PUBLIC HEALTH REPORTS

VOL. 43 FEBRUARY 10, 1928 NO. 6

PREVALENCE OF DIPHTHERIA IN THE UNITED STATES

The diphtheria case and death rates for the year 1926 were the lowest ever recorded. The death rate for diphtheria for that year in the registration area was 7.5 per hundred thousand, and the case rate in 47 States was 80 per hundred thousand. In 1927 there was a reaction. Preliminary reports from 37 States show an increase in 1927 over 1926 of 16.7 per cent, and an increase in 1927 over 1925 of 15 per cent. The figures are as follows:

Cases of diphtheria reported in 37 States for 52 weeks of the years 1925, 1926, and 1927

	Cases
1925	69, 624
1926	68, 668
1927	80, 152

These 37 States had a population in 1927 of about 90,500,000.

The greatest prevalence of diphtheria usually occurs in October, November, and December. The following table gives a comparison of the weekly telegraphic reports from 37 States for the last 20 weeks of the years 1925, 1926, and 1927:

Diphtheria cases reported by 37 States for last 20 weeks of years 1925, 1926, and 1927, by four-week periods

4 weeks ended—	1927	Corresponding weeks—	
		1926	1925
Sept. 10	3,857	2,905	3,450
Oct. 8	5,771	5,171	5,205
Nov. 5	8,699	9,929	7,478
Dec. 5	9,106	8,970	7,293
Dec. 31	7,809	7,055	5,735
Total	35,242	34,030	29,161

The increase in number of cases during the last 20 weeks of 1926 was more marked than it was in either of the other years.

SICKNESS AMONG PERSONS IN DIFFERENT OCCUPATIONS OF A PUBLIC UTILITY[1]

By DEAN K. BRUNDAGE, *Assistant Statistician, United States Public Health Service*

In a previous report[2] the general results of a study of disabling sickness among employees of the Edison Electric Illuminating Co. of Boston in the 10 years ending December 31, 1924, were given. In the present communication the frequency of sickness during the last 3 years of this period is presented for certain occupations in the public utility. The record covers all absences for 1 full working day or longer on account of disability. Liberal sick leave is granted, especially to those who have been with the company more than 1 year, amounting practically to the payment of full wages during the entire period of incapacitation up to a maximum of 15 weeks.[3] During the period under review the company physician called at the homes of a large proportion of those who reported themselves as unable to work on account of sickness or accident. A physician's diagnosis was thus obtained for 81 per cent of the disabilities which lasted 2 days or more, and 58 per cent of the disablements for 1 day only, during the years 1922, 1923, and 1924.

"EXPOSURE" ESTIMATED

The most accurate method of obtaining the divisor for computing a sickness rate is to add the number of days during which each employee was on the pay roll during the period under study and divide the total by 365 (number of calendar days in the year). The quotient thus obtained represents the equivalent number of employees on the pay-roll for a full year. But on account of the large amount of clerical labor required to obtain the "exposure" data in this way, the population "at risk" was approximated by the following method:

The number of persons in each occupation as of July 15, 1923 (the approximate mid-point of the three years 1922 to 1924), was obtained from the pay-roll records of the company. The sex, age, and number of years in the employ of the company up to July 15, 1923, were also obtained for each person. The per cent of total persons in each occupation who were in different age and length-of-service groups was computed and applied to the sum of the average number in the occupation during each of the three years, the annual averages being based on the exact number in each occupation at the end of each month.

---

[1] From the Office of Industrial Hygiene and Sanitation in cooperation with the Office of Statistical Investigations of the U. S. Public Health Service.

[2] A 10-Year Record of Absences from Work on Account of Sickness and Accidents. PUBLIC HEALTH REPORTS, vol. 42, No. 8 (Feb. 25, 1927), pp. 529-550. (Reprint No. 1142.)

[3] The sick-leave provisions of the company are given in detail on p. 3 of the reprint mentioned in footnote 2.

The products which represent the approximate number of years of life under observation are given for two service groups and for all lengths of service, by occupations, in Table 10, and the sex and age distribution within each numerically important occupation are shown in Table 12. With these approximations of the equivalent number of persons under observation for one full year in the different sex, age,

