



# Morbidity and Mortality

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

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EPIDEMIOLOGIC NOTES AND REPORTS

IMPORTED BLOOD TRANSFUSION-INDUCED MALARIA  
Florida and California

Two cases of blood transfusion-induced *Plasmodium malariae* infections in American citizens who had been hospitalized overseas were recently reported to the NCDC. **Case 1:** On June 4, 1969, a 31-year-old woman underwent a laminectomy in Mexico City for a slipped disc. Post-operatively, she developed a wound infection and received whole blood transfusions on June 9 and 28. The wound infection did not respond to therapy, and on August 13, the day she returned to the United States, she entered a Miami hospital. Following transfer to another Miami hospital on August 24, *P. malariae* parasites were identified in a peripheral blood smear. The patient gave no history of travel to malarious areas in Mexico or elsewhere or of illicit drug usage.

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**Case 2:** A 24-year-old naturalized Philippino man with chronic glomerulonephritis received multiple blood transfusions, while visiting Manila in early 1969. On May 14, he returned to the United States. Four days later, he complained of fever and shaking chills to a physician at a hospital in San Francisco, where he was enrolled in a renal dialysis program. *P. malariae* organisms were found  
*(Continued on page 310)*

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

DISEASE	36th WEEK ENDED		MEDIAN 1964 - 1968	CUMULATIVE, FIRST 36 WEEKS		
	September 6, 1969	September 7, 1968		1969	1968	MEDIAN 1964 - 1968
Aseptic meningitis . . . . .	149	192	141	1,861	2,356	1,745
Brucellosis . . . . .	5	3	3	151	148	177
Diphtheria . . . . .	4	9	7	107	120	120
Encephalitis, primary:						
Arthropod-borne & unspecified . . . . .	44	42	49	778	793	1,176
Encephalitis, post-infectious . . . . .	1	10	10	239	369	580
Hepatitis, serum . . . . .	76	71	568	3,612	2,954	27,108
Hepatitis, infectious . . . . .	832	725		31,929	30,240	
Malaria . . . . .	50	63	9	1,925	1,513	249
Measles (rubeola) . . . . .	121	89	414	20,248	19,520	189,095
Meningococcal infections, total . . . . .	24	23	23	2,347	1,999	2,018
Civilian . . . . .	22	23	---	2,140	1,822	---
Military . . . . .	2	---	---	207	177	---
Mumps . . . . .	363	593	---	67,735	124,408	---
Poliomyelitis, total . . . . .	---	3	3	10	41	44
Paralytic . . . . .	---	3	2	9	41	41
Rubella (German measles) . . . . .	206	245	---	48,789	43,594	---
Streptococcal sore throat & scarlet fever. . . . .	4,140	4,407	4,371	301,726	300,495	300,495
Tetanus . . . . .	5	4	5	97	106	152
Tularemia . . . . .	6	1	2	103	138	138
Typhoid fever . . . . .	9	24	13	198	242	281
Typhus, tick-borne (Rky. Mt. spotted fever) . . . . .	6	10	12	359	229	217
Rabies in animals . . . . .	55	37	63	2,474	2,498	3,130

TABLE II. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax: . . . . .	3	Rabies in man: . . . . .	1
Botulism: . . . . .	11	Rubella congenital syndrome: N.J.-1 . . . . .	7
Leptospirosis: Calif.-1, Tex.-1 . . . . .	50	Trichinosis: Mass.-1, N.J.-1 . . . . .	156
Plague: . . . . .	3	Typhus, murine: . . . . .	34
Psittacosis: Minn.-1 . . . . .	29	Poliomyelitis, non-paralytic: . . . . .	1

## MALARIA - (Continued from front page)

in a peripheral blood smear. Prior to his emigration to the United States, the man had never experienced a clinical attack of malaria or resided in malarious areas of the Philippines.

Following therapy with chloroquine in standard dosage, both patients had no further evidence of malaria infection. (Reported by Mary Jo Carter, M.D., Assistant Professor

of Medicine, University of Miami School of Medicine; E. Charlton Prather, M.D., Director, Division of Epidemiology, Florida State Board of Health; James Richardson, M.D., USPHS Hospital, San Francisco; and Philip K. Condit, M.D., Chief, Bureau of Communicable Diseases, California State Department of Public Health.)

## A CASE OF TETANUS - Guam

On May 8, 1969, a 45-year-old diabetic man in Guam came to the outpatient clinic of a local hospital with complaints of a nail puncture wound, incurred 3 hours earlier, on his left foot. The wound was cleaned, and he was given tetanus toxoid and penicillin and discharged. He had no history of previous tetanus toxoid immunization. On May 13, he was admitted to the hospital because of a tickling sensation of the wound, neck stiffness, and coughing.

