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WEEKLY REPORT

For Week Ending June 3, 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

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INTERNATIONAL NOTES

VENEZUELAN EQUINE ENCEPHALITIS – Ecuador

In mid-February 1972, an outbreak of equine encephalitis was reported from the town of Engabao, 14 kilometers north of Playas, Ecuador, South America. By mid-March, the epizootic had spread to the nearby towns of San Rafael, Tenguel, and Playas. Approximately 200 equines, mostly burros, have died so far; most were under 3 years of age.

The first human cases, at least 33, were detected in Playas by mid-March. The predominant symptoms were fever, headache, and myalgia. Four patients showed evidence of encephalitis; three were children over 3 years of age, and one was an adult male.

Ecuador has reported 21 Venezuelan equine encephalitis (VEE) virus isolations; 15 were from whole blood or pharyngeal swabs from humans, and six were from equines. All virus identifications were performed by neutralization tests using weaned mice. Serologic studies of humans and animals are being carried out using primarily the hemagglutination-inhibition test.

In April, an equine vaccination program was initiated using TC-83 vaccine obtained from Mexico. Present evidence suggests that the epizootic has been "practically controlled." Further studies are in progress.

TABLE I. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
(Cumulative totals include revised and delayed reports through previous weeks)

DISEASE	22nd WEEK ENDING		MEDIAN 1967-1971	CUMULATIVE, FIRST 22 WEEKS		
	June 3, 1972	June 5, 1971		1972	1971	MEDIAN 1967-1971
Aseptic meningitis	38	39	33	788	1,011	640
Brucellosis	5	4	4	58	60	71
Chickenpox	3,737	– – –	– – –	92,721	– – –	– – –
Diphtheria	1	1	2	47	71	71
Encephalitis, primary:						
Arthropod-borne and unspecified	14	20	17	341	470	432
Encephalitis, post-infectious	4	4	10	115	144	202
Hepatitis, serum (Hepatitis B)	133	145	78	4,016	3,641	2,196
Hepatitis, infectious (Hepatitis A)	861	990	821	24,119	26,353	20,186
Malaria	22	47	39	554	1,560	1,111
Measles (rubeola)	992	2,871	1,671	21,415	56,648	31,559
Meningococcal infections, total	28	30	36	724	1,383	1,383
Civilian	28	30	35	694	1,206	1,236
Military	–	–	3	30	177	146
Mumps	1,693	3,435	– – –	46,519	82,332	– – –
Rubella (German measles)	534	1,588	1,800	16,802	31,208	34,577
Tetanus	2	3	4	39	39	50
Tuberculosis, new active	694	– – –	– – –	13,935	– – –	– – –
Tularemia	1	6	2	43	40	52
Typhoid fever	7	4	5	124	107	107
Typhus, tick-borne (Rky. Mt. spotted fever)	20	12	13	74	47	47
Venereal Diseases:†						
Gonorrhea	12,593	11,783	– – –	286,455	257,297	– – –
Syphilis, primary and secondary	417	436	– – –	10,046	9,825	– – –
Rabies in animals	79	102	59	1,876	1,988	1,658

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	–	Poliomyelitis, total:	5
Botulism:	–	Paralytic:	5
Congenital rubella syndrome:	16	Psittacosis: . Calif. – 1	12
Leprosy:	44	Rabies in man:	1
Leptospirosis:	7	Trichinosis: Ill. – 5, N.Y.C. – 1	38
Plague:	1	Typhus, murine:	7

†Numbers for 1971 are estimated from quarterly reports to the Venereal Disease Branch, CDC

VENEZUELAN EQUINE ENCEPHALITIS – Continued

(Reported by Ernesto Gutierrez Vera, Chief, Virus Section, National Institute of Hygiene, Guayaquil, Ecuador; and the Arbovirology Unit, Laboratory Program, CDC.)

Editorial Note

In 1969, this area in Ecuador was the site of an epizootic-epidemic which eventually spread north into Central America, Mexico, and the United States. Strains of VEE virus from the 1969-1971 epizootic were type IB. The strain in this epizootic in Ecuador is unknown; however, since most affected equines have been under 3 years of age (that is, born since the 1969 outbreak), it is possible that type IB (an epidemic strain) is recurring. The endemic existence of type IB of VEE virus has not yet been shown.

EPIDEMIOLOGIC NOTES AND REPORTS

BRUCELLOSIS – Illinois

From July through October 1971, six cases of brucellosis occurred in employees at a swine slaughtering and packing plant in Illinois. Eight additional cases had been reported in the preceding 2 years, and six of these occurred between May and July 1969. Almost all patients reported having fever, chills, malaise, and generalized body aches. Four of the 14 cases were confirmed by a 4-fold or greater rise in brucella agglutination titer. In the remainder, the diagnosis was based on clinical symptoms and a single agglutination titer of ≥1:160. Nine persons were hospitalized for periods ranging from 5 to 14 days. Attack rates were highest for boxroom, shipping dock, and maintenance employees, although the majority of cases (8) occurred in workers in the kill department (Table 1).