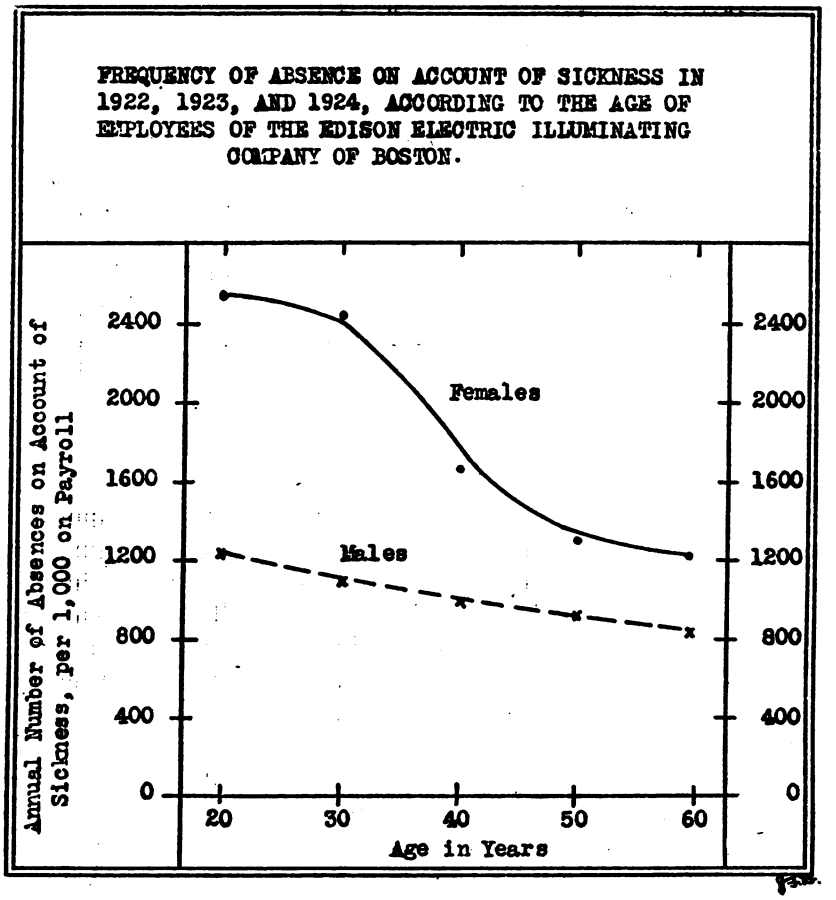

FIG. 1

and length-of-service groups, by occupation, and with the absences on account of sickness similarly classified and tabulated, it was possible to express the sickness in terms of rates per 100 or per 1,000 persons in the different occupations, and according to age, sex, and length of service. The rates shown in all the tables with the exception of the last one (Table 13) do not include accidents either of industrial or nonindustrial origin.

FREQUENCY OF SICKNESS ACCORDING TO AGE

The frequency of absence for one day or longer on account of sickness gradually decreased as age advanced among the male employees of the public utility, and declined sharply between the ages of 30 and 50 among the women. This result was surprising, inasmuch as the age incidence of illness in the general population of Hagers-

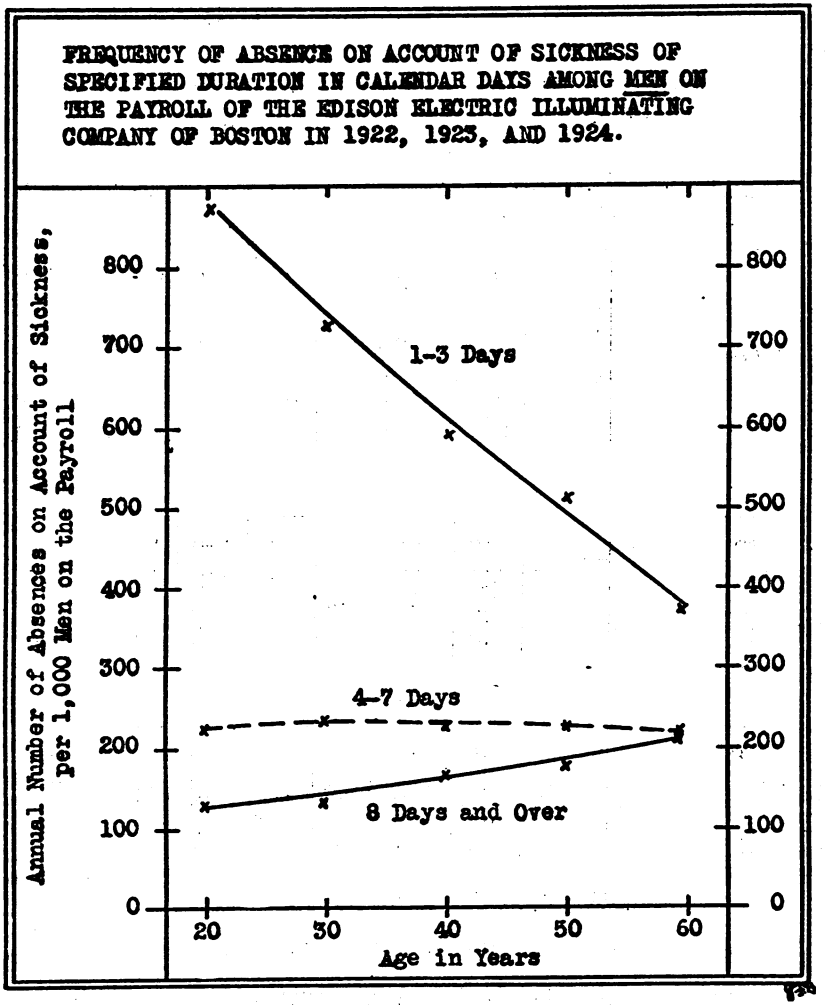

FIG. 2

town, Md., gradually increased from age 20 or thereabouts throughout the remainder of life.[4] It appears, however, that the shape of the age curve of illness depends largely upon the extent to which the more minor sicknesses are included. In early adult life the

