceph, post.: N. Hamp. +1, Hep. B: Mo. +2, W. Va. +2, Ark. +14, La. +3, Nev. +1, Hep. A: Ohio –1, N. Dak. –1, Va. –1, W.Va. –2, Ark. –39, La. +1, Hep. unsp.: Ind. –2, Ark. +31, La. +3; Malaria: Pa. –1

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending July 30, 1977 and July 31, 1976 – 30th 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	534	51,796	33,547	21	1,147	1,026	148	14,845	51	154	18,087	30
NEW ENGLAND	5	2,459	369	1	49	47	3	620	–	12	1,174	1
Maine	–	164	6	–	3	–	–	46	–	–	69	–
New Hampshire	–	510	9	–	3	4	–	90	–	–	240	–
Vermont	–	289	32	–	4	3	1	7	–	–	64	–
Massachusetts*	3	638	35	–	16	16	–	113	–	4	371	–
Rhode Island	–	61	14	–	1	4	1	50	–	4	134	–
Connecticut	2	797	273	1	22	20	1	314	–	4	296	1
MIDDLE ATLANTIC	113	8,227	6,863	2	165	140	10	1,213	5	31	5,969	3
Upstate New York	49	3,749	2,874	–	38	57	2	272	2	29	3,348	1
New York City	19	681	435	1	41	37	–	445	2	2	303	–
New Jersey	–	193	586	1	33	19	5	339	–	–	1,775	2
Pennsylvania*	45	3,604	2,968	–	53	27	3	157	1	–	543	–
EAST NORTH CENTRAL	258	10,668	14,307	4	112	130	54	5,125	4	20	3,568	2
Ohio*	197	1,535	562	3	40	52	9	639	2	12	1,099	–
Indiana	4	4,280	3,227	–	8	6	4	285	–	1	893	1
Illinois	29	1,544	1,498	–	19	16	11	864	1	1	301	–
Michigan	5	913	5,715	1	33	47	14	1,783	1	2	896	1
Wisconsin	23	2,396	3,305	–	12	9	16	1,554	–	4	379	–
WEST NORTH CENTRAL	26	9,551	1,166	–	64	67	20	3,375	2	1	488	4
Minnesota	21	2,617	389	–	21	14	–	6	–	–	16	1
Iowa	3	4,284	37	–	5	8	1	1,246	–	–	158	–
Missouri*	2	945	17	–	26	23	15	1,072	2	–	33	2
North Dakota*	–	21	3	–	1	3	–	16	–	1	11	–
South Dakota*	–	65	4	–	4	2	–	59	–	–	17	–
Nebraska	–	192	55	–	1	4	4	67	–	–	2	–
Kansas	–	1,427	661	–	6	13	–	909	–	–	251	1
SOUTH ATLANTIC	34	4,402	2,111	6	248	202	5	664	19	5	1,572	8
Delaware*	–	23	128	–	3	6	1	113	–	–	24	–
Maryland	–	371	715	–	17	16	1	51	–	–	5	–
District of Columbia	–	4	12	–	–	2	–	5	–	–	–	–
Virginia	24	2,613	722	1	15	32	–	84	1	1	572	1
West Virginia	7	213	183	–	9	6	–	146	–	1	98	–
North Carolina	1	61	9	1	59	36	2	47	–	1	438	–
South Carolina	–	147	4	–	26	34	–	10	–	–	209	–
Georgia	2	762	1	2	41	19	1	19	18	–	49	1
Florida	–	208	337	2	78	51	–	189	–	2	177	6
EAST SOUTH CENTRAL	12	1,916	791	–	130	91	13	796	1	7	1,902	2
Kentucky	4	1,160	732	–	26	14	–	80	–	1	75	1
Tennessee	3	642	43	–	33	40	13	490	1	5	1,709	1
Alabama	–	77	–	–	47	26	–	196	–	–	109	–
Mississippi	5	37	16	–	24	11	–	30	–	1	9	–
WEST SOUTH CENTRAL	13	2,028	657	4	199	160	20	1,314	5	3	756	4
Arkansas*	–	29	–	–	9	10	3	41	–	–	3	1
Louisiana*	–	74	185	1	76	27	3	33	–	–	28	1
Oklahoma	–	54	286	–	10	18	3	458	–	2	29	–
Texas*	13	1,871	186	3	104	105	11	782	5	1	696	2
MOUNTAIN	3	2,458	4,993	–	40	30	3	578	2	–	340	1
Montana	2	1,154	202	–	2	4	–	9	–	–	14	–
Idaho	–	128	2,020	–	4	3	1	120	–	–	11	–
Wyoming	–	15	3	–	1	–	–	1	–	–	3	1
Colorado	1	497	245	–	1	5	2	252	1	–	232	–
New Mexico	–	267	15	–	17	3	–	106	1	–	11	–
Arizona	–	296	225	–	11	9	–	–	–	–	11	–
Utah	–	8	2,220	–	3	4	–	76	–	–	49	–
Nevada	–	93	63	–	1	2	–	14	–	–	9	–
PACIFIC	70	10,087	2,290	4	140	159	20	1,160	13	75	2,318	5
Washington	1	525	330	–	18	27	–	256	2	1	434	–
Oregon	3	352	150	–	11	14	4	210	4	–	103	–
California	66	9,118	1,807	4	84	101	16	650	7	16	1,430	5
Alaska	–	58	–	–	25	14	–	25	–	–	1	–
Hawaii	–	34	3	–	2	3	–	19	–	58	350	–
Guam	NA	4	12	–	–	–	NA	3	NA	NA	7	–
Puerto Rico	13	788	298	–	1	3	8	582	–	–	29	8
Virgin Islands	NA	14	9	–	–	–	NA	186	NA	NA	2	–

