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STUDIES OF THE ACUTE DIARRHEAL DISEASES [1] [2]

X C. FURTHER CULTURAL OBSERVATIONS ON THE RELATIVE EFFICACY OF SULFONAMIDES IN *SHIGELLA* INFECTIONS

By Albert V. Hardy, *Surgeon, (R) United States Public Health Service*

Observations on 501 individuals treated for shigellosis in New York State institutions in 1942 have been reported *(1)*. Two absorbed and two poorly absorbed sulfonamides were used in that study. During the following 18 months, 1,423 [3] additional infected individuals were studied similarly. In this study 10 sulfonamides, some in varying dosages, were tested.

The methods previously described were continued. Cases of acute diarrhea were reported and cultured promptly; carriers were discovered by cultural surveys. Fecal specimens were obtained by rectal swabs, and plates of S. S. (*Shigella-Salmonella*) agar were inoculated directly. There was ordinarily one pretreatment culture in cases and two or more in carriers. Those receiving medication were cultured daily except when treatment was given "prophylactically" to all in a group. Post-treatment cultures were obtained; in some groups these were taken repeatedly throughout a prolonged period. The number of suspicious colonies per petri plate was determined and recorded. At least one isolation from each individual was studied both culturally and serologically. In cases showing successive positive tests on the same individual, the cultures with a "positive" reaction on Kligler's tubes were usually identified by serological tests only.

Medication was dispensed in individual envelopes or boxes bearing the patient's name and directions as to dosage. The preparations used in a particular outbreak were given in rotation insofar as practicable. The amount of the respective sulfonamides administered daily, as shown in the tables, was divided into four equal doses, usually given at 7 a. m., 12 noon, 5 p. m., and 10 p. m., with variations to adjust to the daily schedule of the institution. The initial dose was twice the maintenance dose. Children under 75 pounds

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[2] The work described in this paper was done under a transfer of funds recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the National Institute of Health.

[3] This total does not include 16 control cases shown in tables 5 and 6.

were given one-half of the stated amounts. There were no infants in this series.

Findings are given in six tables. These show the average colony counts and the percent of individuals with persisting positive cultures for Flexner, Schmitz, and Sonne varieties of infection, respectively.

TABLE 1.—*Average colony counts [1] per S. S. agar plate in Flexner infections before and during treatment with different sulfonamides*

Type of Flexner	Treatment: Sulfonamide used	Treatment: Daily dosage (gm.)	Number treated	Day treatment started	Average colony count [1]: Day of treatment 1	2	3	4	5	6	7	8	9	10	11
W	Diazine	4	27	264	98	51	2	0	0	[2]0	----	----	----	----	----
W	Pyrazine	4	28	238	71	6	6	1	0	0	0	----	----	----	----
W	Merazine	4	21	369	118	6	1	.3	0	0	0	----	----	----	----
W	Methazine	4	20	320	151	32	15	1	0	0	0	----	----	----	----
W	Diazine	2	15	608	220	98	4	0	0	0	----	----	----	----	----
W	Pyrazine	2	12	233	114	12	.2	0	0	0	----	----	----	----	----
W	Merazine	2	13	373	126	17	0	0	0	----	----	----	----	----	----
W	Methazine	2	10	430	195	36	23	0	0	0	----	----	----	----	----
W	Diazine	2	28	319	----	4	----	1	----	----	0	----	0	----	----
W	Thiazole	2	7	325	----	----	0	----	0	----	----	----	0	----	----
W	Pyrazine	1	45	243	----	12	----	0	----	0	----	0	----	----	----
W	Diazine	([3])	25	304	88	2	.5	0	0	0	----	----	----	----	----
W	Diazine	([4])	21	251	101	2	5	2	3	0	0	0	----	----	----
Z	Diazine	([3])	50	265	81	51	1	0	0	.3	0	0	0	----	----
Z	Diazine [5]	([3])	15	245	6	10	.4	.3	0	0	0	0	.3	1	0
Z	Diazine	([3])	30	215	60	.4	1.6	0	.1	.6	.8	27.6	[6]22.1	----	----
Newcastle	Diazine	([4])	15	329	----	5	----	0	----	0	----	0	----	----	----

[1] Suspicious colorless colonies of which the picked representative proved to be *Shigella*. The averages are computed on the basis of all individuals in the respective series. Plates having more than 1,000 colonies were recorded as 1,000.
[2] Follow-up cultures were also taken from 7 to 14 days following the third consecutive negative test.
[3] Total dosage 4 gm. in 3 days (first dose 2 gm. and then 1 dose of 1 gm. for 2 days).
[4] 1 dose only of 2 gm.
[5] Enteric coated (Lederle).
[6] Retreatment of positive cases started.

TABLE 2.—*Percentage of individuals with persisting positive cultures in Flexner infections treated with different sulfonamides*

Type of Flexner	Treatment: Sulfonamide used	Treatment: Daily dosage (gm.)	Number treated	Percentage with persisting positive cultures by day of treatment: 0	1	2	3	4	5	6	7	8	9	10	11
W	Diazine	4	27	100	63	30	11	0	0	0	----	----	----	----	----
W	Pyrazine	4	28	100	64.3	17.6	10.7	7.1	0	0	0	----	----	----	----
W	Merazine	4	21	100	66.6	28.6	23.8	9.5	0	0	0	----	----	----	----
W	Methazine	4	20	100	65.0	40.0	20.0	5.0	0	0	0	----	----	----	----
W	Diazine	2	15	100	86.7	53.4	26.7	0	0	0	----	----	----	----	----
W	Pyrazine	2	12	100	75.0	58.3	8.3	0	0	0	----	----	----	----	----
W	Merazine	2	13	100	61.5	30.8	0	0	0	----	----	----	----	----	----
W	Methazine	2	10	100	90.0	60.0	30.0	0	0	0	----	----	----	----	----
W	Diazine	2	28	100	----	21.3	----	3.6	0	----	0	----	0	0	----
W	Thiazole	2	7	100	----	----	0	----	0	----	----	----	0	0	----
W	Pyrazine	1	45	100	----	26.7	----	0	0	0	----	0	----	----	----
W	Diazine	([3])	25	100	44.0	4	4	0	0	0	----	----	----	----	----
W	Diazine	([4])	21	100	38.1	14.3	4.8	4.8	4.8	0	0	0	----	----	----
Z	Diazine	([3])	50	100	48	28.0	10.0	4.0	4.0	4.0	0	0	0	0	----
Z	Diazine [5]	([3])	15	100	46.7	26.7	13.3	13.3	6.7	6.7	6.7	6.7	6.7	6.7	0
Z	Diazine	([3])	30	100	56.7	43.3	26.7	20.0	16.7	16.7	13.3	10.0	[6]10.0	----	----
Newcastle	Diazine	([4])	15	100	----	33.0	----	0	----	0	----	0	----	----	----

See table 1 for footnotes.

There were 382 Flexner cases or carriers of the W, Z, and Newcastle types of organisms. Absorbed sulfonamides only were used. All were highly effective. The last positive cultures were obtained on the fourth day of treatment except in cases given reduced dosage. Even here, from the third day of treatment few organisms were being excreted.

There were 2 Schmitz outbreaks in which 206 and 40 cases respectively were treated. These pathogens disappeared from the stools a little more slowly than the Flexner organisms. There was a relatively poor response to sulfathiazole, sulfaguanidine, and to small doses of sulfathaladine.

TABLE 3.—*Average colony counts [1] per S. S. agar plate in Schmitz infections before and during treatment with different sulfonamides*

Treatment		Number treated	Average colony counts [1]										
Sulfonamide used	Daily dosage (gm.)		Day treatment started	Day of treatment									
				1	2	3	4	5	6	7	8	9	10
Diazine	4	24	585	151	140	10	0.7	0.3	0	0.1	0	0	[2] 0
Pyrazine	4	28	463	149	53	.7	.6	3	0	0	0	-----	-----
Merazine	4	29	231	34	70	47	14	.1	.4	0	0	0	-----
Methazine	4	24	425	202	103	2	0	.1	0	0	0	-----	-----
Thiazole	4	31	425	240	112	76	45	41	.4	.3	0	.1	0
Guanidine	20	29	340	134	131	58	44	40	17	0	0	0	-----
Suxidine	20	17	380	108	39	15	1	0	-----	0	-----	-----	-----
Thaladine	10	24	411	196	101	22	13	.3	0	0	0	-----	-----
Thaladine	1	40	521	-----	-----	13	-----	15	-----	26	-----	-----	.7

See table 1 for footnotes.

TABLE 4.—*Percentage of individuals with persisting positive cultures in Schmitz infections treated with different sulfonamides*

Treatment		Number treated	Percentage with persisting positive cultures by day of treatment										
Sulfonamide used	Daily dosage (gm.)		0	1	2	3	4	5	6	7	8	9	10
Diazine	4	24	100	83.3	66.7	33.3	16.7	12.5	4.1	4.1	0	0	[2] 0
Pyrazine	4	28	100	78.6	39.3	14.3	14.3	7.1	0	0	0	-----	-----
Merazine	4	29	100	75.9	51.7	27.6	17.2	13.8	3.4	0	0	0	-----
Methazine	4	24	100	66.7	50.0	29.2	8.3	8.3	0	0	0	-----	-----
Thiazole	4	31	100	77.4	64.5	41.9	29.0	22.6	12.9	12.9	3.2	3.2	0
Guanidine	20	29	100	79.3	48.3	24.1	17.2	13.8	6.9	0	0	0	-----
Suxidine	20	17	100	82.3	64.7	29.4	11.8	0	0	0	-----	-----	-----
Thaladine	10	24	100	95.8	66.7	25.0	12.5	4.1	0	0	0	-----	-----
Thaladine	1	40	100	-----	-----	37.5	-----	30.0	-----	20.0	-----	-----	10.0

See table 1 for footnotes.

The Sonne variety of infection was the most widely prevalent in 1943. In all, 795 cases or carriers were treated, of which 621 were in one outbreak. This epidemic was caused by a strain of organism which was unusually resistant to sulfonamides. In this outbreak, 19 percent were still positive after 7 days of treatment; all but 2.5 percent of the other Sonne infections were negative at this time. Even the latter responded slowly as compared with Flexner and Schmitz infections. The complete clearing of Sonne infection in all individ-

uals given sulfasuxidine contrasted with the failure of all other sulfonamides in a small proportion of these cases and carriers.

TABLE 5.—*Average colony counts* [1] *per S. S. agar plate in Sonne infections before and during treatment with different sulfonamides*

Outbreak	Treatment		Number treated	Average colony counts											
	Sulfonamide used	Daily dosage (gm.)		Day treatment started	Day of treatment										
					1	2	3	4	5	6	7	8	9	10	11
1	Control	0	16	621	600	508	495	296	212	223	123	200	(*)	(*)	(*)
1	Diazine	4	72	678	379	232	165	76	78	44	16	14	14	.6	.5
1	Pyrazine	4	51	740	428	272	164	53	77	26	39	21	13	2	1
1	Merazine	4	48	549	388	240	159	138	42	40	10	2	2	2	2
1	Methazine	4	50	708	503	241	188	158	104	49	31	1	18	.6	10
1	Thiazole	4	48	732	616	346	278	130	20	14	18	26	3	1	(*)
1	Pyridine	4	19	562	522	170	226	155	85	77	30	3	1	26	(*)
1	Sulfanilamide	4	14	604	463	461	69	214	184	3	27	15	(*)	(*)	(*)
1	Guanidine	20	16	777	619	532	143	141	120	125	57	5	31	38	31
1	Suxidine	20	72	580	431	210	108	44	31	3	.2	0	0	[2]0	----
1	Thaladine	10	53	536	359	193	228	162	125	30	11	14	.3	5	11
1	Diazine [3]	4	34	346	189	111	91	35	35	59	76	33	59	0	11
1	Pyrazine	6	29	476	447	149	157	12	38	44	5	17	.4	0	5
1	Diazine	1	21	550	-----	308	-----	-----	156	-----	-----	72	-----	-----	.3
1	Pyrazine	1	14	651	-----	-----	147	-----	-----	96	-----	-----	.6	-----	----
1	Guanidine	2	40	688	-----	137	-----	-----	67	-----	-----	4	-----	-----	6
1	Suxidine	2	16	766	-----	-----	177	-----	-----	61	-----	-----	31	-----	----
1	Thaladine	2	24	607	-----	171	-----	-----	179	-----	-----	44	-----	-----	.3
2	Diazine	4	27	463	153	83	30	14	.6	1.6	.1	.1	0	0	0
2	Pyrazine	4	21	420	150	106	9	6	0	0	0	-----	-----	-----	----
2	Merazine	4	13	638	331	141	123	4	2	0	0	0	-----	-----	----
2	Methazine	4	10	362	94	191	103	9	0	0	0	-----	-----	-----	----
3	Pyrazine	4	9	911	572	201	59	3	3	0	0	0	-----	-----	----
3	Pyrazine	2	35	740	499	388	207	120	60	54	.4	0	0	.5	0
3	Thaladine	2	20	821	479	-----	224	-----	-----	18	-----	4	-----	0	----
4	Diazine	4	39	228	126	9	15	4	2	0	0	3	0	0	0

*Sulfonamide changed.