[4] The Age Curve of Illness, Hagerstown Morbidity Studies No. IV, Public Health Reports, vol. 42, No. 23 (June 10, 1927), pp. 1565-1576. (Reprint No. 1163.)

frequency of minor illnesses, especially those which disable for a period varying from one to three days, evidently is high, if the experience of male employees of the Edison Co. is typical. In the Hagerstown study it was found by actual check that many minor cases, the one and two day disabilities especially, were not reported for school children,[5] and therefore probably were not generally reported among the adults. The recorded morbidity experience of males in the employ of the Edison Co. showed a practically stationary rate of absence throughout the working period of life from illness lasting four to seven days. The eight-day or longer disabilities, however, increased in frequency from age 20 onward.

TABLE 1.—*Frequency of absence on account of sickness* [1] *of specified duration according to the age of employees of the Edison Electric Illuminating Co. of Boston in 1922, 1923, and 1924*

Age group	Number of years of life under observation	Annual number of absences per 1,000 on pay roll				Number of absences on account of sickness [1]			
		Duration of disability in calendar days							
		All durations	1–3 days	4–7 days	8 days and over	All durations	1–3 days	4–7 days	8 days and over
MALES									
All ages	6,129	1,044	666	226	152	6,399	4,084	1,386	929
Under 25	1,310	1,224	872	222	130	1,604	1,143	291	170
25–34	1,951	1,087	724	233	130	2,121	1,412	454	255
35–44	1,543	980	590	224	166	1,512	910	346	256
45–54	908	911	511	224	176	827	464	203	160
55 and over	417	803	372	220	211	335	155	92	88
FEMALES									
All ages	1,508	2,304	1,700	349	255	3,475	2,563	527	385
Under 25	701	2,536	1,945	364	227	1,778	1,364	255	159
25–34	505	2,442	1,814	351	277	1,233	916	177	140
35–44	204	1,662	1,049	353	260	339	214	72	53
45–54	74	1,297	729	203	365	96	54	15	27
55 and over	24	1,208	625	333	250	29	15	8	6

[1] Exclusive of accidents of both industrial and nonindustrial origin.

LENGTH OF SERVICE WITH THE COMPANY

Among either sex the frequency of absence from work for 1 day or longer on account of sickness tended to decrease with increase in length of service. Among males in the employ of the company less than 5 years the incidence rate of illness was 56 per cent greater than among those with a service record of 10 years or more. Among

[5] Incidence of Sickness Among White School Children in Hagerstown, Md. Public Health Reports, vol. 40, No. 9 (Feb. 27, 1925), p. 405. (Reprint No. 993, p. 5.)

the women the difference was even wider, those employed by the company less than 5 years being absent on account of illness 72 per cent oftener than the women of 10 or more years' service.