NA: Not available
*Delayed reports: Measles: Mass. –3, Ohio –1, Mo. –2, N. Dak. +1, S. Dak. +1, Dela. –1, Ark. +10, Tex. –1; Men. inf.: Pa. –2, Ark. +2, La. +3; Mumps: Mo. +55, Ark. +1, La. +1; Pertussis: La. –1; Rubella: Mo. +1, La. –1

Table III-Continued
Cases of Specified Notifiable Diseases: United States
Weeks Ending July 30, 1977 and July 31, 1976 — 30th Week

REPORTING AREA	TUBERCULOSIS		TULAREMIA	TYPHOID FEVER		TYPHUS-FEVER TICK-BORNE (RMSF)		VENEREAL DISEASES (Civilian Cases Only)						RABIES IN ANIMALS
								GONORRHEA			SYPHILIS (Pri. & Sec.)			
									CUMULATIVE			CUMULATIVE		
	1977	CUM. 1977	CUM. 1977	1977	CUM. 1977	1977	CUM. 1977	1977	1977	1976	1977	1977	1976	CUM. 1977
UNITED STATES	551	17,465	74	9	206	52	655	21,474	551,345	564,872	353	11,856	14,017	1,663
NEW ENGLAND	16	641	1	–	12	–	6	625	14,350	*15,232	13	492	425	27
Maine	1	46	–	–	–	–	–	34	1,021	1,304	–	14	10	23
New Hampshire	–	17	–	–	–	–	–	23	568	420	–	3	6	1
Vermont	–	24	–	–	–	–	–	15	377	381	–	6	5	–
Massachusetts	11	360	1	–	9	–	1	299	6,209	7,342	12	350	292	2
Rhode Island	–	46	–	–	2	–	3	41	1,195	1,015	–	7	15	–
Connecticut	4	148	–	–	1	–	2	213	4,980	4,770	1	112	97	1
MIDDLE ATLANTIC	46	2,747	1	3	44	–	35	1,799	55,619	64,849	52	1,648	2,356	47
Upstate New York	9	428	1	–	6	–	19	223	9,251	10,402	9	158	142	23
New York City	–	885	–	1	17	–	–	676	21,999	29,282	32	1,036	1,479	–
New Jersey	21	710	–	–	16	–	6	300	9,568	9,693	7	214	333	21
Pennsylvania	16	724	–	2	5	–	10	600	14,801	15,472	4	240	402	3
EAST NORTH CENTRAL	74	2,744	3	–	19	1	8	3,483	85,755	88,026	32	1,257	1,207	62
Ohio	11	442	1	–	7	1	5	1,327	22,721	21,397	10	289	291	–
Indiana	14	324	–	–	1	–	2	163	7,801	8,693	1	93	64	4
Illinois	35	1,082	–	–	2	–	–	947	27,697	31,264	14	674	627	19
Michigan *	11	769	–	–	9	–	1	744	19,663	18,863	6	144	161	4
Wisconsin	3	127	2	–	–	–	–	302	7,873	7,809	1	57	64	35
WEST NORTH CENTRAL	20	597	7	–	13	2	20	1,477	29,144	29,242	9	272	244	424
Minnesota	3	127	–	–	4	–	–	246	5,231	5,274	3	84	56	159
Iowa *	1	62	–	–	–	–	–	155	3,379	3,696	1	33	23	67
Missouri *	8	248	6	–	4	2	12	458	12,232	11,544	2	92	98	31
North Dakota	–	14	–	–	1	–	–	28	541	435	–	–	–	63
South Dakota	6	32	1	–	–	–	–	64	807	816	–	2	4	75
Nebraska	–	21	–	–	1	–	–	172	2,537	2,555	–	24	18	1
