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INFLUENZA PREVALENCE IN THE UNITED STATES

The epidemic of influenza appears to be traveling eastward, but with somewhat diminished intensity, according to the reports from State health officers which are tabulated on page 80.

The total number of cases of influenza reported to the United States Public Health Service for the week ended December 29, 1928, was about 160,000, while for the preceding week about 250,000 cases were reported. However, the earlier week included an estimate of 40,000 cases in Virginia, and no estimate for Virginia was included in the figures for the later week.

On the Pacific coast and in the Mountain States the reports for the week ended December 29, 1928, showed continued improvement over preceding weeks, although Oregon and New Mexico reported more cases of influenza than they did for the week ended December 22.

The West North Central States also reported fewer cases than were reported for the preceding weeks.

Ohio, Indiana, Illinois, and Michigan reported increased prevalence of influenza for the week ended December 29, but in Wisconsin less than 4,700 cases were reported, as compared with 14,700 cases for the preceding week.

The South Central States, both east and west of the Mississippi River, reported increased prevalence of the disease.

Delaware, Maryland, the District of Columbia, and West Virginia, reported more cases of influenza for the week ended December 29 than they did for the preceding week, but conditions apparently improved in South Carolina and Georgia.

In the Middle Atlantic and New England States, there was an increase in the number of cases, but the figures as reported are not large. Reports of cases of influenza are not received from Pennsylvania and New York outside of New York City, but the State health officer of New York has received reports from 12 counties of epidemic prevalence of influenza or an influenza-like disease, most of the cases being very mild and many of them not seen by physicians.

The death rate from influenza and pneumonia (combined) in 95 large cities, having an aggregate population of about 31,000,000, rose from 103 per 100,000 population for the week ended November 10, 1928, to 354 per 100,000 for the week ended December 22, 1928. These death rates, however, are not as high as might be expected

when the large numbers of cases of influenza are considered. In March, 1926, the corresponding rates in the same cities rose to more than 450 per 100,000 population.

SUMMARY OF THE INFLUENZA EPIDEMIC[1]

According to weekly reports sent to the United States Public Health Service by the health officers of 44 States, the influenza incidence had declined somewhat for the country as a whole by the week ended

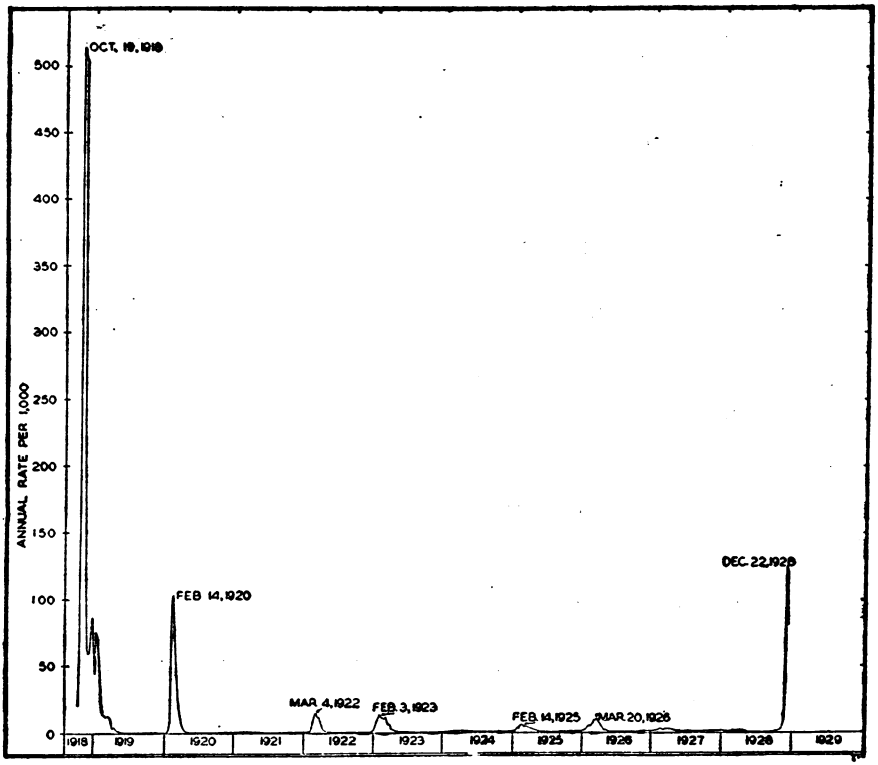

FIG. 1.—Weekly incidence of influenza, September 22, 1918, to December 29, 1928, as indicated by the cases reported to State boards of health in a group of States

December 29, 1928. The reported case rate was 80 per 1,000 population (annual basis) compared with 126 per 1,000 for the preceding week. The situation varied widely in different regions, however, as will be shown.

In Figure 1 the reported weekly case rates for the current epidemic are shown in graphic comparison with previous outbreaks. From this it is apparent that, if the decline continues, the incidence in the present epidemic will be approximately of the order of magnitude of that of the 1920 outbreak, in which the peak incidence was, roughly, one-fifth of the peak of the 1918 pandemic.

[1] From the Office of Statistical Investigations, U. S. Public Health Service.

TABLE 1.—*Weekly number of cases of influenza occurring in various States as reported to the United States Public Health Service*

[These reports are preliminary and subject to change. States omitted are those from which no reports have been received]

Division and State	Cases reported for week ended—													Total cases Oct. 14 to Dec. 29, 1928
	October, 1928				November, 1928				December, 1928					
	6	13	20	27	3	10	17	24	1	8	15	22	29	
Pacific:														
California	27	34	158	1,392	2,389	2,596	3,192	4,843	8,213	10,296	6,655	2,708	1,232	43,674
Oregon	26	5	25	25	19	50	52	250	296	1,466	1,851	1,605	2,007	7,706
Washington						4	3	28	8	22	407	766	590	1,828
Mountain:														
Arizona	3				1			4	18	100	2,615	933	495	4,166
Colorado	2		3		4	2		2	37	1,936	1,146		[1] 2,468	5,598
Idaho					1			14	11	7	79	11	34	157
Montana		6					33	421	3,372	4,580	3,060	4,031	623	16,120
New Mexico					1		2	42	66	170	1,757	1,161	2,005	4,204
Utah		4	5	2	4	3	25	158	258	96	224	63	14	852
Wyoming								7	6	68	450	320	179	1,030
West North Central:														
Iowa	1											[2] 85,000	[2] 27,000	[2] 112,000
Kansas		2	5	1	5	1		2	7	13,596	68,843	17,617	11,953	111,030
Minnesota	1	1		3	1			1	4	4	1,238	1,749	108	3,108
Missouri	6	4		10	9	6	4	16	37	140	11,683	1,184	1,774	14,863
Nebraska				4	2	14			17	364	2,590	1,704	909	5,604
North Dakota			3		2			16		194	7,355	21,346	1,644	30,560
South Dakota					5	3	1				167	103	253	532
West South Central:														
Arkansas	47	28	16	33	56	29	102	89	90	95	412	1,145	2,830	4,897
Louisiana	5	9	3	10	10	16	42	22	17	36	136	121	2,343	2,756
Oklahoma	8	35	33	25	33	51	58	87	53	200	994	3,574	8,205	13,313
Texas	28	34	6	47	34	26	43	19	31	38	37	992	160	1,433
East South Central:														
Alabama	71	39	61	60	62	91	152	191	158	214	622	1,518	6,261	9,390
Kentucky										4	3,946	10,100	10,585	24,635
Mississippi											2,038	2,689	22,094	26,821
Tennessee	20	27	24	27	41	25	25	97	107	222	6,612	4,101	5,205	16,486
East North Central:														
Illinois	8	10	22	11	17	9	26	20	92	97	2,196	2,408	2,657	7,555
Indiana	15	18	11	9	7	23	10	7	261	87	2,280	1,761	3,158	7,614
Michigan			6		10	10	3	2	4	6	244	5,777	10,690	16,745
Ohio	6	24	6	10		16	18	11	22	45	718	1,872	6,957	9,675
Wisconsin	19	54	24	28	22	33	51	38	22	107	583	14,724	4,698	20,330

[1] Total for 2 weeks ending Dec. 29, 1928.

[2] Number of cases estimated.

TABLE 1.—*Weekly number of cases of influenza occurring in various States as reported to the United States Public Health Service*—Continued

Division and State	Cases reported for week ended—													Total cases Oct. 14 to Dec. 29, 1928
	October, 1928				November, 1928				December, 1928					
	6	13	20	27	3	10	17	24	1	8	15	22	29	
South Atlantic:														
Delaware		3									4	10	16	30
District of Columbia	1				1		1	3	4	3	29	187	293	521
Florida	9	5	6	1		6		31	25	17	93	228	541	948
Georgia	110	112	87	78	103	153	100	146	344	990	4,462	6,852	6,123	19,438
Maryland	7	8	3	9	8	10	14	13	15	10	72	627	1,048	1,829
South Carolina	664	591	546	533	858	981	1,008	1,770	2,718	5,145	8,912	9,662	7,885	30,356
West Virginia	12	15	7	11	8	5	4	13	16	57	461	2,640	4,683	7,911
Virginia												[1] 40,000		[1] 40,000
New England and Middle Atlantic:														
Connecticut	12	3	2	3	21	1	2	4	5	4	14	144	297	497
Maine	1			3	1	4	2	22	3	12		46	211	304
Massachusetts	3	6	12	7	5	6	5	9	13	15	21	73	221	314
New Jersey	1	9	15	5	3	8	10	5	9	22	54	219	584	934
New York City	9	10	19	11	15		16	20	20	30	68	271	441	712
Rhode Island					5			4	10	2	1	14	9	45
Vermont													292	292

[1] Number of cases estimated.

The graph also suggests that the vague symptom complex which is termed "influenza" has not been limited to a specific month, the three major outbreaks coming to a peak in October, December, and February, respectively.

CHRONOLOGY BY STATES

From the reported cases, the 1928 outbreak would seem to have become perceptible in late October, in two widely separated regions—California and South Carolina (Figure 2). The more complete reporting of this disease in South Carolina may have resulted in making the outbreak seem to have occurred earlier in that State than it really did. Peaks were first reached in the States of Utah (week ended December 1), California, Montana, and Colorado (week ended December 8).

By the end of 1928, declines had begun in California and practically all the Mountain and West North Central States. On the other hand, none of the Atlantic Coast States had begun to decline by December 29, except possibly Georgia and South Carolina. A definite lag of at least three weeks is already apparent between the New England States and certain States of the Far West.

It should be emphasized that Figure 2 shows actual cases upon *variable scales*, and therefore does not indicate *relative* intensity of the epidemic in the several States.

The weekly number of cases in each area to December 29, 1928, is shown in Table 1.

CUMULATIVE ATTACK RATES

The largest proportions of the population are reported to have been attacked up to December 29 in Kansas, 6.1 per cent; North Dakota, 4.8 per cent; Iowa, 4.6 per cent; Montana, 2.9 per cent; and in South Carolina, 1.6 per cent.

Three-fourths of the States have, to December 29, reported less than one per cent of their populations attacked. These rates are, of course, very deficient, and final judgment upon the subject must be suspended until more accurate data become available from house-to-house surveys, which are about to be undertaken by the Public Health Service in certain cities.

Such as they are, however, the reported rates covering the eleven weeks ended December 29, 1928, are shown in Table 2. While highly incomplete in an absolute sense, they nevertheless tend to show in a crude way the frequency of attack in different parts of the country to December 29.

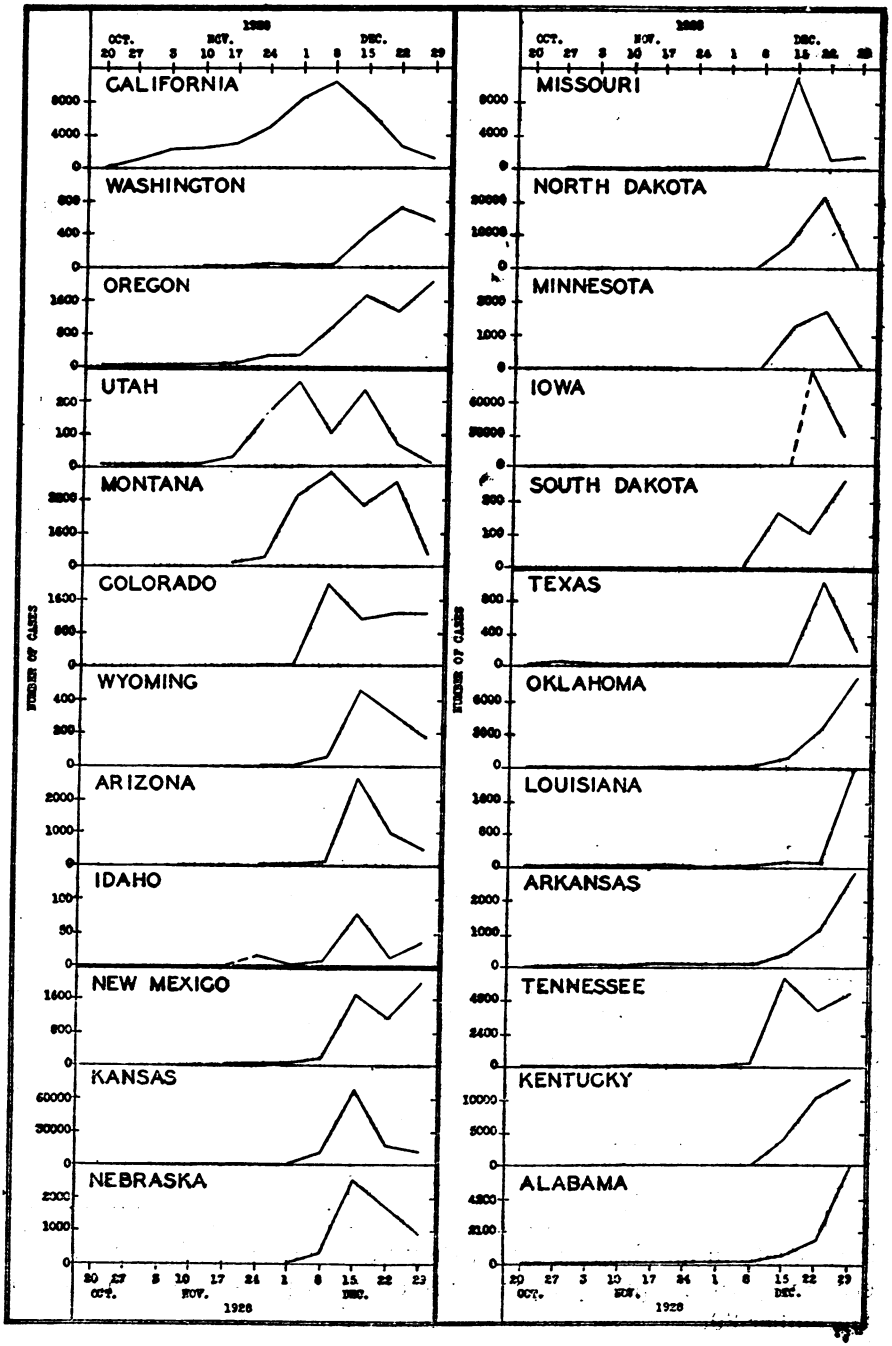

FIG. 2.—Reported cases of influenza by weeks in each State, October 14 to December 29, 1928

MORTALITY FROM INFLUENZA AND PNEUMONIA

The excess mortality in large cities from influenza and pneumonia over the average rate for corresponding nonepidemic periods in recent years is shown in Table 3.

It will be noted that during the last week of 1928, the mortality from these diseases was 470 per 100,000 population (annual basis).

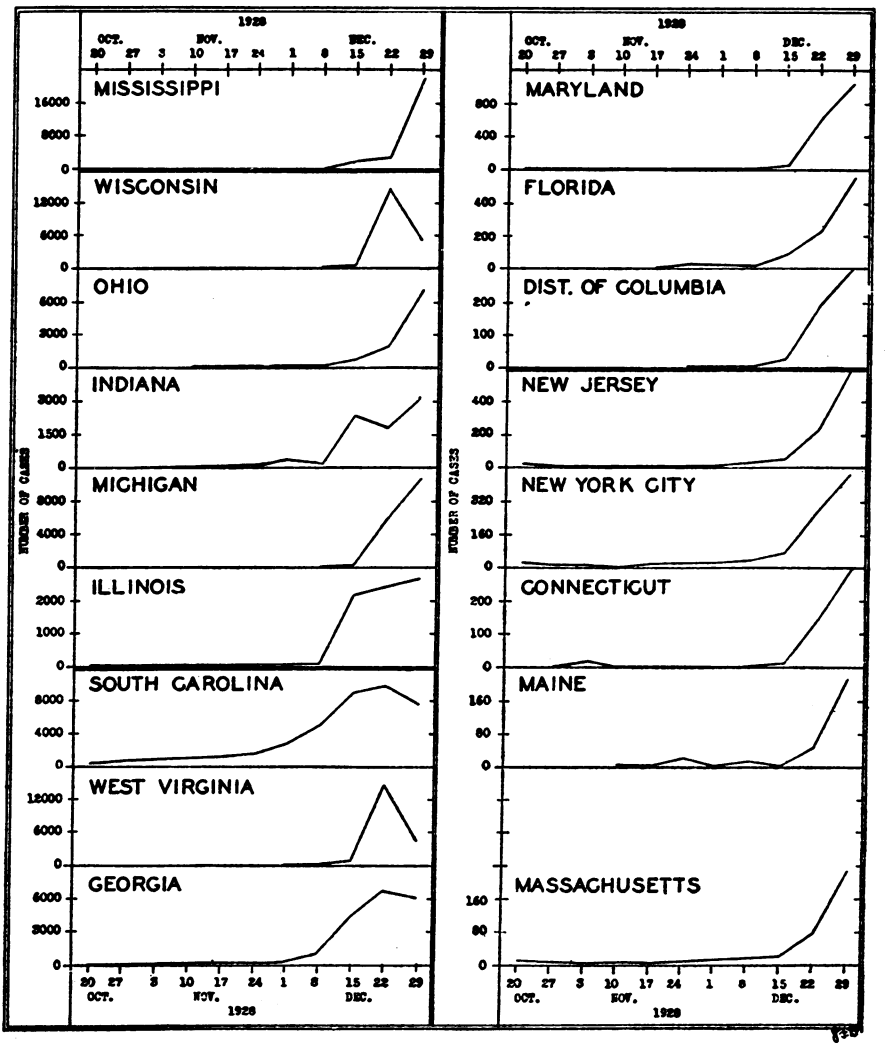

FIG. 2.—Continued

This rate, the highest to date for the current epidemic, represents an excess of 299 per 100,000 over the nonepidemic average of recent years, the excess amounting to 175 per cent.

While there is, as yet, no assurance that the last week of December will see the mortality peak of the current epidemic, it is nevertheless interesting to compare this rate with the peaks of other epidemics.

Thus, the highest weekly excess mortality from influenza and pneumonia during the 1920 epidemic was 1,319 per 100,000, and in the 1918 pandemic it was 4,695 per 100,000 population, that is to say, the maximum epidemic excess was in 1920 about four times and in 1918 was about sixteen times the highest recent excess.

In other words, if the mortality of the present epidemic should go no higher, the outbreak should be classed as of relatively low mortality.

TABLE 2.—*Reported influenza attack rates per 1,000 population from October 14 to December 29, 1928, inclusive*

State	Rate per 1,000 population	State	Rate per 1,000 population
Kansas	60. 51	Arkansas	2. 52
North Dakota	47. 66	Indiana	2. 40
Iowa	46. 13	Utah	1. 60
Montana	29. 37	Ohio	1. 42
South Carolina	16. 29	Louisiana	1. 41
Virginia	15. 53	Washington	1. 15
Mississippi	14. 98	Minnesota	1. 14
New Mexico	10. 62	Maryland	1. 13
Kentucky	9. 65	Illinois	1. 02
California	9. 59	District of Columbia	.94
Arizona	8. 79	Vermont	.84
Oregon	8. 54	South Dakota	.76
Wisconsin	6. 88	Florida	.67
Tennessee	6. 59	Maine	.38
Georgia	6. 07	Connecticut	.30
Oklahoma	5. 49	Idaho	.29
Colorado	5. 14	Texas	.26
West Virginia	4. 59	New Jersey	.24
Missouri	4. 22	Delaware	.12
Wyoming	4. 17	Massachusetts	.07
Nebraska	3. 98	New York City	.06
Alabama	3. 65	Rhode Island	.06
Michigan	3. 65		

TABLE 3.—*Mortality from influenza and pneumonia (including broncho-pneumonia) in a group of cities*

	Annual rate per 100,000 population during week ended [1]—								
	November				December				
	3	10	17	24	1	8	15	22	29
1928 [2]	101	107	125	144	170	209	274	398	470
Average 1924–1927 [3]	115	128	134	133	135	149	152	165	171
Excess	−14	−21	−9	+11	+35	+60	+122	+233	+299
RATES FOR YEARS ENTERING INTO AVERAGE									
1924	116	125	133	128	140	165	176	188	172
1925	133	154	150	159	159	161	147	167	153
1926	112	120	133	136	136	146	152	154	181
1927	99	112	121	109	126	122	132	152	176

[1] Date of week ended is for year 1928.
[2] 78 cities (estimated to be 100,000 or more population) reporting to U. S. Bureau of the Census; aggregate population, 32,358,142 in 1928.
[3] Cities reporting to U. S. Public Health Service numbered usually about 95, but were not the same group as 1928 figures; aggregate population, 31,660,000 in 1928.