Examination of the plant's buying and slaughtering records revealed a temporal relationship between the occurrence of human cases and reports of infected herds from the plant's principle buying area (Figures 1 and 2). There was also a temporal relationship between the appearance of human brucellosis cases and increases in the number of sows slaughtered (Figures 1 and 3).

Ten patients were interviewed regarding possible exposure to brucella outside the packing plant. None reported using unpasteurized milk, cheese, or other dairy products in the 3-year period preceding the onset of their illness. Two persons had worked previously on farms, but neither reported having had direct contact with farm animals within 12 months prior to their illness. This suggests that all patients acquired their infection as a result of exposure to infected hogs at the packing plant.

Data from patient histories ruled out ingestion of infected material at the plant as a probable source of infection.

Table 1
Brucellosis Attack Rates, by Work Department
Illinois Packing Plant – May 1969-October 1971

Department	Approximate Number of Employees in Department	Number of Cases	Attack Rate (Percent)
Kill (includes offal, casings, and USDA inspectors)	115	8	7.0
Cut (includes pork boning)	110	0	0
Rendering	7	0	0
Hog Drivers	5	0	0
Shipping Dock	14	2	14.3
Boxrooms	4	1	25.0
Engineering-Mechanical	20	3	15.0
Clean-up	10	0	0
Fill-in	30	0	0
Office, Supervisors, Foreman, etc.)	47	0	0

Figure 1
HUMAN BRUCELLOSIS CASES, BY DATE OF ONSET OF FEVER
ILLINOIS PACKING PLANT – JANUARY 1967-OCTOBER 1971

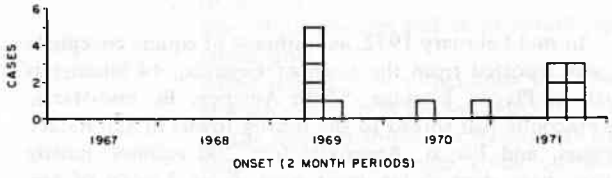


Figure 2
BRUCELLOSIS-POSITIVE SWINE HERDS IDENTIFIED IN 10-COUNTY BUYING AREA AROUND ILLINOIS PACKING PLANT
JANUARY 1967-OCTOBER 1971

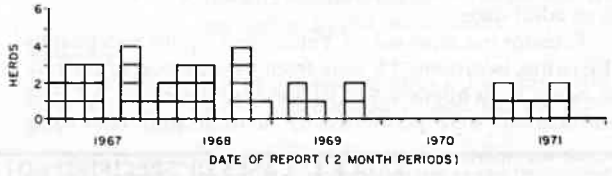
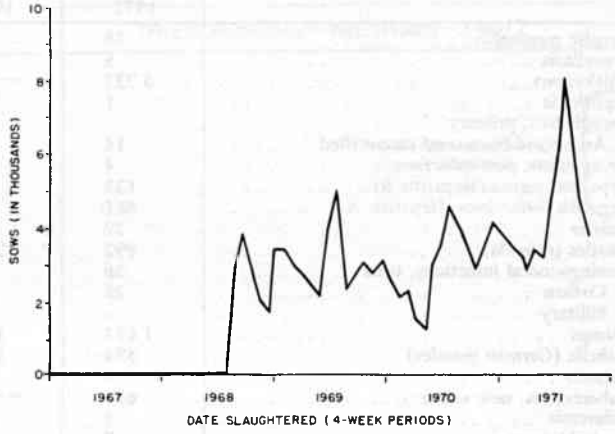


Figure 3
NUMBER OF SOWS SLAUGHTERED, BY DATE OF REPORT
ILLINOIS PACKING PLANT – JANUARY 1967-OCTOBER 1971



The distribution of cases in the plant did not indicate conjunctival contact as an important mode of transmission. Exposure of open wounds to blood and lymphatic tissue of infected carcasses, however, appeared to be a likely route of infection for many of the cases. The high attack rates among kill-department employees and among engineering and mechanical-maintenance personnel, who sharpen knives and maintain the machinery during the slaughter operation, may reflect the degree of contact these persons had with freshly killed animals and their propensity for sustaining cuts and scratches while working. Virtually all production and maintenance em-

ployees sustained frequent cuts and scratches, and first-aid treatment of these wounds was inadequate to prevent subsequent contamination.

Cases in the boxroom and shipping dock workers who had no history of frequent hand contact with fresh animal material but who passed through the kill department several times daily are more difficult to explain on the basis of contact transmission. Aerosolization of brucella organisms occurs at various stages of processing in the kill department *(1)*, for example, when using high speed electric saws and other machinery, and brucellosis is known to be transmitted via the airborne route. This route of transmission remains a possibility for the boxroom and shipping-dock workers. Airborne spread is also an alternative explanation for cases in the kill department.