Kansas *	2	93	–	–	3	–	8	354	4,417	4,922	3	37	45	28
SOUTH ATLANTIC	139	3,972	9	4	37	40	377	5,551	137,320	138,917	89	3,352	4,285	169
Delaware	1	34	–	–	–	–	1	118	1,928	1,851	1	18	39	2
Maryland *	20	562	2	2	2	5	46	970	17,356	18,238	6	217	360	–
District of Columbia	4	184	–	–	1	–	–	337	9,044	9,595	17	356	344	–
Virginia *	13	458	–	1	9	14	108	444	13,895	14,936	5	328	382	2
West Virginia	4	144	–	–	3	–	3	66	1,880	1,763	–	1	18	2
North Carolina *	23	663	2	1	3	10	143	1,008	20,448	19,722	10	475	794	5
South Carolina *	1	354	2	–	–	2	37	444	12,554	13,225	1	144	225	5
Georgia	19	466	3	–	9	9	39	897	26,755	25,873	25	676	611	113
Florida	54	1,107	–	–	10	–	–	1,267	33,460	33,714	24	1,137	1,512	40
EAST SOUTH CENTRAL	74	1,561	4	–	3	8	102	1,641	48,852	49,972	10	412	561	49
Kentucky	49	390	1	–	–	–	22	126	6,683	6,299	–	50	83	16
Tennessee	15	494	3	–	1	7	69	671	19,451	19,601	6	130	198	26
Alabama *	10	412	–	–	1	–	9	426	13,407	14,414	–	73	111	7
Mississippi	–	265	–	–	1	1	2	418	9,311	9,658	4	159	169	–
WEST SOUTH CENTRAL	95	2,061	42	–	11	1	97	2,513	69,980	73,718	53	1,705	1,647	526
Arkansas *	7	243	25	–	4	–	20	319	5,375	7,039	1	38	53	79
Louisiana *	19	382	1	–	–	–	2	302	10,493	10,897	15	385	353	7
Oklahoma	2	189	7	–	1	1	56	271	6,562	6,917	3	46	63	174
Texas	67	1,247	9	–	6	–	19	1,621	47,550	48,865	34	1,236	1,178	266
MOUNTAIN	14	471	6	–	16	–	9	890	22,322	22,693	12	242	384	92
Montana	–	25	1	–	–	–	3	44	1,111	1,134	1	4	5	33
Idaho	–	23	–	–	–	–	4	41	1,048	1,199	–	5	14	–
Wyoming	–	7	1	–	–	–	2	27	544	433	–	4	3	1
Colorado	–	68	3	–	8	–	–	265	5,784	5,624	4	74	85	26
New Mexico	7	78	–	–	–	–	–	119	3,295	4,343	7	47	95	–
Arizona	7	214	1	–	4	–	–	221	6,385	6,806	–	94	140	28
Utah	–	25	–	–	4	–	–	52	1,238	1,073	–	6	16	4
Nevada	–	31	–	–	–	–	–	121	2,917	2,081	–	8	26	–
PACIFIC	73	2,671	1	2	51	–	1	3,495	88,003	82,223	83	2,476	2,908	267
Washington	NA	147	–	–	1	–	–	231	6,507	6,932	NA	106	73	2
Oregon	4	120	–	–	3	–	–	231	6,033	6,403	3	73	61	4
California	60	2,016	1	2	46	–	1	2,877	70,755	65,004	77	2,254	2,709	249
Alaska	–	35	–	–	–	–	–	93	2,843	2,283	3	19	11	12
Hawaii	9	353	–	–	1	–	–	63	1,865	1,601	–	24	54	–
Guam *	NA	34	–	NA	1	NA	–	NA	110	202	NA	1	1	–
Puerto Rico	–	200	–	–	4	–	–	43	1,831	1,593	11	321	340	39
Virgin Islands	NA	1	–	NA	–	NA	–	NA	115	151	NA	5	43	–