On physical examination, his neck was stiff but not rigid, breathing was shallow, and pathological reflexes were normal. The left heel was swollen, but no induration or crepitus was noted. He was given tetanus antitoxin in divided doses of 170,000 units daily, intravenous and oral penicillin, chlorpromazine, a muscle relaxant, and tetracycline. A white blood cell count was 13,800, but a chest X-ray, cerebrospinal fluid, and other laboratory tests taken at admission were normal. Cultures of the wound revealed coagulase negative *Staphylococcus aureus*; anaerobic culture was negative.

On May 14, 24 hours after admission, the neck stiffness was worse and difficulty in breathing was noted. On

May 15, abdominal rigidity developed. The patient was given 500 units of human tetanus immune globulin. At noon that day, his vital signs were normal, but 1 hour later, he experienced convulsions and died.

A culture of wound tissue obtained at autopsy was positive for *Clostridium tetani*.

(Reported by Olivia Cruz, M.D., Attending Physician, and the Communicable Disease Program Coordinator, Guam Department of Public Health and Social Services; and the Regional Representative, NCDC, HSMHA, PHS, DHEW, Region IX, San Francisco.)

## Editorial Comment:

Tetanus in the United States is predominantly a disease of middle-aged and elderly persons. This case stresses the need to ascertain carefully tetanus immunization history at the time of injury and to give prophylactic treatment as indicated by the immunization status (human hyperimmune globulin and/or toxoid for persons whose immunization status is not adequate according to present recommendations.)

SURVEILLANCE SUMMARY  
TETANUS - United States and Puerto Rico 1967

In 1967, a total of 263 cases of tetanus from 30 states and 39 cases from Puerto Rico were reported to the NCDC. Surveillance forms were received on 234 U.S. cases and on 32 cases from Puerto Rico.

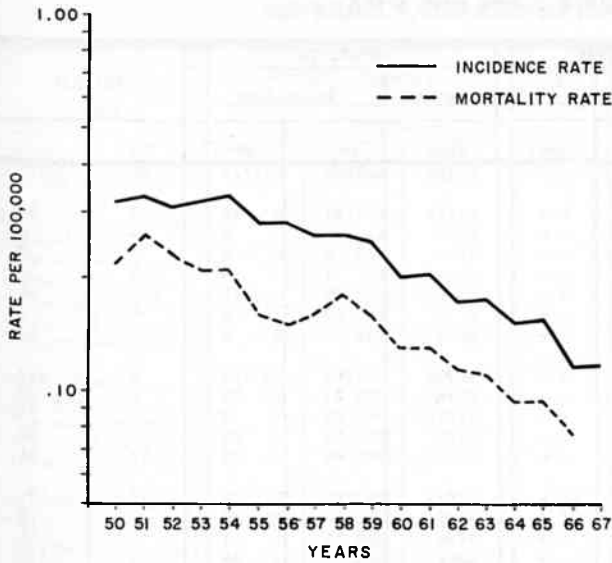
The U.S. incidence of tetanus was 0.12 cases per 100,000 population, which was essentially unchanged from the incidence reported for 1965-66 (Figure 1). There was a higher incidence in males than in females by a ratio of 3 to 2, and the disease was 5 times more common in non-whites than in whites. The peak incidence and the highest case fatality ratio occurred at the extremes of age (Figure 2), and excluding neonates, the median age of all patients was 54 years. While the overall case fatality ratio was 66.7 percent, it was 76 percent for neonates and exceeded 78 percent for the age groups 50 years and over. These case fatality ratios were similar to those from 1965-66 and were not significantly different from the case fatality ratios since 1950 (Figure 3).

The southern-most tier of states continued to have the highest incidence in the nation (Figure 4). All states that reported cases in 1967 also had cases during 1965-66; Arizona, Maryland, Nebraska, Oregon, and South Carolina reported cases in 1965-66 but not in 1967. The peak seasonal incidence of tetanus occurred from April through October, but no seasonal variation was noted in neonatal tetanus.

Lacerations and puncture wounds were the most frequent predisposing injuries in 1967 and accounted for 29.7 and 28.0 percent, respectively, of the total cases. Wounds of the feet and hands accounted for 30.6 and 22.6 percent, respectively, of all cases in which a site of injury was identified. The home was the commonest place for incurring the predisposing injury. The median incubation period for all cases was 7 days.

Presenting symptoms and clinical course were reported for 177 cases. Relatively low mortality was noted

Figure 1  
TETANUS MORBIDITY AND MORTALITY  
UNITED STATES - 1950-1967



SOURCE: MORBIDITY AND MORTALITY WEEKLY REPORT, ANNUAL SUPPLEMENTS

in patients with both trismus and local muscle spasm, while convulsions, either as a presenting symptom or developing later in the illness, were associated with a poorer prognosis.

Mortality for persons receiving no serotherapy was approximately 79 percent. Treatment with various anti-toxin preparations was associated with lower mortality.

*Clostridium tetani* was isolated from cultures taken after onset of illness in 23 of 76 cases.