See table 1 for footnote.

Variations in the response to different dosages of sulfonamides were studied in Flexner and Sonne infections. It was first found that the former cleared as readily with 2 gm. as with 4 gm. of absorbed sulfonamide daily. Sulfapyrazine, 1 gm. daily, was then used in another group and was effective. Recently, the total amount of sulfonamide per individual was reduced, first to 4 gm. (2 gm. as the initial dose and 1 gm. on each of the following 2 days) and then to 2 gm. in one dose only. There was some delay in the clearing of the infection with these smaller amounts of sulfonamide, but a high proportion of infected individuals became and remained culturally negative. The organisms concerned were highly sensitive to sulfonamides in vitro. In Sonne infections, by contrast, a reduction of dosage reduced the efficacy of treatment. In the series in outbreak No. 3 (tables 5 and 6) cases and carriers receiving 2 gm. daily of sulfapyrazine remained positive approximately twice as long as the corresponding cases given 4 gm. daily.

Organisms isolated after 7 or more days of treatment, if tested in vitro, were commonly found to be highly resistant to sulfonamides. The problem of treating Sonne infections appeared to be related in

part to the ready development of sulfonamide resistance by these organisms.

TABLE 6.—*Percentage of individuals with persisting positive cultures in Sonne infections treated with different sulfonamides*

Outbreak	Treatment: Sulfonamide used	Treatment: Daily dosage (gm.)	Number treated	Percentage with persisting positive cultures by day of treatment: 0	1	2	3	4	5	6	7	8	9	10	11
1	Control	0	16	100	93.7	87.5	81 3	62.5	62.5	62.5	62.5	62.5	(*)	(*)	(*)
1	Diazine	4	72	100	93.0	86.1	66.7	63.9	50.0	33.3	22.2	11.1	6.9	5.5	1.4
1	Pyrazine	4	51	100	90.2	80.4	56.9	51.0	41.2	21.6	11.7	9.8	5.9	3.9	3.9
1	Merazine	4	48	100	93.7	72.9	60.4	47.9	31.2	25.0	14.6	10.4	8.3	2.1	1.0
1	Methazine	4	50	100	92.0	82.0	62.0	54.0	30.0	22.0	12.0	10.0	6.0	4.0	4.0
1	Thiazole	4	48	100	89.6	83.3	77.1	70.8	56.2	47.9	39.6	20.8	12.5	4.2	(*)
1	Pyridine	4	19	100	89.5	78.9	73.7	57.9	47.4	47.4	42.1	26.3	5.3	5.3	(*)
1	Sulfanilamide	4	14	100	100.0	78.6	71.4	71.4	57.1	42.9	21.4	14.3	(*)	(*)	(*)
1	Guanidine	20	16	100	93.7	75.0	62.5	37.5	25.0	25.0	25.0	25.0	12.5	12.5	6.2
1	Suxidine	20	72	100	83.3	72.2	45.8	25.0	18.1	8.3	2.8	0	0	[2]0	----
1	Thaladine	10	53	100	92.5	83.0	64.1	56.6	37.7	32.1	18.9	18.9	13.2	11.3	7.5
1	Diazine [1]	4	34	100	91.2	67.6	47.1	32.4	23.5	17.6	11.8	5.9	5.9	5.9	5.9
1	Pyrazine	6	29	100	86.2	72.4	65.5	48.2	41.3	31.0	24.1	17.2	10.3	6.9	3.4
1	Diazine	1	21	100	-----	71.4	-----	-----	47.6	-----	-----	23.8	-----	-----	4.8
1	Pyrazine	1	14	100	-----	-----	85.7	-----	-----	28.6	-----	-----	7.1	-----	----
1	Guanidine	2	40	100	-----	72.5	-----	-----	47.5	-----	-----	20.0	-----	-----	7.5
1	Suxidine	2	16	100	-----	-----	75.0	-----	-----	43.8	-----	-----	6.2	-----	----
1	Thaladine	2	24	100	-----	79.2	-----	-----	62.5	-----	-----	25.0	-----	-----	4.2
2	Diazine	4	27	100	92.6	70.4	55.6	33.3	14.8	11.1	7.4	3.7	0	0	0
2	Pyrazine	4	21	100	76.2	33.3	23.8	14.3	0	0	0	-----	-----	-----	----
2	Merazine	4	13	100	84.6	53.8	30.8	15.4	7.7	0	0	0	-----	-----	----
2	Methazine	4	10	100	70.0	40.0	30.0	30.0	0	0	0	-----	-----	-----	----
3	Pyrazine	4	9	100	100.0	88.9	66.7	33.3	11.1	11.1	0	0	0	-----	----
3	Pyrazine	2	35	100	94.3	85.7	80.0	57.1	60.0	40.0	17.1	2.9	2.9	2.9	0
3	Thaladine	2	20	100	80.0	-----	45.0	-----	-----	20.0	-----	10.0	-----	0	----
4	Diazine	4	39	100	69.2	46.2	35.9	25.6	12.8	2.6	2.6	2.6	0	0	0

*Sulfonamide changed.

See table 1 for footnotes.

Following treatment for Flexner infection with 2 or 4 gm. of absorbed sulfonamide daily, 113 individuals were held in isolation and examined culturally an average of 11.3 times per person during a period of 2 months. There was no recurrence of infection. Three of 30 who received a total of only 4 gm. of sulfadiazine did have a return of positive cultures after 3 or more consecutive negative tests. Other individuals were followed for varying periods. Positive cultures were discovered occasionally, particularly when the individual, after treatment, was returned to a group in which the infection was spreading actively.

The variation in the bacteriostatic activity of the different sulfonamides in *Shigellae* infections in vivo is summarized in table 7. Here the numbers of organisms in the lower enteric tract as determined by colony counts on the day treatment started are compared with the total of all daily counts during treatment. In the Flexner cases it was found that fewer organisms were discharged during the course of treatment than on the one day on which treatment was started. The Schmitz infection cleared a little more slowly. Sonne infections varied by outbreaks but were more resistant. Considering all infections, three sulfonamides—sulfadiazine, sulfapyrazine and sulfasuxi-

dine—have superior records. Sulfamerazine and sulfamethazine were a little less effective, although the former appeared highly active in Flexner infections. Sulfathiazole and sulfaguanidine were the least satisfactory of the seven drugs that were widely tested. Sulfathaladine in the series in which it was employed was less active than sulfasuxidine, a chemically related compound. Sulfapyridine and sulfanilamide were the least potent sulfonamides in the treatment of *Shigella* infections.

TABLE 7.—*The relative bacteriostatic activity of various sulfonamides as indicated by the ratio* [1] *of the total of all daily colony counts during treatment to the counts on the day treatment was started*

Variety of *Shigella*	Year and outbreak	Daily dosage of sulfonamide (gm.) [2]	Ratio of all daily colony counts during treatment to the counts on the day the respective sulfonamide was started										
			Diazine	Pyrazine	Merazine	Methazine	Thiazole	Pyridine	Sulfanilamide	Guanidine	Suxidine	Thaladine	Control
Flexner [3]	[4] 1942	3 or 4	0.20	------	------	------	0.84	------	------	0.63	0.84	------	------
	1943	4	.57	.35	.34	.62	------	------	------	------	------	------	------
	1943	2	.50	.53	.38	.59	------	------	------	------	------	------	------
	1943	[5] 2 or 4	.39	------	------	------	------	------	------	------	------	------	------
Schmitz	[4] 1942	3 or 4	------	------	------	------	------	------	------	.72	.49	------	[6] 3.0
	1943	4	.52	.44	.71	.72	1.20	------	------	1.24	.48	.78	------
Sonne	[4] 1942	3 or 4	.80	------	------	------	1.00	------	------	1.21	.83	------	[6] 5.6
	1943-1	4	1.59	1.48	1.86	1.84	1.98	2.30	2.38	2.37	1.43	2.12	[7] 4.3
	1943-2	4	.61	.64	.94	1.10	------	------	------	------	------	------	------
	1943-3	4	------	.92	------	------	------	------	------	------	------	------	------
	1943-4	2	------	1.80	------	------	------	------	------	------	------	------	------
	1943-5	4	.54	------	------	------	------	------	------	------	------	------	------

[1] It is assumed that the excretion of organisms and the weight of infection are measured relatively by the daily colony counts. With a pretreatment average colony count of 400 and successive average daily colony counts during treatment of 240, 50, 9, 1, and 0 (total 300), the ratio would equal $\frac{300}{400}$ or 0.75.

[2] Dosage of absorbed sulfonamides for adults. Five times as much sulfaguanidine and sulfasuxidine and 2.5 times as much sulfathaladine was given.

[3] The findings on all types of Flexner are combined since there was no evident variation in the response to sulfonamides.

[4] Previously reported data (*1*).

[5] Total dosage.

[6] Measured for 5 days.

[7] Measured for 8 days.

The responses of seven Shiga strains were tested in vitro. These strains were less sensitive than Flexner, more sensitive than Sonne, and approximately equal in sensitiveness to the Schmitz variety.

Considering toxicity, availability, and relative efficacy, it is concluded that at present sulfadiazine is the drug to be recommended for *Shigella* infections. Sulfasuxidine is an alternative poorly absorbed compound which may be used in cases which do not respond readily to sulfadiazine. Sulfapyrazine, sulfamerazine, or sulfamethazine may be used if preferred. The other sulfonamides are to be recommended for shigellosis only when the more effective preparations are not available.

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SICKNESS ABSENTEEISM AMONG MALE AND FEMALE INDUSTRIAL WORKERS DURING 1944, AND AMONG MALES DURING THE FIRST QUARTER OF 1945, WITH A NOTE ON ABSENCE DURATION, 1941–44 [1]

By W. M. GAFAFER, *Principal Statistician, United States Public Health Service*

The quarterly reports for the year 1944 on the frequency of sickness and nonindustrial injuries disabling for more than 1 week among a group of approximately 250,000 male members of industrial sick benefit organizations have appeared (*1–3*), the organizations including sick benefit associations, group insurance plans, and company relief departments. The present report is concerned with the experience of male and female workers during 1944 and earlier years, and of males during the first quarter of 1945 and corresponding earlier quarters. Particular attention is directed to time changes in certain annual frequency rates covering the decade 1935–44, and to changes in absence duration among the 4 years, 1941–44. The last report on the experience among females appeared in 1944 (*1*).

YEAR 1944

The male and female frequency rates for 1944, 1943, and the decade 1935–44 are shown by cause in table 1. The corresponding rates for the single years 1935–42 appear in reference *4*.

The 1944 male rate for all causes (140.9 absences per 1,000 males) is the highest recorded annual rate of the 10 years 1935–44, being 37 percent above the 10-year mean (102.9), but only 2 percent above the corresponding rate for 1943 (138.1).

The 1944 female rate for all causes (221.0 absences per 1,000 females) is likewise the highest recorded annual rate of the 10-year period, being 35 percent above the mean of 163.1 but only 8 percent above the rate for 1943 (204.1).