(Reported by Paul Schnurrenburger, D.V.M., Chief Public Health Veterinarian, Illinois Department of Public Health; Nathan Willans, Division of Industrial Hygiene, Illinois Department of Labor; and the Bacterial Diseases Branch, Epidemiology Program, CDC.)

Editorial Note

Sows appeared to be the chief source of infection in this outbreak. Serologic surveys of hogs processed in other slaughterhouses have shown that the rate of brucella-seropositivity is at least twice as high for sows as for butcher hogs *(2)*. The greater infection rate in sows is thought to be due to their exposure to the genital route of infection by breeding with infected boars and to their longer life span with increased opportunity for oral contact with the organisms.

Although the skin-contact route and/or the airborne route appeared to be the likely modes of transmission in this outbreak, an accurate assessment of the comparative importance of these routes was not possible from the available data.

References

1. Harris MH, Hendricks SL, Gorman GW, Held JR: Isolation of *Brucella suis* from air of slaughterhouse. Public Health Rep 77:602-604, 1962

2. Hendricks SL, Hausler WJ: Prevalence of brucellosis in Iowa swine. J Am Vet Med Assoc 141:1,168-1,170, 1962

INTERNATIONAL NOTES

DENGUE – Colombia

In late 1971 and early 1972, large numbers of cases of dengue-like illness occurred in Colombia, South America. Estimates of the total number of cases have ranged as high as 700,000. The illness was characterized by fever, lassitude, pain in the back, loins, and bones, frontal headache, retro-orbital pain, and the appearance of a rash 3-4 days after onset of the above symptoms.

The disease first reached epidemic proportions in Santa Marta (Figure 4) in October 1971, and then moved south to Barranquilla in November, Cartagena in November and December, and Sahagún in late January and early February 1972. Since then, the number of cases has decreased, possibly as the result of the Colombian government's extensive mosquito control efforts.

Serologic tests performed in Colombia indicated that the most likely cause of the epidemic was dengue type 2; these results were confirmed at CDC.

(Reported by Dr. Hernando Groot, Director, Research Division, National Institute of Hygiene, Bogota, Colombia; Dr. Carlos Sanmartin, Chief, Virus Section, Dr. Pablo Barreto, Medical Epidemiologist, Dr. Ronald B. Mackenzie, Rockefeller Foundation staff member assigned to the Virus Section, Universidad del Valle, Cali, Colombia; and the Arbovirology Unit, Laboratory Program, CDC.)

Figure 4
COLOMBIA

MEASLES – United Kingdom

In 1971, a total of 213 laboratory-confirmed measles cases were reported in the United Kingdom, representing less than half the number of cases (450) reported in 1970. In 1967, 1968, and 1969, there were 163, 264, and 142 confirmed measles cases, respectively. In the period 1967-1971, the epidemiologic pattern of this disease was interrupted by widespread measles vaccination (Figure 5). Prior to vaccination on a national scale in 1968, measles had occurred in epidemics every 2 years. The number of cases has dropped considerably since 1968, although smaller bi-annual epidemics still occurred. It is probable that a significant effect on the incidence of measles will require a continuing high vaccination coverage.

The number of laboratory requests for diagnostic serology or virus isolation has apparently risen since the introduction of vaccination. This is partly accounted for by the general increase in the use of virus diagnostic facilities and partly by the investigation of cases in vaccinated children. The disease sometimes occurs in previously vaccinated children in a mild form which may resemble rubella. Such cases are likely to be investigated when there is contact with a pregnant woman.

Patients with neurological symptoms suspected of being associated with measles virus infection are quite often investigated by laboratories, and 82 such cases were reported in the last 5 years; 66 of the patients were children under 10 years

(Continued on page 192)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDING JUNE 3, 1972 AND JUNE 5, 1971 (22nd WEEK)