DEATHS FROM INFLUENZA AND PNEUMONIA IN LARGE CITIES

Deaths from influenza and pneumonia in 78 large cities during nine weeks ended December 29, 1928. (From the Weekly Health Index, January 4, 1929, issued by the Bureau of the Census, Department of Commerce)

INFLUENZA DEATHS

City	Week ended—								
	Nov. 3	Nov. 10	Nov. 17	Nov. 24	Dec. 1	Dec. 8	Dec. 15	Dec. 22	Dec. 29
Total	51	78	91	105	203	291	477	829	1,035
Akron	0	0	0	0	0	0	2	18	14
Albany	0	0	0	0	0	2	1	1	3
Atlanta	0	0	1	0	2	10	10	33	51
Baltimore	2	0	3	1	5	4	6	8	17
Birmingham	1	3	0	0	0	2	4		11
Boston	0	0	2	2	2	0	2	2	3
Bridgeport	0	1	1	0	1	2	0	0	0
Buffalo	0	1	1	1	0	0		6	4
Cambridge	0	0	0	0	0	0		0	
Camden	0	0	1	1	0	0	4		4
Canton	0	0	0	1	0	3		1	2
Chicago	4	4	6	2	10	10	33	80	104
Cincinnati	0	2	2	0	2	0	6	5	9
Cleveland	4	2	2	1	1	2	2	25	54
Columbus	0	1	0	1	1	0	0	10	22
Dallas	1	3	0	2	1	2	0		18
Dayton	0	1	0	0	1	1		0	2
Denver	1	1	2	1	15	28	58	50	25
Des Moines	2	0	0	0	0	2	6	19	13
Detroit	2	1	4	0	4	3	4	22	64
Duluth	0	0	0	0	0	2	5	8	2
El Paso	0	2	1	1	4	1	4	7	10
Erie	0	0	0	1	1	0			3
Fall River	0	0	0	1	0	1	0	0	
Flint	0	0	1	0	0	0	0	2	5
Fort Worth	0	0	0	1	2	1	3	3	4
Grand Rapids	1	1	1	0	1	1	11	16	18
Houston	0	1	0	1	0	1	2	71	12
Indianapolis	1	0	0	1	0	3	6	16	15
Jersey City	0	1	0	0	0	2	2	3	2
Kansas City, Kans	0	0	0	0	0	1		23	8
Kansas City, Mo	2	0	1	0	1	12	35	20	
Knoxville	0	1	1	1	1	2	1	11	14
Los Angeles	2	0	8	14	55	70	85	45	32
Louisville				2				1	2
Lowell	0	0	0	0	1	0	0	1	0
Lynn	0	0	0	0	0	0		1	2
Memphis	1	0	0	2	1	2	2	3	
Milwaukee	1	3	0	0	0	2	3	10	10
Minneapolis	0	0	1	0	2	2	2	21	24
Nashville	0	2	1	2	1	2			8
New Bedford	0	0	0	0	0	0	0		1
New Haven	0	0	0	1	0	1	2	0	1
New Orleans	2	2	5	4	9	5	12	37	53
New York		11	8	14	11	15	16	25	46
Newark, N. J	0	1	2	0	0	0	1		
Oakland	4	2	3	5	11	3	1	7	
Oklahoma City			3	1		3		2	3
Omaha	0	0	0	0	0	0	0		
Paterson	0	0	0	0	1	1	0	2	0
Philadelphia	3	8	6	7	4	14	16	34	47
Pittsburg	1	3	1	8	4	5	17	64	144
Portland, Oreg	0	1	0	3	4	1	9	9	11
Providence	0	0		0	1	0	0	1	0
Richmond	0	0	0	0	0	1	3	0	4
Rochester	0	0	0	0	0	0	0	1	0
St. Louis	0	0	0	0	0	1	0	1	5
St. Paul	0	0	0	1	0	0	2	3	13
Salt Lake City	1	2	4	3	14	18	13	12	3
San Antonio	2	3	1	1	3	6	6	4	8
San Diego	0	1	1	0	6	11	16	8	6
San Francisco	6	11	11	10	7	9	9	10	9
Schenectady	0	0	0	0	2	0	0	1	0
Seattle	2	1	1	1	6	5	15	15	
Somerville	0	0	0	0	0	0			0
Spokane	0	1	0	1	0	6	8	11	9
Springfield, Mass	0	0	0	0	0	0	1	1	0

Deaths from influenza and pneumonia in 78 large cities during nine weeks ended December 29, 1928. (From the Weekly Health Index, January 4, 1929, issued by the Bureau of the Census, Department of Commerce)—Continued

INFLUENZA DEATHS—Continued

City	Week ended—								
	Nov. 3	Nov. 10	Nov. 17	Nov. 24	Dec. 1	Dec. 8	Dec. 15	Dec. 22	Dec. 29
Syracuse	0	0	1	0	0	0	0	3	6
Tacoma	0	0	0	0	0	0	1	3	10
Toledo	4	0	1	4	2	5	21	27	39
Trenton	0	0	1	0	1	1	-------	2	-------
Utica	0	0	0	0	1	0	1	0	-------
Washington, D. C	1	0	1	1	0	4	7	3	7
Waterbury	0	0	0	0	1	0	0	0	0
Wilmington, Del	0	0	0	0	0	0	0	1	4
Worcester	0	0	0	0	0	0	-------	0	-------
Yonkers	0	0	0	0	0	0	1	0	9
Youngstown	-------	-------	-------	-------	-------	-------	-------	-------	-------

PNEUMONIA DEATHS

Total	577	587	687	791	853	1,009	1,226	1,646	1,892
Akron	4	3	1	4	5	8	8	65	38
Albany	5	3	3	7	8	8	4	9	11
Atlanta	6	6	4	5	10	8	14	26	28
Baltimore	15	17	24	32	25	35	37	27	51
Birmingham	6	6	6	6	10	9	9	4	7
Boston	17	12	20	22	17	24	24	36	29
Bridgeport	2	5	4	6	1	3	3	2	1
Buffalo	8	13	15	11	15	15	24	33	36
Cambridge	2	0	2	2	2	1	3	2	6
Camden	0	1	3	5	4	5	12	8	4
Canton	2	2	2	2	5	3	6	15	12
Chicago	54	38	49	71	70	85	129	179	226
Cincinnati	10	13	10	15	14	13	11	13	26
Cleveland	12	16	7	13	14	17	19	35	60
Columbus	2	6	5	4	4	6	5	12	26
Dallas	0	2	1	2	4	2	1	4	21
Dayton	2	1	9	2	0	7	3	9	13
Denver	6	6	4	9	12	22	51	28	22
Des Moines	1	1	1	0	0	4	2	25	6
Detroit	19	24	31	25	38	39	35	57	112
Duluth	0	1	2	1	1	5	1	2	0
El Paso	2	4	2	3	2	5	6	11	-------
Erie	0	0	7	2	4	2	3	0	5
Fall River	1	0	1	2	0	3	1	5	7
Flint	3	6	4	5	9	11	2	4	12
Forth Worth	1	2	3	6	1	3	3	7	11
Grand Rapids	2	0	1	5	2	5	5	8	8
Houston	6	3	2	11	4	8	12	17	20
Indianapolis	6	4	11	18	14	19	33	43	48
Jersey City	6	4	11	12	6	8	12	18	17
Kansas City, Kans	1	2	5	1	5	5	31	12	6
Kansas City, Mo	9	5	3	5	15	15	29	52	12
Knoxville	2	4	3	6	1	4	1	18	9
Los Angeles	26	25	18	41	57	69	44	36	33
Louisville	10	6	10	3	7	14	10	9	13
Lowell	4	2	2	3	1	2	4	4	2
Lynn	3	1	0	1	2	0	3	2	6
Memphis	3	4	8	7	3	17	5	10	-------
Milwaukee	8	8	5	3	8	8	4	22	36
Minneapolis	8	9	16	4	6	15	8	14	23
Nashville	5	6	3	2	5	10	3	8	4
New Bedford	0	11	3	1	2	4	3	1	3
New Haven	6	3	5	2	3	1	6	6	4
New Orleans	14	14	12	9	12	15	16	22	44
New York	111	137	137	150	157	173	202	212	223
Newark, N. J	8	5	7	10	8	14	10	12	19
Oakland	3	5	6	4	11	6	8	6	6
Oklahoma City	2	4	7	6	2	6	8	7	9
Omaha	2	5	7	5	7	10	34	38	41
Paterson	2	5	3	2	2	3	3	4	2
Philadelphia	25	30	46	43	54	70	83	132	134
Pittsburgh	12	17	27	27	30	16	40	95	149
Portland, Oreg	4	2	7	5	3	4	11	10	18
Providence	2	4	8	3	8	7	6	7	8
Richmond	3	0	2	6	5	4	4	4	14

Deaths from influenza and pneumonia in 78 large cities during nine weeks ended December 29, 1928. (From the Weekly Health Index, January 4, 1929, issued by the Bureau of the Census, Department of Commerce)—Continued

PNEUMONIA DEATHS—Continued

City	Week ended—								
	Nov. 3	Nov. 10	Nov. 17	Nov. 24	Dec. 1	Dec. 8	Dec. 15	Dec. 22	Dec. 29
Rochester	3	2	8	6	7	3	7	5	8
St. Louis	14	8	19	22	23	22	35	33	66
St. Paul	9	4	5	5	6	5	10	20	20
Salt Lake City	3	1	4	3	5	6	7	4	1
San Antonio	3	3	0	6	10	5	10	8	
San Diego	3	4	3	6	5	4	8	4	3
San Francisco	11	12	8	12	19	12	18	14	17
Schenectady	0	2	2	1	1	2	2	2	2
Seattle	6	4	2	7	5	10	9	13	
Somerville	2	1	2	1	2	2	3	1	5
Spokane	3	0	2	3	4	4	12	9	
Springfield, Mass	4	3	0	3	5	6	3	4	9
Syracuse	3	8	7	8	7	9	4	3	10
Tacoma	1	2	1	1	1	3	6	3	
Toledo	5	3	4	6	8	8	7	17	27
Trenton	2	1	0	3	2	1	4	7	8
Utica	3	4	5	7	4	3	3	8	
Washington, D. C	15	6	13	12	8	11	10	19	19
Waterbury	3	0	0	5	3	3	1	2	2
Wilmington, Del	2	3	3	6	0	0	4	3	5
Worcester	1	4	0	4	2	3	0	0	2
Yonkers	2	6	2	4	6	5	4	2	7
Youngstown	6	3	2	3	5	3	6	17	

Blank spaces indicate that no report has been received.

PREVALENCE OF COMMUNICABLE DISEASES [1]

The United States, October 28–December 1, 1928

Morbidity from communicable diseases.—The prevalence of certain important communicable diseases as indicated by weekly telegraphic reports from State health departments [2] to the Public Health Service from October 28–December 1, 1928, is summarized below.

Influenza.—A summary of influenza prevalence during the period September to December 22 was published in Public Health Reports for January 4, 1928, and later reports are published in this issue, pp. 55–65 and 80–81.

Smallpox.—In Iowa, 103 cases of smallpox were reported for the week ended December 1. An outbreak of the disease occurred also in Maine during the month of November, and for the period from November 4 to December 1 the number of cases totaled 58. The customary seasonal increase was apparent in most of the States where the disease is usually prevalent However, the number of cases (1,968) reported for the five weeks ended December 1, was approximately 600 less than occured during the same period in 1927 and more than a hundred less than was reported in 1926.

[1] From the Office of Statistical Investigations, U. S. Public Health Service.

[2] The number of States reporting for the various diseases were as follows: Typhoid fever, 41; poliomyelitis, 43; meningococcus meningitis, 42; smallpox, 42; measels, 38; diphtheria, 42; scarlet fever, 41.

Meningococcus meningitis.—With one exception (the week ended July 17) the lowest incidence of meningococcus meningitis occurring during the year was reported for the week ended November 10. A sharp rise, however, became apparent during the remainder of the month, and for the three weeks ended December 1 the cases totaled 258. For the corresponding period in 1927 and 1926, there were reported 139 and 96 cases, respectively. Following an epidemiclike wave early in the year, the rate has continued at a level much above the rate for either of the two preceding years.

Poliomyelitis.—The incidence of poliomyelitis showed the customary seasonal decline in November. However, the number of cases (333), for the five weeks ended December 1, was more than twice the number reported for the same period in 1926. A comparison is not made with 1927, since the mortality rate for the corresponding period in that year continued abnormally high following attacks which began earlier in the year.

Scarlet fever.—In Michigan, Illinois, New York, and Pennsylvania significant increases in the prevalence of scarlet fever were noted during the month of November. Reports from other States indicated only a normal seasonal increase. The cases reported for the five-week period ended December 1 totaled approximately 15,000, which was slightly lower than the number reported in 1927 for the corresponding period, and about 4,500 cases less than in 1926.

Diphtheria.—No unusual prevalence of diphtheria was reported in any section of the country during the month of November. The usual seasonal increase occurred in most of the States. Preliminary reports indicated a rate slightly below the rate for the corresponding month in the two preceding years.

Measles.—As usual, an increase in the prevalence of measles occurred during the month of November in practically every State. Only slight increases were noted in some States, but in the New England and Middle Atlantic States marked increases occurred. The rate, however, for the five weeks ended December 1 approximated the rate for the same period in 1927 and still maintained its relatively low level below the rate of 1926.

Typhoid fever.—Reports indicated a normal seasonal decline in the prevalence of typhoid fever during the month of November. For the five weeks ended December 1 the reported cases totaled 1,976. There were 2,348 and 3,235 cases reported for the corresponding periods in the years 1927 and 1926, respectively. The relatively low rate which has prevailed throughout the year continued.

Mortality from all causes.—Reports from large cities indicated an increase in mortality during the month of November. The rate for 65 cities for the week ended December 1 was 12.6 per 1,000 population, which was but slightly higher than the rate (11.3) for the

corresponding week of 1927 and was the same as the rate for 1926. An increase in mortality is expected at this season of the year, but there was nothing to indicate more than a normal weekly increase during the month.

Although an epidemiclike wave of influenza appeared in several western cities, a mild form prevailed and few deaths from that disease occurred up to the end of November compared with the number of cases reported.

CURRENT STATE MORTALITY STATISTICS

For the information of public-health officials and others interested, the data in the following tables have been compiled from the monthly mortality reports of State health departments for the latest month for which published records are available. Statistics of most communicable diseases are not included, since they are available in other tabulations in the Public Health Reports. Statistics of deaths from other causes are limited for the most part to those causes which appear in the State reports. In the case of States which publish detailed mortality reports each month, the record of only the principal groups of causes and certain important specific causes have been used.

For purposes of comparison, the mortality records for a few preceding years are given, the rates being for the month corresponding to the last month for which the 1928 rate is available.

These tabulations will be enlarged as the current data on mortality from additional States become available.

Monthly State mortality statistics

[All rates are on an annual basis, and, with the exception of mortality from all causes and infant mortality, are per 100,000]

	1928									Corresponding month for—			
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	1927	1926	1925	1924
ALL CAUSES: ANNUAL RATE PER 1,000													
Alabama:													
White	10.1	10.7	9.5	9.5	9.6	9.3	8.7	8.7	8.7	8.3	8.7	----	----
Colored	17.3	17.7	17.6	17.8	16.4	16.3	17.1	15.7	14.8	13.1	14.1	----	----
California	15.1	14.7	14.5	13.6	12.9	12.8	----	----	----	----	----	----	----
Connecticut	12.0	12.0	12.5	13.0	10.5	9.8	9.3	9.4	----	9.6	9.6	10.1	9.8
Indiana	11.7	13.6	13.6	12.7	11.0	9.9	10.6	(1)	(1)	11.3	11.4	11.7	11.7
Iowa	10.2	12.1	11.2	10.9	9.3	9.9	----	----	----	----	----	----	----
Kansas	11.7	13.8	12.4	10.9	9.4	9.0	----	----	----	----	----	----	----
Louisiana	13.4	13.7	13.0	12.3	11.1	12.7	12.2	11.5	----	----	----	----	----
Michigan	----	----	----	----	----	9.9	9.7	10.6	10.9	----	----	----	----
Minnesota	9.6	9.6	10.6	10.7	8.3	8.1	8.0	8.1	8.6	----	----	----	----
Mississippi	----	----	----	----	----	13.0	11.9	10.7	10.7	----	----	----	----
Nebraska	----	----	----	----	8.2	7.9	8.1	8.0	----	----	----	----	----
New Jersey	12.4	13.3	13.8	13.2	11.2	9.9	9.9	9.7	10.6	10.5	10.2	11.3	10.5
New York[1]	14.2	14.4	14.4	14.2	12.8	11.4	11.0	11.7	----	11.6	11.7	13.3	12.7
North Carolina	12.5	11.2	11.9	11.7	14.3	11.2	11.2	11.0	10.8	----	----	----	----
Pennsylvania	13.3	13.8	13.7	13.5	11.2	10.3	10.1	10.4	----	10.0	10.5	11.5	10.5
South Dakota	----	----	----	9.6	8.0	----	----	----	----	----	----	----	----
Tennessee	12.9	12.3	13.6	12.0	11.5	12.7	11.6	11.2	----	10.7	----	----	----

[1] Exclusive of New York City.

(1) Not available.