In each of the past 10 years 1935–44, the female rate for all causes and each of the broad cause groups (with the possible exception of nonindustrial injuries) is higher than the corresponding male rate, the excess in the total frequency among females in 1944 being 57 percent.

[1] From the Industrial Hygiene Division, Bureau of State Services.

TABLE 1.—*Average annual number of absences per 1,000 persons on account of sickness and nonindustrial injuries disabling for 8 consecutive calendar days or longer, by sex and cause, experience of MALE and FEMALE employees in various industries, 1944, 1943, and 1935–44, inclusive* [1]

Cause. (Numbers in parentheses are disease title numbers from International List of Causes of Death, 1939)	Annual number of absences per 1,000 persons					
	Males			Females		
	1944	1935–44 [2]	1943	1944	1935–44 [2]	1943
Sickness and nonindustrial injuries	140.9	102.9	138.1	221.0	163.1	204.1
Percent of female rate	*64*	*63*	*68*			
Percent of male rate				*157*	*159*	*148*
Nonindustrial injuries (169–195)	12.1	11.5	11.9	14.5	13.1	11.3
Sickness	128.8	91.4	126.2	206.5	150.0	192.8
Respiratory diseases	57.6	40.8	66.6	85.5	66.5	100.1
Tuberculosis of respiratory system (13)	.7	.8	.8	.2	.6	.6
Influenza, grippe (33)	24.6	18.2	29.7	28.4	27.7	43.9
Bronchitis, acute and chronic (106)	9.7	5.9	10.4	11.2	8.2	10.8
Pneumonia, all forms (107–109)	6.3	4.1	8.8	2.2	2.0	4.2
Diseases of pharynx and tonsils (115b, 115c)	6.1	5.3	6.7	17.2	13.2	14.5
Other respiratory diseases (104, 105, 110–114)	10.2	6.5	10.2	26.3	14.8	26.1
Digestive diseases	19.7	15.0	17.5	36.0	25.3	29.0
Diseases of stomach except cancer (117, 118)	6.5	4.4	5.9	3.8	2.6	2.8
Diarrhea and enteritis (120)	2.8	1.5	2.1	6.1	3.0	3.8
Appendicitis (121)	4.7	4.5	4.6	16.9	13.3	16.4
Hernia (122a)	2.1	1.7	2.0	.8	.4	.2
Other digestive diseases (115a, 115d, 116, 122b–129)	3.6	2.9	2.9	8.4	6.0	5.8
Nonrespiratory-nondigestive diseases	46.1	32.7	37.7	79.6	53.6	59.0
Infectious and parasitic diseases (1–12, 14–24, 26–29, 31, 32, 34–44) [3]	2.4	2.4	2.4	4.6	3.9	5.2
Cancer, all sites (45–55)	.5	.5	.4	.2	.4	.4
Rheumatism, acute and chronic (58, 59)	6.1	4.2	4.5	5.2	3.3	2.9
Neurasthenia and the like (part of 84d)	2.4	1.3	1.6	14.0	7.4	9.7
Neuralgia, neuritis, sciatica (87b)	3.2	2.3	2.7	3.3	2.3	1.8
Other diseases of nervous system (80–85, 87, except part of 84d, and 87b)	2.0	1.3	1.5	1.4	1.0	.9
Diseases of heart (90–95)	4.6	2.9	3.2	2.5	1.6	1.7
Diseases of arteries and high blood pressure (96–99, 102)	2.4	1.2	1.6	1.4	.8	.8
Other diseases of circulatory system (100, 101, 103)	4.2	2.7	3.7	5.5	3.1	3.4
Nephritis, acute and chronic (130–132)	.5	.4	.5	.5	.4	.3
Other diseases of genitourinary system (133–139)	3.6	2.6	2.7	15.2	10.8	12.6
Diseases of skin (151–153)	3.6	3.0	3.2	5.2	3.7	4.5
Diseases of organs of movement except diseases of joints (156b)	3.8	3.0	3.5	5.1	2.6	3.7
All other diseases (56, 57, 60–79, 88, 89, 154, 155, 156a, 157, 162)	6.8	4.9	6.2	15.5	12.3	11.1
Ill-defined and unknown causes (200)	5.4	2.9	4.4	5.4	4.6	4.7
Average number of person-years	267,716	2,220,177	293,960	29,750	189,127	28,519

[1] Industrial injuries and venereal diseases are not included.
[2] Average of the 10 annual rates.
[3] Exclusive of influenza and grippe, respiratory tuberculosis, and venereal diseases.

BROAD CAUSE GROUPS, 1935–44

The 10 annual rates for all causes and for each of the broad cause groups are shown graphically for males and females in figure 1.

Respiratory diseases.—For both males and females the frequency of respiratory diseases in 1944 was less than the respiratory rate for 1943, the 1943 frequencies reflecting the presence of the respiratory epidemic occurring principally in December of that year (*1*). Never-

theless, the male and female respiratory frequencies for 1944 are exceeded only by those for 1943, and are 41 and 29 percent, respectively, above the mean rates for the 10-year period.

Digestive diseases.—For each sex the 1944 frequency of digestive diseases has never been equalled or exceeded in the 10-year period, the excesses in the rates when compared with the 10-year means being 31 and 42 percent for males and females, respectively. Of particular interest among males is the relative stability of the rates during the years 1935–39, and the gradual increase in frequency during 1940–44.

Nonrespiratory-nondigestive diseases.—The nonrespiratory-nondigestive diseases also show for 1944 the highest rates of the 10 years 1935–44, yielding excesses of 41 percent for males and 49 percent for females when compared with the corresponding 10-year means.

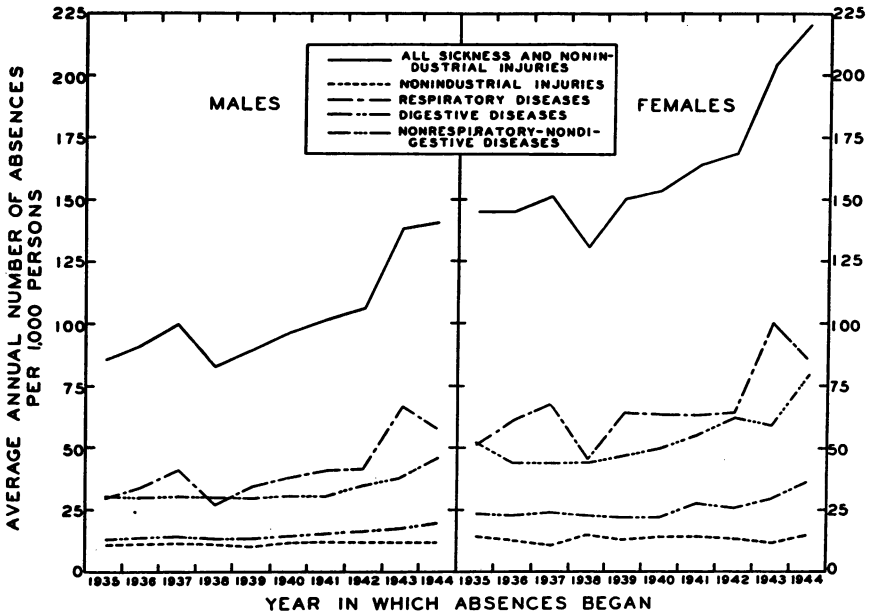

FIGURE 1.—Average annual number of absences per 1,000 persons on account of sickness and nonindustrial injuries disabling for 8 consecutive calendar days or longer, by sex and broad cause group; variation of rates with time; experience of MALE and FEMALE employees in various industries, 1935–44, inclusive.

Among males the rates for the years 1935 through 1941 are relatively stable, the frequency increasing in the years 1942–44. Among females the trend of the rates since 1937 has been generally upward, the marked increase in 1944 nullifying the slight downward movement of the rate in 1943.

NONRESPIRATORY-NONDIGESTIVE CAUSES SHOWING RELATIVELY HIGH RATES IN 1944

The noteworthy excesses of more than 40 percent observed in the comparison of the 1944 male and female nonrespiratory-nondigestive

disease rates with the corresponding mean rates for 1935–44 raises the question of the specific causes primarily contributing to these excesses. It will be noted in table 1 that four groups of specific diagnoses are chiefly responsible, namely, rheumatic diseases, including rheumatism, acute and chronic, neuralgia, neuritis, and sciatica, and diseases of organs of movement except diseases of joints; neurasthenia, including nervous asthenia, nervous exhaustion, nervous fatigue, "nerves," etc.; diseases of the circulatory system, including diseases of the heart and arteries, high blood pressure, and "other diseases of the circulatory system"; and diseases of the genitourinary system, including nephritis, acute and chronic, and "other diseases of the genitourinary system."

The variation in the frequency of these four causes throughout the 10 years 1935–44 is presented graphically for males and females in

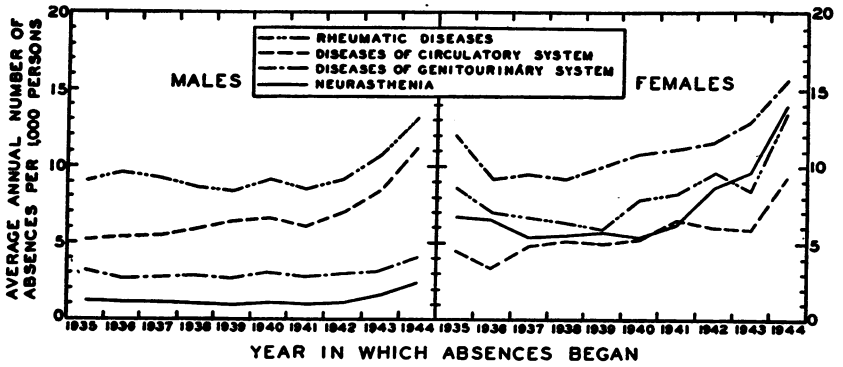

FIGURE 2.—Average annual number of absences per 1,000 persons on account of selected nonrespiratory-nondigestive causes disabling for 8 consecutive calendar days or longer, by sex; variation of rates with time; experience of MALE and FEMALE employees in various industries, 1935–44, inclusive.

figure 2. For each sex and cause the 1944 rate is the highest rate recorded for the 10 years, the percentage excesses over the corresponding 10-year means being for males and females, respectively, as follows: Rheumatic diseases, 38 and 66 percent; neurasthenia, 100 and 89 percent; diseases of the circulatory system, 65 and 68 percent; and diseases of the genitourinary system, 37 and 40 percent.

Noteworthy is the sex difference in the order of the frequencies shown in figure 2. Among males the highest rates are consistently revealed for the rheumatic diseases, with diseases of the circulatory system, diseases of the genitourinary system, and neurasthenia ranking second, third, and fourth in frequency each year. Among females, diseases of the genitourinary system regularly yielded the highest frequency rate each year while diseases of the circulatory system were generally low. Neurasthenia, ranking third in order in 1935–40, fell slightly below the circulatory diseases in 1941 but rose rapidly to second place in 1943 and 1944.

ABSENCE DURATION, 1941–44

Figure 3 presents graphically by sex, for the organizations reporting absences by duration, the frequency of ended absences on account of sickness and nonindustrial injuries disabling for a specified number of calendar days or longer. The absences began in the years 1941–44, and the minimum duration periods range from 8 through 92 days.