AREA	ASEPTIC MENINGITIS	BRUCELLOSIS	CHICKENPOX	DIPHTHERIA		ENCEPHALITIS			HEPATITIS		
						Primary including unspec. cases		Post Infectious	Serum (Hepatitis B)	Infectious (Hepatitis A)	
	1972	1972	1972	1972	Cum. 1972	1972	1971	1972	1972	1972	1971
UNITED STATES	38	5	3,737	1	47	14	20	4	133	861	990
NEW ENGLAND	–	–	693	–	–	2	3	–	5	100	74
Maine	–	–	23	–	–	–	–	–	–	33	13
New Hampshire	–	–	71	–	–	–	–	–	1	13	8
Vermont	–	–	12	–	–	–	–	–	–	3	1
Massachusetts	–	–	250	–	–	–	1	–	–	30	32
Rhode Island	–	–	191	–	–	1	2	–	1	13	9
Connecticut	–	–	146	–	–	1	–	–	3	8	11
MIDDLE ATLANTIC	3	1	207	–	1	1	2	2	37	117	157
Upstate New York	–	–	1	–	1	–	–	2	2	26	26
New York City	3	1	200	–	–	1	–	–	10	29	42
New Jersey *	–	–	NN	–	–	–	1	–	15	28	48
Pennsylvania	–	–	6	–	–	–	1	–	10	34	41
EAST NORTH CENTRAL	9	–	1,596	–	3	–	5	1	33	182	163
Ohio	3	–	450	–	–	–	4	–	10	60	28
Indiana	–	–	43	–	–	–	–	–	1	2	16
Illinois	2	–	–	–	2	–	–	1	7	44	34
Michigan	4	–	389	–	1	–	1	–	15	63	80
Wisconsin	–	–	714	–	–	–	–	–	–	13	5
WEST NORTH CENTRAL	–	3	256	–	9	–	–	–	–	26	50
Minnesota	–	–	4	–	–	–	–	–	–	3	7
Iowa	–	3	223	–	–	–	–	–	–	3	11
Missouri	–	–	1	–	–	–	–	–	–	2	8
North Dakota	–	–	7	–	–	–	–	–	–	–	4
South Dakota	–	–	–	–	6	–	–	–	–	8	3
Nebraska	–	–	11	–	3	–	–	–	–	2	3
Kansas	–	–	10	–	–	–	–	–	–	8	14
SOUTH ATLANTIC	16	–	362	–	8	4	4	–	16	124	134
Delaware	–	–	8	–	–	–	–	–	1	6	4
Maryland	–	–	50	–	–	1	1	–	6	14	16
District of Columbia	–	–	10	–	–	–	–	–	–	1	6
Virginia	1	–	32	–	–	–	–	–	1	21	30
West Virginia	–	–	239	–	–	–	–	–	–	7	5
North Carolina	1	–	NN	–	–	2	–	–	3	25	11
South Carolina	7	–	19	–	1	–	–	–	–	12	4
Georgia	–	–	4	–	2	–	–	–	–	5	8
Florida	7	–	–	–	5	1	3	–	5	33	50
EAST SOUTH CENTRAL	–	1	14	–	1	–	1	–	3	29	19
Kentucky	–	–	10	–	–	–	–	–	–	7	11
Tennessee	–	1	NN	–	–	–	1	–	1	19	5
Alabama	–	–	2	–	1	–	–	–	2	2	2
Mississippi	–	–	2	–	–	–	–	–	–	1	1
WEST SOUTH CENTRAL	3	–	16	1	21	–	4	–	6	69	118
Arkansas	–	–	2	–	–	–	1	–	–	2	9
Louisiana *	1	–	NN	–	4	–	1	–	4	7	10
Oklahoma *	–	–	3	–	–	–	2	–	–	16	8
Texas	2	–	11	1	17	–	–	–	2	44	91
MOUNTAIN	1	–	243	–	4	2	–	–	2	33	63
Montana	–	–	27	–	–	2	–	–	–	4	–
Idaho	–	–	–	–	2	–	–	–	1	3	10
Wyoming	–	–	24	–	–	–	–	–	–	1	–
Colorado	–	–	89	–	–	–	–	–	–	8	12
New Mexico	–	–	29	–	1	–	–	–	1	6	10
Arizona	1	–	59	–	1	–	–	–	–	8	21
Utah	–	–	15	–	–	–	–	–	–	2	10
Nevada	–	–	–	–	–	–	–	–	–	1	–
PACIFIC	6	–	350	–	–	5	1	1	31	181	212
Washington	–	–	296	–	–	–	–	–	–	15	19
Oregon	–	–	–	–	–	–	–	–	2	40	19
California	5	–	–	–	–	5	1	1	29	124	173
Alaska	---	---	---	---	–	---	–	---	---	---	–
Hawaii	1	–	54	–	–	–	–	–	–	2	1
Guam	–	–	–	–	–	–	---	–	–	–	---
Puerto Rico	–	–	23	–	–	–	–	–	–	12	13
Virgin Islands	–	–	–	–	–	–	–	–	–	–	–

*Delayed reports: Encephalitis, post-infectious: La. delete 1
Hepatitis B: N.J. delete 1
Hepatitis A: Okla. 4

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JUNE 3, 1972 AND JUNE 5, 1971 (22nd WEEK) – Continued