Monthly State mortality statistics—Continued

	1928									Corresponding month for—			
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	1927	1926	1925	1924
INFANT MORTALITY RATE PER 1,000 LIVE BIRTHS													
Alabama:													
White	78	78	59	59	64	65	54	57	62	45	57	-----	-----
Colored	118	109	100	113	83	93	99	79	82	88	92	-----	-----
California	68	66	59	64	60	59	-----	-----	-----	-----	-----	-----	-----
Connecticut	56	66	83	71	56	43	52	42	-----	57	73	71	68
Indiana	60	68	75	69	56	52	63	64	60	67	73	75	63
Iowa	53	66	58	54	54	48	-----	-----	-----	-----	-----	-----	-----
Kansas	58	74	(2)	53	44	(2)	-----	-----	-----	-----	-----	-----	-----
Louisiana	78	89	93	102	81	79	62	69	-----	-----	-----	-----	-----
Michigan	-----	-----	-----	-----	-----	49	53	58	66	-----	-----	-----	-----
Minnesota	-----	-----	-----	-----	-----	-----	44	38	50	-----	-----	-----	-----
Nebraska	-----	-----	-----	-----	48	37	45	50	-----	-----	-----	-----	-----
New Jersey	-----	-----	-----	-----	52	56	(2)	56	-----	-----	-----	-----	-----
New York [1]	72	73	75	73	67	52	55	60	-----	60	65	86	67
Pennsylvania	81	83	84	89	59	54	58	66	-----	65	80	106	(2)
South Dakota	-----	-----	-----	65	47	-----	-----	-----	-----	-----	-----	-----	-----
Wisconsin	60	59	68	75	60	53	47	51	55	-----	-----	-----	-----
INFLUENZA (11)													
Alabama:													
White	83.9	98.8	78.9	67.3	26.8	16.8	11.9	12.3	21.0	16.0	9.6	-----	-----
Colored	112.8	124.0	107.7	112.1	45.0	29.0	25.1	30.0	33.0	11.8	18.4	-----	-----
California	25.4	21.4	17.1	15.2	14.4	12.1	-----	-----	-----	-----	-----	-----	-----
Connecticut	25.8	19.7	29.4	71.5	16.6	6.6	2.9	6.0	-----	8.4	1.6	7.2	2.4
Indiana	44.0	69.3	82.0	96.4	27.4	13.7	8.2	11.9	16.3	12.7	19.2	17.1	10.8
Iowa	35.8	79.5	87.2	67.9	24.1	19.4	-----	-----	-----	-----	-----	-----	-----
Kansas	85.7	139.9	112.7	78.9	23.2	14.8	-----	-----	-----	-----	-----	-----	-----
Kentucky	-----	-----	-----	-----	-----	11.5	-----	-----	-----	-----	-----	-----	-----
Louisiana	112.3	125.0	73.0	40.5	28.1	19.9	29.0	21.8	-----	-----	-----	-----	-----
Michigan	-----	-----	-----	-----	-----	9.0	5.4	8.7	-----	-----	-----	-----	-----
Minnesota	22.7	29.8	58.1	104.2	24.1	13.8	7.8	8.0	16.4	-----	-----	-----	-----
Mississippi	-----	-----	-----	-----	-----	15.8	19.1	11.5	9.2	-----	-----	-----	-----
Nebraska	-----	-----	-----	-----	19.0	8.4	11.7	9.5	-----	-----	-----	-----	-----
New Jersey	16.1	24.7	28.0	23.7	9.2	3.7	3.4	4.8	7.7	5.0	5.4	5.2	4.3
New York [1]	20.7	25.3	27.0	34.3	18.9	4.4	2.3	4.1	-----	6.2	3.2	3.5	(2)
North Carolina	62.1	63.7	58.0	34.1	22.8	6.8	7.6	6.6	14.0	-----	-----	-----	-----
Pennsylvania	38.2	51.3	47.1	65.0	28.6	10.3	7.7	12.1	-----	9.7	5.9	11.8	8.2
South Carolina	81.7	132.6	50.9	26.5	20.2	8.8	12.0	11.1	-----	4.6	-----	-----	-----
South Dakota	-----	-----	-----	98.7	41.5	-----	-----	-----	-----	-----	-----	-----	-----
Tennessee	89.5	88.5	112.3	74.4	40.8	16.0	13.2	9.7	-----	6.9	-----	-----	-----
Wisconsin	24.7	30.7	70.9	83.7	25.1	11.6	5.2	11.1	10.0	-----	-----	-----	-----
TUBERCULOSIS, ALL FORMS (31-37)													
Alabama:													
White	53.9	57.5	48.5	43.5	52.1	50.5	37.8	50.7	38.5	37.2	43.6	-----	-----
Colored	179.1	162.2	184.0	160.9	182.6	172.7	168.8	128.1	141.1	118.4	153.8	-----	-----
California	139.2	134.6	153.8	143.4	128.4	133.4	-----	-----	-----	-----	-----	-----	-----
Connecticut	75.1	83.9	77.6	71.5	73.9	68.6	55.4	55.8	-----	56.8	51.5	67.6	63.2
Indiana	67.4	88.2	76.2	81.9	80.6	57.5	58.9	57.5	64.1	57.9	70.9	68.5	74.1
Iowa	32.1	38.8	36.6	45.6	35.6	38.3	-----	-----	-----	-----	-----	-----	-----
Kansas	52.8	49.4	49.1	43.6	39.8	38.5	-----	-----	-----	-----	-----	-----	-----
Kentucky	-----	-----	-----	-----	-----	73.8	-----	-----	-----	-----	-----	-----	-----
Louisiana	95.5	106.9	107.3	107.5	96.1	93.0	96.0	72.4	-----	-----	-----	-----	-----
Michigan	-----	-----	-----	-----	-----	62.8	60.8	59.1	58.2	-----	-----	-----	-----
Minnesota	64.7	60.1	55.0	64.0	47.8	43.7	54.9	50.1	34.6	-----	-----	-----	-----
Mississippi	-----	-----	-----	-----	-----	78.2	82.9	78.1	54.6	-----	-----	-----	-----
Nebraska	-----	-----	-----	-----	35.4	20.1	28.4	20.7	-----	-----	-----	-----	-----
New Jersey	70.8	78.9	83.1	86.3	87.2	68.4	76.1	66.9	73.6	70.7	66.2	68.4	74.5
New York [1]	82.1	82.5	88.5	82.5	82.9	73.2	71.1	70.0	-----	70.4	72.9	82.0	89.1
North Carolina	87.8	86.6	88.2	93.8	106.4	65.7	81.8	77.9	60.9	-----	-----	-----	-----
Pennsylvania	78.5	78.4	81.9	79.9	68.6	69.0	59.6	62.4	-----	56.8	66.8	68.5	71.1
South Carolina	74.9	87.2	86.8	97.9	80.9	87.8	66.3	53.5	-----	69.2	-----	-----	-----
South Dakota	-----	-----	-----	61.9	57.0	-----	-----	-----	-----	-----	-----	-----	-----
Tennessee	150.9	140.7	159.5	104.9	129.8	134.1	112.5	99.7	-----	93.0	-----	-----	-----
Virginia	-----	-----	-----	-----	-----	-----	-----	69.0	84.1	-----	-----	-----	-----
Wisconsin	63.1	56.2	63.0	79.3	60.1	52.2	52.2	49.0	42.3	-----	-----	-----	-----

[1] Exclusive of New York City.

[2] Not available.

Monthly State mortality statistics—Continued

	1928									Corresponding month for—			
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	1927	1926	1925	1924
CANCER, ALL FORMS (43-49)													
Alabama:													
White	36.0	44.9	49.2	44.9	59.4	49.1	62.4	52.1	54.7	50.3	46.6	----	----
Colored	39.5	48.8	36.8	51.4	46.3	48.8	47.5	46.3	47.5	44.7	34.2	----	----
California	148.1	129.2	145.8	148.3	131.4	127.7	----	----	----	----	----	----	----
Connecticut	106.6	105.8	102.5	84.6	113.8	99.2	110.2	103.3	----	112.7	99.1	112.9	106.1
Indiana	87.6	117.1	105.3	90.8	104.3	87.1	109.7	94.6	90.8	100.5	93.5	98.9	82.6
Iowa	91.2	121.2	104.2	114.0	110.2	115.9	----	----	----	----	----	----	----
Kansas	107.0	104.6	96.8	93.0	98.8	80.8	----	----	----	----	----	----	----
Kentucky	----	----	----	----	----	54.4	----	----	----	----	----	----	----
Louisiana	62.0	56.2	69.9	71.2	61.8	70.6	75.5	69.9	----	----	----	----	----
Michigan	----	----	----	----	----	92.3	87.5	103.9	92.6	----	----	----	----
Minnesota	94.8	115.1	93.0	103.1	110.0	107.3	105.1	110.4	104.7	----	----	----	----
Mississippi	----	----	----	----	----	39.4	50.0	52.3	49.3	----	----	----	----
Nebraska	----	----	----	----	90.7	87.0	82.0	99.4	----	----	----	----	----
New Jersey	102.4	107.9	104.4	120.5	105.4	97.7	99.8	101.9	112.2	106.2	108.8	106.6	82.2
New York [1]	121.2	128.6	122.0	121.8	117.2	123.5	123.5	122.0	----	125.1	117.0	125.5	140.3
Pennsylvania	102.0	95.4	102.0	96.5	91.8	90.4	90.4	97.6	----	95.8	94.2	91.4	89.6
South Carolina	39.2	51.2	34.6	50.5	39.2	46.7	34.1	41.1	----	45.5	----	----	----
South Dakota	----	----	----	73.6	81.2	----	----	----	----	----	----	----	----
Tennessee	51.3	53.2	67.6	47.5	73.4	70.6	55.5	55.0	----	61.7	----	----	----
Wisconsin	95.9	113.2	106.7	98.1	[2]	111.6	104.1	106.7	103.7	----	----	----	----
DIABETES (57)													
Alabama:													
White	6.0	9.8	8.0	7.7	7.2	4.2	9.1	15.2	8.4	10.9	9.6	----	----
Colored	14.1	18.5	9.5	7.9	6.8	10.5	5.3	15.0	4.0	2.6	7.9	----	----
California	19.6	25.1	25.9	21.4	17.6	18.3	----	----	----	----	----	----	----
Connecticut	[2]	21.9	19.6	16.1	18.1	20.4	16.8	15.8	----	----	----	----	----
Indiana	----	----	----	----	----	----	14.5	16.1	16.3	----	----	----	----
Iowa	24.4	19.9	25.6	19.4	12.5	15.0	----	----	----	----	----	----	----
Kansas	17.1	28.9	23.2	18.6	21.9	16.7	----	----	----	----	----	----	----
Kentucky	----	----	----	----	----	9.7	----	----	----	----	----	----	----
Louisiana	12.3	19.3	15.0	8.5	8.1	9.7	13.3	6.9	----	----	----	----	----
Michigan	----	----	----	----	----	16.9	16.2	18.3	20.5	----	----	----	----
Minnesota	19.4	24.7	21.0	26.1	15.2	13.4	12.5	12.5	13.4	----	----	----	----
Mississippi	----	----	----	----	----	5.9	7.2	5.4	6.6	----	----	----	----
Nebraska	----	----	----	----	15.6	16.7	13.4	19.0	----	----	----	----	----
New Jersey	----	----	----	----	----	16.0	19.4	21.3	21.3	----	----	----	----
New York [1]	27.2	27.4	26.3	28.6	24.6	18.5	24.0	21.5	----	20.1	18.7	21.0	18.5
Pennsylvania	23.5	27.8	25.3	23.2	19.9	18.6	20.0	17.4	----	15.4	15.9	14.8	15.1
South Carolina	13.5	11.4	3.3	6.9	4.6	3.8	5.1	6.5	----	4.6	----	----	----
South Dakota	----	----	----	13.4	15.6	----	----	----	----	----	----	----	----
Tennessee	----	----	----	----	6.8	6.1	7.1	10.2	----	----	----	----	----
DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE (70-86)													
Alabama:													
White	----	----	----	----	----	75.0	69.4	72.4	72.9	----	----	----	----
Colored	----	----	----	----	----	118.7	133.2	132.2	116.0	----	----	----	----
California	149.2	142.7	132.7	141.1	132.5	129.5	----	----	----	----	----	----	----
Iowa	145.1	153.2	145.8	142.6	125.3	132.4	----	----	----	----	----	----	----
Kansas	145.4	173.2	171.7	146.3	115.4	132.2	----	----	----	----	----	----	----
Kentucky	----	----	----	----	----	82.1	----	----	----	----	----	----	----
Louisiana	102.0	101.4	110.4	91.8	89.8	102.6	103.3	97.3	----	----	----	----	----
Michigan	----	----	----	----	----	118.5	103.4	126.4	124.1	----	----	----	----
Minnesota	----	----	----	----	----	----	76.6	82.7	88.2	----	----	----	----
Nebraska	----	----	----	----	102.8	94.5	97.0	96.8	----	----	----	----	----
New Jersey	120.9	126.3	139.5	132.5	110.8	98.6	98.3	95.8	110.9	99.9	119.7	125.3	120.0
New York [1]	169.8	176.1	172.7	159.9	145.7	123.4	120.6	136.1	----	137.5	134.2	163.5	163.9
Pennsylvania	----	----	----	----	119.4	109.8	108.1	97.3	----	----	----	----	----
South Dakota	----	----	----	98.7	76.0	----	----	----	----	----	----	----	----

[1] Exclusive of New York City.

[2] Not available.

Monthly State mortality statistics—Continued

	1928									Corresponding month for—			
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	1927	1926	1925	1924
CEREBRAL HEMORRHAGE, APOPLEXY (74)													
Alabama:													
White	47.2	57.5	48.5	56.1	49.2	45.6	35.7	42.7	39.2	48.8	42.9	-----	-----
Colored	84.6	87.1	85.9	75.2	69.5	75.2	75.2	80.4	83.1	68.4	69.7	-----	-----
California	104.7	102.3	94.5	100.5	92.1	89.7	-----	-----	-----	-----	-----	-----	-----
Indiana	122.5	(2)	134.1	107.5	95.4	90.8	93.8	97.3	96.4	112.1	94.2	102.7	90.2
Iowa	108.3	111.5	102.2	105.7	92.7	91.7	-----	-----	-----	-----	-----	-----	-----
Kansas	104.3	141.8	131.9	106.5	91.5	98.8	-----	-----	-----	-----	-----	-----	-----
Kentucky	-----	-----	-----	-----	-----	48.0	-----	-----	-----	-----	-----	-----	-----
Louisiana	67.1	74.9	75.5	57.4	63.6	75.5	61.6	61.8	-----	-----	-----	-----	-----
Michigan	-----	-----	-----	-----	-----	83.9	77.2	87.5	92.3	-----	-----	-----	-----
Minnesota	-----	-----	-----	-----	-----	-----	59.3	59.0	67.5	-----	-----	-----	-----
Mississippi	-----	-----	-----	-----	-----	58.5	59.2	67.9	61.8	-----	-----	-----	-----
Nebraska	-----	-----	-----	-----	80.4	67.7	75.3	76.9	-----	-----	-----	-----	-----
New Jersey	-----	-----	-----	-----	-----	73.6	70.3	72.0	80.7	-----	-----	-----	-----
New York [1]	131.8	134.7	135.3	124.6	113.5	95.5	92.0	104.2	-----	102.7	103.5	122.0	124.2
Pennsylvania	101.0	97.2	101.0	88.2	87.8	78.7	76.8	68.4	-----	-----	-----	-----	-----
South Dakota	-----	-----	-----	53.5	38.0	-----	-----	-----	-----	-----	-----	-----	-----
DISEASES OF THE CIRCULATORY SYSTEM (87-96)													
Alabama:													
White	-----	-----	-----	-----	-----	114.9	117.7	106.5	113.5	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	184.6	188.5	185.3	171.4	-----	-----	-----	-----
California	343.4	319.2	318.6	290.0	280.4	266.2	-----	-----	-----	-----	-----	-----	-----
Iowa	253.0	310.8	249.0	238.1	211.5	226.9	-----	-----	-----	-----	-----	-----	-----
Kansas	210.6	250.9	236.7	197.0	192.3	155.9	-----	-----	-----	-----	-----	-----	-----
Kentucky	-----	-----	-----	-----	-----	143.0	-----	-----	-----	-----	-----	-----	-----
Louisiana	198.8	215.6	213.4	193.2	168.6	186.6	191.4	184.7	-----	-----	-----	-----	-----
Michigan	-----	-----	-----	-----	-----	197.5	188.8	222.1	240.3	-----	-----	-----	-----
Minnesota	-----	-----	-----	-----	-----	-----	145.3	156.0	172.2	-----	-----	-----	-----
Nebraska	-----	-----	-----	-----	176.3	151.4	152.2	163.3	-----	-----	-----	-----	-----
New Jersey	272.4	281.6	306.6	286.0	231.2	209.2	213.2	215.9	250.8	229.9	211.6	224.4	199.2
New York [1]	399.7	369.1	387.7	379.4	342.5	301.6	276.5	311.4	-----	292.2	292.1	303.8	284.1
Pennsylvania	-----	-----	-----	-----	247.5	209.1	196.9	218.6	-----	-----	-----	-----	-----
South Carolina	278.2	277.9	263.7	341.1	279.4	305.1	274.1	283.3	-----	273.0	-----	-----	-----
South Dakota	-----	-----	-----	152.2	136.5	-----	-----	-----	-----	-----	-----	-----	-----
DISEASES OF THE HEART (87-90)													
Alabama:													
White	116.9	96.0	98.5	101.6	109.4	102.3	104.4	99.2	103.0	77.3	82.0	-----	-----
Colored	150.9	189.9	199.0	188.6	183.9	168.8	180.7	166.2	155.6	118.4	127.5	-----	-----
California	294.8	278.6	276.7	255.6	243.0	225.9	-----	-----	-----	-----	-----	-----	-----
Connecticut	200.3	198.4	196.8	101.4	160.6	192.6	164.9	156.0	-----	172.6	147.5	145.6	131.2
Indiana	158.1	188.0	194.6	180.2	172.0	149.4	169.1	182.3	201.7	179.4	158.3	148.4	125.2
Iowa	225.5	279.8	222.0	215.8	186.9	193.0	-----	-----	-----	-----	-----	-----	-----
Kansas	183.8	215.6	214.2	169.4	163.1	135.4	-----	-----	-----	-----	-----	-----	-----
Kentucky	-----	-----	-----	-----	-----	128.7	-----	-----	-----	-----	-----	-----	-----
Louisiana	184.6	201.7	200.9	181.7	157.9	172.7	178.7	179.1	-----	-----	-----	-----	-----
Michigan	-----	-----	-----	-----	-----	173.4	163.9	187.9	215.4	-----	-----	-----	-----
Minnesota	165.5	160.9	125.6	154.4	130.1	120.7	128.5	127.4	58.0	-----	-----	-----	-----
Mississippi	-----	-----	-----	-----	-----	111.1	103.9	99.9	88.7	-----	-----	-----	-----
Nebraska	-----	-----	-----	-----	157.3	132.1	136.3	140.8	-----	-----	-----	-----	-----
New Jersey	-----	-----	-----	-----	-----	101.4	196.6	193.3	229.0	-----	-----	-----	-----
New York [1]	345.5	323.7	342.7	324.3	300.7	257.8	207.3	237.2	-----	248.9	251.2	255.8	243.5
Pennsylvania	256.0	272.0	249.0	233.0	220.9	189.7	176.6	196.9	-----	181.0	169.0	149.0	(2)
South Dakota	-----	-----	-----	135.5	115.8	-----	-----	-----	-----	-----	-----	-----	-----
Tennessee	137.3	101.7	133.2	122.4	127.9	124.7	122.4	118.7	-----	-----	-----	-----	-----

[1] Exclusive of New York City. [2] Not available.

Monthly State mortality statistics—Continued

	1928									Corresponding month for—			
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	1927	1926	1925	1924
DISEASES OF THE RESPIRATORY SYSTEM (97-107)													
Alabama:													
White						34.3	35.7	37.7	59.6				
Colored						56.7	54.1	81.7	76.5				
Iowa	107.8	105.2	104.2	91.2	53.1	36.9							
Kansas	125.5	75.1	107.4	69.9	45.1	28.2							
Kentucky						39.7							
Louisiana	170.4	173.3	129.8	114.1	51.2	56.2	62.8	54.9					
Michigan						51.3	41.5	49.3	76.2				
Nebraska					38.9	26.8	27.6	23.3					
New Jersey						45.0	64.0	78.3					
New York [1]	146.2	171.1	170.9	138.7	93.1	42.9	44.2	65.2		51.6	58.4	61.5	63.2
Pennsylvania					90.4	58.1	51.9	72.8					
South Dakota				61.9	60.5								
PNEUMONIA, ALL FORMS (100, 101)													
Alabama:													
White	144.6	162.6	120.2	84.8	48.5	30.1	28.0	29.7	46.3	45.9	51.7		
Colored	200.2	203.1	170.4	184.7	69.5	46.1	44.8	72.2	68.6	77.6	71.0		
California	132.9	115.8	88.9	74.7	65.7	54.8							
Connecticut	148.6	151.7	165.1	183.1	72.4	34.3	34.3	46.7	42.9	35.1	43.7	36.4	
Indiana	120.1	151.3	173.2	120.5	58.0	30.0	33.7	44.1	61.5	67.7	65.2	70.8	63.4
Iowa	91.8	98.4	92.2	80.5	41.1	31.0							
Kansas	104.9	56.5	96.8	56.5	35.8	21.8							
Kentucky						32.7							
Louisiana	157.5	160.0	119.2	102.6	41.2	46.5	52.5	41.2					
Michigan						37.4	21.3	37.6	61.3				
Minnesota	77.7	87.4	102.4	76.1	47.8	30.7	22.9	32.6	51.0				
Mississippi						25.0	23.0	29.9	28.9				
Nebraska					32.0	15.1	18.4	23.3					
New Jersey	108.7	111.2	104.1	86.3	52.2	39.4	36.4	54.1	68.4	32.0	33.3	54.9	45.8
New York [1]	131.3	152.8	152.9	126.3	80.2	36.4	35.1	53.4		41.0	46.9	49.6	48.8
North Carolina	164.5	168.7	125.5	93.4	91.5	40.5	24.8	31.5	48.9				
Pennsylvania	154.0	191.5	166.0	156.0	75.7	45.3	40.4	56.2		51.9	53.5	60.7	56.9
South Carolina	155.3	161.7	124.7	111.2	58.7	44.2	49.9	56.8		56.7			
South Dakota				110.4	55.3								
Tennessee	163.0	162.8	116.7	104.5	61.3	38.1	39.5	40.4		49.5			
Wisconsin	93.8	83.7	128.5	116.8	99.7	40.7	29.9	38.3	58.2				
DISEASES OF THE DIGESTIVE SYSTEM (108-127)													
Alabama:													
White						171.0	136.7	109.4	94.6				
Colored						143.7	147.7	115.8	85.7				
Iowa	62.2	65.5	55.6	61.1	63.1	78.6							
Kansas	60.4	78.3	69.0	81.5	74.3	95.6							
Kentucky						135.6							
Louisiana	74.9	75.5	91.7	94.2	134.1	125.0	112.3	114.2					
Michigan						81.3	95.7	110.5	94.6				
Minnesota							50.2	58.6	64.4				
Nebraska					73.4	88.6	107.0	86.4					
New Jersey	(2)	(2)	(2)	(2)	(2)	82.0	101.4	90.7	78.6				
New York [1]	86.2	79.8	72.6	79.5	70.9	68.2	79.8	84.6		82.8	98.1	160.5	101.6
Pennsylvania					71.7	79.3	94.7	118.3					
South Dakota				61.9	60.5								

[1] Exclusive of New York City.
[2] Rate previously published was exclusive of infantile diarrhea.