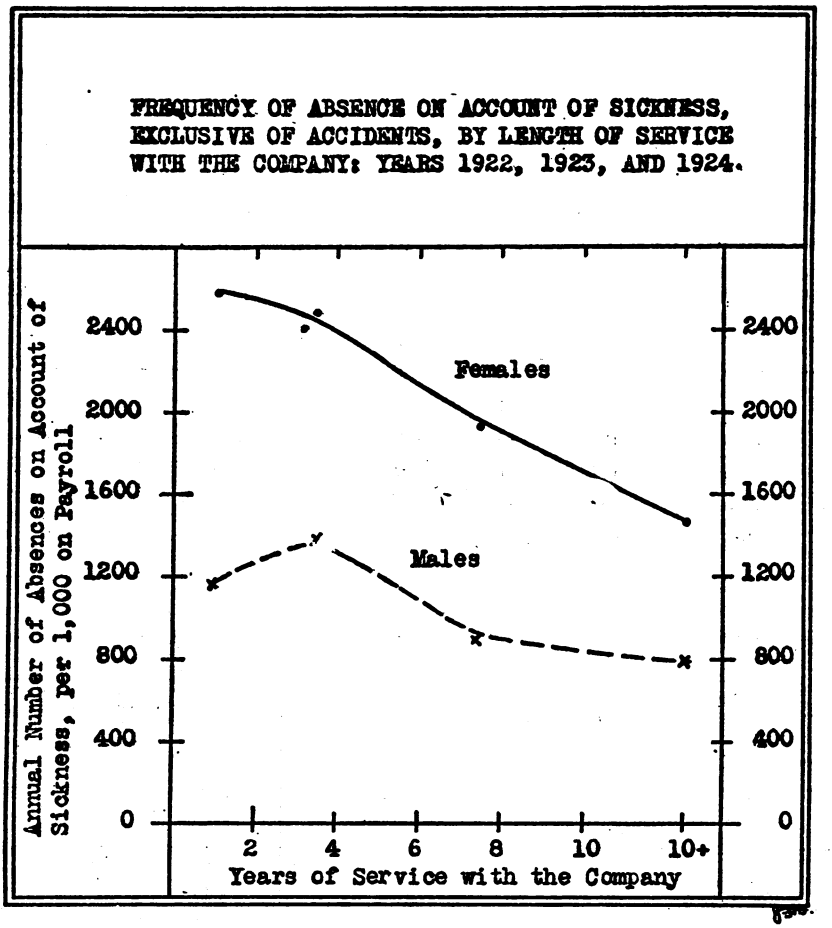

FIG. 3

TABLE 2.—*Frequency of absence on account of sickness, exclusive of accidents, among employees of the Edison Electric Illuminating Co. of Boston during the 3 years ending December 31, 1924: By length of service with the company*

Length of service	Males			Females		
	Number of years of life under observation	Number of absences due to sickness	Rate per 1,000 on the pay roll	Number of years of life under observation	Number of absences due to sickness	Rate per 1,000 on the pay roll
All lengths of service	6,129	6,399	1,044	1,508	3,475	2,304
Less than 2 years	1,928	2,225	1,154	556	1,430	2,572
2 to 5 years	1,183	1,637	1,384	485	1,207	2,489
5 to 10 years	1,469	1,303	887	331	638	1,927
10 years or more	1,549	1,234	797	136	200	1,471

Inasmuch as the trend in the frequency of disabling illness was found to be downward with increase both in age and in length of service, the question arose whether the rates according to length of service merely reflected the influence of age, since the employees of longer service would tend to be in the higher age groups. The frequency of one- to three-day, four- to seven-day, and eight-day or longer disabilities in two service groups (less than five years compared with five or more years' service) was computed, therefore, according to age. The age curves of illness among male employees of five or more years' service did not differ materially from the curves for men of less than five years' service except that disability occurred oftener at every age among the newer recruits than among the veteran employees. The contrast was especially marked in the shorter disabilities; i. e., those lasting less than eight days. Among the women the same results were indicated, although not so clearly, probably because there were only one-fourth as many women as men under observation. It may be said, therefore, that the incidence rates of illness tended to be lower in every age group among employees of five or more years' service than among those who had been with the company less than five years.[6]

TABLE 3.—*Number of years of life covered in the record, classified according to age and by length of service, among men on the pay roll of the Edison Electric Illuminating Co., of Boston, in the three years ending December 31, 1924*

Age group	All periods of service	Less than 5 years in employ of company	5 or more years' service with company
All ages	6,129	3,111	3,018
Under 25	1,310	1,218	92
25–34	1,951	1,139	812
35–44	1,543	455	1,088
45–54	908	249	659
55 and over	417	50	367

[6] Decrease in sickness frequency with increase in length of service is also revealed in other industrial morbidity data collected by the Public Health Service, but not yet published, and in "Disabling Sickness Among Employees of a Rubber Manufacturing Establishment in 1918, 1919, and 1920." Public Health Reports, vol. 37, No. 50 (Dec. 15, 1922). p. 3089. (Reprint No. 804, p. 9.)