NA: Not available

*Delayed reports: TB: Mich –1, Iowa –3, Kans. –1, Md. –8, N. Car. –4, S. Car. –1, La. +13, Guam +2; Tularemia: Mo. +2, Ark. +4; Typhoid fever: Ark. +1; RMSF: Va. –1, La. –1; GC: La. –57 civ., –4 mil., Guam +6 civ; Syphilis: La. –4 civ., –1 mil.; An. rabies: La. +1

Table IV
Deaths in 121 United States Cities*
Week Ending July 30, 1977 — 30th 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	701	500	136	28	20	44
Boston, Mass.	197	145	26	8	10	6
Bridgeport, Conn.	47	33	8	4	1	3
Cambridge, Mass.	27	22	5	–	–	3
Fall River, Mass.	29	25	4	–	–	2
Hartford, Conn.	53	25	15	8	3	3
Lowell, Mass.	24	15	9	–	–	2
Lynn, Mass.	19	14	5	–	–	1
New Bedford, Mass.	22	18	4	–	–	1
New Haven, Conn.	53	33	14	3	1	–
Providence, R.I.	83	59	18	1	3	12
Somerville, Mass.	11	9	2	–	–	–
Springfield, Mass.	49	33	10	3	1	3
Waterbury, Conn.	38	31	7	–	–	4
Worcester, Mass.	49	38	9	1	1	4
MIDDLE ATLANTIC	3,123	1,994	773	186	84	157
Albany, N. Y.	50	34	8	1	4	1
Allentown, Pa.	13	9	3	–	–	1
Buffalo, N. Y.	81	52	23	2	3	8
Camden, N. J.	40	27	10	2	1	3
Elizabeth, N. J.	26	16	10	–	–	1
Erie, Pa.	28	20	7	–	–	4
Jersey City, N. J.	102	70	23	5	4	2
Newark, N. J.	43	21	16	4	2	1
New York City, N. Y.	1,727	1,145	377	113	42	75
Paterson, N. J.	39	23	8	5	1	5
Philadelphia, Pa.	399	222	119	32	11	19
Pittsburgh, Pa.	199	108	66	12	9	9
Reading, Pa.	31	24	6	–	–	2
Rochester, N. Y.	118	78	33	1	3	20
Schenectady, N. Y.	28	17	6	4	–	1
Scranton, Pa.	49	30	15	2	1	1
Syracuse, N. Y.	79	50	24	1	2	1
Trenton, N. J.	29	17	12	–	–	–
Utica, N. Y.	15	10	3	2	–	2
Yonkers, N. Y.	27	21	4	–	1	1
EAST NORTH CENTRAL	2,321	1,314	646	173	99	61
Akron, Ohio	65	40	15	3	6	–
Canton, Ohio	39	22	7	7	2	3
Chicago, Ill.	588	309	169	55	30	11
Cincinnati, Ohio	151	100	34	8	4	1
Cleveland, Ohio	184	95	63	17	3	4
Columbus, Ohio	129	74	36	9	5	2
Dayton, Ohio	116	76	30	4	5	5
Detroit, Mich.	312	178	92	22	12	8
Evansville, Ind.	41	33	5	1	–	6
Fort Wayne, Ind.	60	29	17	5	6	3
Gary, Ind.	19	7	4	–	–	1
Grand Rapids, Mich.	47	30	12	1	3	1
Indianapolis, Ind.	155	80	42	17	9	2
Madison, Wis.	27	15	7	–	2	1
Milwaukee, Wis.	114	70	37	3	4	8
Peoria, Ill.	36	19	9	2	3	–
Rockford, Ill.	34	17	11	5	–	1
South Bend, Ind.	56	35	16	3	1	2
Toledo, Ohio	97	50	27	11	3	2
Youngstown, Ohio	51	35	13	–	1	–
WEST NORTH CENTRAL	738	499	152	28	32	20
Des Moines, Iowa	51	38	9	1	2	–
Duluth, Minn.	28	18	3	3	3	–
Kansas City, Kans.	38	23	12	1	1	2
Kansas City, Mo.	122	80	29	2	6	–