Monthly State mortality statistics—Continued

	1928									Corresponding month for—			
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	1927	1926	1925	1924
DIARRHEA AND ENTERITIS UNDER 2 YEARS (113)													
Alabama:													
White	6.0	5.6	10.9	16.8	77.5	89.7	68.7	62.3	37.1	25.5	39.9	------	------
Colored	9.9	9.2	21.8	18.5	59.9	73.8	58.6	53.1	18.5	11.8	26.3	------	------
California	10.2	11.9	14.7	22.2	29.4	21.2	------	------	------	------	------	------	------
Connecticut	4.8	3.6	6.0	4.4	5.3	3.6	13.9	12.1	------	11.5	34.3	50.9	30.8
Indiana	10.7	9.3	6.1	7.8	7.3	20.0	50.4	47.1	28.2	37.4	41.8	53.3	40.7
Iowa	1.0	5.8	3.5	3.4	2.5	6.3	------	------	------	------	------	------	------
Kansas	5.5	9.6	8.0	6.4	11.3	22.5	------	------	------	------	------	------	------
Kentucky	------	------	------	------	------	70.1	------	------	------	------	------	------	------
Louisiana	17.4	11.5	22.5	29.6	51.8	43.5	30.8	26.8	------	------	------	------	------
Michigan	------	------	------	------	------	14.6	23.9	38.7	25.9	------	------	------	------
Minnesota	(1)	(1)	(1)	(1)	(1)	(1)	4.3	6.7	6.1	------	------	------	------
Mississippi	------	------	------	------	------	77.6	35.5	24.5	------	------	------	------	------
Nebraska	------	------	------	------	9.5	5.9	23.4	17.3	------	------	------	------	------
New Jersey	10.5	10.2	12.7	11.4	10.2	16.6	29.0	24.5	16.9	17.3	23.7	32.1	30.8
New York [2]	11.5	10.3	12.4	10.9	13.5	8.0	14.5	20.9	------	21.3	36.3	78.0	38.1
North Carolina	7.7	10.0	7.0	29.7	119.7	97.8	70.9	44.7	30.9	------	------	------	------
Pennsylvania	19.0	16.1	16.4	16.5	13.5	18.6	32.1	50.7	------	------	------	------	------
South Carolina	[3] 8.8	[3] 8.2	[3] 5.9	[3] 38.5	[3] 83.5	[3] 78.3	[3] 43.0	[3] 36.6	------	[3] 28.4	------	------	------
South Dakota	------	------	------	1.7	5.2	------	------	------	------	------	------	------	------
Tennessee	3.5	4.7	3.4	8.9	59.8	94.6	80.5	55.9	------	27.4	------	------	------
Virginia	------	------	------	------	------	------	------	42.1	22.9	------	------	------	------
Wisconsin	8.1	13.6	16.5	15.6	9.5	12.4	8.8	(1)	8.4	------	------	------	------
NEPHRITIS (128, 129)													
Alabama:													
White	66.7	75.7	73.9	68.0	80.4	74.3	60.3	73.9	65.2	72.1	56.9	------	------
Colored	90.2	91.0	111.8	124.0	113.1	151.6	156.9	137.6	123.9	89.5	93.3	------	------
California	122.4	114.7	128.4	109.6	105.2	96.7	------	------	------	------	------	------	------
Connecticut	------	71.5	73.1	84.6	89.0	67.8	57.6	63.3	------	------	------	------	------
Indiana	86.8	85.6	90.0	83.0	76.1	71.2	77.1	84.3	75.6	75.1	84.8	76.1	69.1
Iowa	54.4	53.8	52.6	52.4	56.1	61.6	------	------	------	------	------	------	------
Kansas	96.7	112.9	114.0	94.3	78.9	75.1	------	------	------	------	------	------	------
Kentucky	------	------	------	------	------	71.0	------	------	------	------	------	------	------
Louisiana	127.8	123.2	120.4	131.6	99.2	120.2	102.6	93.6	------	------	------	------	------
Michigan	------	------	------	------	------	61.3	68.2	62.5	68.2	------	------	------	------
Minnesota	62.4	54.5	61.7	54.9	38.0	45.9	45.9	50.5	52.8	------	------	------	------
Mississippi	------	------	------	------	------	101.9	106.5	81.5	112.4	------	------	------	------
Nebraska	------	------	------	------	44.9	44.3	44.3	31.1	------	------	------	------	------
New Jersey	118.6	124.8	108.6	114.6	98.7	95.2	84.7	90.4	91.5	90.8	94.7	101.1	92.9
New York [2]	117.6	120.0	127.0	121.4	104.2	93.0	94.1	92.6	------	100.3	107.1	103.3	108.9
Pennsylvania	122.0	115.0	122.0	125.0	95.6	93.3	94.2	50.7	------	------	------	------	------
South Carolina	[6] 99.9	[6] 108.6	[6] 105.7	[6] 95.4	[6] 106.4	[6] 111.8	[6] 87.8	[6] 92.7	------	[6] 102.9	------	------	------
South Dakota	------	------	------	46.8	34.6	------	------	------	------	------	------	------	------
PUERPERAL STATE (143-150)													
Alabama:													
White	21.0	20.3	18.1	14.7	16.7	14.7	15.4	14.5	19.6	13.1	17.0	------	------
Colored	16.9	25.1	31.3	33.0	31.3	34.3	36.9	24.5	23.7	17.1	17.1	------	------
California	11.9	10.9	11.8	10.3	9.1	9.8	------	------	------	------	------	------	------
Connecticut	8.9	13.1	21.1	8.8	6.0	10.2	8.0	5.3	7.7	7.0	7.2	11.3	------
Indiana	8.7	11.5	9.2	13.3	10.8	8.9	11.1	15.3	9.3	9.7	10.9	7.2	3.5
Iowa	11.9	11.2	15.0	10.7	9.5	4.8	------	------	------	------	------	------	------
Kansas	21.3	17.3	13.3	22.5	12.6	13.5	------	------	------	------	------	------	------
Kentucky	------	------	------	------	------	6.0	------	------	------	------	------	------	------
Louisiana	24.5	27.2	21.2	22.9	29.3	26.6	19.9	19.3	------	------	------	------	------
Michigan	------	------	------	------	------	10.8	12.6	7.7	9.7	------	------	------	------
Minnesota	10.2	14.3	13.0	12.1	8.0	7.8	7.8	4.0	5.6	------	------	------	------
Mississippi	------	------	------	------	------	22.4	23.0	14.3	18.4	------	------	------	------
Nebraska	------	------	------	------	14.7	13.4	12.5	6.9	------	------	------	------	------
New Jersey	------	------	------	------	------	9.6	12.0	10.2	12.6	------	------	------	------
New York [2]	13.3	12.0	15.2	12.8	8.5	12.2	9.7	8.9	------	11.7	9.0	12.5	9.0
Pennsylvania	[7] 3.3	[7] 6.6	[7] 6.7	[7] 7.1	[7] 5.8	[7] 5.4	[7] 4.4	[7] 4.4	------	[7] 4.4	[7] 3.9	[7] 5.5	(4)
South Dakota	------	------	------	10.0	5.2	------	------	------	------	------	------	------	------
Tennessee	[8] 4.5	[8] 7.1	[8] 5.3	[8] 7.5	[8] 4.4	[8] 5.6	[8] 6.6	[8] 3.9	------	[8] 6.9	------	------	------

[1] Exclusive of New York City.
[2] Not available.
[3] Rate previously published was for diarrhea of children under 5 years.
[4] Reported as intestinal diarrhea of children under 1 year.
[6] Reported as kidney diseases.
[7] Rate per 1,000 total births.
[8] Reported as puerperal septicemia.

Monthly State mortality statistics—Continued

	1928									Corresponding month for—			
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	1927	1926	1925	1924
CONGENITAL MALFORMATION AND DISEASES OF EARLY INFANCY (159–163)													
Alabama:													
White	70.4	69.4	57.9	79.2	73.9	61.0	63.1	73.9	68.7	61.2	73.2	------	------
Colored	98.7	92.3	80.4	83.1	58.6	60.7	93.6	77.7	65.9	76.3	74.9	------	------
California	58.3	53.0	50.7	57.4	49.7	53.0	------	------	------	------	------	------	------
Iowa	48.2	61.1	66.6	60.6	66.1	65.5	------	------	------	------	------	------	------
Kansas	59.0	65.4	56.4	46.8	40.4	51.3	------	------	------	------	------	------	------
Louisiana	60.0	70.0	66.1	64.6	49.3	71.2	65.8	75.5	------	------	------	------	------
Mississippi	------	------	------	------	------	55.2	44.0	47.6	49.3	------	------	------	------
Nebraska	------	------	------	------	59.6	51.8	53.5	57.9	------	------	------	------	------
New York [1]	70.2	69.4	66.5	72.4	72.2	60.6	62.7	60.0	------	68.0	62.7	73.8	81.1
Pennsylvania	[3] 37.6	[3] 35.1	[3] 37.4	[3] 37.7	[3] 30.8	[3] 31.1	[3] 30.4	[3] 27.5	------	[3] 31.6	[3] 33.9	[3] 37.2	[2]
South Dakota	------	------	------	56.9	57.0	------	------	------	------	------	------	------	------

[1] Exclusive of New York City. [2] Not available. [3] Rate per 1,000 live births.

PUBLIC HEALTH ENGINEERING ABSTRACTS

The Irish Milk Supply. Anon. *The Lancet*, vol. 214, No. 5459 (No. 15, vol. 1, 1928), April 14, 1928, p. 788. (Abstract by Arthur P. Miller.)

A committee appointed by the Minister for Local Government in 1926 to advise as to cleanliness and wholesomeness of the Irish milk supply has reported. The principal features of the report are: (*a*) To deal with tuberculous cows, it is recommended that all cows be inspected twice a year by veterinarians; (*b*) in so far as finances permit, the "accredited herd system" is recommended; (*c*) improvement in light and ventilation of cowsheds suggested; (*d*) manufacture of tuberculin should be controlled; (*e*) the grading of milk in Irish Free State is recommended, the two grades to be—(1) Grade A, tuberculin tested, which is to be from tuberculin-tested herds, have a count of not more than 100,000 per c. c., and be free from coliform organisms in 0.1 c. c.; (2) Grade A, which is to come from herds examined by veterinarians every three months, have a count not to exceed 200,000 per c. c., and be free from coliform organisms in 0.01 c. c.

The Production of Milk of Low Bacterial Content by Means of Milking Machines. A. T. R. Mattick and F. Procter. *Journal of Hygiene*, vol. 27, No. 2, January, 1928, pp. 215–224. (Abstract by A. W. Fuchs.)

An Alfa-Laval milking machine, typical of most modern machines, was used with two milking units. One unit was washed, brushed, and rinsed in water at 185° F. after each milking; in the other all rubber parts were washed, brushed, and sterilized by steam for ten minutes at 210° F. after each milking. Disinfectants were not considered because "as used in practice they are not to be compared in efficiency with less expensive sterilization by steam."

Plate counts showed enormous fluctuations with both units. After other possibilities were eliminated, the contamination was found, by means of a suspension of carmine, to be due to small quantities of water in the vacuum pipe line finding their way into the receiving pails. By turning all vacuum supply taps upward, giving a generous slope to each section of the vacuum pipe line, and providing drain cocks at each low point, leakage was eliminated and excellent results followed. Of 191 samples of 28-hour old milk examined for each unit over a period of one year, the sterile unit showed 173 below 10,000 per c. c. and 190 below 200,000 per c. c.; while for the washed unit 151 were below 10,000 per c. c., 167 were below 200,000 per c. c., and 20 were over 500,000 per c. c. The

average keeping quality of milk at 60° F. was 96 hours for the sterile unit and 86 hours for the washed unit. In machines from which teat cup liners are readily removed, steam sterilization is successful, without seriously shortening the life of rubber parts.

Milk in Relation to Health. H. M. Speechly. *The Public Health Journal*, vol. 19, No. 8, August, 1928, pp. 363–365. (Abstract by J. R. Hoffert.)

This is an address urging adoption of a milk ordinance approving only certified and pasteurized milks. Milk, an ideally balanced food, is responsible, when impure, for more disease than any other class of food and is the only animal food habitually used uncooked. Twenty to twenty-five chances of contamination between cow and consumer make its protection difficult.

Eighty per cent of infant deaths from diarrhea, 25 per cent of all tuberculosis under 16 years of age, and 18 to 25 per cent of deaths from tuberculosis under 5 years, as well as many epidemics of septic sore throat, typhoid, and scarlet fever, are due to unsafe milk. The typhoid epidemics at Regina College in 1920 were due to infection of clean raw milk by a dairyman. There were 83 cases and 9 deaths.

Certified and pasteurized milk are defined. Pasteurization at 142°–145° F. for 30 minutes does not affect vitamins A and B. Vitamin C may be impaired but is normally variable and is provided by fruit juices.

Four carrier epidemics of typhoid in Winnipeg since 1916 have been traced to milk. At present, Winnipeg's milk is 2 per cent certified, 57 per cent pasteurized, and 41 per cent raw.

Shellfish and Typhoid Fever. Bertin-Sans & Carrieu. Arch. Soc. Sci. Med. et Biol. de Montpellier. 1927–8, v. 9, pp. 33–36. Abstract by J. D. Rolleston in *Bulletin of Hygiene*, vol. 3, No. 7, July, 1928, p. 612.

"In reply to a questionnaire 38 physicians at Montpellier stated that they had had a total of 164 cases of typhoid under their care in 1926. Of these, 84, or a little more than 51 per cent, were said to be due to shellfish. In only 57 instances could the exact nature of the shellfish be identified, viz, mussels in 28 (49.1 per cent), limpets in 11 (19.3 per cent), oysters in 13 (22.8 per cent), and whelks in 5 (8.7 per cent). The total number of deaths was 10 (6 per cent mortality). The deaths among the cases due to shellfish numbered 6 (7.1 per cent) as compared with 4 (5 per cent) among the cases not due to this cause.

"More than half of all the cases were therefore due to shellfish, and four times as many cases were due to mussels, limpets, and whelks, the sale of which is not subject to regulations, as were due to oysters, the sale of which is controlled by law."

Influence of Temperature on the Changes Produced in Milk by Certain Bacteria. R. S. Sarkaria and B. W. Hammer (Jour. Dairy Sci., 11 (1928), No. 1, pp. 89–101.) From the *Experiment Station Record*, vol. 59, No. 4, September, 1928, p. 366.

"Duplicate tubes of milk inoculated with different organisms were studied at the Iowa Experiment Station at room temperature and at 37° C. (98.6° F.). The organisms used were the lactic-acid bacteria and those belonging to the proteolytic type. Acid and soluble nitrogen determinations and bacterial counts were made on each tube at various intervals over an extended period.

"With the true lactic forms the type of change in the milk was not influenced by the temperature although the rate was. The difference in temperature did influence the gas-forming lactic-acid organisms, and the greatest difference was noted with certain of the proteolytic organisms and involved the formation of a more definite curd at 37° than at room temperature. From these results the authors deem it necessary to give definite information as to temperatures used when changes produced in milk are recorded in the descriptions of organisms."

Bacteria Count Limits and the Transportation of Milk. J. D. Brew and R. C. Fisher (New York Cornell Sta. Bul. 460 (1928), p. 37.) From the *Experiment Station Record*, vol. 59, No. 4, September, 1928, p. 366.

"Two experiments are reported in which the bacterial content of milk upon leaving the shipping point and on reaching its destination was determined. In one trial the milk was hauled approximately 60 miles and in the other about four miles. Samples of both night and morning milk were taken before shipping and upon arrival at destination for bacterial analysis. The temperature of the milk at shipping time, the temperature of the outdoor air, and the temperature of the milk on arrival were also noted. The milk samples were plated as soon after taking as possible and plate counts made as soon as strained. The detailed counts of samples are given in tabular form.

"The bacterial counts of the milk both at shipping time and upon arrival at destination varied greatly, due largely to the manner of handling by the producer. The authors believe, however, that a count as low as 100,000 per cubic centimeter is entirely possible in cities where the milk is on the road for only a few hours. Many of the standards of cities in the State for bacterial count are so lenient as to promote carelessness by the producers. However, where a hard and fast ordinance for low bacterial count is enforced, the authors believe that there should be a certain percentage of tolerance allowed because of the fact that it is impossible to set any definite number beyond which milk is not clean. Differences in individual counts make a percentage of tolerance advisable. Even though the temperature of milk was increased during a shipping period of five hours the increase in bacterial growth should be negligible if the milk was properly handled."

A Comparison of Three Methods of Pasteurizing Milk for Cheddar Cheesemaking. W. V. Price and P. S. Prickett. (Jour. Dairy Sci. 11 (1928), No. 1, pp. 69–78). From the *Experiment Station Record*, vol. 59, No. 4, September, 1928, p. 367.

"The flash, the flash-holder, and the holder methods of pasteurizing milk were compared at the New York Cornell Experiment Station for making Cheddar cheese. Cheese was also made from raw milk. The milk pasteurized by each method was made into the best possible cheese following the procedure previously described (E. S. R., 57, p. 374). Bacterial analyses were made of the raw and pasteurized milk, and the cheeses were scored for quality at four and eight months of age.

"The flash method destroyed 98.31 per cent of the bacteria in the original milk, the flash-holder method 98.65 per cent, and the holder method 98.96 per cent. The gain in total score of the cheese made from milk pasteurized by the flash method over the raw-milk cheese was 1.91 points, for the flash-holder cheese 2 points, and for the holder cheese 1.94 points at 4 months of age, and 1.89, 3.12, and 2.7 points, respectively, at 8 months of age. From 100 lbs. of raw milk, 9.92–0.16 lbs. of cheese was made, from 100 lbs. of milk pasteurized by the flash and flash-holder method 10.18–0.16 lbs., and from the holder method milk 10.32–0.17 lbs. Analysis of the cheese indicates that the increase in yield of the pasteurized cheese is due largely to its increase in moisture content."

Detection of Hydrogen Peroxide in Pasteurized Milk. Tapernoux. (C. R. Soc. Biol. 1927, v. 97, pp. 1161–3.) Abstract by J. H. Johnston, in the *Bulletin of Hygiene*, vol. 3, No. 5, May, 1928, p. 407.

"For the detection of hydrogen peroxide in milk, the author adopted the method of Dupouy, in which 5 c. c. of raw milk has 5 c. c. of a 1 per cent aqueous solution of guaiacol added to it and a rapid production of a red color takes place. The reaction is not given by pasteurized milk as the oxidase, upon which the reaction depends is destroyed by heat. The reaction may be restored to pasteurized milk by the addition of fresh saliva.

"In the experiments, milk pasteurized at 85° C. was used and 12-volume hydrogen peroxide was added to it in quantities of 1, 2, and 4 c. c. per liter, the milk being subsequently kept on ice or at the laboratory temperature. Each sample was then tested for hydrogen peroxide by adding 1 c. c. of saliva and 5 c. c. of guaiacol solution and keeping at 40° C. for a few minutes, when a salmon pink color was produced in presence of hydrogen peroxide.

"It was found that when the pasteurized milks were kept on ice, one part per 1,000 of hydrogen peroxide disappeared in less than eight hours, while two and four parts did not disappear till between 10 and 24 hours. In pasteurized milk kept at laboratory temperature one part of hydrogen peroxide lasted for three hours, two parts for 10 hours, and four parts for 24 hours. In fresh milk all the peroxide disappeared in less than three hours. The conclusion is drawn that hydrogen peroxide undergoes decomposition in pasteurized milk as in raw milk, only much more slowly."

Reforestation of Water Sheds. Edgar P. Kable. *Municipal News and Water Works*, vol. 75, No. 1, July, 1928, pp. 57–58; *Journal of American Water Works Assn.*, vol. 20, No. 5, November, 1928, pp. 635–641. (Abstract by A. H. Wieters.)

It is desirable for a water works to own its entire water shed if possible. Such areas can not be left to remain barren. Tilling the soil as well as pasturing the area is obviously undesirable. The planting of trees seems to offer the greatest benefits. Trees prevent trespass, prevent erosion, check rapid run-off, and furnish a profitable crop. The kind of trees to be planted should be carefully selected. Evergreens are most desirable at stream and reservoir edges; and on account of falling leaves, deciduous trees should be planted farther from water's edge. The culture of trees is discussed, and the author believes that a tree about three years old is the best for transplanting. Care in handling trees for transplanting is also discussed. The principal hazard is the forest fire. Since fatal diseases as a rule attack only one species, this hazard can be circumvented by planting several species. The impounding basin track of the York, Pa., Water Co., is described. Summarizing, the author states that forestation increases the quantity of water, insures its purity, as well as provides a profitable crop.

Preparation of the Ortho-Tolidine Reagent for Free Chlorine. C. S. Boruss, S. J. Vellenga, and R. H. Phelps. *Journal of American Water Works Association*, vol. 20, No. 3, September, 1928, pp. 404–406. (Abstract by Ella G. White.)