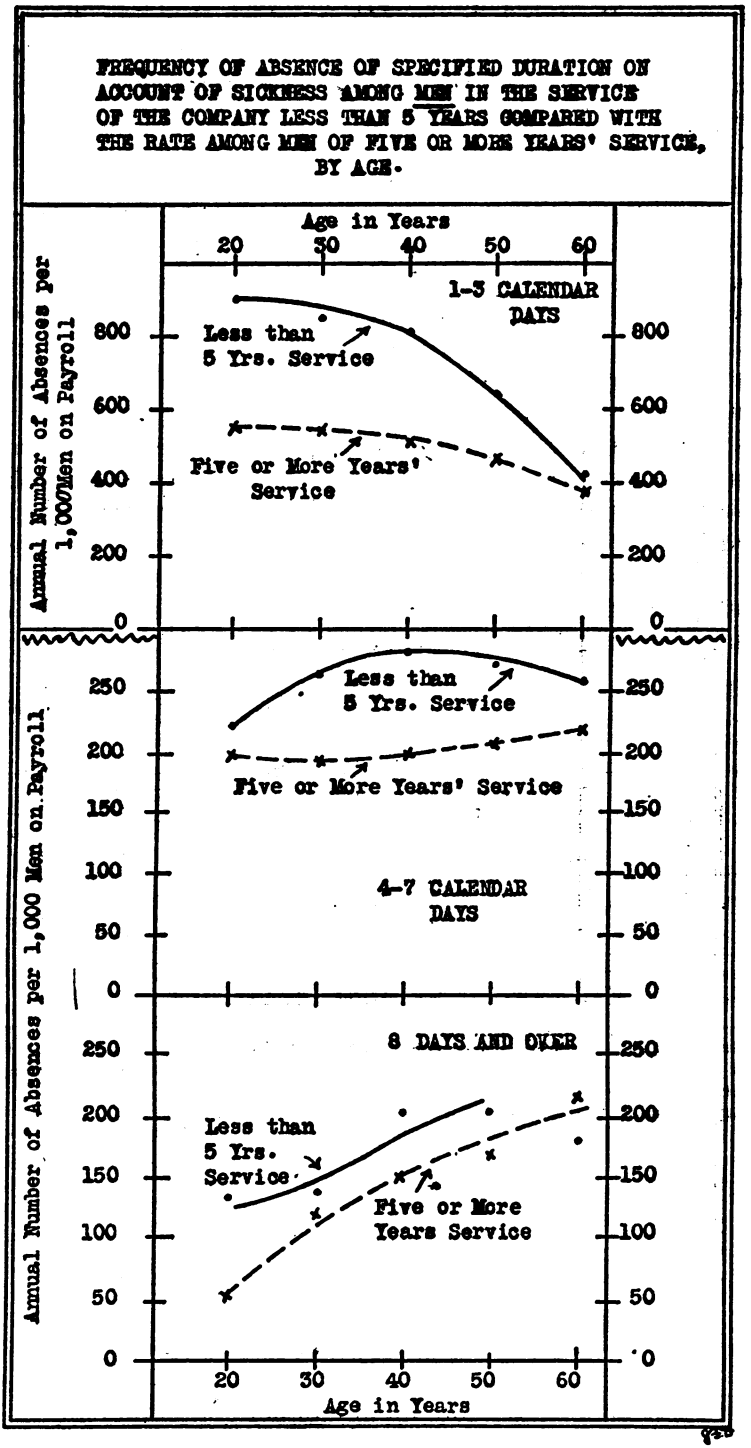
FREQUENCY OF ABSENCE OF SPECIFIED DURATION ON ACCOUNT OF SICKNESS AMONG MEN IN THE SERVICE OF THE COMPANY LESS THAN 5 YEARS COMPARED WITH THE RATE AMONG MEN OF FIVE OR MORE YEARS' SERVICE, BY AGE.
Age in Years
20 30 40 50 60
1-3 CALENDAR DAYS
Less than 5 Yrs. Service
Five or More Years' Service
Annual Number of Absences per 1,000 Men on Payroll
800 600 400 200 0
4-7 CALENDAR DAYS
Less than 5 Yrs. Service
Five or More Years' Service
250 200 150 100 50 0
8 DAYS AND OVER
Less than 5 Yrs. Service
Five or More Years Service
Annual Number of Absences per 1,000 Men on Payroll
250 200 150 100 50 0
20 30 40 50 60
Age in Years