Lincoln, Nebr.	19	16	–	2	–	3
Minneapolis, Minn.	91	65	18	3	3	3
Omaha, Nebr.	73	44	17	5	2	3
St. Louis, Mo.	200	134	42	7	11	6
St. Paul, Minn.	72	50	13	3	2	2
Wichita, Kans.	44	31	9	1	2	1
SOUTH ATLANTIC	1,090	599	318	78	42	33
Atlanta, Ga.	159	75	48	20	2	4
Baltimore, Md.	165	96	44	15	5	–
Charlotte, N. C.	50	22	18	5	4	1
Jacksonville, Fla.	80	47	24	5	1	3
Miami, Fla.	119	59	30	6	13	3
Norfolk, Va.	41	20	15	2	1	4
Richmond, Va.	76	46	24	4	1	2
Savannah, Ga.	30	24	5	–	–	5
St. Petersburg, Fla.	88	68	17	1	2	4
Tampa, Fla.	63	35	16	4	4	2
Washington, D. C.	184	84	70	16	7	5
Wilmington, Del.	35	23	7	–	2	–
EAST SOUTH CENTRAL	664	362	198	47	21	31
Birmingham, Ala.	93	47	29	8	2	4
Chattanooga, Tenn.	65	33	27	1	1	2
Knoxville, Tenn.	38	26	7	2	–	–
Louisville, Ky.	109	65	30	7	3	4
Memphis, Tenn.	138	74	43	12	4	3
Mobile, Ala.	54	23	19	7	2	2
Montgomery, Ala.	46	27	9	1	6	5
Nashville, Tenn.	121	67	34	9	3	11
WEST SOUTH CENTRAL	1,105	589	305	89	67	29
Austin, Tex.	40	28	7	1	2	2
Baton Rouge, La.	50	22	10	10	2	1
Corpus Christi, Tex.	27	12	9	2	1	–
Dallas, Tex.	155	89	33	13	14	4
El Paso, Tex.	42	22	14	1	2	3
Fort Worth, Tex.	74	43	16	2	8	2
Houston, Tex.	223	113	59	24	13	6
Little Rock, Ark.	81	44	31	3	3	5
New Orleans, La.	189	108	54	12	8	–
San Antonio, Tex.	123	57	44	10	6	2
Shreveport, La.	56	32	16	5	1	2
Tulsa, Okla.	45	19	12	6	7	2
MOUNTAIN	471	251	122	35	39	17
Albuquerque, N. Mex.	54	21	20	8	1	4
Colorado Springs, Colo.	24	14	8	–	2	3
Denver, Colo.	115	58	30	3	18	5
Las Vegas, Nev.	21	11	5	3	1	–
Ogden, Utah	12	6	1	1	1	–
Phoenix, Ariz.	116	59	31	9	11	2
Pueblo, Colo.	24	15	6	2	–	3
Salt Lake City, Utah	48	33	7	5	1	–
Tucson, Ariz.	57	34	14	4	4	–
PACIFIC	1,534	953	385	97	38	28
Berkeley, Calif.	22	16	4	2	–	–
Fresno, Calif.	73	42	18	5	3	1
Glendale, Calif.	28	19	9	–	–	1
Honolulu, Hawaii	66	36	19	3	4	–
Long Beach, Calif.	94	52	30	9	2	1
Los Angeles, Calif.	439	267	111	38	7	11
Oakland, Calif.	52	27	20	2	1	–
Pasadena, Calif.	45	36	7	–	1	–
Portland, Oreg.	117	71	25	3	10	–
Sacramento, Calif.	60	35	15	6	1	1
San Diego, Calif.	125	78	31	10	–	2
San Francisco, Calif.	137	91	30	11	1	2
San Jose, Calif.	51	31	14	1	2	2
Seattle, Wash.	141	87	37	4	5	3
Spokane, Wash.	48	34	11	2	1	1
Tacoma, Wash.	36	31	4	1	–	3
TOTAL	11,747	7,061	3,035	761	442	420
Expected Number	11,245	6,737	2,906	756	385	356

*By place of occurrence and week of filing certificate. Excludes fetal deaths.