AREA	MALARIA		MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS		RUBELLA	
	1972	Cum. 1972	1972	Cumulative		1972	Cumulative		1972	Cum. 1972	1972	Cum. 1972
				1972	1971		1972	1971				
UNITED STATES	22	554	992	21,415	56,648	28	724	1,383	1,693	46,519	534	16,802
NEW ENGLAND	1	13	169	2,158	2,678	1	31	61	79	1,874	66	803
Maine	–	–	–	184	1,206	–	3	7	–	208	–	59
New Hampshire	1	3	19	186	152	–	2	8	14	149	1	31
Vermont	–	–	3	98	95	–	–	–	2	78	40	63
Massachusetts *	–	5	26	395	193	–	15	26	16	477	16	395
Rhode Island	–	–	52	419	174	1	9	2	11	324	5	69
Connecticut	–	5	69	876	858	–	2	18	36	638	4	186
MIDDLE ATLANTIC	1	38	12	788	6,282	3	85	178	88	2,138	33	1,495
Upstate New York	–	7	1	105	436	1	22	44	NN	NN	2	183
New York City	–	5	6	176	3,204	1	25	39	53	1,035	3	145
New Jersey	1	12	3	461	977	–	19	43	5	590	19	934
Pennsylvania	–	14	2	46	1,665	1	19	52	30	513	9	233
EAST NORTH CENTRAL	2	52	421	8,542	11,789	–	97	147	486	12,805	156	4,638
Ohio	1	7	8	210	3,192	–	34	40	65	1,812	7	298
Indiana	–	1	–	1,090	2,177	–	10	11	6	833	9	528
Illinois	1	19	194	3,114	2,455	–	22	44	38	2,282	25	870
Michigan	–	23	65	1,511	1,464	–	27	42	102	2,223	35	1,071
Wisconsin *	–	2	154	2,617	2,501	–	4	10	275	5,655	80	1,871
WEST NORTH CENTRAL	4	39	67	890	5,683	2	60	114	164	7,899	38	793
Minnesota	1	4	–	15	48	–	13	18	1	638	–	64
Iowa	–	3	64	633	2,134	–	2	7	87	5,547	20	363
Missouri	–	10	2	152	2,077	–	18	43	9	386	–	97
North Dakota	–	1	1	47	201	–	–	5	4	288	–	20
South Dakota	–	4	–	4	192	–	2	5	3	106	–	12
Nebraska	–	3	–	18	56	2	9	13	17	236	–	50
Kansas	3	14	–	21	975	–	16	23	43	698	18	187
SOUTH ATLANTIC	1	77	74	1,729	5,859	11	159	226	200	4,098	35	1,260
Delaware	–	–	3	20	32	–	1	2	5	52	–	5
Maryland	–	2	–	12	352	3	28	33	20	201	–	38
District of Columbia	–	1	–	2	12	3	7	8	–	7	1	4
Virginia	–	3	2	54	1,023	2	38	17	77	737	3	60
West Virginia	–	1	8	205	399	–	6	5	69	2,065	9	336
North Carolina	–	33	–	28	1,733	1	22	37	NN	NN	1	19
South Carolina	–	10	20	206	794	–	14	17	3	141	–	47
Georgia	–	19	7	131	182	–	3	20	1	2	–	33
Florida	1	8	34	1,071	1,332	2	40	87	25	893	21	718
EAST SOUTH CENTRAL	8	156	13	954	7,364	1	59	129	63	2,390	22	1,282
Kentucky	–	138	5	477	3,494	–	20	37	2	381	3	758
Tennessee	–	–	3	183	854	–	22	47	55	1,489	16	407
Alabama *	8	14	–	126	1,641	1	11	26	4	422	2	33
Mississippi	–	4	5	168	1,375	–	6	19	2	98	1	84
WEST SOUTH CENTRAL	3	63	29	1,211	11,244	5	88	116	100	3,755	33	1,192
Arkansas	1	4	–	11	671	–	7	5	4	151	–	27
Louisiana *	–	4	3	78	1,566	3	26	40	7	217	7	81
Oklahoma	–	3	–	9	729	–	6	6	–	151	1	31
Texas	2	52	26	1,113	8,278	2	49	65	89	3,236	25	1,053
MOUNTAIN	2	39	107	1,515	2,663	1	13	44	89	2,450	50	924
Montana	–	2	–	12	887	–	2	3	1	147	6	28
Idaho	–	3	1	17	221	–	3	6	4	183	12	21
Wyoming	1	1	44	45	83	–	1	2	3	217	–	6
Colorado	1	26	26	458	733	–	2	7	31	651	10	483
New Mexico	–	1	4	96	261	–	1	3	14	484	3	78
Arizona	–	5	30	735	305	–	1	8	21	628	18	286
Utah	–	1	2	152	170	1	2	12	15	95	1	19
Nevada	–	–	–	–	3	–	1	3	–	45	–	3
PACIFIC	–	77	100	3,628	3,086	4	132	368	424	9,110	101	4,415
Washington	–	–	23	854	733	–	11	17	139	3,302	29	775
Oregon	–	8	4	44	290	–	11	24	38	1,121	10	303
California	–	59	71	2,640	1,845	4	103	322	241	4,448	61	3,279
Alaska	---	2	---	5	51	---	4	–	---	92	---	15
Hawaii	–	8	2	85	167	–	3	5	6	147	1	43
Guam	–	2	–	2	---	–	6	---	–	2	–	5
Puerto Rico	–	3	16	403	240	–	3	1	24	453	–	12
Virgin Islands	–	–	–	1	5	–	2	–	–	117	–	3