FIG. 4

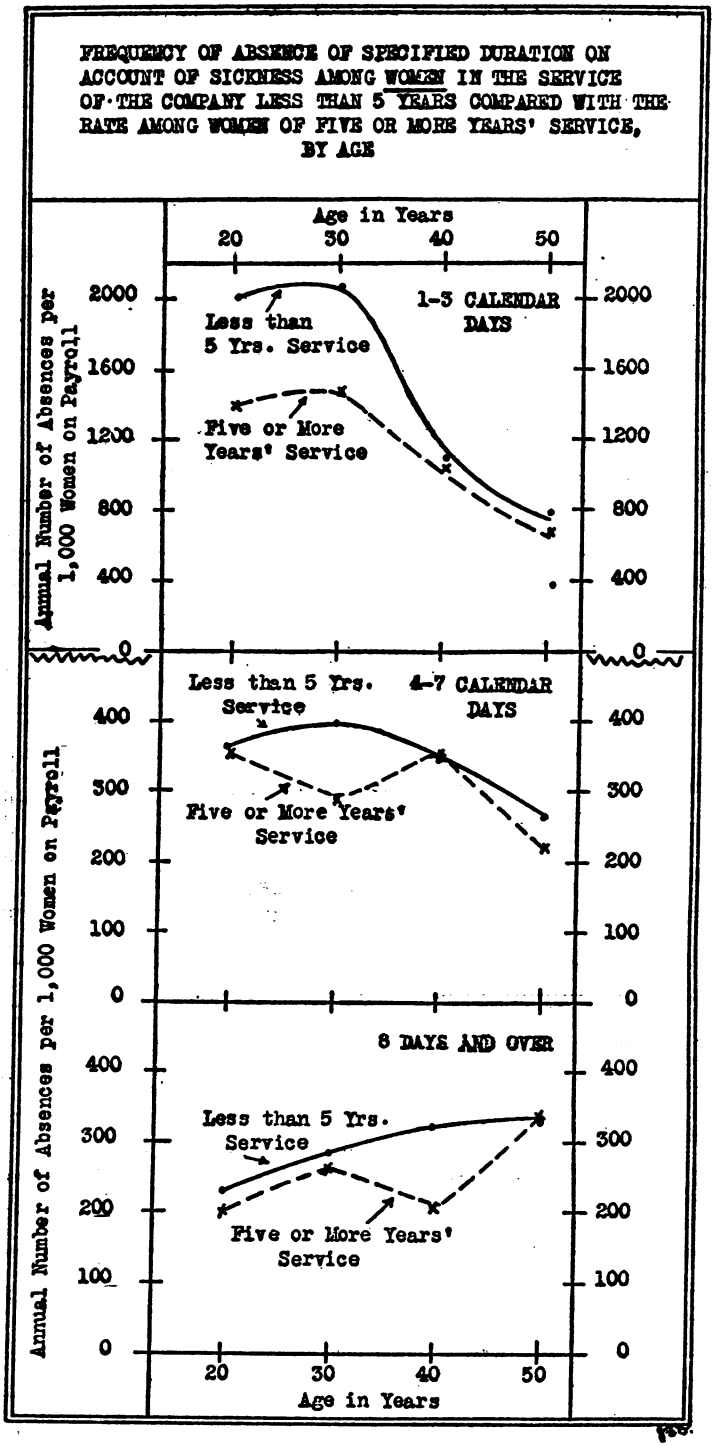
FREQUENCY OF ABSENCE OF SPECIFIED DURATION ON ACCOUNT OF SICKNESS AMONG WOMEN IN THE SERVICE OF THE COMPANY LESS THAN 5 YEARS COMPARED WITH THE RATE AMONG WOMEN OF FIVE OR MORE YEARS' SERVICE, BY AGE
Age in Years
20
30
40
50
Annual Number of Absences per 1,000 Women on Payroll
2000
1600
1200
800
400
0
1-3 CALENDAR DAYS
Less than 5 Yrs. Service
Five or More Years' Service
4-7 CALENDAR DAYS
Less than 5 Yrs. Service
Five or More Years' Service
8 DAYS AND OVER
Less than 5 Yrs. Service
Five or More Years' Service

FIG. 5

TABLE 4.—*Frequency of absence of specified duration on account of sickness* [1] *among men in the service of the company less than five years compared with men of five or more years' service—Morbidity record for three years ending December 31, 1924*

Age group	Annual number of absences per 1,000 men on pay roll		Number of absences on account of sickness	
	Less than 5 years in employ of company	5 or more years' service with company	Less than 5 years in employ of company	5 or more years' service with company
DISABILITIES LASTING 1 DAY OR LONGER				
All ages	1,241	841	3,862	2,537
Under 25	1,256	804	1,530	74
25–34	1,252	856	1,426	695
35–44	1,290	850	587	925
45–54	1,108	836	276	551
55 and over	860	795	43	292
DISABILITIES LASTING 1 TO 3 CALENDAR DAYS				
All ages	837	490	2,605	1,479
Under 25	897	554	1,092	51
25–34	851	546	969	443
35–44	802	501	385	545
45–54	634	464	158	306
55 and over	420	365	21	134
DISABILITIES LASTING 4 TO 7 CALENDAR DAYS				
All ages	251	201	781	605
Under 25	224	196	273	18
25–34	262	191	299	155
35–44	284	199	129	217
45–54	269	206	67	136
55 and over	260	215	13	79
DISABILITIES LASTING 8 DAYS OR MORE				
All ages	153	150	476	453
Under 25	135	54	165	5
25–34	139	119	158	97
35–44	204	150	93	163
45–54	205	166	51	109
55 and over	180	215	9	79

[1] Exclusive of accidents.

TABLE 5.—*Number of years of life covered in the record, classified according to age and by length of service, among women on the pay roll of the Edison Electric Illuminating Co. of Boston, in the three years ending December 31, 1924*

Age group	All periods of service	Less than 5 years in employ of company	5 or more years' service with company
All ages	1,508	1,041	467
Under 25	701	624	77
25–34	505	295	210
35–44	204	92	112
45 and over	98	30	68

TABLE 6.—*Frequency of absence of specified duration on account of sickness*[1] *among women in the service of the company less than five years compared with women of five or more years' service—Morbidity record for the three years ending December 31, 1924*