The Morbidity and Mortality Weekly Report, circulation 67,500, 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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Pertussis — continued

complete immunization provided 62% more protection over that afforded by partial immunization.*

Reported by W Holbert, RN, N Tondreau, RN, L Lauer, DO, Bridgton, Maine; E Jones, MD, North Conway, New Hampshire; GN Bohan, MD, MPH, DeKalb County Health Dept; W Nersesian, MD, Acting State Epidemiologist, Maine Dept of Health and Welfare; J McCroan, PhD, State Epidemiologist, Georgia State Dept of Human Resources; Immunization Div, Bur of State Services; Analytical Bacteriology Br, Bacteriology Div, Bur of Laboratories; Epidemiological Investigations Laboratory Br, and Special Pathogens Br, Bacterial Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: Pertussis occurs more frequently than is generally recognized. It is often not considered in the differential diagnosis of cough (as occurred with the index case in the first outbreak) or in older children because the disease may be mild and manifested simply as a persistent cough (as in the second outbreak). Difficulties in making the diagnosis are further compounded by variation in the capability of laboratories to identify the organism by culture or FA staining.

In the Georgia outbreak the additional protection associated with up-to-date immunization (62%) was similar to that observed in a previous community outbreak in Michigan in 1962. In that outbreak, protection among immunized persons was 66% greater in those who had received their most recent shot within 3 years than in those who had received their most recent immunization 4 or more years earlier (*1*). These data reconfirm the need for the preschool DTP booster as recommended by the USPHS Advisory Committee on Immunization Practices (*2*) and the American Academy of Pediatrics (*3*) to protect children of primary school age.

References

1. Lambert HJ: Epidemiology of a small pertussis outbreak in Kent County, Michigan. Public Health Rep 80:365-369, 1965
2. MMWR 20:396-397, 1971
3. Committee on Infectious Diseases: Report of the Committee on Infectious Diseases. Evanston, American Academy of Pediatrics, 1974, p 3

*Efficacy of complete (versus partial) vaccination =

$$\frac{\text{attack rate of partially immunized} - \text{attack rate of fully immunized}}{\text{attack rate of partially immunized}}$$

International Notes

Dengue Fever — Jamaica, United States

Jamaica: According to the World Health Organization, the current outbreak of dengue fever in Jamaica (*1,2,3*) was first reported from the Kingston area. By mid-July the outbreak had gradually extended to involve at least 6 adjacent parishes. The clinical attack rate in schools and industry was 10-20%. The clinical picture has been that of classical dengue fever, with no evidence of any hemorrhagic complications.

The Jamaican health authorities have implemented extensive mosquito control operations in all areas. Assistance to the Jamaican government has been received from the Pan American Health Organization, which provided a technician and 5 ultra-low volume (ULV) applicators, and from the United States.

United States: Ohio and Indiana have now reported suspect cases of dengue fever in persons returning from Jamaica. Suspect cases have previously been identified in California, Florida, Georgia, Louisiana, Maine, Maryland, Mississippi, New York, Virginia, and the District of Columbia. The San Juan Laboratories have demonstrated diagnostic antibody rises against dengue and other flaviviruses in acute and convalescent sera from the Maryland case, involving a resident who had visited Jamaica. Similar results have previously been reported in a Tampa, Florida, resident (*3*).

Reported by the Jamaican Consulate, Miami, Florida; the World Health Organization in the Weekly Epidemiological Record 52:243, 1977; San Juan Laboratories, Bur of Laboratories, Bur of Tropical Diseases, and Viral Diseases Div, Bur of Epidemiology, CDC.