*Delayed reports: Measles: Mass. delete 3, Wis. 305, Ala. 1
Mumps: La. delete 1

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES FOR WEEKS ENDING JUNE 3, 1972 AND JUNE 5, 1971 (22nd WEEK) – Continued

AREA	TETANUS	TB (New Active)	TULAREMIA		TYPHOID FEVER		TYPHUS FEVER TICK-BORNE (Rky. Mt. spotted fever)		VENEREAL DISEASES		RABIES IN ANIMALS	
									GONORRHEA	SYPHILIS (Pri. & Sec.)		
	1972	1972	1972	Cum. 1972	1972	Cum. 1972	1972	Cum. 1972	1972	1972	1972	Cum. 1972
UNITED STATES	2	694	1	43	7	124	20	74	12,593	417	79	1,876
NEW ENGLAND	–	14	–	–	–	5	–	–	368	7	2	67
Maine	–	2	–	–	–	–	–	–	10	1	–	55
New Hampshire	–	2	–	–	–	–	–	–	10	–	–	1
Vermont	–	–	–	–	–	–	–	–	23	1	1	8
Massachusetts	–	4	–	–	–	3	–	–	148	3	–	–
Rhode Island	–	1	–	–	–	–	–	–	20	–	1	1
Connecticut	–	5	–	–	–	2	–	–	157	2	–	2
MIDDLE ATLANTIC	–	106	–	1	2	27	–	3	1,742	115	–	37
Upstate New York	–	25	–	–	1	9	–	–	380	15	–	16
New York City	–	26	–	–	1	14	–	–	797	80	–	–
New Jersey	–	27	–	1	–	3	–	1	308	16	–	–
Pennsylvania	–	28	–	–	–	1	–	2	257	4	–	21
EAST NORTH CENTRAL	–	111	–	1	–	12	–	2	1,780	28	9	203
Ohio *	–	22	–	1	–	5	–	2	669	6	3	68
Indiana	–	8	–	–	–	–	–	–	190	3	1	48
Illinois	–	51	–	–	–	2	–	–	384	8	2	36
Michigan	–	21	–	–	–	4	–	–	381	7	–	2
Wisconsin	–	9	–	–	–	1	–	–	156	4	3	49
WEST NORTH CENTRAL	1	16	–	8	1	4	–	1	825	4	18	446
Minnesota	–	5	–	–	–	–	–	–	144	3	7	117
Iowa	–	–	–	–	–	–	–	–	97	–	6	124
Missouri	–	8	–	8	1	3	–	–	403	1	3	43
North Dakota	–	1	–	–	–	–	–	–	20	–	2	71
South Dakota	–	–	–	–	–	–	–	–	17	–	–	31
Nebraska	1	–	–	–	–	–	–	–	35	–	–	8
Kansas *	–	2	–	–	–	1	–	1	109	–	–	52
SOUTH ATLANTIC	–	152	–	6	–	15	16	45	3,014	141	5	157
Delaware	–	2	–	–	–	–	–	–	9	1	–	–
Maryland	–	26	–	–	–	2	3	10	293	21	–	5
District of Columbia	–	10	–	–	–	2	–	–	167	7	–	–
Virginia	–	12	–	4	–	5	3	13	306	32	2	47
West Virginia	–	7	–	–	–	1	–	–	44	2	–	36
North Carolina	–	30	–	–	–	–	9	15	689	3	–	–
South Carolina	–	–	–	–	–	1	1	5	298	26	–	–
Georgia	–	18	–	1	–	–	–	2	421	15	1	40
Florida	–	47	–	1	–	4	–	–	787	34	2	29
EAST SOUTH CENTRAL	1	57	–	3	1	12	–	8	802	15	12	410
Kentucky	–	21	–	–	–	4	–	–	133	7	5	148
Tennessee	1	5	–	2	–	3	–	7	329	7	5	217
Alabama	–	15	–	1	–	–	–	1	115	1	2	44
Mississippi *	–	16	–	–	1	5	–	–	225	–	–	1
WEST SOUTH CENTRAL	–	138	1	21	2	12	4	15	1,770	39	19	415
Arkansas	–	13	1	13	1	6	1	3	371	4	1	60
Louisiana	–	51	–	1	–	1	–	–	294	20	–	20
Oklahoma	–	7	–	4	–	1	3	10	149	2	2	180
Texas	–	67	–	3	1	4	–	2	956	13	16	155
MOUNTAIN	–	13	–	2	–	3	–	–	451	15	2	29
Montana	–	1	–	–	–	–	–	–	32	3	–	–
Idaho	–	–	–	–	–	–	–	–	36	–	–	–
Wyoming	–	1	–	–	–	–	–	–	1	1	–	–
Colorado	–	5	–	1	–	–	–	–	105	1	–	–
New Mexico	–	1	–	–	–	1	–	–	157	3	2	5
Arizona *	–	5	–	1	–	1	–	–	101	7	–	24
Utah	–	–	–	–	–	1	–	–	3	–	–	–
Nevada	–	–	–	–	–	–	–	–	16	–	–	–
PACIFIC	–	87	–	1	1	34	–	–	1,841	53	12	112
Washington	–	3	–	–	–	2	–	–	148	3	–	–
Oregon	–	7	–	–	–	–	–	–	147	–	–	–
California	–	74	–	–	1	29	–	–	1,530	49	12	108
Alaska	---	---	---	1	---	–	---	–	---	---	---	4
Hawaii	–	3	–	–	–	3	–	–	16	1	–	–
Guam	–	–	–	–	–	–	–	–	–	–	–	–
Puerto Rico	–	7	–	–	–	3	–	–	20	24	1	27
Virgin Islands	–	–	–	–	–	–	–	–	–	–	–	–