The rates for a particular year indicate the ability of absences beginning in that year to continue to contribute to the frequency rate as the lower limit of duration is increased. In general, the presence of a relatively large number of absences of long duration is reflected in a relatively slow decline in the curve for a particular year; on the other

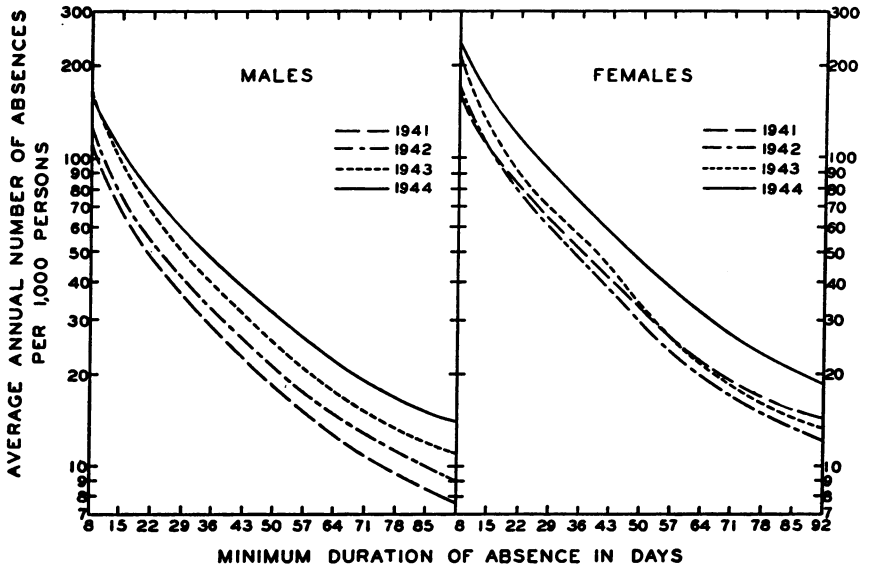

FIGURE 3.—Average annual number of ended absences per 1,000 persons on account of sickness and nonindustrial injuries disabling for the specified number of calendar days or longer, by sex; experience of MALE and FEMALE employees in various industries reporting absences by duration, absences beginning in 1941–44, inclusive. (Vertical logarithmic scale.)

hand, a relatively large number of short absences is reflected in a curve decreasing less slowly. Figure 3 is useful, therefore, in showing graphically any possible differences among the experiences yielded by the 4 years with respect to duration of disability.

Males, 1941–44.—For the group of organizations reporting absences by duration the frequency of all disabilities of 8 days or longer among males was slightly less in 1944 than in 1943. The occurrence of a relatively large number of 8–14-day absences in 1943, however, is evidenced by the fact that for absences of 15 days or longer, and with increasing minimum durations, the rates for 1944 are above the rates for 1943. Indeed with the exception of the initial points the rates for each of the indicated duration periods increase from 1941 through 1944.

An examination of figure 3 reveals that the rates for 1944 decrease less rapidly than the rates for any of the years 1941–43. In each of the first 3 years about 20 percent of all 8-day or longer absences due to disability lasted more than 6 weeks (43 days or longer); the corresponding percentage for 1944 is 24. Similarly 7 percent of the disabilities beginning in the first 3 years lasted more than 3 months (92 days or longer), the corresponding percentage for 1944 being 9. It would appear therefore that in comparison with the years 1941–43, the 1944 disability experience of males in companies reporting absences by duration is characterized by a relatively large proportion of absences of long duration.

Females, 1941–44.—Among females the 1944 rate for each of the indicated duration periods is consistently higher than the rates for the 3 earlier years. In general it will be observed in figure 3 that the rates for 1944 decrease less rapidly than the rates for either 1943 or 1942, but at approximately the same rate as the frequencies for 1941. In both 1944 and 1941 approximately one-fourth of the 8-day or longer disabilities lasted more than 6 weeks, while about 8 percent lasted more than 3 months.

TABLE 2.—*Average annual number of absences per 1,000 males on account of sickness and nonindustrial injuries disabling for 8 consecutive calendar days or longer, by cause, experience of MALE employees in various industries, first quarter of 1945 compared with first quarters of 1944 and 1943*[1]

Cause. (Numbers in parentheses are disease title numbers from International List of Causes of Death, 1939)	Annual number of absences per 1,000 males for the first quarter		
	1945	1944	1943
Sickness and nonindustrial injuries	168.2	171.8	164.9
Nonindustrial injuries (169–195)	16.0	12.1	12.8
Sickness	152.2	159.7	152.1
Respiratory diseases	73.0	94.2	97.7
Tuberculosis of respiratory system (13)	.7	.6	.5
Influenza, grippe (33)	26.6	52.8	40.9
Bronchitis, acute and chronic (106)	13.7	11.5	16.7
Pneumonia, all forms (107–109)	7.7	11.1	16.2
Diseases of pharynx and tonsils (115b, 115c)	7.2	6.5	10.0
Other respiratory diseases (104, 105, 110–114)	17.1	11.7	13.4
Digestive diseases	20.6	17.4	14.7
Diseases of stomach except cancer (117, 118)	7.5	5.9	4.7
Diarrhea and enteritis (120)	2.5	2.2	1.6
Appendicitis (121)	4.1	4.2	3.8
Hernia (122a)	2.5	1.7	2.0
Other digestive diseases (115a, 115d, 116, 122b–129)	4.0	3.4	2.6
Nonrespiratory-nondigestive diseases	52.7	42.2	36.1
Infectious and parasitic diseases (1–12, 14–24, 26–29, 31, 32, 34–44)[2]	3.5	2.4	2.7
Rheumatism, acute and chronic (58,59)	7.1	5.9	4.4
Neurasthenia and the like (part of 84d)	2.4	1.8	1.2
Neuralgia, neuritis, sciatica (87b)	4.1	3.0	3.0
Other diseases of nervous system (80–85, 87, except part of 84d, and 87b)	2.4	1.6	1.5
Diseases of heart and arteries, and nephritis (90–99, 102, 130–132)	8.9	7.6	5.2
Other diseases of genitourinary system (133–138)	3.4	3.4	2.5
Diseases of skin (151–153)	3.6	2.8	2.7
Diseases of organs of movement except diseases of joints (156b)	4.2	3.2	3.5
All other diseases (45–57, 60–79, 88, 89, 100, 101, 103, 154, 155, 156a, 157, 162)	13.1	10.5	9.4
Ill-defined and unknown causes (200)	5.9	5.9	3.6
Average number of males	225,797	256,610	265,428

[1] Industrial injuries and venereal diseases are not included.
[2] Exclusive of influenza and grippe, respiratory tuberculosis, and venereal diseases.

MALES, FIRST QUARTER, 1945

The morbidity experience of males for the first quarter of 1945 as compared with the corresponding quarters of 1943 and 1944 is shown in table 2. Attention is directed to (1) the relatively stable rate for all sickness, (2) the nonindustrial injury rate of 16.0 which has never been equalled or exceeded during the past 10 years, (3) the substantial drop in the rate for the respiratory diseases reflecting principally the decrease in the rate for influenza and grippe, and (4) the continuous rise over the 3 years of the rate for the digestive diseases and the rate for the nonrespiratory-nondigestive diseases, both rates for 1945 having never been equalled or exceeded during the past 10 years.

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(2) ————: Sickness absenteeism among industrial workers, third quarter of 1944. Pub. Health Rep., **60**: 145–148 (Feb. 9, 1945.)

(3) ————: Sickness absenteeism among industrial workers, fourth quarter of 1944, with a note on seasonal variation. Pub. Health Rep., **60**: 612–617 (June 1, 1945.)

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ISOLATION OF *PASTEURELLA TULARENSIS* FROM SPUTUM

A Report of Successful Isolations From Three Cases Without Respiratory Symptoms

By CARL L. LARSON, *Passed Assistant Surgeon, United States Public Health Service*

Pasteurella tularensis may be isolated by inoculation of susceptible animals with certain materials obtained from patients suffering from tularemia. Blood, conjunctival scrapings, pus from the nose of a patient with oculoglandular tularemia, material from primary lesions of the skin, the lymph nodes, pleural fluid, ascitic fluid, fluid from the olecranon bursa, spinal fluid, bone marrow, and sputum from patients have produced infections when inoculated into animals from which pure cultures of the organism were subsequently obtained by cultivation of selected tissues on suitable media (*1*). Francis lists four cases in which the organism was isolated by this method from the sputum of individuals with pulmonary involvement. Isolation of *P. tularensis* from the sputum of such cases is not unexpected, for pulmonary lesions at autopsy are usually found to contain organisms. Johnson (*2*) cultured *P. tularensis* from mice which had been inoculated with the sputum of a person suffering from tularemia who had no evidence of pulmonary involvement. This is of great interest for it indicates that the presence of specific organisms in the respiratory tract of

individuals with tularemia is not necessarily associated with the presence of signs or symptoms referable to the respiratory system.

The studies to be reported are concerned with the isolation of *P. tularensis* from the sputum of three individuals with tularemia, none of whom manifested symptoms referable to involvement of the respiratory tract. One case had the typhoidal type and the others had the ulceroglandular type of tularemia.

METHODS

Sputum was collected from patients and transported to the laboratory as quickly as possible. The sputum was diluted with about nine times its volume of 0.85-percent salt solution and mixed by repeated aspiration into a 5-cc. syringe to which a 22-gage needle was attached. White Swiss mice, weighing about 15 gm., were inoculated intraperitoneally with 0.1 cc. to 0.5 cc. of sputum suspension and, in some instances, guinea pigs were inoculated subcutaneously with 0.5 cc. of suspension. No attempts were made to culture sputum on glucose cystine blood agar because of the obvious gross bacterial contamination of sputum specimens. Mice exhibited symptoms of acute infection in a few days and died within a week after intraperitoneal inoculation with infective sputum.

In some instances it was desired to establish an etiological diagnosis of tularemia before the mice were definitely ill. To accomplish this a mouse was killed and the liver and spleen removed aseptically. Portions of the liver and spleen were cultured on glucose cystine blood agar and 0.5 cc. of a 10-percent suspension of liver and spleen in 0.85 percent salt solution was inoculated intraperitoneally into a group of mice. Impression smears of the liver and spleen were made on glass slides and the smears stained with Wayson's stain. The presence of very small bacillary organisms, staining a deep purple and occurring both intracellularly and extracellularly was considered sufficient evidence to offer a tentative diagnosis based on etiological grounds. This evidence has been corroborated in each case by subsequent isolation of *P. tularensis* from the animal studied or from the animals inoculated with the suspension prepared from its tissues.

Case 1.—M. J. In May 1944, three individuals were admitted to Children's Hospital, Washington, D. C., to the service of Dr. J. McLeod. All of the children had played with a sick wild rabbit several days before onset of illness. One of the children died and another developed the typhoidal type of tularemia with pulmonary involvement, the signs of which were elicited by physical examination and demonstrated by X-ray examination. The third child, a colored female, 10 years of age, became ill on May 11, 1944, with fever and sore throat and was admitted to hospital on May 13. She did not appear acutely ill. The throat was injected, the tonsils were red and enlarged, and the cervical lymph nodes palpable. On May 17, X-ray examination of the chest showed some fibrosis but no evidence of fluid or consolidation. Ten days later this condition had not changed. Specific

symptoms or signs suggestive of involvement of the respiratory tract were not manifested during the course of illness. The white blood cell count was 8,400 cells per cubic millimeter of blood on admission. On May 23, serum was obtained from this patient and tested for the presence of agglutinins against *P. tularensis*. A titre of 1:2,560 was demonstrated. Another sample of serum drawn 3 days later was examined at the National Institute of Health and agglutinins against *P. tularensis* were demonstrated in the same titre.

A sample of sputum was obtained on May 26. This was diluted and mixed with about nine times its volume of 0.85-percent salt solution, and 0.3 cc. of the diluted sputum was inoculated intraperitoneally into each of six mice. All the mice died within 3 days following inoculation. Lesions suggestive of tularemia were noted in the mice, microscopic examination of smears of spleen tissue stained with Wayson's stain revealed organisms characteristic of *P. tularensis*, and cultures on glucose cystine blood agar resulted in the isolation of *P. tularensis* from the tissues of these animals.

Case 2.—S. A., a white female, 45 years of age, was admitted to Providence Hospital, Washington, D. C., on the service of Dr. T. Collins, on August 13, 1944, with a history of fever of 2 days' duration, chills, back pains, and frequency of urination. She had been vacationing at an area where ticks and wild animals were abundant. On examination the temperature was 103.6° F. and the pulse rate 120. The only other finding consisted of a small ulcer at the tip of the first finger of the left hand. About 1 week before admission the patient had experienced a thorn prick in this spot. Subsequently, enlarged epitrochlear and axillary lymph nodes developed, and eventually the axillary lymph nodes suppurated and were incised. The temperature ranged between 105.2° F. and 98° F. for the first 2 weeks of hospitalization, and between 101.8° F. and 98.4° F. during the following 3 weeks. The white blood cell count ranged from 5,200 to 8,300 cells per cubic millimeter of blood. Symptoms or signs referable to pulmonary disease were not noted throughout the course of illness. An X-ray film of the chest revealed no abnormalities.