Age group	Annual number of absences per 1,000 women on pay roll		Number of absences on account of sickness	
	Less than 5 years in employ of company	5 or more years' service with company	Less than 5 years in employ of company	5 or more years' service with company
DISABILITIES LASTING 1 DAY OR LONGER				
All ages	2,533	1,794	2,637	838
Under 25	2,607	1,961	1,627	151
25–34	2,736	2,029	807	420
35–44	1,761	1,580	162	177
45 and over	1,367	1,235	41	84
DISABILITIES LASTING 1 TO 3 CALENDAR DAYS				
All ages	1,907	1,238	1,985	578
Under 25	2,013	1,402	1,256	108
25–34	2,054	1,476	606	310
35–44	1,087	1,018	100	114
45 and over	767	676	23	46
DISABILITIES LASTING 4 TO 7 CALENDAR DAYS				
All ages	370	304	385	142
Under 25	365	351	228	27
25–34	397	286	117	60
35–44	348	357	32	40
45 and over	267	221	8	15
DISABILITIES LASTING 8 DAYS OR LONGER				
All ages	256	252	267	118
Under 25	229	208	143	16
25–34	285	267	84	56
35–44	326	205	30	23
45 and over	333	338	10	23

[1] Exclusive of accidents.

INCIDENCE RATES OF ILLNESS IN DIFFERENT OCCUPATIONS

In Table 7 the annual number of absences due to sickness per 1,000 persons under observation is shown according to occupation. The frequency of one- to three-day, four- to seven-day, and eight-day or longer illnesses is also given to indicate the comparative severity of sickness among persons in different lines of work. The occupations have been arrayed in accordance with the magnitude of the sickness incidence rate (regardless of the duration of disability) for each occupation.

In the interpretation of these rates several points should be borne in mind. Although the chief interest of statistics of this sort lies in

their instructiveness with regard to the effect upon health of different kinds of work and working conditions, the existence of an occupational health hazard is not necessarily indicated by a high rate of illness. The rate merely states the frequency of sickness among persons following a given occupation. The more arduous occupations are of necessity recruited from men of supernormal physical condition. Persons physically unfit for the more exacting occupations and those especially susceptible to certain diseases naturally seek the light, sedentary jobs.[7] However, when the work is not of such a nature as to attract physically inferior individuals in the industrial population, and when the sex and age distribution of the groups under study do not account for the amount of illness experienced, a high sickness rate *may* indicate a causal relation between the occupation and the abnormal number of disabilities.

A factor which probably affects the incidence rate to some extent, especially the frequency of the one- to three-day absences, is the nature of the duties in the different occupations. A telephone operator, for example, is virtually compelled to lay off when suffering from almost any type of minor respiratory illness on account of its effect upon the voice and ears; but under ordinary circumstances such minor pathological conditions would not seriously interfere with the duties of the station operators, for example. This may at least partly explain why the rate of one- to three-day absences on account of sickness among the male telephone operators was 42 per cent above that of the male station operators. In general, however, the effect of these differences undoubtedly is minimized by the payment of full wages during illness, which removes the economic argument for attempting to carry on while suffering a physical indisposition.

It will be seen from Table 7 that the occupation having the worst morbidity experience among the men during the three years ending with 1924 was that of repairmen. Their illnesses of less than four days' duration occurred at an inordinate frequency, and their rate of 4 to 7 and of 8-day or longer cases was considerably higher than the average for all men in the employ of the company. About three-fourths of the men in this group are automobile repairmen on night duty in garages, engaged in repairing cars which are needed during the daytine.

Next to the highest male rate of disabling sickness was shown for the stock handlers; but on account of the small number of years of life under observation (56) the high rate for this occupation may have been due largely to chance. When the numbers are small, it

[7] This type of selection appears to be the principal explanation of the low morbidity rates among steel workers shown in "Sickness Among Industrial Employees," Public Health Reports, vol. 41, No. 4 (Jan. 22, 1926) (Reprint No. 1060), and a considerable factor in the relatively high disability rates among certain textile workers indicated from data now being collected by the Public Health Service.

is necessary to ascertain whether a high rate is sustained over a longer period.

The third from the worst morbidity rate occurred among the linemen. The frequency of eight-day or longer cases among them was not excessive, however, their high rate resulting largely from an abnormal number of disabilities of less than a week's duration. Oilmen and oilers, chauffeurs, and meter testers also appear to have experienced considerably more than the average sickness frequency among men in the employ of the company.

TABLE 7.—*Frequency of absence on account of sickness, exclusive of accidents, by occupations—Recorded morbidity experience of employees of the Edison Electric Illuminating Co. of Boston for the three years ending December 31, 1924*