Immunization data were reported for 50 patients. For 49 of these patients, there was no record of complete primary immunization; 11 of them had received single boosters

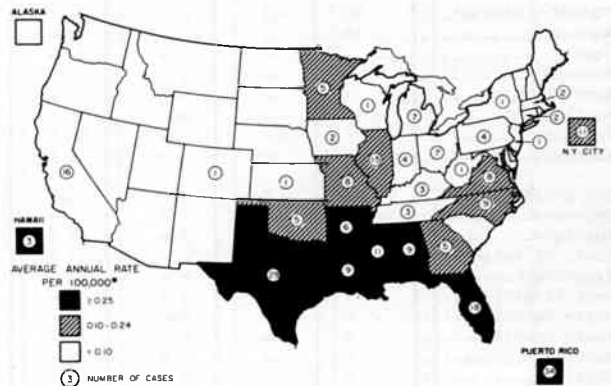
Figure 2  
TETANUS CASE FATALITY RATIO  
BY AGE GROUPS - UNITED STATES - 1967



Figure 3  
TETANUS CASE FATALITY RATIO  
UNITED STATES - 1950-1967



Figure 4  
GEOGRAPHIC DISTRIBUTION OF NON-NEONATAL TETANUS  
CASES AND INCIDENCE RATES  
UNITED STATES AND PUERTO RICO - 1967



in the 10 years preceding injury and 38 received boosters within 72 hours after injury; 35 of these 49 patients died. The one patient with a history of adequate immunization according to present standards\* recovered.

The incidence of neonatal tetanus was 0.233 cases per 100,000 live births for whites and 2.94 cases per 100,000 live births for nonwhites. All cases of neonatal tetanus except one occurred in babies delivered outside the hospital environment to mothers with no history of immunization or with a history of incomplete immunization. The one child born in a hospital, who developed tetanus, had onset 22 days after discharge, suggesting that contamination occurred in the home environment. For all but one infant, the umbilicus was identified as the site of infection. The exception was a child with extensive neonatal dermatitis which was felt to be secondarily infected.

The overall incidence in Puerto Rico was 1.4 cases per 100,000 population. Although this incidence was 10 times that of the United States, a downward trend in tetanus

(Continued on page 316)

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

FOR WEEKS ENDED  
SEPTEMBER 6, 1969 AND SEPTEMBER 7, 1968 (36th WEEK)

AREA	ASEPTIC MENIN- GITIS	BRUCEL- LOSIS	DIPHTHERIA	ENCEPHALITIS			HEPATITIS			MALARIA	
				Primary including unsp. cases		Post- Infectious	Serum	Infectious		1969	Cum. 1969
				1969	1968	1969		1969	1968		
UNITED STATES...	149	5	4	44	42	1	76	832	725	50	1,925
NEW ENGLAND.....	15	-	-	2	4	-	1	81	40	1	67
Maine*.....	-	-	-	-	-	-	-	6	6	-	6
New Hampshire.....	-	-	-	-	-	-	-	5	2	-	2
Vermont.....	-	-	-	-	-	-	-	1	-	-	-
Massachusetts.....	12	-	-	2	3	-	-	39	21	-	44
Rhode Island.....	1	-	-	-	1	-	-	30	9	-	3
Connecticut.....	2	-	-	-	-	-	1	-	2	1	12