The patient was seen on August 29, when blood was obtained to be tested for the presence of agglutinins against *P. tularensis* and scrapings from the base and sides of the ulcer were harvested in 0.85 percent salt solution to be examined for the presence of this organism. The serum agglutinated *P. tularensis* to a titre of 1:2,560. The scrapings from the ulcer were thoroughly dispersed in salt solution and 0.5 cc. was injected subcutaneously into a guinea pig and 0.2 cc. intraperitoneally into each of five mice. *P. tularensis* was subsequently isolated from the guinea pig and from some of the mice.

Sputum was obtained from the patient on August 30, August 31, and on September 1. As each sample of sputum was obtained it was thoroughly mixed with about nine parts of salt solution and a guinea pig inoculated intraperitoneally with 0.5 cc. of diluted sputum, two mice intraperitoneally with 0.2 cc., and three mice intraperitoneally with 0.5 cc. of diluted sputum. *P. tularensis* was isolated from the guinea pig and from mice inoculated with each sample of sputum. Organisms morphologically identical with *P. tularensis* could be identified in the spleens of mice sick or dead as a result of inoculation of diluted sputum into the peritoneal cavity.

Case 3.—F. R., a white male, was admitted to the Veterans Administration Facility, Washington, D. C., on November 19, 1944. He had a history of fever, malaise, an ulcer on the fourth finger of the left hand which had been present for "several days," and an enlargement in the left axilla. On admission it was determined that he had handled dead rabbits about a week before coming to the hospital. The temperature was 38° C. on admission, and by November 24

reached 40° C. Following this there was gradual lysis of the temperature until December 4, when a normal temperature was reached and continued to be maintained during the balance of the hospital stay. An X-ray film exposed on November 23 showed no pulmonary lesions, but another X-ray study on November 29 showed "minimal bilateral pleural effusion with possibility of a slight degree of a pulmonary inflammatory process." Serum examined on November 25 had an agglutinin titre of 1:10 against *P. tularensis*. By December 7, an agglutinin titre of 1:1,280 against *P. tularensis* had developed.

The patient was seen on November 25, 1944, when scrapings from the local lesion and sputum were collected. Sputum specimens were again collected on November 29, December 3, December 10, and on December 14. The sputum specimens were diluted in saline as previously described and injected intraperitoneally into groups of six mice each. In every group two mice were given 0.1 cc., two were given 0.2 cc., and two 0.3 cc. None of the mice inoculated with specimens of sputum taken on December 10 and December 14 died or became ill. All of the mice inoculated with a suspension of scrapings and pus from the local lesion succumbed in 3 to 5 days and all mice inoculated with sputum collected on November 25, November 29, and December 3 died in 3 to 6 days; *P. tularensis* was isolated from these mice. Microscopic examination of smears of spleen tissue of these mice, stained with Wayson's stain, revealed organisms typical of *P. tularensis*.

DISCUSSION

From the data presented it appears that organisms may be present in the respiratory tract of patients suffering from typhoidal or ulceroglandular types of tularemia even though specific symptoms referable to this system are absent. The detection of pulmonary lesions by X-ray examination in case 3 was accomplished only because organisms had been previously isolated from the sputum and it was desired to detect any possible pulmonary lesions. No symptoms of respiratory involvement were manifested by the patient or detected by physical methods. In the other cases no pulmonary lesions were detected by X-ray examination.

The question of the possibility of a respiratory route of infection in tularemia is debatable. Johnson (*2*) considers it possible that respiratory transmission of tularemia may assume importance. Throughout the known history of tularemia there has been no well-established case in which the disease was contracted through person-to-person contact. That respiratory infection can occur is evidenced by the study of Ashburn and Miller (*3*) of a fatal case in a laboratory worker.

Inoculation of mice with suspensions of sputum from patients suspected of having tularemia and inoculation of glucose cystine blood agar with organs of the mice which become ill or die is recommended as a method of attempting to establish a diagnosis of tularemia. A tentative diagnosis may be established at an early period by studying smeared spleen preparations stained with Wayson's stain. The smears are made from the spleens of mice dead or ill following inoculation of

suspected material. An early tentative diagnosis is of value because therapy may be started 24 to 48 hours earlier than when the results of cultures are awaited.

CONCLUSIONS

P. tularensis was isolated from the sputum of three persons suffering from tularemia who manifested no frank clinical signs of pulmonary involvement.

The inoculation of mice with sputum suspensions from patients suspected of having tularemia is recommended as a laboratory procedure.

Microscopic examination of smeared preparations of infected mouse spleens, stained with Wayson's strain, offers a method of establishing an early tentative diagnosis of tularemia.

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DEATHS DURING WEEK ENDED AUGUST 11, 1945

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Aug. 11, 1945	Corresponding week, 1944
Data for 93 large cities of the United States:		
Total deaths	7,918	8,223
Average for 3 prior years	7,867	
Total deaths, first 32 weeks of year	292,236	296,246
Deaths under 1 year of age	576	591
Average for 3 prior years	596	
Deaths under 1 year of age, first 32 weeks of year	19,422	19,809
Data from industrial insurance companies:		
Policies in force	67,369,241	66,695,383
Number of death claims	11,997	12,456
Death claims per 1,000 policies in force, annual rate	9.3	9.8
Death claims per 1,000 policies, first 32 weeks of year, annual rate	10.6	10.3

PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

July 15–August 11, 1945

The accompanying table (table 1) summarizes the prevalence of nine important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State for each week are published in the PUBLIC HEALTH REPORTS under the section "Prevalence of Disease." The table gives the number of cases of these diseases for the 4 weeks ended August 11, 1945, the number reported for the corresponding period in 1944, and the median number for the years 1940–44.

TABLE 1.—*Number of reported cases of 9 communicable diseases in the United States during the 4-week period July 15–August 11, 1945, the number for the corresponding period in 1944, and the median number of cases reported for the corresponding period, 1940–44*

Division	Current period	1944	5-year median	Current period	1944	5-year median	Current period	1944	5-year median
	Diphtheria			Influenza [1]			Measles [2]		
United States	950	713	613	2,512	1,667	1,667	4,990	6,201	10,086
New England	19	19	17	1	23	3	522	575	1,297
Middle Atlantic	56	58	58	10	14	14	758	1,125	3,213
East North Central	105	78	86	69	54	81	1,005	976	2,607
West North Central	86	53	51	18	15	15	191	300	387
South Atlantic	211	136	133	564	518	526	129	528	528
East South Central	94	74	50	99	103	85	55	95	153
West South Central	210	159	119	1,574	833	833	332	509	362
Mountain	41	55	51	155	71	159	509	250	407
Pacific	128	81	61	22	36	83	1,489	1,843	1,001
	Meningococcus meningitis			Poliomyelitis			Scarlet fever		
United States	428	712	211	1,907	3,255	1,296	3,625	3,185	2,888
New England	24	61	28	146	94	28	261	272	274
Middle Atlantic	81	179	67	638	1,382	83	812	564	564
East North Central	81	107	15	210	495	158	850	816	779
West North Central	38	56	13	66	129	127	333	286	286
South Atlantic	52	115	35	247	598	65	356	377	268
East South Central	52	44	20	131	344	131	194	125	147
West South Central	46	46	15	272	90	89	181	137	120
Mountain	4	14	5	76	17	17	130	174	100
Pacific	50	90	27	121	106	106	508	434	243
	Smallpox			Typhoid and paratyphoid fever			Whooping cough [2]		
United States	11	21	23	625	688	966	11,802	9,438	13,822
New England	0	0	0	13	30	26	1,054	670	945
Middle Atlantic	0	0	0	89	45	87	3,148	1,257	2,614
East North Central	3	4	9	45	73	113	2,274	2,274	4,155
West North Central	3	9	9	25	34	52	378	609	760
South Atlantic	0	4	1	140	180	222	1,964	2,195	2,195
East South Central	1	1	1	100	119	185	464	519	539
West South Central	2	1	3	158	160	241	918	902	1,037
Mountain	1	1	4	26	14	44	493	584	584
Pacific	1	1	1	29	33	33	1,109	428	1,227

[1] Mississippi and New York excluded; New York City included.
[2] Mississippi excluded.

DISEASES ABOVE MEDIAN PREVALENCE

Poliomyelitis.—The number of cases of poliomyelitis rose from 678 during the 4 weeks ended July 14 to 1,907 during the 4 weeks ended August 11. While every section of the country contributed to the rise, the largest increases were reported from the North Atlantic, North Central, and Mountain sections. About 70 percent of the total cases were reported from 11 States, viz, New York 312, New Jersey 222, Texas 196, Illinois 108, Pennsylvania 104, Tennessee 96, Virginia 92, California 74, Massachusetts 70, Oklahoma 53, and Utah 52, a total of 1,379 cases.

Although a rise in poliomyelitis is expected at this season of the year, the rate of increase in the number of cases during the current 4 weeks was somewhat above that of normal years. With the exception of 1944, the number of cases reported for the country as a whole was the highest

reported for the corresponding period since 1931 when approximately 3,000 cases occurred. The current incidence (1,907 cases) was only about 60 percent of the 1944 figure for this period, but it was nearly 50 percent above the 1940–44 median (1,296 cases). The North Atlantic, South Atlantic, West South Central, and Mountain sections reported the greatest increases over the normal expectancy, with minor increases in two other sections. In the East South Central section the incidence stood at the median level and the West North Central section alone reported a relatively low incidence.

Table 2 shows the total reported cases since the beginning of the year and the incidence by weeks since the first of June, with corresponding data for 1944 and 1943. The year 1943 shows an increase of poliomyelitis cases in the West South Central, Mountain, and Pacific sections, while in 1944 an increase occurred in all sections except the Mountain and Pacific. The current rise first appeared in Texas, in the West South Central section, and has spread mostly into the Atlantic coast regions.

TABLE 2.—*Number of cases of poliomyelitis reported in each geographic area during 1945, 1944, and 1943*

Division	Total Jan. 1–Aug. 11	June					July				August	
		2	9	10	23	30	7	14	21	28	4	11
All regions:												
1945	3,581	71	92	96	116	155	154	253	369	391	476	671
1944	5,051	46	41	[1]111	126	222	290	462	568	738	932	1,015
1943	3,311	52	60	99	136	190	245	297	329	361	450	545
New England:												
1945	206	0	2	3	3	3	11	8	26	34	33	53
1944	130	4	0	1	1	1	4	8	9	12	36	37
1943	120	1	3	3	3	0	1	6	3	11	32	36
Middle Atlantic:												
1945	984	10	12	14	19	22	31	56	95	120	196	227
1944	1,674	11	4	4	12	33	62	125	216	304	413	449
1943	167	0	5	4	8	5	6	14	12	13	20	38
East North Central:												
1945	344	2	3	5	13	10	10	17	19	27	51	113
1944	652	5	4	3	15	10	21	58	63	111	143	178
1943	229	0	3	2	1	1	8	4	12	21	46	79
West North Central:												
1945	128	0	0	0	4	5	5	7	14	8	15	29
1944	191	1	0	2	5	7	9	8	25	22	28	54
1943	305	2	0	2	1	5	9	15	12	40	61	117
South Atlantic:												
1945	497	19	10	16	13	27	23	42	68	55	46	78
1944	1,085	6	3	28	50	103	123	126	128	136	167	167
1943	95	6	0	2	2	2	1	6	9	7	5	8
East South Central:												
1945	317	5	4	11	11	16	25	35	26	42	28	35
1944	584	5	9	10	22	34	37	91	90	101	84	67
1943	101	0	4	0	4	0	6	5	6	14	11	5
West South Central:												
1945	691	26	45	39	42	59	30	56	78	58	58	78
1944	303	8	10	12	15	15	17	26	18	22	27	23
1943	1,124	8	11	35	51	107	137	148	148	141	122	119
Mountain:												
1945	114	5	1	2	2	0	1	3	13	16	18	29
1944	62	0	1	3	3	1	6	2	1	4	4	9
1943	158	2	4	3	8	10	2	9	11	4	29	23
Pacific:												
1945	300	4	15	6	9	13	18	29	30	31	31	29
1944	330	6	10	9	3	18	11	18	18	26	30	31
1943	1,012	33	30	48	58	60	75	90	116	110	124	120

[1] Includes 39 delayed cases in North Carolina.