These investigators found upon reviewing the literature and conversing with users of the ortho-tolidine test for free chlorine that there are a number of methods in use for preparing the reagent. Among those using the same method, different results were noted. In this paper they discuss the methods of Roake, Theriault, and Standard Methods (APHA), which have been tried out and compared with results obtained by Buswell and Boruff in earlier experiments. The only constant factor among the various methods seems to be that the reagent should be prepared by using hydrochloric acid. Sulphuric acid and acetic acid have not proved satisfactory. They found by using Theriault's method of preparation they could dissolve at room temperatures 1 gram of o-tolidine in a liter solution containing 240 c. c. of concentrated HCl. After standing, crystals were thrown out in ten days. Determinations were repeated with lesser amounts of HCl to determine the maximum HCl concentration at which the reagent would remain in solution. It was often noted that solutions could be prepared using from 178 to 190 c. c. of concentrated HCl which would remain in solution for weeks at 23° C. At 23.6° C. they found it possible to keep 1 gram of o-tolidine completely dissolved in a liter of solution containing 178 c. c. of concentrated HCl (35 per cent). The authors found Theriault's method for the preparation of the o-tolidine reagent to be the most rapid and reliable.

Comparative Studies of Standard Methods and the Brilliant Green Bile Medium on Lake Michigan Water at Chicago. C. C. Ruchhoft. *Journal of American Water Works Association*, vol. 16, No. 6, December, 1926, pp. 778–785. (Abstract by Isador W. Mendelsohn.)

As a result of a series of tests on raw and chlorinated tap water from Lake Michigan, begun in September, 1924, and involving over 1,100 samples, the following conclusions are reached: (1) Brilliant green bile broth is too inhibitive to the *B. Coli* group for direct planting into the medium; (2) the green bile medium is much more specific than standard lactose broth and is desirable as a confirmatory medium; (3) spore forming organisms are practically all inhibited in the medium; (4) preliminary enrichment in standard lactose broth for 48 hours and the transfer of all presumptive to brilliant green bile medium. Recording 10 per cent or more gas in 48 hours as positive checks remarkably well on raw waters with the standard method, carried as far as the second lactose broth tube. Final results are obtained in three or four days, instead of five or six; (5) with this procedure partial confirmation with the green bile produces results comparable with the completely confirmed test of the standard method on raw water; (6) further study of the medium is needed before its usefulness can be ascertained for use on chlorinated tap water.

DEATHS DURING WEEK ENDED DECEMBER 29, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended December 29, 1928, and corresponding week of 1927. (From the Weekly Health Index, January 4, 1929, issued by the Bureau of the Census, Department of Commerce)

	Weed ended Dec. 29, 1928	Corresponding week, 1927
Policies in force	72, 242, 331	69, 653, 164
Number of death claims	13, 045	14, 773
Death claims per 1,000 policies in force, annual rate	9. 4	11. 1

Deaths from all causes in certain large cities of the United States during the week ended December 29, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, January 4, 1929, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Dec. 29, 1928		Annual death rate per 1,000 corresponding week, 1927	Deaths under 1 year		Infant mortality rate, week ended Dec. 29, 1928 [2]
	Total deaths	Death rate [1]		Week ended Dec. 29, 1928	Corresponding week, 1927	
Total (63 cities)	10,078	18.0	13.8	905	767	[3] 77
Akron	115	----	----	15	6	160
Albany [4]	52	22.6	20.5	3	3	62
Atlanta	154	31.6	18.4	19	10	----
White	89	----	15.8	11	3	----
Colored	65	(5)	24.7	8	7	----
Baltimore [4]	257	16.2	14.9	18	25	58
White	209	----	12.8	14	15	56
Colored	48	(5)	27.3	4	10	62
Birmingham	75	17.6	21.6	8	9	68
White	48	----	15.7	7	4	96
Colored	27	(5)	30.8	1	5	22
Boston	240	15.7	14.7	32	28	88
Bridgeport	39	----	----	6	7	100
Buffalo	166	15.6	13.6	12	13	52

See footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended December 29, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927—Continued

City	Week ended Dec. 29, 1928		Annual death rate per 1,000 corresponding week, 1927	Deaths under 1 year		Infant mortality rate, week ended Dec. 29, 1928 [2]
	Total deaths	Death rate [1]		Week ended Dec. 29, 1928	Corresponding week, 1927	
Cambridge	34	14.1	16.0	5	3	90
Camden	40	15.4	12.9	6	4	96
Canton	48	21.5	11.5	7	2	163
Chicago [4]	1,231	20.4	13.0	98	81	84
Cincinnati	203			27	10	160
Cleveland	347	18.0	11.8	33	26	90
Columbus	164	28.7	16.1	15	3	139
Dallas	88	21.1	17.5	14	5	
White	72		15.9	10	5	
Colored	16	(5)	28.5	4	0	
Dayton	65	18.4	10.4	2	6	32
Denver	122	21.7	18.9	15	9	
Des Moines	49	16.9	11.2	0	4	0
Detroit	529	20.1	11.1	83	35	130
Duluth	16	7.2	13.2	1	1	23
El Paso	51	22.6	19.3	6	5	
Erie	33			2	3	43
Fall River [4]	30	11.7	11.4	5	5	91
Flint	34	11.9	15.3	8	7	104
Fort Worth	43	13.2	11.2	1	3	
White	34		9.4	0	3	
Colored	9	(5)	23.9	1	0	
Grand Rapids	60	19.1	11.3	6	4	87
Houston	97			9	10	
White	60			8	10	
Colored	37	(5)		1	0	
Indianapolis	164	22.4	13.9	9	11	70
White	137		13.0	8	10	72
Colored	27	(5)	21.0	1	1	56
Jersey City	72	11.6	10.7	13	10	101
Kansas City, Kans	44	19.4	11.1	3	3	67
White	38		9.7	1	2	25
Colored	6	(5)	17.2	2	1	359
Kansas City, Mo	153	20.5	17.4	9	4	73
Knoxville	38	18.9	11.7	6	2	131
White	28		8.1	5	1	122
Colored	10	(5)	38.5	1	1	212
Los Angeles	337			22	34	63
Louisville	86	13.7	11.6	7	2	57
White	64		10.2	6	2	56
Colored	22	(5)	19.2	1	0	63
Lowell	37			4	3	87
Lynn	27	13.4	13.4	3	2	82
Memphis	100	27.5	18.9	5	5	59
White	59		13.5	2	1	38
Colored	41	(5)	28.8	3	4	94
Milwaukee	193	18.5	10.8	25	18	112
Minneapolis	155	17.8	14.0	13	11	79
Nashville	54	20.2	21.9	6	9	100
White	37		22.1	6	9	135
Colored	17	(5)	21.4	0	0	0
New Bedford	23			3	4	64
New Haven	32	8.9	8.7	2	4	29
New Orleans	298	36.3	26.5	24	18	120
White	193		23.6	16	14	119
Colored	105	(5)	35.0	8	4	122
New York	1,574	13.7	13.2	137	150	56
Bronx Borough	176	9.7	10.8	14	20	42
Brooklyn Borough	539	12.2	10.8	57	56	58
Manhattan Borough	642	19.2	18.8	56	55	67
Queens borough	165	10.1	9.5	9	16	36
Richmond borough	52	18.0	17.1	1	3	18
Newark, N. J	130	14.4	10.5	9	14	47
Oakland	70	13.4	14.4	4	9	43
Oklahoma City	32			2	1	
Omaha	95	22.3	14.3	9	12	106
Paterson	43	15.5	9.8	3	2	53
Philadelphia	650	16.5	12.8	60	47	81
Pittsburgh	552	42.8	16.9	51	25	171
Portland, Oreg	107			2	2	23
Providence	71	13.0	13.0	6	6	52

See footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended December 29, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927—Continued

City	Week ended Dec. 29, 1928		Annual death rate per 1,000, corresponding week, 1927	Deaths under 1 year		Infant mortality rate, week ended Dec. 29, 1928 [2]
	Total deaths	Death rate [1]		Week ended Dec. 29, 1928	Corresponding week, 1927	
Richmond	90	24.2	15.2	3	5	41
White	51		11.9	1	3	21
Colored	39	[6]	23.4	2	2	78
Rochester	86	13.7	10.4	8	6	65
St. Louis	315	19.4	15.6	18	17	61
St. Paul	93			1	2	10
Salt Lake City [4]	27	10.2	17.3	3	4	49
San Antonio	93	22.3	19.2	12	12	
San Diego	62	27.1	21.7	4	6	77
San Francisco	188	16.8	15.0	7	10	44
Schenectady	19	10.6	7.8	0	2	0
Somerville	19	9.7	12.8	1	3	28
Spokane	38	18.2	21.0	0	5	0
Springfield, Mass	40	14.0	13.4	6	5	99
Syracuse	74	19.4	11.6	6	4	73
Tacoma	54	25.6	9.7	2	1	53
Toledo	146	24.4	14.2	7	4	67
Trenton	40	15.0	17.9	4	4	69
Washington, D. C	169	16.0	13.7	11	15	64
White	92		10.5	4	3	34
Colored	77	[5]	23.4	7	12	129
Waterbury	27			2	3	50
Wilmington, Del	41	16.7	13.6	3	1	73
Worcester	45	11.9	11.2	5	4	61
Yonkers	36	15.5	11.4	4	4	90

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 67 cities.
[4] Deaths for week ended Friday.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Forth Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

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

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended December 29, 1928, and December 31, 1927

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 29, 1928, and December 31, 1927

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927
New England States:								
Maine	20	9	211	2	385	25	0	0
New Hampshire	2	1	2	32	37	1	0	0
Vermont	1	-------	292	-------	15	-------	0	0
Massachusetts	93	135	221	11	650	648	1	1
Rhode Island	18	11	9	6	28	3	0	0
Connecticut	33	40	297	12	269	55	2	0
Middle Atlantic States:								
New York	271	349	[1] 441	[1] 14	615	636	25	3
New Jersey	162	180	584	19	79	115	8	0
Pennsylvania	219	377	-------	-------	1,409	1,048	5	3
East North Central States:								
Ohio	121	115	6,957	8	646	104	2	2
Indiana	33	35	3,158	27	220	28	0	0
Illinois	242	176	2,657	30	247	26	18	2
Michigan	101	150	10,690	2	54	407	13	5
Wisconsin	13	63	4,698	46	149	39	4	6
West North Central States:								
Minnesota	11	29	108	1	50	-------	7	0
Iowa	10	15	[2] 27,000	-------	-------	4	1	1
Missouri [3]	56	44	1,774	1	31	21	10	2
North Dakota	14	1	1,644	-------	6	-------	2	1
South Dakota	1	2	253	4	26	10	3	0
Nebraska	8	18	909	-------	5	11	2	1
Kansas	18	31	11,953	2	27	9	2	1
South Atlantic States:								
Delaware	1	4	16	-------	16	6	0	0
Maryland [4]	29	46	1,048	20	40	109	0	0
District of Columbia	14	13	293	4	1	4	0	0
West Virginia	17	17	4,683	19	94	60	0	0
North Carolina	63	66	-------	-------	25	1,617	0	1
South Carolina	35	28	7,885	829	1	769	0	0
Georgia	11	13	6,123	137	33	69	0	0
Florida	15	21	541	15	-------	8	0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 29, 1928, and December 31, 1927—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927
East South Central States:								
Kentucky	14	33	10,585	24	----	47	2	0
Tennessee	25	17	5,205	88	----	194	6	3
Alabama	26	62	6,261	163	82	158	0	1
Mississippi	19	19	22,694	----	----	----	----	----
West South Central States:								
Arkansas	21	12	2,830	136	----	27	1	0
Louisiana	28	24	2,343	25	1	35	1	0
Oklahoma [5]	59	76	8,205	106	2	30	3	1
Texas	47	----	160	----	5	----	1	----
Mountain States:								
Montana	----	8	623	----	25	----	2	5
Idaho	2	6	34	----	11	----	5	2
Wyoming	----	----	179	----	2	9	1	0
Colorado [6]	15	6	2,468	1	4	4	9	5
New Mexico	10	4	2,005	----	----	19	2	1
Arizona	----	41	495	1	1	18	0	0
Utah [4]	----	4	14	6	1	----	3	2
Pacific States:								
Washington	5	13	590	----	37	146	2	8
Oregon	7	7	[7] 2,520	30	39	21	2	1
California	55	111	1,232	25	17	31	14	1

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1927	Week ended Dec. 31, 1927	Week ended Dec. 29, 1927	Week ended Dec. 31, 1927	Week ended Dec. 29, 1927	Week ended Dec. 31, 1927
New England States:								
Maine	1	2	31	39	8	0	2	4
New Hampshire	0	0	29	13	0	0	1	0
Vermont	0	0	10	8	0	0	0	0
Massachusetts	2	9	262	286	0	1	3	3
Rhode Island	1	0	20	33	0	0	0	1
Connecticut	1	0	50	75	0	1	1	0
Middle Atlantic States:								
New York	2	4	400	526	0	14	16	25
New Jersey	1	0	123	187	0	7	7	2
Pennsylvania	3	2	465	548	0	0	16	20
East North Central States:								
Ohio	2	0	239	225	26	9	6	28
Indiana	0	1	61	62	47	82	0	2
Illinois	0	3	366	313	55	39	9	18
Michigan	2	1	240	383	25	41	5	14
Wisconsin	0	1	137	155	16	27	0	2
West North Central States:								
Minnesota	0	1	118	109	5	2	2	4
Iowa	0	0	48	58	20	56	1	0
Missouri [3]	0	0	65	51	33	34	2	5
North Dakota	0	0	25	20	4	1	2	0
South Dakota	0	0	9	22	9	8	0	2
Nebraska	0	1	42	63	35	6	1	0
Kansas	0	1	90	117	16	45	1	4
South Atlantic States:								
Delaware	0	0	2	2	0	0	0	1
Maryland [4]	1	0	56	27	0	0	3	6
District of Columbia	0	0	7	33	0	0	0	0
West Virginia	0	1	31	71	26	23	9	18
North Carolina	1	0	44	64	1	57	5	1
South Carolina	2	1	11	14	1	3	16	9
Georgia	0	0	16	16	0	0	2	10
Florida	0	0	10	10	3	0	2	8

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 29, 1928, and December 31, 1927—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927	Week ended Dec. 29, 1928	Week ended Dec. 31, 1927
East South Central States:								
Kentucky	0	0	59	107	15	83	0	32
Tennessee	0	1	21	23	1	14	4	6
Alabama	0	0	24	35	8	5	8	10
Mississippi	0	1	10	16	0	2	2	6
West South Central States:								
Arkansas	0	1	15	9	1	3	4	4
Louisiana	0	0	24	8	4	4	5	4
Oklahoma [5]	1	1	41	57	29	65	7	19
Texas	0	----	15	----	8	----	1	----
Mountain States:								
Montana	0	0	21	27	12	8	0	1
Idaho	1	0	5	7	10	2	1	0
Wyoming	0	0	7	27	9	1	1	6
Colorado [6]	0	0	22	32	20	12	0	0
New Mexico	0	1	11	14	0	0	4	3
Arizona	0	1	0	11	1	2	0	10
Utah [4]	0	0	7	6	4	53	0	0
Pacific States:								
Washington	1	4	28	26	25	36	2	2
Oregon	0	10	23	23	40	46	3	5
California	1	8	130	137	19	11	5	7

[1] New York City only.
[2] Estimated.
[3] Figures for 1928 are exclusive of Kansas City.
[4] Week ended Friday.
[5] Figures for 1928 are exclusive of Oklahoma City and Tulsa and for 1927 are exclusive of Tulsa.
[6] Figures for 1928 are for 2 weeks.
[7] 513 cases delayed reports included.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
October, 1928										
Hawaii Territory	4	37	71	----	9	----	----	10	0	5
November, 1928										
California	20	422	20,762	2	76	1	19	753	97	21
Mississippi	----	222	5,606	5,015	286	514	0	138	1	110
Missouri	16	288	40	4	202	----	3	391	38	87
Montana	13	12	460	----	215	----	5	143	99	7
North Carolina	2	859	----	----	166	----	4	643	31	53
Oklahoma [1]	4	378	256	319	27	26	2	194	82	147
Oregon	3	83	809	3	144	----	5	129	217	12
Rhode Island	1	97	4	----	174	----	3	71	0	1
Virginia	0	472	2,157	38	168	22	4	402	1	35
Washington	13	84	119	----	159	----	26	191	143	17
West Virginia	2	151	32	----	172	----	9	278	26	60

[1] Exclusive of Oklahoma City and Tulsa.

October, 1928

Hawaii Territory:	Cases
Chicken pox	6
Conjunctivitis (follicular)	40
Impetigo contagiosa	10
Leprosy	4
Mumps	11
Tetanus	3
Trachoma	108
Whooping cough	8

November, 1928

Anthrax:	
California	1
Chicken pox:	
California	912
Mississippi	669
Missouri	301
Montana	297
North Carolina	432
Oklahoma [1]	89
Oregon	208
Rhode Island	44
Virginia	428
Washington	758
West Virginia	434
Coccidoidal granuloma:	
California	1
Dengue:	
Mississippi	21
Dysentery:	
California (amebic)	5
California (bacillary)	1
Mississippi (amebic)	44
Mississippi (bacillary)	249
Oklahoma [1]	15
Virginia	54
German measles:	
California	29
Montana	15
North Carolina	10
Rhode Island	2
Washington	41
Hookworm disease:	
California	1
Mississippi	226
Virginia	7
Washington	1
Impetigo contagiosa:	
Oregon	10
Washington	6
Leprosy:	
Washington	1
Lethargic encephalitis:	
California	5
Montana	1
Oregon	1
Washington	2
Mumps:	
California	747
Mississippi	266
Missouri	30
Montana	19
Oklahoma [1]	9
Oregon	43
Rhode Island	1
Washington	217
Ophthalmia neonatorum:	
Mississippi	7
North Carolina	1
Rhode Island	2
Paratyphoid fever:	
California	2
Washington	1
Puerperal septicemia:	
Mississippi	30
Oregon	1
Rabies in animals:	
California	49
Mississippi	12
Rhode Island	18
Scabies:	
Oregon	30
Washington	8
Septic sore throat:	
Missouri	9
Montana	2
North Carolina	13
Oklahoma [1]	24
Oregon	5
Tetanus:	
California	3
Missouri	1
Oklahoma [1]	2
Trachoma:	
California	8
Mississippi	7
Missouri	48
Montana	3
Oklahoma [1]	5
Oregon	1
Undulant fever:	
California	1
Oregon	1
Washington	1
Vincent's angina:	
Washington	1
Whooping cough:	
California	529
Mississippi	698
Missouri	231
Montana	20
North Carolina	242
Oklahoma [1]	38
Oregon	18
Rhode Island	25
Virginia	331
Washington	80
West Virginia	70

[1] Exclusive of Tulsa and Oklahoma City.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,140,000. The estimated population of the 94 cities reporting deaths is more than 30,630,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended December 22, 1928, and December 24, 1927

	1928	1927	Estimated expectancy
Cases reported			
Diphtheria:			
44 States	1,751	2,154	
99 cities	869	1,190	1,183
Measles:			
43 States	4,475	4,161	
99 cities	178	284	
Poliomyelitis:			
44 States	34	87	
Scarlet fever:			
44 States	3,072	3,161	
99 cities	1,096	1,099	1,249
Smallpox:			
44 States	515	594	
99 cities	47	96	59
Typhoid fever:			
44 States	163	268	
99 cities	25	61	40
Deaths reported			
Influenza and pneumonia:			
94 cities	2,078	867	
Smallpox:			
94 cities	0	0	

City reports for week ended December 22, 1928

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1919 is included. In obtaining the estimated expectancy the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1926, estimated	Chickenpox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	76,400	3	2	1	4	1	22	1	3
New Hampshire:									
Concord	[1] 22,546	0	0	0		0	0	0	2
Manchester	84,000	0	3	0		1	0	0	1
Vermont:									
Barre	[1] 10,008	0	0	0		0	0	2	0

[1] Estimated, July 1, 1925.