MIDDLE ATLANTIC.....	39	1	-	7	9	-	30	162	108	3	223
New York City.....	5	-	-	-	-	-	18	23	28	-	20
New York, up-State.	5	-	-	1	1	-	1	23	8	-	33
New Jersey*.....	16	-	-	4	-	-	10	50	20	-	86
Pennsylvania.....	13	1	-	2	8	-	1	66	52	3	84
EAST NORTH CENTRAL...	26	1	-	13	8	-	11	110	72	7	199
Ohio.....	8	-	-	6	3	-	5	22	15	-	19
Indiana.....	9	-	-	-	-	-	-	11	1	-	19
Illinois.....	3	-	-	2	4	-	-	17	24	5	119
Michigan.....	6	1	-	4	1	-	6	54	27	2	41
Wisconsin.....	-	-	-	1	-	-	-	6	5	-	1
WEST NORTH CENTRAL...	18	1	-	1	11	-	2	32	39	8	135
Minnesota.....	18	-	-	-	2	-	2	4	13	-	7
Iowa.....	-	1	-	-	4	-	-	14	5	-	13
Missouri.....	-	-	-	-	1	-	-	7	17	1	36
North Dakota.....	-	-	-	-	4	-	-	-	1	-	3
South Dakota.....	-	-	-	-	-	-	-	2	-	-	-
Nebraska.....	-	-	-	-	-	-	-	2	2	-	3
Kansas.....	-	-	-	1	-	-	-	3	1	7	73
SOUTH ATLANTIC.....	19	2	2	9	-	-	8	78	78	5	514
Delaware.....	-	-	-	-	-	-	-	2	3	-	3
Maryland.....	5	-	-	2	-	-	2	13	11	-	28
Dist. of Columbia..	-	-	-	-	-	-	1	1	1	-	1
Virginia*.....	2	2	-	-	-	-	1	6	12	-	20
West Virginia*.....	3	-	-	6	-	-	-	8	14	-	-
North Carolina.....	-	-	-	-	-	-	-	2	8	-	233
South Carolina.....	8	-	-	-	-	-	-	8	5	3	47
Georgia.....	-	-	2	-	-	-	-	16	18	2	156
Florida.....	1	-	-	1	-	-	4	22	6	-	26
EAST SOUTH CENTRAL...	1	-	1	1	2	-	-	56	36	-	85
Kentucky.....	-	-	-	-	-	-	-	11	8	-	67
Tennessee.....	1	-	-	1	1	-	-	31	15	-	-
Alabama.....	-	-	1	-	-	-	-	7	4	-	16
Mississippi.....	-	-	-	-	1	-	-	7	9	-	2
WEST SOUTH CENTRAL...	8	-	1	-	2	-	2	78	52	6	111
Arkansas.....	-	-	-	-	-	-	-	-	-	-	10
Louisiana.....	4	-	-	-	2	-	2	14	13	3	40
Oklahoma.....	1	-	-	-	-	-	-	12	4	2	45
Texas.....	3	-	1	-	-	-	-	52	35	1	16
MOUNTAIN.....	4	-	-	2	-	-	2	52	35	-	121
Montana.....	3	-	-	-	-	-	-	1	6	-	3
Idaho.....	-	-	-	-	-	-	-	-	5	-	3
Wyoming.....	-	-	-	-	-	-	-	1	2	-	-
Colorado.....	1	-	-	1	-	-	1	14	14	-	102
New Mexico.....	-	-	-	1	-	-	-	7	4	-	7
Arizona.....	-	-	-	-	-	-	-	13	3	-	1
Utah.....	-	-	-	-	-	-	1	5	1	-	1
Nevada.....	-	-	-	-	-	-	-	11	-	-	4
PACIFIC.....	19	-	-	9	6	1	20	183	265	20	470
Washington.....	5	-	-	-	-	-	-	11	29	-	5
Oregon.....	-	-	-	-	-	-	3	26	22	-	9
California.....	14	-	-	9	6	1	17	146	213	20	366
Alaska.....	-	-	-	-	-	-	-	-	-	-	2
Hawaii.....	-	-	-	-	-	-	-	-	1	-	88
Puerto Rico*.....	---	---	---	---	-	---	---	---	30	---	2