Diphtheria.—For the 4 weeks ended August 11 there were 950 cases of diphtheria reported, as compared with 713 for the corresponding period in 1944 and a 5-year median of 631 cases. For the country as a whole the current incidence is the highest for this period since 1939 when 1,030 cases were reported. All sections of the country except the North Atlantic and Mountain contributed largely to the excess incidence of this disease. In the North Atlantic sections the number of cases was about normal and in the Mountain section the incidence was about 20 percent below the median. The increases in the other 6 sections ranged from 1.2 times the median in the East North Central region to 2.1 times the median in the Pacific section.

Influenza.—There were 2,512 cases of influenza reported for the current 4-week period, an increase of about 50 percent over the 1940–44 median figure for the same period. Of the total cases Texas, in the West South Central section, reported 1,438 cases, and South Carolina and Virginia, in the South Atlantic section, reported 274 and 211 cases, respectively. The situation was favorable in all other sections of the country.

Meningococcus meningitis.—The number of cases of this disease continued to decline. During the 4 weeks under consideration there were 428 cases reported, as compared with 502 during the preceding 4 weeks. Compared with preceding years the number of cases was 40 percent below the 1944 figure for the same period, but it was about twice the 1940–44 median. In the New England and Mountain sections the incidence dropped to about the median level, but in all other sections the incidence remained relatively high. After 2 years of unusually high prevalence of this disease the number of cases is now decreasing and will probably decline gradually to the level of more normal years.

Scarlet fever.—The incidence of scarlet fever remained at a relatively high level, 3,625 cases being reported for the 4 weeks ended August 11, as compared with a 5-year median of 2,888 cases. Each section except the New England reported an increase over the preceding 5-year median, the excesses ranging from 10 percent in the East North Central section to an incidence in the Pacific region that was more than twice the 5-year median. The current incidence is the highest since 1937 when approximately 3,800 cases were reported for this 4-week period of the year.

DISEASES BELOW MEDIAN PREVALENCE

Measles.—For the 4 weeks ended August 11 there were 4,990 cases of measles reported, which was less than 50 percent of the preceding 5-year median expectancy (approximately 10,000 cases). An increase over the median of about 50 percent occurred in the Pacific section,

but in other sections the incidence was either about normal or considerably lower than the 5-year median figure.

Smallpox.—The smallpox situation remained very favorable, 11 cases being reported for the current 4-week period, as compared with a 5-year median of 23 cases. For the country as a whole the incidence is the lowest on record for this period.

Typhoid and paratyphoid fever.—The number of cases (625) of typhoid fever reported for the 4 weeks ended August 11 was slightly below the incidence during the corresponding period in 1944, and only about 65 percent of the 5-year (1940–44) median. In the Middle Atlantic and Pacific sections the incidence was about normal, but in all other regions the number of cases was considerably below the seasonal expectancy.

Whooping cough.—The incidence of this disease was relatively low. While the number of cases (11,802) was slightly higher than during the corresponding period in 1944, it was about 20 percent lower than the 1940–44 median. In the New England and Middle Atlantic sections the incidence was somewhat above the normal seasonal expectancy, but in all other sections the numbers of cases were less than the 5-year medians.

MORTALITY, ALL CAUSES

For the 4 weeks ended August 11 there were 32,312 deaths from all causes reported by 93 large cities to the Bureau of the Census. The average number reported for the corresponding period in 1942–44 was 31,999 deaths. For the first week of the 4-week period the number of deaths was 6.3 percent less than the preceding 3-year average, but the number during each of the other 3 weeks was larger than the 1942–44 average; the excess, however, dropped from 4.6 percent in the second week to 0.6 percent during the last week of the period.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED AUGUST 18, 1945

Summary

A total of 694 cases of poliomyelitis was reported, representing an increase of only 23 cases during the current week, as compared with an increase of 197 during the preceding week and 238 during the corresponding week last year when the total reported was 1,254. The median for the corresponding weeks of the past 5 years is 549. Increases of more than 7 cases were reported in only 2 States—Tennessee (24 to 36) and California (10 to 25). Increases of more than 3 cases occurred in only 8 other States. Of the total to date, 4,278 cases, as compared with 6,262 last year and 2,821 for the 5-year median, 3,161 were reported for the 8-week period from June 24 to August 18, as compared with 5,480 for the corresponding 8 weeks of 1944. The peak of incidence of the disease is usually reached before the fourth week of September.

Of the total of 79 cases of meningococcus meningitis reported for the current week, only 5 States reported more than 3 cases each, as follows (last week's figures in parentheses): New York 11 (8), Illinois 7 (6), Michigan 4 (5), Tennessee 5 (4), and California 8 (6). The total for the year to date is 6,170, as compared with 13,089 for the corresponding period last year and a 5-year median of 2,396.

Of a total of 462 cases of undefined dysentery, Virginia reported 395 (last week 620), and of 387 cases of bacillary dysentery, Texas reported 299 (last week 409).

Deaths recorded in 93 large cities of the United States totaled 7,642, as compared with 7,919 last week, 8,681 for the corresponding week last year, and a 3-year average of 8,006. The total to date this year is 299,879, as compared with 304,927 for the same period last year.

Telegraphic morbidity reports from State health officers for the week ended August 18, 1945, and comparison with corresponding week of 1944 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1940–44	Week ended—		Median 1940–44	Week ended—		Median 1940–44	Week ended—		Median 1940–44
	Aug. 18, 1945	Aug. 19, 1944		Aug. 18, 1945	Aug. 19, 1944		Aug. 18, 1945	Aug. 19, 1944		Aug. 18, 1945	Aug. 19, 1944	
NEW ENGLAND												
Maine	0	0	0	------	------	------	1	24	24	0	0	0
New Hampshire	0	0	0	------	------	------	0	7	1	1	3	0
Vermont	0	0	0	------	------	------	2	0	12	0	0	0
Massachusetts	1	1	1	------	------	------	45	43	62	0	8	0
Rhode Island	0	0	0	1	------	------	0	1	6	0	1	2
Connecticut	0	0	0	------	------	------	2	3	11	0	1	0
MIDDLE ATLANTIC												
New York	4	5	7	(1)	[1] 2	[1] 3	21	67	134	11	23	7
New Jersey	2	1	2	------	------	1	9	23	45	2	7	2
Pennsylvania	3	3	5	1	3	------	38	17	35	3	15	3
E. NORTH CENTRAL												
Ohio	5	7	3	1	6	2	14	9	16	3	7	1
Indiana	2	2	5	3	3	3	5	2	5	1	2	1
Illinois	5	6	13	------	1	1	59	16	27	7	9	2
Michigan [2]	5	6	4	1	1	1	36	15	39	4	4	3
Wisconsin	2	2	0	8	20	11	35	136	125	3	6	0
W. NORTH CENTRAL												
Minnesota	4	9	1	------	------	------	2	2	6	3	2	0
Iowa	0	0	1	------	------	------	3	2	15	1	0	2
Missouri	1	1	2	------	1	------	6	19	17	1	4	0
North Dakota	6	0	0	3	------	4	0	0	7	0	0	0
South Dakota	4	0	0	------	------	------	2	0	2	1	0	0
Nebraska	0	2	1	------	1	1	1	20	4	0	0	0
Kansas	6	1	2	------	------	------	7	3	9	0	1	1
SOUTH ATLANTIC												
Delaware	0	0	0	------	------	------	0	0	0	0	0	0
Maryland [2]	8	5	2	1	------	1	3	3	9	2	3	3
District of Columbia	0	0	0	------	------	------	0	4	4	1	0	1
Virginia	5	5	5	54	24	43	6	13	33	3	3	2
West Virginia	2	2	5	1	4	4	0	4	4	0	2	0
North Carolina	16	8	10	------	1	------	2	8	8	2	1	1
South Carolina	20	7	7	101	102	104	1	5	5	0	0	0
Georgia	11	11	11	7	2	7	2	1	4	1	1	0
Florida	3	5	1	1	4	2	0	4	3	2	6	3
E. SOUTH CENTRAL												
Kentucky	5	3	3	------	------	1	9	2	11	2	2	1
Tennessee	11	2	5	3	2	9	1	12	7	5	2	2
Alabama	2	13	9	35	11	11	0	3	8	1	5	1
Mississippi [2]	13	9	8	------	------	------	------	------	------	1	1	1
W. SOUTH CENTRAL												
Arkansas	4	10	4	13	13	4	0	12	12	1	0	0
Louisiana	2	4	7	3	4	4	3	1	3	2	0	1
Oklahoma	1	4	3	17	------	11	6	2	2	1	0	0
Texas	33	39	25	221	292	175	31	44	44	2	7	2
MOUNTAIN												
Montana	0	2	1	------	1	1	3	0	10	0	1	0
Idaho	1	0	0	3	------	------	19	0	3	0	0	0
Wyoming	0	0	1	------	------	------	3	1	5	0	1	0
Colorado	3	2	3	4	25	11	2	4	8	1	1	1
New Mexico	2	1	1	------	1	1	0	0	2	0	0	0
Arizona	3	2	1	12	30	20	2	15	12	0	0	0
Utah [2]	0	0	0	------	------	------	25	23	19	0	0	0
Nevada	0	0	0	------	------	------	0	0	0	0	0	0
PACIFIC												
Washington	1	3	2	------	------	------	37	19	19	2	2	1
Oregon	7	1	1	------	1	3	13	18	12	1	3	2
California	11	19	9	9	9	15	189	170	101	8	11	2
Total	214	203	185	503	564	506	645	777	1,028	79	145	42
33 weeks	8,284	6,783	7,426	70,732	338,678	169,222	101,210	590,958	537,131	6,170	13,089	2,396

[1] New York City only.
[2] Period ended earlier than Saturday.