City reports for week ended December 22, 1928—Continued

Division, State, and city	Population, July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND—CON.									
Massachusetts:									
Boston	787,000	94	57	24	24	2	10	7	36
Fall River	131,000	8	5	2	1	0	110	0	5
Springfield	145,000	19	5	11	4	2	136	0	0
Worcester	193,000	9	6	4	1	0	33	4	0
Rhode Island:									
Pawtucket	71,000	7	2	0	----	0	6	0	2
Providence	275,000	0	12	19	6	1	15	0	7
Connecticut:									
Bridgeport	(2)	6	9	5	4	0	13	0	3
Hartford	164,000	9	8	2	1	0	2	2	5
New Haven	182,000	32	3	1	7	0	1	1	6
MIDDLE ATLANTIC									
New York:									
Buffalo	544,000	24	23	19	70	6	3	2	31
New York	5,924,000	260	204	183	271	25	70	0	212
Rochester	321,000	24	12	4	18	1	9	14	5
Syracuse	185,000	18	5	2	----	3	0	1	3
New Jersey:									
Camden	131,000	0	6	5	1	0	2	1	8
Newark	459,000	61	17	47	80	1	9	43	10
Trenton	134,000	7	5	3	26	2	1	0	7
Pennsylvania:									
Philadelphia	2,008,000	102	85	22	540	34	9	1	132
Pittsburgh	637,000	53	30	12	12	64	17	5	95
Reading	114,000	14	5	1	----	0	19	1	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	411,000	16	16	17	101	5	0	0	13
Cleveland	960,000	137	49	26	1,211	25	147	12	35
Columbus	285,000	9	9	1	571	10	22	2	12
Toledo	295,000	63	14	0	40	30	0	0	17
Indiana:									
Fort Wayne	99,900	4	5	3	----	2	0	0	5
Indianapolis	367,000	46	12	5	----	16	5	1	43
South Bend	81,700	1	1	0	----	0	0	0	3
Terre Haute	71,900	2	2	1	24	----	0	0	2
Illinois:									
Chicago	3,048,000	138	97	124	1,255	80	53	13	179
Springfield	64,700	2	2	1	6	1	1	2	1
Michigan:									
Detroit	[3] 1,242,044	103	73	65	1,165	22	8	18	57
Flint	136,000	22	9	1	31	2	1	6	4
Grand Rapids	156,000	6	4	0	----	16	4	0	8
Wisconsin:									
Kenosha	52,700	10	1	0	27	0	0	0	4
Milwaukee	517,000	113	26	7	95	10	120	22	22
Racine	69,400	19	3	3	6	0	23	0	0
Superior	[1] 39,671	0	1	0	----	0	0	1	2
WEST NORTH CENTRAL									
Minnesota:									
Duluth	113,000	1	2	4	51	8	0	10	2
Minneapolis	434,000	290	23	10	----	21	74	22	14
St. Paul	248,000	59	16	8	----	7	1	4	19
Iowa:									
Davenport	[1] 52,469	0	1	0	360	1	0	0	----
Des Moines	146,000	0	4	0	----	----	0	0	----
Sioux City	78,000	7	3	0	----	----	0	3	----
Waterloo	36,900	7	0	0	----	----	0	26	----
Missouri:									
Kansas City	375,000	22	12	1	12	19	23	3	50
St. Joseph	78,400	0	2	1	61	6	1	1	11
St. Louis	830,000	50	47	36	76	1	6	5	----
North Dakota:									
Fargo	[1] 26,403	8	0	0	----	1	0	2	1
Grand Forks	[1] 14,811	0	0	0	48	----	0	0	----

[1] Estimated July 1, 1925. [2] No estimate made. [3] Special census.

City reports for week ended December 22, 1928—Continued

Division, State, and city	Population, July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST NORTH CENTRAL—continued									
South Dakota:									
Aberdeen	[1] 15,036	1	0	1	----	----	1	0	----
Sioux Falls	[1] 30,127	0	1	0	----	----	0	0	----
Nebraska:									
Omaha	216,000	3	5	9	----	0	0	0	38
Kansas:									
Topeka	56,500	8	2	2	105	2	10	0	0
Wichita	92,500	3	5	0	----	7	0	2	10
SOUTH ATLANTIC									
Delaware:									
Wilmington	124,000	3	3	1	3	1	12	0	4
Maryland:									
Baltimore	808,000	155	39	25	407	8	2	79	27
Cumberland	[1] 33,741	0	2	0	11	0	8	0	3
Frederick	[1] 12,035	0	1	0	13	0	0	0	1
District of Columbia:									
Washington	528,000	26	20	14	187	3	0	0	19
Virginia:									
Lynchburg	[3] 38,493	3	3	2	549	2	0	6	2
Norfolk	174,000	----	3	----	----	----	----	----	----
Richmond	189,000	2	9	5	758	1	0	0	7
Roanoke	61,900	10	3	2	----	3	0	0	1
West Virginia:									
Charleston	50,700	13	1	0	72	3	0	0	5
Wheeling	[1] 56,208	7	2	1	12	0	4	4	2
North Carolina:									
Raleigh	[1] 30,371	0	1	1	----	2	0	0	0
Wilmington	37,700	13	1	2	12	5	0	0	2
Winston-Salem	71,800	2	2	1	----	0	1	0	9
South Carolina:									
Charleston	74,100	0	1	0	1,257	4	0	0	2
Columbia	41,800	6	1	0	0	0	0	0	2
Greenville	[1] 27,311	0	1	2	0	0	0	0	3
Georgia:									
Atlanta	([2])	1	4	4	1,782	33	0	1	26
Brunswick	[1] 16,809	0	0	0	----	1	0	0	0
Savannah	94,900	0	2	4	549	2	0	1	7
Florida:									
Miami	[3] 131,286	0	1	4	13	0	3	0	2
St. Petersburg	[3] 47,629	----	0	1	3	1	----	----	1
Tampa	102,000	0	2	2	12	2	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,500	1	1	2	76	0	0	0	3
Louisville	311,000	----	9	----	----	----	----	----	----
Tennessee:									
Memphis	177,000	13	7	9	327	3	0	0	10
Nashville	137,000	1	3	1	----	2	0	0	8
Alabama:									
Birmingham	211,000	11	5	3	281	4	1	2	4
Mobile	66,800	0	1	2	68	1	0	0	2
Montgomery	47,000	1	1	2	9	----	3	0	----
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	[1] 31,633	3	1	1	----	----	0	1	----
Little Rock	75,900	3	1	0	13	0	0	0	0
Louisiana:									
New Orleans	419,000	0	12	11	738	37	0	0	22
Shreveport	59,500	3	2	1	12	0	0	0	5
Texas:									
Dallas	203,000	2	14	22	12	6	0	0	4
Fort Worth	159,000	4	5	7	161	3	0	0	7
Galveston	49,100	0	2	2	2	0	0	0	4
Houston	[1] 164,954	0	6	5	71	4	0	0	17
San Antonio	205,000	0	3	5	3	4	3	0	9

[1] Estimated July 1, 1925. [2] No estimate made. [3] Special census.

City reports for week ended December 22, 1928—Continued

Division, State, and city	Population, July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MOUNTAIN									
Montana:									
Billings	[1] 17,971	3	0	0	-------	2	0	0	2
Great Falls	[1] 29,883	27	1	0	[3] 120	2	20	4	2
Helena	[1] 12,037	0	0	0	138	0	2	0	0
Missoula	[1] 12,668	0	1	0	30	0	0	0	3
Idaho:									
Boise	[1] 23,042	2	1	0	0	0	0	0	0
Colorado:									
Denver	285,000	18	12	7	606	50	1	6	28
Pueblo	43,900	15	2	0	76	1	0	0	4
New Mexico:									
Albuquerque	[1] 21,000	0	0	0	3	2	0	0	3
Utah:									
Salt Lake City	133,000	53	3	1	-------	12	0	11	4
Nevada:									
Reno	[1] 12,665	0	0	0	-------	0	0	0	2
PACIFIC									
Washington:									
Seattle	(2)	12	7	3	109	-------	0	1	-------
Spokane	109,000	35	3	0	19	-------	15	0	-------
Tacoma	106,000	18	3	0	-------	3	1	16	3
Oregon:									
Portland	[1] 282,383	7	11	11	166	9	36	0	11
California:									
Los Angeles	(2)	14	44	18	836	45	3	7	36
Sacramento	73,400	1	2	7	108	3	0	5	6
San Francisco	567,000	9	19	9	56	12	0	5	5

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	2	6	0	0	0	0	0	0	0	0	19
New Hampshire:											
Concord	0	0	0	0	0	1	0	0	0	0	15
Manchester	2	3	0	0	0	0	0	0	0	0	20
Vermont:											
Barre	2	0	0	0	0	0	0	0	0	1	2
Massachusetts:											
Boston	69	44	0	0	0	8	1	1	0	30	183
Fall River	3	5	0	0	0	0	0	0	0	1	23
Springfield	9	9	0	0	0	0	0	0	0	2	26
Worcester	12	7	0	0	0	0	0	0	0	12	46
Rhode Island:											
Pawtucket	1	5	0	0	0	1	0	0	0	2	12
Providence	8	21	0	0	0	1	0	0	0	0	87
Connecticut:											
Bridgeport	9	0	0	0	0	1	0	0	0	2	25
Hartford	8	5	0	1	0	2	0	0	0	5	43
New Haven	8	3	0	0	0	2	0	0	0	4	53
MIDDLE ATLANTIC											
New York:											
Buffalo	25	22	0	0	0	12	1	0	0	27	152
New York	195	170	0	0	0	101	12	4	1	61	1,597
Rochester	13	1	0	0	0	0	0	0	0	25	78
Syracuse	13	8	0	0	0	2	0	0	0	24	50
New Jersey:											
Camden	4	13	0	0	0	1	0	0	0	3	36
Newark	20	11	0	0	0	3	1	1	0	21	108
Trenton	4	2	0	0	0	2	0	0	0	1	42

[1] Estimated, July 1, 1925. No estimate made. [3] Estimated.

City reports for week ended December 22, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
MIDDLE ATLANTIC—continued											
Pennsylvania:											
Philadelphia	79	46	0	0	0	38	3	3	0	73	696
Pittsburgh	37	17	0	0	0	12	1	1	0	23	366
Reading	2	6	0	0	0	1	0	0	0	0	34
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	16	27	1	1	0	9	0	1	0	18	161
Cleveland	38	14	1	0	0	12	1	0	0	65	227
Columbus	11	2	1	0	0	1	0	0	0	4	81
Toledo	14	18	1	0	0	8	0	1	0	26	134
Indiana:											
Fort Wayne	4	7	0	0	0	3	0	0	0	0	33
Indianapolis	11	12	6	0	0	5	0	0	0	4	154
South Bend	4	0	1	0	0	0	0	0	0	1	16
Terre Haute	3	2	0	0	0	0	0	0	0	4	14
Illinois:											
Chicago	120	88	1	0	0	55	4	1	0	39	1,114
Springfield	2	15	0	0	0	1	0	0	0	0	21
Michigan:											
Detroit	92	103	2	0	0	24	2	0	0	90	371
Flint	11	13	1	5	0	1	0	0	0	3	27
Grand Rapids	11	5	1	0	0	1	0	0	0	2	60
Wisconsin:											
Kenosha	2	3	0	0	0	0	0	0	0	4	15
Milwaukee	26	59	0	0	0	7	0	0	0	44	151
Racine	6	5	1	0	0	0	0	0	0	9	----
Superior	3	2	0	0	0	0	0	0	0	0	8
WEST NORTH CENTRAL											
Minnesota:											
Duluth	8	12	0	0	0	2	0	0	0	1	36
Minneapolis	53	25	5	0	0	6	0	0	0	13	147
St. Paul	27	21	6	0	0	0	0	0	0	8	74
Iowa:											
Davenport	1	0	1	0	----	----	0	0	----	0	----
Des Moines	7	11	1	0	----	----	0	0	----	0	66
Sioux City	3	0	0	1	----	----	0	0	----	0	----
Waterloo	2	31	0	1	----	----	0	0	----	10	----
Missouri:											
Kansas City	13	12	1	0	0	5	0	0	0	3	206
St. Joseph	2	3	0	0	0	0	0	0	0	3	34
St. Louis	39	10	1	0	0	11	2	1	0	19	262
North Dakota:											
Fargo	2	1	0	0	0	0	0	0	0	0	9
Grand Forks	1	1	0	0	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	1	0	0	0	----	----	0	0	----	0	----
Sioux Falls	2	1	0	0	----	----	0	0	----	0	12
Nebraska:											
Omaha	7	4	3	1	0	1	0	0	0	0	75
Kansas:											
Topeka	2	0	0	0	0	0	0	0	0	3	6
Wichita	4	4	1	0	0	0	0	0	0	0	54
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	2	0	0	0	0	0	0	0	3	29
Maryland:											
Baltimore	28	28	0	0	0	13	3	0	0	92	252
Cumberland	1	2	0	0	0	0	0	0	0	0	19
Frederick	0	0	0	0	0	0	0	0	0	3	4
District of Columbia:											
Washington	23	20	0	0	0	13	1	2	0	9	147
Virginia:											
Lynchburg	0	2	0	0	0	1	0	0	0	0	12
Norfolk	2	----	0	----	----	----	0	----	----	----	----
Richmond	6	6	0	0	0	4	1	1	0	0	57
Roanoke	2	7	0	0	0	0	0	0	0	2	10
West Virginia:											
Charleston	2	0	0	0	0	1	0	0	0	0	20
Wheeling	2	0	0	0	0	1	0	0	0	1	25

City reports for week ended December 22, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
SOUTH ATLANTIC—continued											
North Carolina:											
Raleigh	1	0	0	0	0	0	0	0	0	0	8
Wilmington	0	1	0	0	0	0	0	0	0	0	13
Winston-Salem	2	4	0	0	0	1	0	0	0	3	----
South Carolina:											
Charleston	0	0	1	0	0	0	1	0	0	0	24
Columbia	1	1	0	0	0	1	0	0	0	0	9
Greenville	0	1	0	0	0	0	0	0	0	6	10
Georgia:											
Atlanta	4	8	1	0	0	0	0	0	0	2	120
Brunswick	0	0	0	0	0	0	0	0	0	0	5
Savannah	1	1	1	0	0	3	0	1	0	0	40
Florida:											
Miami	----	4	0	0	0	1	0	0	0	5	22
St. Petersburg	0	----	0	----	0	2	0	----	0	----	19
Tampa	1	5	0	0	0	1	0	0	0	2	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	4	0	0	0	2	0	0	0	0	28
Louisville	6	----	0	----	----	----	1	----	----	----	----
Tennessee:											
Memphis	6	7	0	0	0	7	0	1	0	1	74
Nashville	4	1	0	0	0	5	0	0	0	5	57
Alabama:											
Birmingham	4	6	1	0	0	7	1	0	0	13	67
Mobile	1	2	0	0	0	1	0	0	0	3	24
Montgomery	1	2	1	0	----	----	0	0	----	10	----
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	----	----	0	0	----	0	----
Little Rock	2	6	0	1	0	1	0	0	0	1	----
Louisiana:											
New Orleans	6	5	0	0	0	16	2	1	1	0	216
Shreveport	2	1	0	0	0	1	0	0	1	1	21
Texas:											
Dallas	4	10	1	7	0	3	0	1	0	1	67
Fort Worth	2	8	0	13	1	1	0	0	0	0	34
Galveston	1	0	0	0	0	0	0	0	0	0	16
Houston	4	1	1	1	0	1	0	0	0	0	70
San Antonio	1	2	0	1	0	2	0	0	0	0	73
MOUNTAIN											
Montana:											
Billings	2	0	0	0	0	0	0	0	0	0	11
Great Falls	2	2	0	0	0	0	0	0	0	3	16
Helena	1	0	0	0	0	0	0	0	0	3	3
Missoula	0	0	0	0	0	0	0	0	0	0	10
Idaho:											
Boise	1	0	1	0	0	0	0	0	0	0	7
Colorado:											
Denver	13	0	1	1	0	6	0	1	0	4	169
Pueblo	2	0	0	0	0	0	0	0	0	0	21
New Mexico:											
Albuquerque	0	1	0	0	0	7	0	0	0	3	22
Utah:											
Salt Lake City	2	1	0	4	0	0	0	0	0	0	52
Nevada:											
Reno	0	0	0	0	0	1	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	9	3	2	0	----	----	0	1	----	7	----
Spokane	8	----	4	0	----	----	0	0	----	4	----
Tacoma	3	8	4	19	0	1	0	0	0	1	33
Oregon:											
Portland	7	5	7	12	0	2	0	0	0	0	100
California:											
Los Angeles	27	34	4	0	0	22	2	2	0	28	373
Sacramento	2	10	1	0	0	5	0	0	0	0	----
San Francisco	15	22	2	3	0	11	1	1	0	8	188

City reports for week ended December 22, 1928—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	1	0	0	0	0	0	0	0	0
Fall River	0	1	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York [1]	20	10	6	4	0	0	1	1	1
New Jersey:									
Newark	1	0	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	3	1	0	0	1	0	0	0	0
Pittsburgh	0	0	0	2	0	0	0	0	2
EAST NORTH CENTRAL [2]									
Ohio:									
Cincinnati	1	0	0	0	0	0	0	0	0
Cleveland	1	0	0	0	0	0	0	0	0
Toledo	0	1	1	1	0	0	0	0	0
Illinois:									
Chicago	10	5	2	2	0	0	0	0	0
Michigan:									
Detroit	8	0	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	2	0	1	1	0	0	0	0	0
Racine	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
St. Paul	0	1	0	0	0	0	0	0	0
Missouri:									
Kansas City	4	2	0	0	0	0	0	1	0
St. Joseph	1	0	0	0	0	0	0	0	0
St. Louis	4	0	0	0	0	0	0	0	0
SOUTH ATLANTIC [1]									
Virginia:									
Richmond	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	1	0	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia:									
Savannah [1]	0	0	0	0	1	2	0	0	0
Florida:									
Tampa	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	4	0	0	0	0	0	0	0	0
Nashville	0	0	0	0	3	1	0	0	0
WEST SOUTH CENTRAL									
Texas:									
Dallas	0	0	0	0	1	1	0	0	0
San Antonio	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Montana:									
Great Falls	2	2	0	0	0	0	0	0	0
Colorado:									
Denver	5	5	0	0	0	0	0	0	0
Utah:									
Salt Lake City	1	3	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	1	0	0	0	0	0	0	0	0
Spokane	1	0	0	0	0	0	0	1	0
California:									
Los Angeles	4	3	0	0	0	0	0	0	0
Sacramento	0	0	0	0	1	0	0	0	0
San Francisco	3	1	0	0	0	0	0	1	0

[1] Typhus fever: 4 cases; 1 case at New York City, N. Y.; 2 cases at Savannah, Ga., and 1 case at Mobile, Ala.

[2] Rabies (in man); 1 death at Indianapolis, Ind.

The following table gives the rates per 100,000 population for 101 cities for the 5-week period ended December 22, 1928, compared with those for a like period ended December 24, 1927. The population figures used in computing the rates are approximate estimates as of July 1, 1928 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,657,000 in 1928 and 31,050,000 in 1927. The 95 cities reporting deaths had nearly 30,961,000 estimated population in 1928 and nearly 30,370,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, November 18 to December 22, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Nov. 24, 1928	Nov. 26, 1927	Dec. 1, 1928	Dec. 3, 1927	Dec. 8, 1928	Dec. 10, 1927	Dec. 15, 1928	Dec. 17, 1927	Dec. 22, 1928	Dec. 24, 1927
101 cities	164	203	[2] 151	232	[3] 164	204	[4] 159	204	[5] 146	201
New England	140	170	195	267	[3] 213	216	[6] 221	200	159	193
Middle Atlantic	137	212	131	251	159	228	139	225	145	232
East North Central	183	219	185	220	190	227	209	247	166	212
West North Central	185	178	164	178	148	129	148	129	138	123
South Atlantic	221	195	121	224	139	189	121	139	[7] 123	143
East South Central	130	122	140	167	125	71	[8] 102	127	[8] 138	127
West South Central	268	302	220	269	256	215	248	215	188	339
Mountain	124	170	[2] 53	143	35	143	[2] 0	161	71	117
Pacific	105	162	72	259	100	167	[9] 62	167	95	157

MEASLES CASE RATES

101 cities	108	136	[2] 115	189	[3] 143	225	[4] 184	247	[5] 178	284
New England	582	500	605	539	[3] 757	539	[6] 860	140	800	537
Middle Atlantic	59	128	46	180	46	199	91	205	68	250
East North Central	105	60	132	121	187	140	194	117	251	157
West North Central	101	24	66	24	193	49	271	46	224	38
South Atlantic	60	200	63	307	53	525	84	604	[7] 50	794
East South Central	5	162	0	20	15	365	[8] 0	527	[8] 29	710
West South Central	4	87	16	120	40	132	12	248	12	83
Mountain	239	27	[2] 441	27	186	36	[2] 476	27	203	18
Pacific	15	175	72	227	43	178	[9] 67	238	49	256

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1928, and 1927, respectively.
[2] Denver, Colo., not included.
[3] Barre, Vt., not included.
[4] Pawtucket, R. I., Louisville, Ky., Denver, Colo., and Tacoma, Wash., not included.
[5] Norfolk, Va., and Louisville, Ky., not included.
[6] Pawtucket, R. I., not included.
[7] Norfolk, Va., not included.
[8] Louisville, Ky., not included.
[9] Tacoma, Wash., not included.