\*Delayed reports: Aseptic meningitis: W.Va. delete 2

Brucellosis: Va. 6

Hepatitis, serum: N.J. delete 1

Hepatitis, infections: Me. 19, N.J. delete 2, P.R. 2

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDED  
SEPTEMBER 6, 1969 AND SEPTEMBER 7, 1968 (36th WEEK) - CONTINUED

AREA	MEASLES (Rubeola)			MENINGOCOCCAL INFECTIONS, TOTAL			MUMPS	POLIOMYELITIS			RUBELLA	
	1969	Cumulative		1969	Cumulative			1969	Total	Paralytic		
		1969	1968		1969	1968				1969		Cum. 1969
UNITED STATES...	121	20,248	19,520	24	2,347	1,999	363	-	-	9	206	
NEW ENGLAND.....	8	1,102	1,148	3	87	116	71	-	-	1	24	
Maine*.....	-	8	37	-	6	6	6	-	-	-	2	
New Hampshire.....	-	238	141	-	2	7	-	-	-	-	-	
Vermont.....	-	3	2	-	-	1	6	-	-	-	6	
Massachusetts*.....	-	214	359	1	34	63	15	-	-	-	6	
Rhode Island.....	-	23	5	-	11	8	6	-	-	-	4	
Connecticut.....	8	616	604	2	34	31	38	-	-	1	6	
MIDDLE ATLANTIC.....	21	7,475	4,006	4	387	358	38	-	-	1	10	
New York City.....	13	4,905	2,080	-	73	72	29	-	-	-	6	
New York, Up-State.....	1	596	1,217	1	72	64	NN	-	-	-	2	
New Jersey.....	4	886	599	3	158	126	9	-	-	-	1	
Pennsylvania*.....	3	1,088	110	-	84	96	NN	-	-	1	1	
EAST NORTH CENTRAL...	18	2,180	3,762	3	320	236	70	-	-	-	30	
Ohio.....	5	375	293	1	121	64	5	-	-	-	4	
Indiana.....	-	466	671	2	38	29	1	-	-	-	5	
Illinois.....	1	495	1,360	-	44	53	11	-	-	-	1	
Michigan.....	10	273	264	-	95	70	21	-	-	-	14	
Wisconsin.....	2	571	1,174	-	22	20	32	-	-	-	6	
WEST NORTH CENTRAL...	6	524	383	-	118	108	13	-	-	1	14	
Minnesota.....	1	7	16	-	25	26	-	-	-	-	1	
Iowa.....	-	329	98	-	16	6	6	-	-	-	8	
Missouri.....	1	26	81	-	51	35	3	-	-	-	2	
North Dakota.....	2	14	133	-	1	3	-	-	-	-	-	
South Dakota.....	-	3	4	-	1	5	NN	-	-	-	-	
Nebraska.....	2	138	41	-	9	6	4	-	-	-	3	
Kansas.....	-	7	10	-	15	27	-	-	-	1	-	
SOUTH ATLANTIC.....	12	2,490	1,498	3	404	403	31	-	-	1	39	
Delaware.....	-	373	16	-	8	8	-	-	-	-	-	
Maryland.....	-	75	96	-	38	32	9	-	-	-	8	
Dist. of Columbia..	-	-	6	1	9	14	-	-	-	-	-	
Virginia.....	-	883	295	-	50	35	5	-	-	-	8	
West Virginia.....	-	193	288	-	18	11	5	-	-	-	16	
North Carolina.....	1	315	282	1	68	76	NN	-	-	-	-	
South Carolina.....	-	116	12	1	56	56	5	-	-	-	4	
Georgia.....	1	2	4	-	70	81	-	-	-	-	-	
Florida.....	10	533	499	-	87	90	7	-	-	1	3	
EAST SOUTH CENTRAL...	-	107	492	2	144	183	28	-	-	1	18	
Kentucky.....	-	63	100	-	50	84	3	-	-	-	3	
Tennessee.....	-	17	62	1	54	52	24	-	-	-	13	
Alabama*.....	-	4	94	-	24	26	1	-	-	1	1	
Mississippi.....	-	23	236	1	16	21	-	-	-	-	1	
WEST SOUTH CENTRAL...	40	4,496	4,779	4	320	302	46	-	-	4	35	
Arkansas.....	-	16	2	-	30	20	-	-	-	-	-	
Louisiana.....	-	120	23	2	85	86	-	-	-	-	-	
Oklahoma.....	-	136	117	-	30	50	-	-	-	-	-	
Texas.....	40	4,224	4,637	2	175	146	46	-	-	4	35	
MOUNTAIN.....	9	852	977	-	43	30	24	-	-	-	17	
Montana.....	1	17	58	-	8	3	2	-	-	-	-	
Idaho.....	-	89	20	-	8	11	-	-	-	-	-	
Wyoming.....	-	-	51	-	-	1	-	-	-	-	1	
Colorado.....	-	140	501	-	7	10	-	-	-	-	7	
New Mexico.....	1	245	102	-	6	-	12	-	-	-	4	
Arizona.....	6	351	219	-	10	1	8	-	-	-	5	
Utah.....	1	9	21	-	2	1	2	-	-	-	-	
Nevada.....	-	1	5	-	2	3	-	-	-	-	-	
PACIFIC.....	7	1,022	2,475	5	524	263	42	-	-	-	19	
Washington.....	-	59	515	-	54	38	1	-	-	-	5	
Oregon.....	-	198	511	-	15	21	3	-	-	-	2	
California.....	7	719	1,412	5	434	190	35	-	-	-	8	
Alaska.....	-	8	2	-	11	2	-	-	-	-	2	
Hawaii.....	-	38	35	-	10	12	3	-	-	-	2	
Puerto Rico.....	---	1,437	403	---	19	19	---	---	---	-	---	

\*Delayed reports: Measles: Mass. delete 4  
Meningococcal infections: Ala. 1  
Mumps: Me. 4  
Rubella: Me. 2, Pa. 2

TABLE III. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES  
FOR WEEKS ENDED  
SEPTEMBER 6, 1969 AND SEPTEMBER 7, 1968 (36th WEEK) - CONTINUED