Telegraphic morbidity reports from State health officers for the week ended August 18, 1945, and comparison with corresponding week of 1944, and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever [2]		
	Week ended—		Median 1940–44	Week ended—		Median 1940–44	Week ended—		Median 1940–44	Week ended—		Median 1940–44
	Aug. 18, 1945	Aug. 19, 1944		Aug. 18, 1945	Aug. 19, 1944		Aug. 18, 1945	Aug. 19, 1944		Aug. 18, 1945	Aug. 19, 1944	
NEW ENGLAND												
Maine	0	0	0	8	2	2	0	0	0	0	3	0
New Hampshire	1	6	0	2	0	2	0	0	0	1	0	0
Vermont	2	2	0	0	0	0	0	0	0	0	0	0
Massachusetts	22	30	7	28	46	46	0	0	0	2	3	6
Rhode Island	0	0	2	1	1	1	0	0	0	0	1	1
Connecticut	13	15	7	3	2	3	0	0	0	1	2	1
MIDDLE ATLANTIC												
New York	110	469	42	80	58	55	0	0	0	4	16	12
New Jersey	72	24	12	14	11	18	0	0	0	7	3	6
Pennsylvania	50	108	5	39	38	38	0	0	0	5	4	14
EAST NORTH CENTRAL												
Ohio	15	92	36	52	44	38	0	0	0	7	8	8
Indiana	16	23	5	8	15	13	0	0	0	1	1	6
Illinois	77	34	27	26	26	35	0	0	1	1	4	4
Michigan [3]	10	55	16	40	25	32	0	0	0	1	4	4
Wisconsin	3	11	2	32	53	30	0	0	0	0	0	0
WEST NORTH CENTRAL												
Minnesota	9	38	14	11	11	12	0	0	0	0	0	0
Iowa	7	12	8	15	5	9	0	0	0	0	2	1
Missouri	10	4	8	12	6	7	0	0	0	1	1	6
North Dakota	2	4	1	2	3	2	0	0	0	0	0	0
South Dakota	0	0	0	4	0	2	0	0	0	0	0	0
Nebraska	4	2	2	5	1	1	0	0	0	0	0	0
Kansas	1	7	7	19	6	20	0	0	0	3	6	4
SOUTH ATLANTIC												
Delaware	2	4	2	1	0	0	0	0	0	1	0	0
Maryland [2]	8	27	0	13	15	8	0	0	0	1	1	2
District of Columbia	12	19	0	3	4	4	0	0	0	0	0	0
Virginia	25	66	7	14	13	12	0	0	0	6	3	9
West Virginia	6	12	5	17	25	18	0	0	0	3	3	7
North Carolina	6	48	8	26	28	22	0	0	0	3	4	4
South Carolina	11	1	1	5	6	5	0	0	0	4	7	8
Georgia	3	5	1	18	3	6	0	1	0	6	11	11
Florida	3	8	2	2	2	0	0	0	0	1	6	4
EAST SOUTH CENTRAL												
Kentucky	3	35	19	8	2	7	0	0	0	2	7	19
Tennessee	36	5	5	8	9	9	0	0	0	4	5	9
Alabama	7	7	3	10	8	12	0	0	0	2	3	3
Mississippi [2]	3	6	3	7	8	8	0	0	0	2	6	6
WEST SOUTH CENTRAL												
Arkansas	0	2	4	4	5	6	0	0	0	4	5	11
Louisiana	6	4	4	7	3	3	0	0	0	6	1	12
Oklahoma	18	6	6	7	0	3	0	0	0	3	2	6
Texas	55	4	4	31	22	18	0	0	0	10	41	32
MOUNTAIN												
Montana	0	2	1	2	7	4	0	0	0	0	0	0
Idaho	1	0	0	2	5	3	0	0	0	2	0	0
Wyoming	0	2	0	4	2	1	0	0	0	0	0	0
Colorado	7	3	0	8	7	10	0	0	0	1	2	2
New Mexico	0	0	1	6	0	1	0	0	0	1	0	2
Arizona	0	3	0	2	8	1	0	0	0	2	1	1
Utah [2]	8	2	2	2	11	5	0	0	0	1	2	0
Nevada	1	0	0	0	1	0	0	0	0	0	0	0
PACIFIC												
Washington	22	12	12	10	16	16	0	0	0	2	0	3
Oregon	2	19	4	4	17	5	0	0	0	0	0	2
California	25	16	16	108	70	50	0	0	0	8	2	4
Total	694	1,254	549	730	650	641	0	1	3	109	170	212
33 weeks	4,278	6,262	2,821	134,548	147,592	97,729	265	300	612	2,730	3,257	4,025

[2] Period ended earlier than Saturday.

[3] Including paratyphoid fever reported separately as follows: Massachusetts 2; New Jersey 1; South Carolina 1; Georgia 2; Texas 2; California 1.

Telegraphic morbidity reports from State health officers for the week ended August 18, 1945, and comparison with corresponding week of 1944 and 5-year median—Con.

Division and State	Whooping cough			Week ended August 18, 1945							
	Week ended—		Median 1940–44	Dysentery			Encephalitis, infectious	Rocky Mt. spotted fever	Tularemia	Typhus fever, endemic	Undulant fever
	Aug. 18, 1945	Aug. 19, 1944		Amebic	Bacillary	Unspecified					
NEW ENGLAND											
Maine	24	4	18	0	0	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	0	0	0	0	0	0
Vermont	8	32	21	0	0	0	0	0	0	0	2
Massachusetts	94	63	139	1	10	0	0	0	0	0	2
Rhode Island	7	6	12	0	4	0	1	0	0	0	0
Connecticut	24	37	32	0	8	0	0	0	0	0	3
MIDDLE ATLANTIC											
New York	269	168	241	5	4	0	1	0	1	0	4
New Jersey	155	37	124	0	2	0	0	0	0	0	1
Pennsylvania	156	56	226	0	0	0	0	1	0	0	0
EAST NORTH CENTRAL											
Ohio	149	152	158	0	0	1	0	0	0	0	3
Indiana	18	6	15	3	0	0	1	0	0	0	2
Illinois	97	94	181	1	0	0	0	1	1	0	7
Michigan [3]	53	78	252	0	1	0	0	0	0	0	8
Wisconsin	73	179	214	0	0	0	0	0	0	0	8
WEST NORTH CENTRAL											
Minnesota	2	44	50	3	0	0	0	0	2	0	4
Iowa	9	5	26	0	0	0	0	0	0	0	0
Missouri	33	15	17	0	0	3	0	0	0	0	4
North Dakota	2	9	13	0	0	0	0	0	0	0	1
South Dakota	2	4	5	0	0	0	0	0	0	0	0
Nebraska	0	19	6	0	0	0	0	0	0	0	0
Kansas	19	24	47	0	0	0	1	0	0	0	3
SOUTH ATLANTIC											
Delaware	5	1	4	0	0	0	0	0	0	0	0
Maryland [3]	41	56	57	0	0	8	0	2	0	0	0
District of Columbia	8	7	12	0	0	0	0	0	0	0	0
Virginia	39	40	40	0	0	395	0	7	0	5	1
West Virginia	8	34	29	0	0	0	0	0	0	0	0
North Carolina	93	107	107	0	13	0	0	4	0	2	1
South Carolina	55	89	74	0	19	0	0	0	1	13	0
Georgia	14	2	9	1	5	1	0	0	1	27	5
Florida	0	2	3	3	0	0	0	0	0	5	1
EAST SOUTH CENTRAL											
Kentucky	29	60	46	0	6	0	0	2	0	0	0
Tennessee	38	20	47	1	0	8	0	1	0	0	1
Alabama	14	14	15	0	0	0	0	0	0	22	7
Mississippi [3]	----	----	----	0	0	0	0	0	0	8	4
WEST SOUTH CENTRAL											
Arkansas	8	22	22	0	1	0	0	0	4	0	0
Louisiana	5	9	8	0	1	0	0	0	0	19	0
Oklahoma	15	17	11	0	5	0	0	1	0	0	0
Texas	122	165	165	6	299	19	1	0	0	75	4
MOUNTAIN											
Montana	0	9	22	0	0	0	0	0	0	0	0
Idaho	7	4	4	0	4	0	0	0	0	0	0
Wyoming	3	0	3	0	0	0	0	0	1	0	0
Colorado	39	21	25	0	0	0	0	0	0	0	0
New Mexico	6	0	14	1	1	4	0	0	0	0	0
Arizona	1	9	9	0	0	23	1	0	0	0	0
Utah [3]	18	30	45	0	0	0	0	0	0	0	1
Nevada	0	0	0	0	0	0	0	0	0	0	0
PACIFIC											
Washington	22	11	42	0	0	0	0	0	0	0	0
Oregon	13	8	22	0	0	0	0	0	0	0	0
California	248	66	170	0	4	0	13	0	0	0	4
Total	2,045	1,835	3,063	25	387	462	19	19	11	176	81
Same week, 1944	1,835	----	----	49	546	315	10	17	4	230	77
Average, 1942–44	2,650	----	----	42	464	310	21	[4]18	9	[4]149	----
33 weeks, 1945	84,194	----	----	1,183	15,995	6,135	279	348	519	2,677	3,110
1944	63,152	----	----	1,111	13,994	5,184	372	365	379	2,729	2,329
Average, 1942–44	105,816	----	[4]122,382	1,060	15,948	4,708	374	[4]365	540	[4]1,819	----

[3] Period ended earlier than Saturday.
[4] 5-year median, 1940–44.
Anthrax: Connecticut 1 case.

WEEKLY REPORTS FROM CITIES

City reports for week ended August 11, 1945

This table lists the reports from 87 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
NEW ENGLAND												
Maine:												
Portland	4	0	------	0	0	0	1	1	0	0	0	0
New Hampshire:												
Concord	0	0	------	0	0	0	0	0	0	0	0	0
Massachusetts:												
Boston	1	0	------	0	20	0	5	17	13	0	0	34
Fall River	0	0	------	0	1	0	0	0	2	0	0	0
Springfield	0	0	------	0	1	0	1	0	3	0	0	6
Worcester	0	0	------	0	21	0	8	0	4	0	0	9
Rhode Island:												
Providence	0	0	------	0	0	0	0	0	0	0	0	6
Connecticut:												
Bridgeport	0	0	------	0	0	0	0	0	0	0	0	0
Hartford	0	0	------	0	0	0	0	1	0	0	0	2
New Haven	0	0	------	0	1	1	1	0	1	0	0	4
MIDDLE ATLANTIC												
New York:												
Buffalo	0	0	------	0	0	0	1	7	2	0	0	2
New York	5	1	------	1	19	4	27	51	37	0	6	181
Rochester	0	0	------	0	0	0	4	15	1	0	0	9
Syracuse	0	0	------	0	0	0	2	0	1	0	0	40
New Jersey:												
Camden	4	0	------	0	3	0	1	0	1	0	0	2
Newark	0	0	------	0	0	0	1	1	2	0	1	18
Trenton	0	0	------	0	0	0	1	13	1	0	0	1
Pennsylvania:												
Philadelphia	0	0	1	0	37	3	14	16	8	0	4	84
Pittsburgh	2	0	------	0	0	0	9	1	1	0	0	41
Reading	0	0	------	0	3	0	0	0	0	0	0	3
EAST NORTH CENTRAL												
Ohio:												
Cincinnati	0	0	------	0	4	0	7	3	1	0	1	21
Cleveland	0	0	------	0	1	3	3	2	12	0	0	35
Columbus	0	0	------	0	0	0	2	3	2	0	0	1
Indiana:												
Fort Wayne	0	0	------	0	0	0	1	0	0	0	0	0
Indianapolis	1	0	------	0	0	2	2	1	4	0	0	11
South Bend	0	0	------	0	0	0	0	0	0	0	0	0
Terre Haute	2	0	------	0	0	0	2	0	0	0	0	1
Illinois:												
Chicago	1	0	------	1	58	6	13	11	16	0	1	69
Springfield	0	0	------	0	0	0	0	0	0	0	0	1
Michigan:												
Detroit	2	0	------	0	25	0	6	3	10	0	0	44
Flint	0	0	------	0	0	0	2	1	2	0	0	4
Grand Rapids	0	0	------	0	2	0	2	3	0	0	0	1
Wisconsin:												
Kenosha	0	0	------	0	1	0	0	0	0	0	0	2
Milwaukee	0	0	------	0	3	1	0	3	11	0	0	4
Racine	0	0	------	0	1	0	1	0	0	0	0	1
Superior	0	0	------	0	1	0	0	0	2	0	0	6
WEST NORTH CENTRAL												
Minnesota:												
Duluth	0	0	------	0	1	0	0	0	0	0	0	0
Minneapolis	0	0	------	0	0	0	2	2	11	0	0	0
St. Paul	1	0	------	0	2	1	1	0	1	0	0	21
Missouri:												
Kansas City	0	0	------	0	2	0	4	0	0	0	1	5
St. Joseph	0	0	------	0	0	0	0	0	1	0	0	0
St. Louis	0	1	2	0	4	0	6	3	2	0	0	29