Summary of weekly reports from cities, November 18 to December 22, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

SCARLET FEVER CASE RATES

	Week ended—									
	Nov. 24, 1928	Nov. 26, 1927	Dec. 1, 1928	Dec. 3, 1927	Dec. 8, 1928	Dec. 10, 1927	Dec. 15, 1928	Dec. 17, 1927	Dec. 22, 1928	Dec. 24, 1927
101 cities	176	158	[2] 171	184	[3] 200	184	[4] 201	211	[5] 184	186
New England	211	181	186	277	[3] 238	321	[6] 228	326	241	281
Middle Atlantic	109	122	102	155	141	156	143	198	144	173
East North Central	227	195	238	192	260	216	290	243	234	212
West North Central	283	204	220	249	263	206	251	204	240	202
South Atlantic	146	171	137	173	165	133	149	162	[7] 164	144
East South Central	244	86	145	147	259	81	[8] 175	142	[8] 160	117
West South Central	144	165	184	141	216	116	172	170	100	91
Mountain	106	179	[2] 123	359	80	305	[3] 53	242	27	170
Pacific	194	131	261	128	197	151	[9] 183	154	197	191

SMALLPOX CASE RATES

101 cities	7	22	[2] 6	17	[3] 4	13	[4] 8	19	[5] 8	16
New England	0	0	5	0	[3] 3	0	[6] 0	0	2	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	21	1	12	10	10	4	16	17	4	12
West North Central	2	202	8	115	2	75	0	115	6	77
South Atlantic	0	2	5	5	0	7	2	5	[7] 0	20
East South Central	15	0	0	10	20	5	[8] 7	5	[8] 0	20
West South Central	8	4	12	8	4	8	24	0	40	12
Mountain	0	54	[2] 71	45	0	99	[3] 71	117	44	99
Pacific	18	44	8	39	8	39	[9] 22	31	56	26

TYPHOID FEVER CASE RATES

101 cities	9	10	[3] 7	9	[3] 9	11	[4] 5	8	[5] 4	11
New England	7	14	5	7	[3] 5	12	[6] 7	9	2	9
Middle Atlantic	9	10	7	10	7	8	4	8	4	10
East North Central	5	6	5	5	7	9	1	3	1	8
West North Central	16	14	8	12	4	14	4	6	2	8
South Atlantic	11	9	9	16	7	9	5	9	[7] 7	16
East South Central	25	15	5	15	20	30	[8] 22	35	[8] 7	25
West South Central	12	12	16	21	48	21	16	17	8	17
Mountain	9	27	[2] 18	9	0	9	[3] 18	18	9	9
Pacific	13	5	3	5	5	13	[9] 8	16	10	10

INFLUENZA DEATH RATES

95 cities	16	10	[2] 30	12	[3] 48	12	[10] 77	14	[8] 113	17
New England	9	2	9	5	[3] 10	9	[6] 10	12	14	5
Middle Atlantic	15	10	10	11	17	7	27	9	66	11
East North Central	3	5	14	9	18	9	44	11	124	13
West North Central	6	6	12	4	43	6	116	6	147	10
South Atlantic	12	13	29	13	51	16	95	14	131	20
East South Central	21	48	21	48	58	58	[8] 101	64	[8] 78	48
West South Central	33	34	53	42	53	47	94	55	209	72
Mountain	44	18	[3] 353	27	513	9	734	9	593	27
Pacific	95	7	240	14	294	3	[9] 338	17	213	24

[2] Denver, Colo., not included.
[3] Barre, Vt., not included.
[4] Pawtucket, R. I., Louisville, Ky., Denver, Colo., and Tacoma, Wash., not included.
[5] Norfolk, Va., and Louisville, Ky., not included.
[6] Pawtucket, R. I., not included.
[7] Norfolk, Va., not included.
[8] Louisville, Ky., not included.
[9] Tacoma, Wash., not included.
[10] Pawtucket, R. I., Louisville, Ky., and Tacoma, Wash., not included.

Summary of weekly reports from cities, November 18 to December 22, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

PNEUMONIA DEATH RATES

	Week ended—									
	Nov. 24, 1928	Nov. 26, 1927	Dec. 1, 1928	Dec. 3, 1927	Dec. 8, 1928	Dec. 10, 1927	Dec. 15, 1928	Dec. 17, 1927	Dec. 22, 1928	Dec. 24, 1927
95 cities	122	95	[2] 134	113	[3] 157	110	[10] 195	118	[8] 241	135
New England	106	60	85	100	[3] 83	51	[6] 107	102	159	121
Middle Atlantic	128	97	141	123	149	119	190	117	246	126
East North Central	106	89	120	103	135	97	171	97	255	105
West North Central	69	87	100	70	126	99	212	91	295	97
South Atlantic	165	144	140	146	165	135	237	161	228	182
East South Central	131	133	162	207	282	154	[8] 203	149	[8] 210	213
West South Central	127	110	140	106	176	102	181	191	250	229
Mountain	159	99	[2] 159	54	336	215	628	134	398	242
Pacific	169	38	240	103	294	110	[9] 218	131	169	165

[2] Denver, Colo., not included.
[3] Barre, Vt., not included.
[6] Pawtucket, R. I., not included.
[8] Louisville, Ky., not included.
[9] Tacoma, Wash., not included.
[10] Pawtucket, R. I., Louisville, Ky., and Tacoma, Wash., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities of each group, approximated as of July 1, 1928 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1928	1927	1928	1927
Total	101	95	31,657,000	31,050,300	30,960,700	30,369,500
New England	12	12	2,274,400	2,242,700	2,274,400	2,242,700
Middle Atlantic	10	10	10,732,400	10,594,700	10,732,400	10,594,700
East North Central	16	16	7,991,400	7,820,700	7,991,400	7,820,700
West North Central	12	10	2,683,500	2,634,500	2,566,400	2,518,500
South Atlantic	21	21	2,981,900	2,890,700	2,981,900	2,890,700
East South Central	7	6	1,048,300	1,028,300	1,000,100	980,700
West South Central	8	7	1,307,600	1,260,700	1,274,100	1,227,800
Mountain	9	9	591,100	581,600	591,100	581,600
Pacific	6	4	2,046,400	1,996,400	1,548,900	1,512,100

FOREIGN AND INSULAR

THE FAR EAST

Report for the two weeks ended December 15, 1928.—The following report for the two weeks ended December 15, 1928, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva.

Plague, cholera, or smallpox was reported at the following ports:

Report for the week ended December 8, 1928

PLAGUE

Ceylon.—Colombo.
India.—Rangoon.
Indo-China.—Pnompenh.

CHOLERA

India.—Calcutta, Bombay, Tuticorin.
Siam.—Bangkok.

SMALLPOX

India.—Bombay, Negapatam, Calcutta.
French India.—Pondicherry.
Indo-China.—Pnompenh.
Dutch East Indies.—Samarinda, Belawan Deli, Surabaya.
China.—Hong Kong, Shanghai, Canton.
Kwantung.—Dairen.

Report for the week ended December 15, 1928

PLAGUE

Ceylon.—Colombo.
India.—Bombay.
Indo-China.—Pnompenh.

CHOLERA

India.—Calcutta, Madras.
Siam.—Bangkok.
Indo-China.—Pnompenh.

SMALLPOX

India.—Bombay, Negapatam, Calcutta, Moulmein, Rangoon, Madras.
French India.—Pondicherry.
Indo-China.—Pnompenh.
Dutch East Indies.—Samarinda, Belawan Deli, Surabaya.
China.—Hong Kong, Shanghai, Canton.
Kwantung.—Dairen.

TRINIDAD

Vital statistics—Port of Spain—November, 1928.—The following statistics for the month of November, 1928, with comparisons for November of the years 1924 to 1927, are taken from a report issued by the Public Health Department of Port of Spain:

Month of November, 1924–1928

	1924	1925	1926	1927	1928
Number of births	142	146	176	186	171
Births per 1,000 population	27.38	27.78	33.18	34.81	31.82
Number of deaths	124	132	126	118	103
Deaths per 1,000 population	23.91	25.11	23.75	22.08	19.17
Deaths under 1 year	26	25	24	17	17
Deaths under 1 year per 1,000 births	183.09	171.23	136.36	91.39	99.41

Estimated population June 30, 1927—65,573.

Notifiable diseases, November, 1928.—The numbers of cases of certain notifiable diseases reported in Port of Spain, Trinidad, during the month of November, 1928, were as follows:

Disease	Cases	Disease	Cases
Chicken pox	1	Tuberculosis (pulmonary)	18
Ophthalmia neonatorum	1	Typhoid fever	4
Pneumonia (lobar)	2		

YUGOSLAVIA

Communicable diseases, November, 1928.—During the month of November, 1928, communicable diseases were reported in Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	80	5	Measles	1,467	26
Cerebrospinal meningitis	5	3	Scarlet fever	3,726	519
Diphtheria	563	99	Tetanus	10	7
Dysentery	169	21	Typhoid fever	505	56
Glanders	1	1	Typhus fever	17	1
Lethargic encephalitis	2	2			

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, health section of the League of Nations, and other sources. The reports contained in the following table must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given:

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928				December, 1928			
										3	10	17	24	1	8	15	22
Ceylon:																	
Colombo	C				1												
	D				1												
Ingiriya Province	C											1					
	D											1					
China:																	
Canton	C		1	2	8	4	1		1			1					2
	D		1	2	8	2	1										
Kwantung—Dairen	C						3										
	D						1										
Shanghai	C					3	2										
	D						3	3									
Swatow	C			3	7												
Dutch East Indies: Java—Batavia	C					1											
India	C	32,564	30,177	31,346	44,240	52,786	32,287	17,028	4,976	5,771	4,714						
	D	20,432	20,162	20,114	23,216	26,967	17,731	10,187	3,226	3,096	2,889						
Bassein	D	41	40	8													
Bombay	C		1		6	9	6	15		1							
	D				11	5	4	7		1			3		1		
Calcutta	C	446	552	462	206	93	68	41	50	44	62	63	87				
	D	428	410	323	133	51	40	39	25	35	42	38	53	39	36	27	
Madras	C	22	27	29	72	555	149	97	69	45	48	41	32	32			
	D	18	16	21	31	271	88	73	31	32	21	31	15	15	6	6	
Madras Presidency	C		1,314	878											1		
	D		675	460											1		
Moulmein	D		1												1		
Negapatam	C						1								1		
	D	2		13		3	7	1					1				
Rangoon	C	23	7	14	1	13	2	1									
	D	15	5	9	1	8	2	2					3	2			
Tuticorin	C	110				1	1	1						1	1		
	D	71									1						
Vizagapatam	D				7	31	5										

India (French):																	
Chandernagor	C				2	7	3	16		12	11	20	18	4	3		
	D				1	3	2	7		12	8	14	6	3	1		
Karikal	C	1				30	41	9	4	4	4	9	6		1		
	D	1				21	26	8	3	4	3	5	3		1		
Pondicherry Province	C	8			3	114	132	31	4	1	1		13	16	8		
	D	8			3	60	72	19	4	1			9	11	7	3	
Indo-China (see also table below):																	
Pnompenh	C				5	2	3					1				1	
	D				5	2	2					1				1	
Saigon	C	116	15	6	2		2					1					
	D	76	9	1	1		1										
Tourane	C			1													
	D			1													
Japan: Osaka	C							1									
Kwangchow-Wan (see table below).																	
Philippine Islands:																	
Bulacan Province—																	
Malolos	C				1												
Paombong	C					1											
Cagayan Province	C				1												
	D					1											
Ballesteros	C				1	2											
	D				1												
Pamplona	C			1													
	D			1													
Sanchez-Mira	C			4													
	D			2													
Cebu (port)	C				1												
Ilocos Norte Province	C				1												
	D				1												
Manila	C				4	1											
Pangasinan Province—Bayambang	C				1												
	D				1												
Surigao Province—Surigao	C				1	3											
	D				1	2											
Siam	C	349	202	203	163	40	21	14	9	15	4						
	D	234	127	144	123	18	14	10	8	8	3						
Ayudhaya	C			2		29	1	7	9	5	1			2			
	D			1		26	1	6	8	3	1			2			
Bangkok	C	74	50	7	9	4	5	4		1	2	2	8	4	2	4	
	D	35	26	4	3		1	1			1	2	7	1		4	
Dhannapuri	C						3								2	4	
	D						3								1	4	
Nondpuri	C															1	
	D															1	
Smud Prakar	C														23	14	
	D														15	13	
Smud Sagara	C									9	1	17	16	12	3	3	
	D									5	1	6	6	6	1	3	
Trad	C			1													

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928				December, 1928			
										3	10	17	24	1	8	15	22
Straits Settlements: Singapore	C	1															
	D	1															
On vessel:																	
S. S. Glenapp, at Yokohama, from Shanghai	C						P										
S. S. Kambangan at Batavia from Jedda via Sabang and Palembang	C					[1]											
S. S. Tairea at Penang from Madras via Negapatam	C					P											

Place		January–March, 1928	April–June, 1928	July, 1928	August, 1928	September, 1928			October, 1928			November, 1928		
						1–10	11–20	21–30	1–10	11–20	21–31	1–10	11–20	21–30
Indo-China (French) (see also table above):														
Annam	C	389	128	16	11	2	2		4	5	2			5
Cambodia	C	312	418	155	38	15		1	6	19			4	17
Cochin-China	C	1,407	1,666	153	28	15	9	4	6	26	20	27	48	81
Tonkin	C	1	43	7	2									
Kwangchow-Wan	C		16	1	1								1	

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928 3	10	17	24	December, 1928 1	8	15	22	29
Algeria (see also table below):																		
Algiers	C	1								2								
Oran	C		1	2				1										
Philippeville	C							2										
Arabia: Aden	C	224	7	1														
	D	191	9	1														
Argentina: [1]																		
Avellaneda	C		1															
	D		1															
Buenos Aires [2]	C		6	1														
	D		3	2														
Catamarca Province: Recreo	C										P				9			
Cordoba Province	C	5																
Canada Honda	C										14							
Entre Rios	C			5														
Loreto	C		3															
Rosario	C		1		1													1
Santa Fe	C			9	1													
Santiago del Estero	C			10	1			7										
Suardi	C		2															
Tucuman Province: El Mollar	C														5			
Azores: St. Michaels Island	C	5	1	1			2	3	2	1								
	D	2	1	1					1									
Belgian Congo:																		
Djugu	C								2									
Lenza	C												1					
Bolivia: Valle Grande	C					P												
Brazil: Bahia	C	6	3															
	D	6	3															
British East Africa (see also table below):																		
Mombasa	C						1	3										
	D						1	3										
Plague-infected rats								2										
Tanganyika	C				6	1	8											
	D	10			29	1	8											
Uganda	C		84	105			102	106		40								
	D		70	85			64	86		29								

[1] During the period from Nov. 10 to Dec. 11, 1928, 13 cases of plague were reported at El Mollar, Tucuman Province, Argentina. During the same period 1 case of plague was reported at Chipion and 1 at Ucacha, both in Cordoba Province, Argentina.

[2] 18 plague-infected rats were reported at Buenos Aires, Argentina, from July 1 to Dec. 31, 1928.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928				December, 1928				
										3	10	17	24	1	8	15	22	29
Canary Islands:																		
Arrecife	C		1															
	D		1															
Lanzarote Village	C		1															
Las Palmas	C						2	2										
	D						1	1										
Palma Island	C					7												
	D					3												
Teneriffe	C						5	2							1			
	D						3											
Laguna	C							4										
Ceylon:																		
Colombo	C	1	4	2			3	2	1					1				
	D	1	2	2			3	1	1					1				
Plague-infected rats								1					3		2			
Jaffna	C							2		1								
	D							2										
China:																		
Amoy	C		5		P													
Hong Kong	C	2		1	1													
	D			1														
Mongolia—																		
Chien Chia Tien	C						P	P										
Tungliao	C						220	173	11	6	2							
Urga	C						P											
Shansi—																		
Fengchow	C							P										
Dutch East Indies:																		
Celebes—Makassar	C							1										
	D							1										
Plague-infected rats								4	2									
Java—																		
Batavia and West Java	C	47	65	61	32	46	49	29	12		5							
	D	47	65	61	32	46	49	29	11		5							
Plague-infected rats		7	9	4	2	2									1			

East Java and Madura	C	4			1	2	1	16											
	D	4			1	2	1	16											
Kedoe Residency	C	4			P														
Surabaya Residency	C	1						1											
	D	1						1											
Ecuador (see also table below):																			
Alausi	C		1																
Egypt:																			
Alexandria	C		1		2	1	2												
	D		2				1												
Amrieh District	C					26	11	1											
	D						5	1											
Assiout Province	C				2	2	1	1		1	1	1							
	D				1		1	1		1	1	1							
Beheira Province	C					2	5	1											
	D						2												
Beni-Suef	C	12	79	25	25	6	16									4			
	D	3	27	99	5	2	5									1			
Cairo	D					1													
Dierout	C									1									
	D									1									
Girga	C						5						1						
	D						4						1						
Kena Province	C												3	1					
	D												2	1					
Maghagha District	C	1																	
	D	1																	
Menoufieh Province	C		11						6	1									
	D		2																
Minieh Province	C	48	76	76	13														
	D	9	17	24	3														
Port Said	C				1	5													
	D						1												
Sidi Barani	C				12	10													
	D				8	1													
Suez	C	5	3			2													
	D	13	1																
Tanta	C		1		2	2			5										
	D		1																
Greece:																			
Athens and Piræus	C						2	5		4	1								
Corfu	C			15		1	1					1							
	D			3															
Patras	C				1	1	1												
	D				1														
Hawaii Territory—Hawaii:																			
Hamakau District—																			
Hamakau—Plague-infected rats			1			1													
Honokaa	D						2												
Plague-infected rats			1				4												
Kukuihaele	D					1													
Plague-infected rats					1														
Kukalau—Plague-infected rats						3													
Paauilo	D				1	1													

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928				December, 1928				
										3	10	17	24	1	8	15	22	29
India	C	18,518	3,272	367	587	1,936	3,354	6,209	1,757	1,957	3,039							
	D	17,074	3,183	345	340	1,037	1,573	3,225	1,042	1,014	1,244							
Bassein	D	13	8	14	3		1					2						
Bombay	C	43	39	14	1	8	7	4	2	3								
	D	69	38	8	1	6	6	5	1	1				5		1		
Plague-infected rats	P					7	20	13			7		10	10	8	4		
Calcutta	D					2	1											
Madras Presidency	C	21	12	54	123	217	317	196	128	132	135							
	D	12	6	25	51	105	147	97	67	48	57							
Rangoon	C	16	14	31	43	28	17	7		2								
	D	14	15	28	39	26	15	5		3					1			
Vizagapatam	D			1														
Indo-China (see also table below):																		
Pnompenh	C				4	1	6	1				1		2	1	1		
	D				4	1	4	1				1		2	1	1		
Saigon	C			5		1					1							
	D			1		1												
Plague-infected rats	P			2														
Iraq:																		
Baghdad	C	11	13	9	1		4		2	1	1	5	3	2	4	1	1	
	D	6	3	4			2		1	1		3	2	1	2		1	
Plague-infected rats	P	4	3															
Dulaim Liwa	C	1																
Kwangchow-Wan (see table below).																		
Madagascar (see also table below):																		
Tamatave	C		1	20	3	8	9	13	3	3	1							
	D			8	7		4	10		2	1							
Nigeria (see also table below):																		
Lagos	C	71	28	43	53	51	60	88	24	19	25	15	15	[illegible]	11			
	D	18	28	42	52	52	59	88	21	18	24	14	14	[illegible]	10			
Plague-infected rats	P	8	55	57	23		62	91	51	56		38						
Paraguay: Asuncion	C			5				3										
	D			2	2													
Peru (see table below).																		
Portugal: Lisbon	C			1														

Senegal (see also table below):																		
Thies and vicinity	C		72	52														
	D		40	40														
Siam	C	27	15	6	10													
	D	13	11	7	8													
Ayudhaya	C			2	2													
	D			1	2													
Bangkok	C	4										1						
	D	2										1						
Nagara	C		1	2														
Panknampo	C															8		
	D															7		
Straits Settlements:																		
Ipoh	C						2											
	D						2											
Penang	C							1										
Syria (see table below).																		
Turkey:																		
Adalia	C				1			1				1						
Constantinople	C							1										
Union of South Africa: Orange Free State	C				P	P		1				P						
Union of Socialist Soviet Republics:																		
Astrakhan—																		
Axary District	C			3														
	D			2														
Kirghiz District	D						54											
Krasnoiarsk District	D						1											
Chita District	C						1											
Kalmouks District	C											10						
	D											7						
Ural Government	C									7								
	D									7								
On vessel:																		
S. S. Tymeric, at Barbados, from New Orleans	C		1															
S. S. Automedon, at Penang, Straits Settlements	C							P										

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		January-March, 1928	April-June, 1928	July, 1928	August, 1928	September, 1928	October, 1928	November, 1928
Algeria (see also table above):								
Algiers	C	------	1	------	------	------	------	------
British East Africa (see also table above):								
Kenya	C	65	86	97	144	15	37	3
	D	------	5	------	34	------	------	2
Uganda	C	------	------	176	152	128	134	------
	D	------	------	151	141	98	108	------
Ecuador: Guayaquil	C	20	6	------	------	3	3	------
	D	8	2	------	------	------	2	------
Plague-infected rats		75	5	7	------	27	21	------
Indo-China (see table above)	C	12	36	7	2	6	2	------
Kwangchow-Wan	C	18	27	------	------	------	------	------
Madagascar (see also table above)	C	940	199	45	65	59	88	------
	D	864	184	33	61	51	84	------
Ambositra Province	C	202	68	4	3	------	5	------
	D	191	35	4	3	------	5	------
Antisirabe Province	C	281	68	11	------	10	2	------
	D	279	67	11	------	10	2	------
Itasy Province	C	55	1	------	------	2	3	------
	D	49	1	------	------	2	3	------
Majunga	C	------	------	------	2	------	------	------
	D	------	------	------	2	------	------	------
Moramanga Province	C	56	4	2	11	20	13	------
	D	55	4	2	10	18	11	------
Tamatave	C	------	23	10	12	18	5	------
	D	------	14	9	7	10	4	------
Tananarive Province	C	348	78	24	51	75	46	------
	D	292	82	23	51	62	43	------

Place		January-March, 1928	April-June, 1928	July, 1928	August, 1928	September, 1928	October, 1928	November, 1928
Nigeria (see also table above)	C	41	91	53	------	------	------	------
	D	41	89	53	------	------	------	------
Peru	C	93	25	5	------	------	------	------
	D	23	6	2	------	------	------	------
Lima	C	6	4	------	------	------	------	------
	D	------	2	------	------	------	------	------
Senegal (see also table above)	C	30	448	318	43	199	------	------
	D	17	246	164	32	127	------	------
Baol	C	------	13	17	68	73	39	18
	D	------	7	10	38	40	14	6
Cayor	C	------	------	40	46	20	17	------
	D	------	------	25	15	8	6	------
Fatick	C	------	------	------	------	------	35	------
	D	------	------	------	------	------	20	------
Louga	C	------	------	------	------	------	14	2
	D	------	------	------	------	------	5	1
Rufisque	C	------	46	18	2	1	49	8
	D	------	31	7	------	1	14	4
Thies	C	------	345	103	151	106	51	11
	D	------	237	64	119	78	29	------
Tivaouane	C	------	325	84	9	------	------	------
	D	------	175	70	------	------	------	------
Syria: Beirut	C	------	1	5	------	------	1	3

PLAGUE RATS ON VESSELS

Steamship *Sicily* at Liverpool from Buenos Aires and Rosario, June 8, 1928, seven plague-infected rats.