AREA	STREPTOCOCCAL SORE THROAT & SCARLET FEVER	TETANUS		TULAREMIA		TYPHOID FEVER		TYPHUS FEVER TICK-BORNE (Rky. Mt. Spotted)		RABIES IN ANIMALS	
		1969	Cum. 1969	1969	Cum. 1969	1969	Cum. 1969	1969	Cum. 1969	1969	Cum. 1969
UNITED STATES...	4,140	5	97	6	103	9	198	6	359	55	2,474
NEW ENGLAND.....	555	-	-	-	14	1	9	-	-	2	20
Maine*.....	13	-	-	-	-	-	1	-	-	-	6
New Hampshire.....	12	-	-	-	-	-	-	-	-	-	4
Vermont.....	23	-	-	-	14	-	-	-	-	-	2
Massachusetts.....	46	-	-	-	-	1	6	-	-	-	1
Rhode Island.....	69	-	-	-	-	-	1	-	-	-	-
Connecticut.....	392	-	-	-	-	-	1	-	-	2	7
MIDDLE ATLANTIC.....	82	-	13	-	4	1	21	-	40	5	142
New York City.....	4	-	6	-	1	-	10	-	-	-	-
New York, Up-State.....	50	-	3	-	3	-	5	-	6	5	134
New Jersey.....	NN	-	2	-	-	1	2	-	12	-	-
Pennsylvania.....	28	-	2	-	-	-	4	-	22	-	8
EAST NORTH CENTRAL...	159	-	12	-	10	-	21	-	2	8	176
Ohio.....	37	-	1	-	-	-	8	-	-	7	57
Indiana*.....	38	-	-	-	1	-	-	-	-	-	45
Illinois.....	8	-	7	-	3	-	9	-	2	-	28
Michigan.....	38	-	4	-	-	-	4	-	-	-	6
Wisconsin.....	38	-	-	-	6	-	-	-	-	1	40
WEST NORTH CENTRAL...	292	-	7	-	13	-	8	-	8	7	457
Minnesota.....	10	-	2	-	-	-	3	-	-	3	121
Iowa.....	50	-	-	-	-	-	-	-	7	1	65
Missouri.....	2	-	1	-	9	-	3	-	-	1	118
North Dakota.....	111	-	-	-	-	-	-	-	-	2	58
South Dakota.....	2	-	-	-	-	-	-	-	1	-	24
Nebraska.....	59	-	-	-	1	-	1	-	-	-	12
Kansas.....	58	-	4	-	3	-	1	-	-	-	59
SOUTH ATLANTIC.....	519	-	18	-	20	-	31	4	195	12	624
Delaware.....	-	-	-	-	-	-	2	-	3	-	-
Maryland.....	41	-	1	-	-	-	4	-	42	-	3
Dist. of Columbia..	-	-	2	-	-	-	1	-	-	-	-
Virginia.....	102	-	-	-	4	-	-	1	57	3	315
West Virginia.....	151	-	1	-	2	-	1	-	5	-	93
North Carolina.....	NN	-	2	-	5	-	6	1	47	-	4
South Carolina.....	60	-	1	-	2	-	1	2	29	-	-
Georgia.....	16	-	2	-	3	-	9	-	12	3	65
Florida.....	149	-	9	-	4	-	7	-	-	6	144
EAST SOUTH CENTRAL...	864	1	16	2	11	5	28	2	53	3	349
Kentucky.....	102	-	6	-	-	-	3	-	8	1	181
Tennessee.....	601	-	4	2	10	1	18	1	39	1	116
Alabama.....	76	1	5	-	-	3	4	-	4	-	46
Mississippi.....	85	-	1	-	1	1	3	1	2	1	6
WEST SOUTH CENTRAL...	497	1	18	1	18	-	22	-	42	13	348
Arkansas*.....	1	-	1	-	1	-	10	-	7	-	25
Louisiana.....	-	1	7	-	4	-	3	-	-	-	26
Oklahoma.....	11	-	1	1	7	-	-	-	28	2	50
Texas.....	485	-	9	-	6	-	9	-	7	11	247
MOUNTAIN.....	847	1	4	1	11	-	23	-	14	3	111
Montana.....	34	-	1	-	-	-	1	-	-	-	-
Idaho.....	79	-	-	-	-	-	3	-	4	-	-
Wyoming.....	12	-	-	-	2	-	5	-	-	1	52
Colorado.....	424	-	2	-	-	-	3	-	8	-	3
New Mexico.....	216	-	-	-	1	-	5	-	-	1	15
Arizona.....	65	1	1	-	-	-	5	-	-	-	22
Utah.....	17	-	-	1	8	-	-	-	2	-	5
Nevada.....	-	-	-	-	-	-	1	-	-	1	14
PACIFIC.....	325	2	9	2	2	2	35	-	5	2	247
Washington.....	64	-	1	2	2	-	2	-	3	-	4
Oregon.....	57	-	-	-	-	-	6	-	-	-	3
California.....	---	2	8	-	-	2	27	-	2	2	240
Alaska.....	20	-	-	-	-	-	-	-	-	-	-
Hawaii.....	184	-	-	-	-	-	-	-	-	-	-
Puerto Rico.....	---	---	5	---	-	---	6	---	-	---	20

\*Delayed reports: SST: Me. 5

Rabies in animals: Ind. delete 1, Ark. 1

Week No.  
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TABLE IV. DEATHS IN 122 UNITED STATES CITIES FOR WEEK ENDED SEPTEMBER 6, 1969