References

1. MMWR 26:225, 1977
2. MMWR 26:240, 1977
3. MMWR 26:248, 1977

Current Trends

Follow-up on Reye Syndrome — United States

From January 1 through June 30, 1977, 337 cases of suspect Reye syndrome have been reported to CDC by 40 states and the District of Columbia. Preliminary analysis reveals that 59% of 225 cases of known sex were in males; 94% of 205 cases of known race were in whites, 6% in blacks, and 1 case was in an American Indian. The mean age was 8.7 years, and the most frequent, 14. The number of reported suspect cases peaked in February at approximately the same time that influenza B isolations were being reported most frequently. Forty-nine percent of 200 children with known outcome recovered completely, 12% recovered with residual neurologic damage of varying degree, and 39% died.

Reported by Field Services Div, Bur of State Services, and Viral Diseases Div, Bur of Epidemiology, CDC.

Editorial Note: The 1977 outbreak of Reye syndrome appears to be the largest since 1973-74, when 379 cases were reported to CDC (*1*). In 1975 there were 55 reported cases, and in 1976, 94 reported cases. The mean age of cases was 10.3 years during the 1974-1976 period, and there was no difference in incidence between males and females. The case-fatality ratio of the current outbreak (39%) is similar to that observed in 1973-74, when death occurred in 41% of cases of Reye syndrome.

Reference

1. Corey L, Rubin RJ, Hattwick MAW, Noble GR, Cassidy E: A nationwide outbreak of Reye syndrome: Its epidemiologic relationship to influenza B. Am J Med 61:615-625, 1976

Results of Screening for Gonorrhea — United States 3-Month Period Ending March 31, 1977

In the 3-month period ending March 31, 1977, a total of 2,117,848 specimens were taken from women as part of gonorrhea screening programs; 89,818 (4.2%) were found to be positive. The table reflects the results of such screening by the types of health care facilities securing the specimen. Although the positivity rates were highest (17.4%) in venereal disease clinics, 90% of all tests were performed in other settings. In these settings culture-positivity rates in women ranged from 0.5% in industrial screening groups to 5.1% for women in manpower training agencies. Among 484,323 women tested by private physicians, cultures from 8,935 (1.8%) were positive.

Provisional data indicate that an additional 1,447,926 women were tested at all types of facilities in April and May 1977 or about 723,963 per month. For this period, the overall positivity rate of cultures from all sources was 4.4%.

Reported by Venereal Disease Control Div, Bur of State Services, CDC.

TABLE 1. Results of gonorrhea culture tests on females — United States, January 1977 — March 1977*

REPORTING SOURCE	NUMBER TESTED	NUMBER POSITIVE	PERCENT POSITIVE
Health Care Providers (Excluding VD Clinics)	1,891,612	50,465	2.7
Health Department Non-VD Clinic	466,232	14,261	3.1
Family Planning	333,303	9,728	2.9
Prenatal, Ob-Gyn	48,638	1,360	2.8
Cancer Detection	5,138	86	1.7
Combinations or Other	79,153	3,087	3.9
Public/Private Hospital—Outpatient	340,476	13,736	4.0
Family Planning	63,312	1,818	2.9
Prenatal, Ob-Gyn	82,195	2,520	3.1
Cancer Detection	1,998	55	2.8
Combinations or Other	192,971	9,343	4.8
Public/Private Hospital—Inpatient	15,339	348	2.3
Obstetric	965	30	3.1
Gynecologic	292	10	3.4
Combinations or Other	14,082	308	2.2
Community Health Centers	176,232	4,861	2.8
Family Planning	46,269	885	1.9
Prenatal, Ob-Gyn	13,171	313	2.4
Cancer Detection	1,725	10	0.6
Combinations or Other	115,067	3,653	3.2
Health Care Providers (Excluding VD Clinics—Con't.)			
Private Physicians	484,323	8,935	1.8
Private Family Planning Groups	242,933	3,690	1.5
Group Health Clinics	33,909	740	2.2
Student Health Centers	61,008	1,060	1.7
Manpower Training Agencies	3,369	173	5.1
Industrial Screening	593	3	0.5
Military/Dependents	18,592	475	2.6
Correctional or Detention Centers	16,470	785	4.8
Not Specified	32,136	1,398	4.4
Venereal Disease Clinics	226,236	39,353	17.4
TOTAL (All Clinics)	2,117,848	89,818	4.2

*Excludes TRUST Territories.

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