SMALLPOX

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928				December, 1928			
										3	10	17	24	1	8	15	22
Algeria	C	12															
Algiers	C	4	5	15	3	8	2	4			1	1		1			
Oran	C	17	5	4	8	5		21									
Angola (see table below).																	
Arabia: Aden	C			11		1	1					1	1				
	D					1											
Brazil (see also table below):																	
Pernambuco (Recife)	D		1														
Rio de Janeiro	C				1												
British East Africa: Kenya—Mombasa	C	1						1									
British South Africa:																	
Northern Rhodesia	C	628	195	15	48	310	382	195	57	270		15					
	D	51	17	1	5	23	22	7	5	7		2					
Southern Rhodesia	C	24	13	36	22	17	5	9	1								
	D	10		4	4												
Tanganyiki	C										1						
Canada:																	
Alberta	C	12	44	9	3	25	6	4	1			3	7	1	13		
Edmonton	C	3			4												
British Columbia—Vancouver	C	24	11	4	11		5	16		12	9	5					
Manitoba	C	7	4	10	4			1			14		16	5	1	7	
Winnipeg and vicinity	C												13	2	1	1	
New Brunswick	C		1	7		5											
Ontario	C	50	41	33	11	5	3	15	5		4	3	4	4	2	5	
Kingston	C	3			2	1	1		1								
North Bay	C															1	
Ottawa	C	4	6	1		1	6	2	2	1	2	1	1			1	
Sarnia	C								1								
Toronto	C	11	12	3	1												
Quebec	C	83	78	81	62	27	28	75	20	9	40	40	25	72	20	8	
Montreal	C	9	3	11	5	2	12	4	7	1	2			1	1	1	
Quebec	C	23	47	52	44	12	13	12	3	1	3	5	3	1	1	1	
Sherbrooke	C			4													
Saskatchewan	C	52	28	16		6	3	1	6			4	11	12	11	18	
Moose Jaw	C	3	1		1		2					2	1				
Regina	C	8	1	1			1						2				
China:																	
Amoy	C	9	3				P	P			P						
Antung	C	3															
Canton	C	2	2										1		4	9	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928 3	10	17	24	December, 1928 1	8	15	22
China—Continued.																	
Chefoo	C		P	P	P	P	P			P			P				
Foochow	C	P		P	P	P	P	P	P	P	P	P					
Hong Kong	C	25	30	14	11	19	9	13	7	6	22	31	17	33	61	91	81
	D	26	23	19	5	16	7	8	6		6	9	8	25	16	29	22
Manchuria—																	
Changchun	C	4	6		1												
Fushun	C			6	1	2	1				1						
	D				1												
Harbin	C	10	27	31	11		1	1	1	2	3						
Kwantung—																	
Dairen	C	16	35	48	21	3	2	1	1		1			2	1		
	D			20	12	3		1									
Port Arthur	C				1	1											
	D					1											
Mukden	C	4	3	6			2	1									
	D			1													
Pensihu	C			1													
	D			1													
South Manchuria Railway Zone	C			5													
Shanghai—																	
Foreigners only	C	3	11	7	2	2	2	3	1	1	3	4	4	1			
Including natives	D	9	19	11	10	2		6	3		6	11	6	11	6	9	
Tientsin	C	17	9	14	1		1	4	4		2		2				
Chosen (see table below).																	
Curacao (alastrim)	C				2												
Dominican Republic: Santo Domingo	C	1															
Dutch East Indies:																	
Balikpapan	C				7												
	D				2												
Belawan Deli	C			11	4	9	10	9	1	2	1	1	2		1	3	
	D			3	1	3	2	3	1	1			1			1	
Borneo—																	
Pontianak	C					5	4	2		1							
	D					2		1									

Samarinda	C							3		8		8	15	3	1	1	8
	D									2			3	1			
Celebes—Makassar	C												1				
	D												1				
Java—																	
Batavia and West Java	C	1	2		2	6	1	6		1							
	D							2									
East Java and Madura	C	2		2	3	6	5	5		1							
	D	2			3	1	6			1							
Surabaya	C					6	4	2	1						1	1	
	D					1											
Sumatra—																	
Medan	C	2	10	4	5	9	7	14	1	2	1						
	D	3	5		2	3		4	1	1							
Palembang	C				1												
Ecuador (see table below).																	
Egypt	C	12	1														
	D	7	1														
Beheira Province	C				1												
Suez	C														1		
France (see table below).																	
Gold Coast (see table below).																	
Great Britain:																	
England and Wales	C	1,344	1,199	1,146	681	492	430	514	148	122	149	162	199	189	155		
Birmingham	C	1		2	1		1										
Bradford	C	14	17	10	2		1	1							1		
Bristol	C	17	10	2		2											
Cardiff	C	3	2											1			
Castleford	C	69	24	18	14	10	5	8		5	1			4	1		
Hull	C			1	24	15	13	7	1		1	1	1				
Leads	C	1		8	1	1	6		1						1		
London	C	42	25	96	19	9	8	12	4	4	4	9	5	4			
Manchester	C	8	5	1			3	1									
Newcastle-on-Tyne	C	4	12	6	28	2		1			1		2				
Nottingham	C	17	20	3	6	10	15	5	1					2			
Plymouth	C					6	3	2			6						
Sheffield	C	14	4	2	2	1	4				8	1	2	2	1	6	
Stoke-on-Trent	C	32	24	14	5	8											
Weymouth	C				1												
Scotland—																	
Arbroath	C					4	3										
Dundee	C						1	3		1	1				1		
Greece (see table below).																	
Hedjaz	C		6	14	18	1											
	D		2	1	6	1											
India	C	30,436	21,489	13,497	9,981	6,218	4,553	2,792	617	727	824						
	D	6,672	5,046	3,700	2,758	1,733	1,116	696	157	191	214						
Bassein	C	1															
Bombay	C	200	136	71	67	28	14	24	5	2	1	1	1	2	2	6	
	D	118	78	46	33	21	11	12	2	2		1			2	2	
Calcutta	C	171	130	61	52	22	13	7		1	1		3	2	4	4	
	D	130	101	50	35	17	17	4		1	1		2	1	2	2	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1922	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928 3	10	17	24	December, 1928 1	8	15	22
India—Continued.																	
Karachi	C	2	3		3			1									
	D	1	1		2												
Madras	C	169	59	85	39	43	90	77	31	9	11	20	10	18	9		
	D	38	18	10	18	10	21	23	5	8	3	6	4	6			
Moulmein	C			1	9	9	4	2					2	2		1	
	D			1	6	4	1							1			
Negapatam	C	7	8	19	26	35	46	51	7	13	12	6	5	16			
	D	3	1	7	4	9	10	11	2	3	1	2		2			
Rangoon	C	167	36	30	7	2					1						1
	D	79	13	6	4	1											
Tuticorin	C		3					3									
Visagapatam	C	2	3	8	3	1	14	1									
	D		1	3	3	1	3	3									
India (French):																	
Chandernagor	C	5			1	2	9	4		3							
	D	1			1	1	2	4		3							
Pondicherry Province	C	36	32	13	12	62	92	111	34	23	12	15	18	13	17		
	D	36	23	13	12	45	87	73	27	17	11	12	16	13	17		
Indo-China (see also table below):																	
Pnompenh	C					2	19	28	12		12	6	5	8	23	8	
	D					2	15	10	2		1	2	4	4	9	3	
Saigon	C						1	3	2								
	D								2								
Iraq:																	
Baghdad	C	5	16	16	24	7	34	38	10	7	9	14	14	9	17	6	5
	D	3	6	10	15	2	17	12	8	1	4	10	9	18	13	5	10
Basra	C	4	3	2	6	4	1	23	3	9	9	14	13	12	5	5	
	D	2	3	2	2	2	1	9	4	7	8	14	11	8	4	3	
Kirkuk Liwa	C												76		64		
	D												19		12		
Mossoul	C										22	31	44	74	146		
	D										6	17	19	42	42		
Italy	C		1	6													
Palermo	C	110	6	40	6	6			2				1	2			

Ivory Coast (see table below).																		
Jamaica (outside Kingston) (alastrim)	C	4	2	3	1	1	3	2										
Kingston	C													1				
Japan:																		
Kobe	C		11															
Nagoya	C	6	2		1													
Osaka	C			4														
Tokyo City	C	8	2															
	D	1																
Tokyo Prefecture (outside city)	C	1	1															
	D	2																
Yokohama	C	2	3															
	D		1															
Latvia (see table below).																		
Malta: Valetta	C							1										
Mexico (see also table below):																		
Acapulco	C		2															
	D		2															
Aguascalientes	D																2	
Jalisco (State)	C	P		21	1													
Guadalajara	D	12	13	10	9	7	3	1					1		1	2		
Jaurez	D							1										2
Mazatlan	D		3	2		3												
Mexico City and surrounding territory	C	1	2		3	2	1	1				5						
	D			1		1	1											
Reynosa	C				1													
Saltillo	D		2	2					1									
San Luis Potosi	D						1	2		1								
Tampico	C										1							
Torreon	D							1										
Morocco (see table below).																		
Nigeria (see also table below):																		
Lagos	C			1							1							
Southern Provinces	C			51														
	D			12														
Persia (see table below).																		
Poland	C	9	1	3	2			1				1		2				
	D	1										1						
Portugal (see also table below):																		
Lisbon	C	6	7	7	8	1												
	D				1	1												
Oporto	C	1																
Senegal (see also table below):																		
Dakar	C	16	29	8														
	D	8	7															
Siam	C	10	8	3	1	3	1	3		1								
	D	3	1	1		2												
Bangkok	C	1											1					
	D		1															
Straits Settlements: Singapore	C	3		1			1	2										
Sudan (Anglo-Egyptian)	C	160	168	206	144	252	152	89	37	14	4	24	58	14	148		192	
	D	32	20	37	35	34	34	19	5	7	1		7	13	9	13	12	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928				December, 1928			
										3	10	17	24	1	8	15	22
Sudan (French) (see table below).																	
Syria (see table below).																	
Taiwan: Keelung	C			1													
Tunisia: Tunis	C	6	3	2	8	5	1					1		1			13
Union of South Africa:																	
Cape Province	C					P	P	P	P	P		P					
Natal	C			1													
Orange Free State	C		P	P	P			P				P					
Transvaal	C	P	P	P		P	P	P		P		P					
Union of Socialist Soviet Republics (see table below).																	
Upper Volta	C	9				50	P	10	5								
	D					8											
Venezuela: Maracaibo	D					1											
On vessel:																	
S. S. Ballarat, en route to Cape Town, South Africa	C								1								
S. S. Kashgar at Kobe, from Shanghai	C	P															
S. S. Ronna at Penang, from Negapatam	C		P														
S. S. Theseus, from Jeddah to Penang	C				1												
S. S. Tjilebocf at Hong Kong, from Shanghai	C	P															
S. S. Victoria at Nome, Alaska	C			8													

Place		January–March, 1928	April–June, 1928	July, 1928	August, 1928	September, 1928			October, 1928			November, 1928			Dec. 1–10, 1928
						1–10	11–20	21–30	1–10	11–20	21–31	1–10	11–20	21–30	
Indo-China (see also table above)	C	426	197	26	71	27	29	17	38	19	43	55	57	32	23
Ivory Coast	C		7	9		2				1					
	D			2											
Senegal (see also table above)	C		110			4			2						
	D		16												
Dakar	C		43												
	D		15												
Sudan (French)	C	15	54	17	55			P	P	32					
	D		6		33					2					
Syria:															
Aleppo	C	1	3		4										
Beirut	C	75	26	5						1		1			
	D	2													
Damascus	C	14													

Place		January–March, 1928	April–June, 1928	July, 1928	August, 1928	September, 1928	October, 1928	November, 1928
Angola	C	47	8	2				
Congo	C	36						
Cuanza-Norte	C	1						
Cuanza-Sul	C	10						
Loanda	C			1				
Brazil (see also table above):								
Porto Alegre	C	1			2	1	12	
Chosen	C	48	221					
	D	16	65					
Seoul	C	1						
Ecuador: Guayaquil	C	35	61	35	38	22	6	
	D	1				1	3	
France	C	34	31	10	6	3	3	
Gold Coast	C	4						
Greece	C	36	54	9	3	6	6	
	D	4	3	1			1	

Place		January–March, 1928	April–June, 1928	July, 1928	August, 1928	September, 1928	October, 1928	November, 1928
Latvia	C	1	1	1				
Mexico (see also table above)	D	1,064	958					
Morocco	C	132	54	55	1	4	5	2
Nigeria (see also table above)	C	592	739	1,059				
	D	84	156	159				
Persia	D	7						
Portugal (see also table above)	C	258	172	82		24	27	
	D	30	12	10		2	3	
Union of Socialist Soviet Republics:								
Railways, etc	C	59						
Other territories in Europe	C	1,717						
Transcaucasus, Siberia, and Central Asia	C	25						
Ukraine	C	27						

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928				December, 1928			
										3	10	17	24	1	8	15	22
Algeria:																	
Algiers	C	4	13	32	3	10	2	1	1	1	1	1					
	D	2		6													
Oran	C	11	4	7	16	4	2	1				2					
	D	1		1													
Bulgaria	C	26		16	P	8	6	8	1	2		1	1	4	4		
	D			2		2			1								
Sofia	C	1	20	14	1		3										
	D			6													
Chile:																	
Iquique	C				1												
	D				1												
Valparaiso	C			3	2								1				
	D			1									1				
China:																	
Manchuria—																	
Harbin	C	2	16	23													
Kwantung	C	17	293	539	431	60	3	2			1						
South Manchuria Railway Zone	C			10	6												
Tientsin	C		2	2		1											
Chosen (see table below).																	
Czechoslovakia (see table below).																	
Egypt	C	3	11	7													
	D	1	2	3													
Alexandria	C				1	2	2										
	D					1	1										
Assiout Province	C			2	2	2		1									
Assouan Province	C			2		1											
	D					1											
Beheira Province	C	32	43	7	2			2									
	D	7	7	2				1									
Cairo	C	4			1	1	1										
	D	4			1	1	1										
Dakalieh	C			1	1												

Gharbieh Province	C	14	5	4	1													
	D	5		3														
Keneh Province	C	38		1														
	D	7		1														
Menounen Province	C	28	9	5			1											
	D	3	3	2			1											
Port Said	C				2	8	1	1	1									
Suez	C		1		4	4	6	4										
	D		1															
Great Britain: London County	C			2														
Greece: Piræus	C			1														
Hungary: Budapest	D			2	2													
Ireland:																		
Belfast	C		2	1														
	D			1														
Irish Free State	C	1	4															
Clare County—Scariff	C										1							
Cork County	C	1																
Dublin	C						5											
Galway County—Oughterard	C				10													
Kerry County—																		
Cahirciveen	C					1												
Tralee	C						1	7										
Japan (see also table below):																		
Hiogo	C			1														
Miyagi	C							2										
Yamagata	C		2	2	2													
Latvia (see table below).																		
Lithuania (see table below).																		
Mexico (see also table below):																		
Aguascalientes	D											1	1					
Durango	D				1													
Guadalajara	D		1		4													
Mexico City, including municipalities in Federal District	C	8	19	14	10	10	15	9	6	2	2	5	3	3	2			
	D	1	2		3	3	1	1	1		1				1			
San Luis Potosi	D																	1
Morocco	C	591	280	214	153	44	3	1		1			4		4			
Palestine	C	6	4	8	9	14	10	11	2	1		3	4	4	3	1	1	
Peru (see table below).																		
Poland	C	144	226	134	96	55	65	31	13	21	27	20	15	17				
	D	12	17	6	5			4	2	2	1	5	3	1				
Portugal: Oporto	C				1		1											
Rumania	C	142	99	80	33	16	12	11	6		2	9	7					
	D	12	8	11	1	1	3											
Syria: Aleppo	C			2		1												
Tunisia	C	19	7	7		1	7			4								
Menzel	C							1	1									
Sfax	C							11										

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Sept. 23–Oct. 20, 1928	Week ended— Oct. 27, 1928	November, 1928 3	10	17	24	December, 1928 1	8	15	22
Union of South Africa:																	
Cape Province	C	P	P	P	P	P	P	P	P	P		P					
East London	C							1									
	D								1								
Natal	C	P	3	P	P		1	P				P					
Orange Free State	C	P	P	P	P			P	P	P		P					
Transvaal	C		1		P	P											
Union of Socialist Soviet Republics (see table below).																	
Yugoslavia (see table below).																	

Place		January–March, 1928	April–June, 1928	July–September, 1928	October, 1928	November, 1928	December, 1928
Chosen	C	866	633	5			
	D	88	75	2			
Chemulpo	C	2	2				
Gensan	C	1					
	D	1					
Seoul	C	10	46	8			
	D	1	6	3			
Czechoslovakia	C	25					
Greece: Athens	C	4	33	6	1	4	
	D		5	1			
Japan	C		21				
Latvia	C	27	7				
Lithuania	C	223	162	27		4	11
	D	22	7	6			

Place		January–March, 1928	April–June, 1928	July–September, 1928	October, 1928	November, 1928	December, 1928
Mexico (see also table above)	D	46					
Peru:							
Arequipa	D	2	1	1			
La Oroya	C	P					
Turkey	C	17	15	16	4		2
	D	1	2	2	1		
Union of Socialist Soviet Republics:							
Railways, etc	C	199					
Transcaucasus, Siberia, and Central Asia	C	17					
Ukraine	C	1,476					
Other territories in Europe	C	5,167					
Yugoslavia	C	34	45	18	1	17	
	D	3	5	3		1	

Place		Apr. 8–May 5, 1928	May 6–June 2, 1928	June 3–30, 1928	July 1–28, 1928	July 29–Aug. 25, 1928	Aug. 26–Sept. 22, 1928	Week ended— Sept. 29, 1928	October, 1928				November, 1928				December, 1928	
									6	13	20	27	3	10	17	24	1	8
Belgian Congo: Matadi	C	2	2															
Brazil:																		
Aracaju	D		2															
Bahia	C			4			1					1						
	D					1	2											
Pernambuco (Recife)	C			1														
Rio de Janeiro	C		2	48	40	14	9	3	3			1	1					
	D		2	22	26	4	8	2	2			1						
Sao Felix	C			P														
Dahomey:																		
Grand Popo	C			3														
	D			2														
Ouidah Military Camp	C														1		1	
	D														1			
Gambia: Bathurst	C												2		2	2		1
	D													1		1		1
Gold Coast	C		2															
Ivory Coast	C			1														
	D			1														
Abidjan	C			1														
Ferkes-Sedougou	D				1	1												
On vessel: S. S. Bernini, at Santos, Brazil	C									4								
	D									1								

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