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

Area	All Causes		Pneumonia and Influenza All Ages	Under 1 year All Causes	Area	All Causes		Pneumonia and Influenza All Ages	Under 1 year All Causes
	All Ages	65 years and over				All Ages	65 years and over		
NEW ENGLAND:	690	406	38	32	SOUTH ATLANTIC:	969	496	21	41
Boston, Mass.-----	229	123	15	15	Atlanta, Ga.-----	119	50	1	5
Bridgeport, Conn.-----	41	27	5	2	Baltimore, Md.-----	182	96	3	7
Cambridge, Mass.-----	31	20	4	3	Charlotte, N. C.-----	52	25	1	4
Fall River, Mass.-----	28	16	1	—	Jacksonville, Fla.-----	51	22	2	4
Hartford, Conn.-----	59	33	1	2	Miami, Fla.-----	82	45	—	3
Lowell, Mass.-----	26	17	—	—	Norfolk, Va.-----	51	23	—	1
Lynn, Mass.-----	16	11	—	1	Richmond, Va.-----	74	40	2	4
New Bedford, Mass.-----	21	14	—	1	Savannah, Ga.-----	29	17	1	—
New Haven, Conn.-----	48	32	—	1	St. Petersburg, Fla.-----	65	54	4	1
Providence, R. I.-----	60	31	3	4	Tampa, Fla.-----	55	32	3	1
Somerville, Mass.-----	11	8	1	—	Washington, D. C.-----	164	74	4	9
Springfield, Mass.-----	36	19	3	1	Wilmington, Del.-----	45	18	—	2
Waterbury, Conn.-----	27	15	1	2	EAST SOUTH CENTRAL:	555	292	18	26
Worcester, Mass.-----	57	40	4	—	Birmingham, Ala.-----	64	31	—	9
MIDDLE ATLANTIC:	2,985	1,747	111	133	Chattanooga, Tenn.-----	44	26	2	1
Albany, N. Y.-----	52	27	1	4	Knoxville, Tenn.-----	27	13	—	—
Allentown, Pa.-----	35	18	1	2	Louisville, Ky.-----	116	60	9	3
Buffalo, N. Y.-----	142	82	4	6	Memphis, Tenn.-----	125	70	1	3
Camden, N. J.-----	46	32	2	4	Mobile, Ala.-----	46	23	4	7
Elizabeth, N. J.-----	26	11	3	4	Montgomery, Ala.-----	32	11	—	1
Erie, Pa.-----	51	24	4	4	Nashville, Tenn.-----	101	58	2	2
Jersey City, N. J.-----	63	38	2	2	WEST SOUTH CENTRAL:	1,008	507	27	77
Newark, N. J.-----	54	27	3	4	Austin, Tex.-----	26	17	5	—
New York City, N. Y.-----	1,482	843	48	60	Baton Rouge, La.-----	27	13	—	—
Paterson, N. J.-----	35	21	4	3	Corpus Christi, Tex.-----	17	13	—	—
Philadelphia, Pa.-----	395	242	5	14	Dallas, Tex.-----	143	61	2	17
Pittsburgh, Pa.-----	187	98	9	12	El Paso, Tex.-----	35	14	1	4
Reading, Pa.-----	44	29	—	1	Fort Worth, Tex.-----	57	34	4	4
Rochester, N. Y.-----	123	83	6	6	Houston, Tex.-----	175	73	3	12
Schenectady, N. Y.-----	32	22	5	—	Little Rock, Ark.-----	40	18	2	1
Scranton, Pa.-----	38	27	5	2	New Orleans, La.-----	177	84	2	22
Syracuse, N. Y.-----	82	59	—	3	Oklahoma City, Okla.-----	74	41	2	4
Trenton, N. J.-----	42	27	1	1	San Antonio, Tex.-----	127	68	1	7
Utica, N. Y.-----	28	18	1	—	Shreveport, La.-----	54	36	3	2
Yonkers, N. Y.-----	28	19	7	1	Tulsa, Okla.-----	56	35	2	4
EAST NORTH CENTRAL:	2,381	1,339	91	111	MOUNTAIN:	410	234	9	23
Akron, Ohio-----	57	35	—	2	Albuquerque, N. Mex.-----	34	16	2	1
Canton, Ohio-----	37	16	1	5	Colorado Springs, Colo.-----	26	10	2	4
Chicago, Ill.-----	678	373	29	27	Denver, Colo.-----	84	59	1	—
Cincinnati, Ohio-----	164	87	3	9	Ogden, Utah-----	22	8	—	5
Cleveland, Ohio-----	208	118	4	5	Phoenix, Ariz.-----	134	79	1	7
Columbus, Ohio-----	99	47	7	5	Pueblo, Colo.-----	11	8	—	1
Dayton, Ohio-----	81	46	1	2	Salt Lake City, Utah-----	46	28	1	2
Detroit, Mich.-----	299	160	6	16	Tucson, Ariz.-----	53	26	2	3
Evansville, Ind.-----	40	29	2	1	PACIFIC:	1,318	782	25	60
Flint, Mich.-----	27	14	1	4	Berkeley, Calif.-----	25	15	—	1
Fort Wayne, Ind.-----	30	19	1	2	Fresno, Calif.-----	47	24	2	1
Gary, Ind.-----	31	16	4	—	Glendale, Calif.-----	10	4	—	—
Grand Rapids, Mich.-----	77	55	10	2	Honolulu, Hawaii-----	42	20	2	3
Indianapolis, Ind.-----	137	83	2	11	Long Beach, Calif.-----	83	53	1	4
Madison, Wis.-----	34	18	6	3	Los Angeles, Calif.-----	334	203	6	17
Milwaukee, Wis.-----	129	72	—	9	Oakland, Calif.-----	80	47	3	3
Peoria, Ill.-----	41	23	1	2	Pasadena, Calif.-----	33	27	—	1
Rockford, Ill.-----	34	19	4	2	Portland, Oreg.-----	108	68	3	3
South Bend, Ind.-----	45	23	2	—	Sacramento, Calif.-----	58	38	1	2
Toledo, Ohio-----	70	44	6	3	San Diego, Calif.-----	100	50	2	7
Youngstown, Ohio-----	63	42	1	1	San Francisco, Calif.-----	157	102	—	4
WEST NORTH CENTRAL:	687	419	25	31	San Jose, Calif.-----	36	17	1	2
Des Moines, Iowa-----	33	23	1	1	Seattle, Wash.-----	118	62	3	7
Duluth, Minn.-----	19	14	6	—	Spokane, Wash.-----	46	27	—	4
Kansas City, Kans.-----	28	18	—	2	Tacoma, Wash.-----	41	25	1	1
Kansas City, Mo.-----	122	76	3	7	Total	11,003	6,222	365	534
Lincoln, Nebr.-----	23	14	4	1	Expected Number	11,752	6,700	341	520
Minneapolis, Minn.-----	111	76	3	5	Cumulative Total (includes reported corrections for previous weeks)	470,908	269,968	22,314	1,984
Omaha, Nebr.-----	48	28	—	2	Las Vegas, Nev.*	18	10	2	1
St. Louis, Mo.-----	203	111	4	8					
St. Paul, Minn.-----	61	37	—	5					
Wichita, Kans.-----	39	22	4	—					