*Delayed reports: Tuberculosis: Ohio delete 2, Kans. delete 4 Syphilis: Ariz. 1
Gonorrhea: Miss. delete 9 Rabies in animals: Ariz. 2

Week No. 22

TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDING JUNE 3, 1972

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

Area	All Causes			Pneumonia and Influenza	Area	All Causes			Pneumonia and Influenza
	All Ages	65 years and over	Under 1 year	All Ages		All Ages	65 years and over	Under 1 year	All Ages
NEW ENGLAND	688	424	30	43	SOUTH ATLANTIC	960	508	52	25
Boston, Mass.	226	132	18	18	Atlanta, Ga.	82	40	4	–
Bridgeport, Conn.	27	17	2	1	Baltimore, Md.	225	116	15	3
Cambridge, Mass.	29	19	–	8	Charlotte, N. C.	51	23	8	1
Fall River, Mass.	26	21	1	–	Jacksonville, Fla.	72	43	3	2
Hartford, Conn.	62	35	–	2	Miami, Fla.	101	51	3	3
Lowell, Mass.	21	10	–	1	Norfolk, Va.	47	19	4	2
Lynn, Mass.	25	14	–	2	Richmond, Va.	83	40	1	7
New Bedford, Mass.	32	22	–	1	Savannah, Ga.	29	13	4	1
New Haven, Conn.	34	18	1	–	St. Petersburg, Fla.	85	70	1	3
Providence, R. I.	57	32	2	3	Tampa, Fla.	78	41	1	3
Somerville, Mass.	7	5	1	–	Washington, D. C.	69	37	5	–
Springfield, Mass.	53	34	3	4	Wilmington, Del.	38	15	3	–
Waterbury, Conn.	46	31	1	–					
Worcester, Mass.	43	34	1	3	EAST SOUTH CENTRAL	615	335	23	21
					Birmingham, Ala.	76	41	5	1
MIDDLE ATLANTIC	3,010	1,842	114	101	Chattanooga, Tenn.	47	23	3	–
Albany, N. Y.	55	31	1	1	Knoxville, Tenn.	28	18	–	–
Allentown, Pa.	24	15	–	3	Louisville, Ky.	113	61	4	11
Buffalo, N. Y.	132	82	7	2	Memphis, Tenn.	156	85	4	1
Camden, N. J.	38	23	2	–	Mobile, Ala.	78	39	–	3
Elizabeth, N. J.	32	21	–	1	Montgomery, Ala.	27	15	3	–
Erie, Pa.	53	33	1	3	Nashville, Tenn.	90	53	4	5
Jersey City, N. J.	69	42	5	1					
Newark, N. J.	76	29	22	5	WEST SOUTH CENTRAL	1,073	567	68	37
New York City, N. Y.†	1,552	941	51	49	Austin, Tex.	35	21	4	2
Paterson, N. J.	46	28	3	4	Baton Rouge, La.	43	28	1	5
Philadelphia, Pa.	399	236	7	6	Corpus Christi, Tex.	20	13	–	–
Pittsburgh, Pa.	100	62	4	6	Dallas, Tex.	155	77	13	–
Reading, Pa.	50	35	2	–	El Paso, Tex.	45	19	8	4
Rochester, N. Y.	106	75	–	5	Fort Worth, Tex.	70	38	3	1
Schenectady, N. Y.	21	13	1	1	Houston, Tex.	179	89	6	6
Scranton, Pa.	61	44	3	3	Little Rock, Ark.	68	33	5	–
Syracuse, N. Y.	76	48	1	3	New Orleans, La.	147	72	13	2
Trenton, N. J.	54	39	2	3	Oklahoma City, Okla.**	76	44	5	2
Utica, N. Y.	30	23	–	3	San Antonio, Tex.	117	66	6	7
Yonkers, N. Y.	36	22	2	2	Shreveport, La.	59	32	1	3
					Tulsa, Okla.	59	35	3	5
EAST NORTH CENTRAL	2,366	1,318	101	56					
Akron, Ohio	56	34	2	3	MOUNTAIN	471	262	29	21
Canton, Ohio	35	24	2	–	Albuquerque, N. Mex.	65	27	2	3
Chicago, Ill.	657	340	23	14	Colorado Springs, Colo.	24	17	–	6
Cincinnati, Ohio	114	68	2	1	Denver, Colo.	128	61	14	4
Cleveland, Ohio	178	85	21	1	Ogden, Utah	15	5	1	2
Columbus, Ohio	142	80	8	5	Phoenix, Ariz.	105	68	2	1
Dayton, Ohio	92	51	4	–	Pueblo, Colo.	19	14	1	2
Detroit, Mich.	342	182	10	11	Salt Lake City, Utah	66	42	6	2
Evansville, Ind.	34	21	–	1	Tucson, Ariz.	49	28	3	1
Flint, Mich. **	47	25	3	1					
Fort Wayne, Ind.	39	19	2	–	PACIFIC	1,313	815	49	25
Gary, Ind.	40	21	4	2	Berkeley, Calif.	21	12	–	–
Grand Rapids, Mich.	49	39	1	2	Fresno, Calif.	77	55	1	3
Indianapolis, Ind.	127	60	5	–	Glendale, Calif.	18	14	–	–
Madison, Wis.	40	21	4	5	Honolulu, Hawaii	48	26	2	1
Milwaukee, Wis.	110	78	1	–	Long Beach, Calif.	97	65	2	1
Peoria, Ill.	33	21	1	–	Los Angeles, Calif.	296	196	9	5
Rockford, Ill.	28	18	3	4	Oakland, Calif.	72	43	5	–
South Bend, Ind.	44	29	–	2	Pasadena, Calif.	23	15	–	–
Toledo, Ohio	107	73	3	3	Portland, Oreg.	102	64	3	3
Youngstown, Ohio	52	29	2	1	Sacramento, Calif.	47	27	1	–
					San Diego, Calif.	99	56	10	1
WEST NORTH CENTRAL	718	433	31	23	San Francisco, Calif.	178	109	3	5
Des Moines, Iowa	38	17	2	1	San Jose, Calif.	42	20	2	–
Duluth, Minn.	26	18	1	4	Seattle, Wash.	131	73	9	3
Kansas City, Kans.	40	17	6	–	Spokane, Wash.	42	26	2	2
Kansas City, Mo.	112	77	3	1	Tacoma, Wash.	20	14	–	1
Lincoln, Nebr.	39	25	–	4					
Minneapolis, Minn.	79	45	4	3	Total	11,214	6,504	497	352
Omaha, Nebr.	55	32	1	–					
St. Louis, Mo.	212	128	7	5	Expected Number	12,602	7,178	556	431
St. Paul, Minn.	51	36	1	3					
Wichita, Kans.	66	38	6	2	Cumulative Total (includes reported corrections for previous weeks)	290,074	170,195	11,222	12,969
Las Vegas, Nev.*	17	6	–	1					