City reports for week ended August 11, 1945—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
WEST NORTH CENTRAL—continued												
North Dakota:												
Fargo	0	0	------	0	0	0	0	0	1	0	1	2
Nebraska:												
Omaha	2	0	------	0	0	0	1	9	1	0	0	1
Kansas:												
Topeka	0	0	------	0	0	0	0	0	2	0	0	0
Wichita	0	1	------	0	0	0	2	1	3	0	0	5
SOUTH ATLANTIC												
Delaware:												
Wilmington	0	0	------	0	0	0	2	0	1	0	0	
Maryland:												
Baltimore	3	0	------	0	0	1	7	0	3	0	0	55
Cumberland	0	0	------	0	0	0	0	0	0	0	0	1
Frederick	0	0	------	0	0	0	0	0	0	0	0	0
District of Columbia:												
Washington	1	0	------	0	1	3	3	13	3	0	0	15
Virginia:												
Lynchburg	0	0	------	0	0	0	0	0	0	0	0	0
Richmond	0	0	------	0	0	0	2	15	5	0	0	6
Roanoke	0	0	------	0	0	0	0	0	0	0	0	0
West Virginia:												
Charleston	0	0	------	0	0	0	0	1	0	0	0	
Wheeling	0	0	------	0	0	0	0	0	0	0	0	0
North Carolina:												
Raleigh	0	0	------	0	0	0	3	1	0	0	0	0
Wilmington	0	0	------	0	0	0	0	0	0	0	0	7
Winston-Salem	0	9	------	0	0	0	0	1	4	0	0	5
South Carolina:												
Charleston	0	0	------	0	0	0	1	1	0	0	0	0
Georgia:												
Atlanta	1	0	3	0	0	1	1	1	4	0	1	9
Brunswick	0	0	------	0	0	0	0	0	0	0	0	0
EAST SOUTH CENTRAL												
Tennessee:												
Memphis	0	0	------	0	0	0	4	2	4	0	0	13
Nashville	0	0	------	0	0	0	0	5	0	0	0	5
Alabama:												
Birmingham	0	0	------	0	0	0	1	4	2	0	0	0
Mobile	0	0	------	0	0	0	1	1	1	0	0	0
WEST SOUTH CENTRAL												
Arkansas:												
Little Rock	0	0	------	0	0	0	0	1	1	0	0	0
Louisiana:												
New Orleans	1	0	2	0	3	0	5	0	1	0	1	0
Shreveport	2	0	------	0	0	0	1	0	0	0	1	0
Texas:												
Dallas	1	0	------	0	1	0	0	1	3	0	1	3
Galveston	1	0	------	0	0	0	1	0	0	0	0	4
Houston	1	0	------	0	2	2	3	2	3	0	1	0
San Antonio	1	0	------	0	0	0	3	1	1	0	1	0
MOUNTAIN												
Montana:												
Billings	0	0	------	0	0	0	1	0	0	0	0	0
Great Falls	0	0	------	0	0	0	1	0	1	0	0	0
Helena	0	0	------	0	1	0	0	0	1	0	0	0
Missoula	0	0	------	0	0	0	2	1	0	0	0	0
Idaho:												
Boise	0	0	------	0	0	0	0	0	0	0	0	0
Colorado:												
Denver	1	0	1	0	1	0	1	2	5	0	1	36
Pueblo	0	0	------	0	3	0	0	0	2	0	0	5
Utah:												
Salt Lake City	0	0	------	0	8	0	4	3	0	0	0	6

City reports for week ended August 11, 1945—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle	0	0	------	0	13	1	0	5	2	0	0	5
Spokane	0	0	------	0	1	0	0	0	2	0	0	4
Tacoma	0	0	------	0	13	0	0	0	0	0	0	2
California:												
Los Angeles	4	0	. 3	1	19	0	1	5	20	0	0	36
Sacramento	0	0	------	0	4	0	2	2	3	0	0	8
San Francisco	1	0	------	0	47	3	5	3	16	0	0	9
Total	43	3	12	3	328	32	188	239	247	0	22	940
Corresponding week, 1944	30	------	12	7	292	------	259	------	178	0	17	685
Average, 1940–44	39	------	23	[1] 6	[2] 373	------	[1] 229	------	188	0	38	1,071

[1] 3-year average, 1942–44.
[2] 5-year median, 1940–44.

Dysentery, amebic.—Cases: Boston, 1; Detroit, 1; Spokane, 1.
Dysentery, bacillary.—Cases: Providence, 1; Detroit, 4; Baltimore, 1; Charleston, S. C., 13; Little Rock, 1; Los Angeles, 1.
Dysentery, unspecified.—Cases: Baltimore, 1; San Antonio, 5.
Typhus fever, endemic.—Cases: Wilmington, N. C., 1; Charleston, S. C., 2: Birmingham, 1; Mobile, 3; New Orleans, 2; Shreveport, 3; Galveston, 1; Houston, 6; San Antonio, 10.

Rates (annual basis) per 100,000 population, by geographic groups, for the 87 cities in the preceding table (estimated population, 1943, 34,147,300)

	Diphtheria case rates	Encephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcus, case rates	Pneumonia death rates	Poliomyelitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England	13.1	0.0	0.0	0.0	116	2.6	42.0	49.9	60	0.0	0.0	160
Middle Atlantic	5.1	0.5	0.5	0.5	29	3.2	27.8	48.1	25	0.0	5.1	176
East North Central	3.6	0.0	0.0	0.6	58	7.3	24.9	18.2	36	0.0	1.2	122
West North Central	6.0	4.0	4.0	0.0	18	2.0	31.8	29.8	44	0.0	4.0	125
South Atlantic	8.8	0.0	5.3	0.0	2	8.8	33.6	58.3	35	0.0	1.8	173
East South Central	0.0	0.0	0.0	0.0	0	0.0	35.4	70.8	41	0.0	0.0	106
West South Central	20.1	0.0	5.7	0.0	17	5.7	37.3	14.3	26	0.0	14.3	20
Mountain	7.9	0.0	7.9	0.0	103	0.0	71.5	47.7	71	0.0	7.9	373
Pacific	7.9	0.0	4.7	1.6	153	6.3	12.7	23.7	68	0.0	0.0	101
Total	6.6	0.5	1.8	0.5	50	4.9	28.8	36.6	38	0.0	3.4	144

FOREIGN REPORTS

ANGOLA

Notifiable diseases—January–March 1945.—During the months of January, February, and March 1945, certain notifiable diseases were reported in Angola as follows:

Disease	January		February		March	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Beriberi	43	1	20		5	
Bilharziasis	317		296		163	
Chickenpox	4		1		7	
Diphtheria	2		2		1	
Dysentery:						
Amebic	97	2	133	1	120	3
Bacillary	2	1			1	
Gonorrhea	238		223		248	
Hookworm disease	673	6	455	7	469	4
Influenza	1,300	8	1,095	12	1,537	11
Leprosy	5		2	1	1	
Measles	51		60		55	
Meningitis, meningococcus	4		4	2	17	1
Mumps	5		23		12	
Pneumonia	203	17	190	15	338	37
Poliomyelitis			1			
Relapsing fever	27		45		43	
Septicemia	1	1			1	1
Smallpox (including alastrim)	30		24		17	
Syphilis	509		382		498	
Tetanus	4	3	2	1	4	2
Trachoma	1					
Trypanosomiasis	147	11	136	11	203	11
Tuberculosis (respiratory system)	44	9	57	4	57	5
Typhoid and paratyphoid fever	8	1	9	1	3	
Whooping cough	118	2	115	6	109	2
Yaws	928		944	1	1,145	

CANADA

Provinces—Communicable diseases—Week ended July 28, 1945.—During the week ended July 28, 1945, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		8		25	112	25	18	36	65	289
Diphtheria		4	3	19	1	4				31
Dysentery:										
Bacillary				2					4	6
Unspecified					2					2
German measles				3	6		2	14	6	31
Influenza		5			13	2			1	21
Measles				38	50	3	8	10	41	150
Meningitis, meningococcus				1	2	1			1	5
Mumps		4		10	16	9	8	31	13	91
Poliomyelitis				1	7	1				9
Scarlet fever			7	26	31	5	1	1	5	76
Tuberculosis (all forms)		5	3	100	50	13		2	20	193
Typhoid and paratyphoid fever		1		6	4		8	5		24
Undulant fever				4	2				1	7
Venereal diseases:										
Gonorrhea		22	13	123	183	51	37	43	107	579
Syphilis		4	2	121	77	6	12	9	46	277
Whooping cough		5		78	23		2	12	3	123

CUBA

Habana—Communicable diseases—4 weeks ended July 21, 1945.—During the 4 weeks ended July 21, 1945, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chickenpox	1		Tuberculosis	2	
Diphtheria	14	1	Typhoid fever	32	7
Measles	3				

Provinces—Notifiable diseases—4 weeks ended July 14, 1945.—During the 4 weeks ended July 14, 1945, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana[1]	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer			1	9	1	9	20
Chickenpox		3	1	1	1	1	7
Diphtheria		15	2				17
Leprosy						4	4
Malaria	5				1	115	121
Measles		2		2			4
Poliomyelitis			1			1	2
Tuberculosis	10	12	12	29	15	39	117
Typhoid fever	32	114	33	93	66	54	392

[1] Includes the city of Habana.

JAMAICA

Notifiable diseases—4 weeks ended July 28, 1945.—During the 4 weeks ended July 28, 1945, cases of certain notifiable diseases were reported in Kingston, Jamaica, and in the island outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis	2	2	Paratyphoid fever		1
Chickenpox	7	11	Puerperal fever	1	
Diphtheria	5	5	Tuberculosis, pulmonary	39	61
Dysentery, unspecified	3	2	Typhoid fever	13	178
Leprosy	1		Typhus fever (murine)	1	2

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual incidence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

Cholera

China.—Cholera has been reported in China as follows: Hupeh Province—Enshih, June 30 to July 11, 1945, 3 cases; Hingshan, July

13, 1 case, 1 death; Maoping, July 12, 2 cases; Tzekwei, July 11, 8 cases, 5 deaths; Kweichow Province—Tsunyi, June 24–29, 4 cases, 2 deaths; Sikong Province—Yaan, July 17, present; Szechwan Province, May 5 to July 12, 1945, 626 cases, 180 deaths.

Plague

Canada—Alberta Province.—A report dated August 7, 1945, stated that plague infection was proved in a pool of fleas collected from squirrels near Cereal, and in another pool of fleas collected in Pollockville, Alberta Province, Canada.

Ecuador—Loja Province.—For the month of July 1945, 11 cases of plague with 5 deaths were reported in Loja County, Loja Province, Ecuador.

Great Britain—Malta.—For the week ended August 4, 1945, 1 case of plague was reported in Zurrie and for the week ended August 11, 1945, 1 fatal case of plague was reported for which no specific location was given.

Morocco (French).—For the period July 21–31, 1945, 73 cases of plague were reported in French Morocco.

Peru.—For the month of June 1945, plague was reported in Peru as follows: Lambayeque Department, Province of Chiclayo, Villa de Eten, 1 case; Lima Department, Province of Chancay, Huacho city, 1 case. Plague infection in rodents was also reported in Huacho, Villa de Eten, and Trujillo, Peru.

Portugal—Azores.—Ponta Delgada—Banlieue.—For the period July 15 to August 11, 1945, 4 cases of plague were reported in Banlieue, Ponta Delgada, Azores, Portugal.

Smallpox

Morocco (French).—For the period July 21–31, 1945, 203 cases of smallpox were reported in French Morocco.

Typhus Fever

Ecuador.—For the month of July 1945, 61 cases of typhus fever with 3 deaths were reported in Ecuador. Cities reporting the highest incidence are as follows: Ambato, 13 cases, 1 death, Guayaquil, 9 cases (murine type), Ibarra, 17 cases, 1 death, Quito, 14 cases.

Morocco (French).—For the period July 21–31, 1945, 418 cases of typhus fever, including 15 cases reported in Casablanca and 6 cases in Rabat, were reported in French Morocco.

Peru.—For the month of June 1945, 79 cases of typhus fever were reported in Peru. Departments reporting the highest incidence are as follows: Cuzco, 25 cases, Cajamarca, 18 cases, Libertad, 11 cases.

Turkey.—For the week ended August 11, 1945, 26 cases of typhus

fever were reported in Turkey, including 2 cases in Istanbul, 2 cases in Izmir, 1 case in Kocaeli, and 1 case in Zonguldak.

Yellow Fever

Colombia.—Yellow fever has been reported in Colombia as follows: Magdalena Department, San Juan de Cesar, July 7–15, 1945, 2 deaths; Norte de Santander Department—Municipality of Cucuta, June 24–29, 1945, 2 deaths, July 14, 1945, 1 death, Municipality of Sardinata, June 21, 1945, 1 death.

Gold Coast—Winneba.—On August 2, 1945, 1 confirmed fatal case of yellow fever was reported in Winneba, Gold Coast.

Peru—Cuzco Department—Quincemil.—During the month of May 1945, 1 confirmed case of yellow fever was reported in Quincemil, Cuzco Department, Peru.

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