\*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.

## TETANUS - (Continued from page 311)

in Puerto Rico has been apparent since 1961 (Table 1). Of the 39 cases, 31 were in males and the median age was 54 years. The greatest number of cases occurred from February through July, a seasonal trend which might be related to greater outdoor activity during the sugar cane production season.

Table 1  
Incidence of Tetanus in Puerto Rico, 1961-67

Year	Number of Reported Cases	Incidence per 100,000
1961	193	8.0
1962	194	7.7
1963	189	7.5
1964	179	6.9
1965	70	2.7
1966	59	2.2
1967	39	1.4

(Reported by the Special Pathogens Section, Bacterial Diseases Branch, and the Statistical Services Activity, Epidemiology Program, NCDC.)

A copy of the report from which these data were derived is available on request from

National Communicable Disease Center  
Attn: Chief, Special Pathogens Section,  
Bacterial Diseases Branch, Epidemiology Program  
Atlanta, Georgia 30333

\*Recommendations of the PHS Advisory Committee on Immunization Practices - Diphtheria, Tetanus, and Pertussis Vaccines (MMWR, Vol. 15, No. 48).

**Primary Immunization**

**Children 2 months through 6 years** (Ideally beginning at age 2-3 months or at the time of a 6-week "check-up" if such timing is an established routine.)

DTP - The recommended single dose given intramuscularly on *three* occasions at 4-6 week intervals with a reinforcing dose approximately one year after the third injection.

**Adults and children over 6 years**

TD\* - The recommended single dose given intramuscularly or subcutaneously on *two* occasions at 4-6 week intervals with a reinforcing dose approximately one year after the second.

**Booster Immunization**

**Children 3 through 6 years**, (Preferably at time of school entrance, kindergarten or elementary school.)

DTP - The recommended single dose intramuscularly.

**Thereafter and for all other individuals**

TD\* - The recommended single dose intramuscularly or subcutaneously every 10 years. (When administered as part of wound management - see specific recommendations - a 10-year interval is determined from that date). More frequent routine booster doses are not indicated and may be associated with increased reactions.

\*TD is considered the agent of choice for immunization at ages over 6 years on the basis of data regarding its effectiveness in primary immunization of older children and adults and because of increasing reactions to full doses of diphtheria toxoid with age. The use of this preparation obviates the need for Schick or Moloney testing prior to immunization.

**ERRATUM, Vol. 18, No. 35, p. 308**

In the article, "International Notes, Quarantine-Exempt Areas," Mexico should not be included as a quarantine-exempt area. Persons traveling between the United States and Mexico are exempt from smallpox vaccination, provided they visited only these two countries during the preceding 14 days.

THE MORBIDITY AND MORTALITY WEEKLY REPORT, WITH A CIRCULATION OF 18,500 IS PUBLISHED AT THE NATIONAL COMMUNICABLE DISEASE CENTER, ATLANTA, GEORGIA.

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IN ADDITION TO THE ESTABLISHED PROCEDURES FOR REPORTING MORBIDITY AND MORTALITY, THE NATIONAL COMMUNICABLE DISEASE CENTER WELCOMES ACCOUNTS OF INTERESTING OUTBREAKS OR CASE INVESTIGATIONS WHICH ARE OF CURRENT INTEREST TO HEALTH OFFICIALS AND WHICH ARE DIRECTLY RELATED TO THE CONTROL OF COMMUNICABLE DISEASES. SUCH COMMUNICATIONS SHOULD BE ADDRESSED TO:

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NOTE: THE DATA IN THIS REPORT ARE PROVISIONAL AND ARE BASED ON WEEKLY TELEGRAMS TO THE NCDC BY THE INDIVIDUAL 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.

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