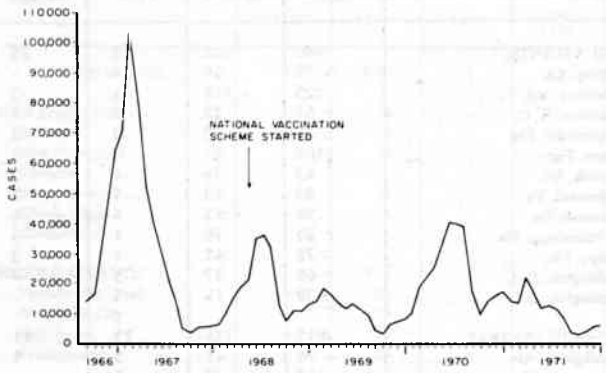
*Mortality data are being collected from Las Vegas, Nev., for possible inclusion in this table, however, for statistical reasons, these data will be listed only and not included in the total, expected number, or cumulative total, until 5 years of data are collected.

†Delayed report for week ending May 27, 1972

**Estimate based on average percent of divisional total

MEASLES – Continued

Figure 5
REPORTED CASES OF MEASLES, BY 4-WEEK PERIODS
ENGLAND AND WALES – 1966-1971



of age, and 8 were over 20 years old. Two of the patients had neuritis, and two had motor disturbances; the association of the measles virus with these symptoms is uncertain. Eleven patients experienced febrile convulsions. Of the more severe complications, there were two children in coma, both of whom recovered, 27 cases of encephalitis, and 34 patients who were thought to have had meningitis. One of the encephalitis patients, a 5-year-old girl, died, and a second death was reported in an 8-year-old boy who had sub-acute sclerosing pan-encephalitis; the measles antigen was isolated from the brain post mortem by the fluorescent antibody technique.

Although the number of notifications has dropped since the introduction of vaccination, the number of patients with neurological complications who have been investigated in the laboratory has not. There is, however, no good evidence that an increase has occurred in the incidence of neurological complications among patients with measles, but the position will be kept under observation.

(From notes based on reports to the Public Health Laboratory Service from Public Health and Hospital Laboratories in the United Kingdom and Republic of Ireland, published in the British Medical Journal, *April 15, 1972.)*

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