Occupations	Number of years of life under observation	Annual number of absences due to sickness per 1,000 on the pay roll				Number of absences causing disability for—			
		All calendar days	1–3 days [1]	4–7 days [1]	8 days or more [1]	All calendar days	1–3 days [1]	4–7 days [1]	8 days or more [1]
MALES									
All occupations	6,129	1,044	666	226	152	6,399	4,084	1,386	929
(1) Repairmen	204	2,260	1,598	392	270	461	326	80	55
(2) Stock handlers	56	1,714	1,018	393	303	96	57	22	17
(3) Linemen	286	1,703	1,168	371	164	487	334	106	47
(4) Oilmen and oilers	148	1,642	1,034	399	209	243	153	59	31
(5) Water tenders	63	1,571	1,095	349	127	99	69	22	8
(6) Chauffeurs	146	1,534	918	370	246	224	134	54	36
(7) Meter testers	194	1,464	959	247	258	284	185	48	50
(8) Janitors	54	1,315	759	259	297	71	41	14	16
(9) Firemen	219	1,201	722	324	155	263	158	71	34
(10) Clerks	749	1,096	756	204	136	821	566	153	102
(11) Inspectors	398	1,088	761	199	128	433	303	79	51
(12) Laborers	198	1,071	475	288	308	212	94	57	61
(13) Installers	191	1,026	539	283	204	196	103	54	39
(14) Testmen	70	943	600	157	186	66	42	11	13
(15) Meter readers	134	858	515	224	119	115	69	30	16
(16) Draftsmen	105	829	629	133	67	87	66	14	7
(17) Troublemen	124	726	331	242	153	90	41	30	19
(18) Switchmen	65	708	293	169	246	46	19	11	16
(19) Salesmen	209	689	445	148	96	144	93	31	20
(20) Telephone operators	72	667	514	125	28	48	37	9	2
(21) Station operators	762	618	362	142	114	471	276	108	87
(22) Division heads [2]	250	532	320	124	88	133	80	31	22
(23) Engineers	225	276	147	62	67	62	33	14	15
All other occupations	1,207	1,033	666	230	137	1,247	804	278	165
FEMALES									
All occupations	1,508	2,304	1,700	349	255	3,475	2,563	527	385
(1) Clerks	1,112	2,617	1,970	377	270	2,910	2,191	419	300
(2) Telephone operators	47	1,766	1,128	447	191	83	53	21	9
(3) Stenographers [3]	130	1,408	1,031	200	177	183	134	26	23
(4) Scrubwomen	44	1,386	545	386	455	61	24	17	20
All other occupations	175	1,360	920	251	189	238	161	44	33

[1] Duration of disability is measured in terms of the number of calendar days intervening between the date absence began and the date employee returned to work.
[2] Also their assistants and subassistants.
[3] Also typists and dictophone operators.

The frequency of the longer cases, i. e., those lasting eight days or more, was greatest among the laborers. In unskilled work, such as that of the general laborer, operation of the selective tendencies mentioned above may be especially expected. Into such work naturally drift those persons who through diminished physical or mental health find themselves unable to engage in more exacting occupations. Another group which might be overloaded with individuals below par physically are the clerks. The wide differences in sickness frequency of the male engineers, division heads, their assistants and subassistants compared with the male clerks *may* roughly measure the effect of this factor. Very interesting also is the fact that the rate of absence on account of sickness among the female clerks was 85 per cent above that of the female stenographers, typists, and dictophone operators.

DISEASE GROUPS CAUSING DISABILITY IN DIFFERENT OCCUPATIONS

In order to facilitate the study of possible occupational influences, the sickness record of persons in several of the occupations which were believed to be free from any health hazard of consequence was used as a control. Among the men the following occupations were selected for this purpose: Clerks, division heads, their assistants and subassistants, draftsmen, engineers, and salesmen; and among the women, on account of the limited selection, the record merely of the stenographers, typists, and dictophone operators. For each of the remaining occupations included in the list presented in Table 7 the number of one-day or longer absences occasioned by different disease groups is shown in Tables 8 and 9, in comparison with the number of absences from causes specified which occurred among an equal number of persons in the control group. In Table 11 the difference between the actual number of absences and the number expected from the experience of the control group was expressed in terms of the ratio of actual to expected number of absences, the ratio being 100 when the rate for the occupation was the same as in the control group.

TABLE 8.—*Number of absences on account of disease groups specified, and number expected from the sickness rates of a control group*[1] *among male employees of the Edison Electric Illuminating Co. of Boston in 1922, 1923, and 1924*

Actual and expected number of absences	Sickness, exclusive of accidents	Respiratory diseases [2]	Diseases of the digestive system [3]	Diseases of the nervous system [4]	Diseases of the circulatory and genito-urinary systems [5]	Diseases of the skin [6]	Rheumatism [7]	All other diseases
REPAIRMEN								
Actual	461	227	119	25	11	19	34	26
Expected	165	105	33	6	4	5	4	8
STOCK HANDLERS								
Actual	96	56	18	5	1	3	11	2
Expected	45	29	9	2	1	1	1	2
LINEMEN								
Actual	487	318	99	12	6	8	27	17
Expected	232	148	46	9	5	7	5	12
OILMEN AND OILERS								
Actual	243	128	64	13	5	6	13	14
Expected	120	76	24	4	3	4	3	6
WATER TENDERS								
Actual	99	46	29	3	5	6	7	3
Expected	51	32	10	2	1	2	1	3
CHAUFFEURS								
Actual	224	118	46	14	5	16	11	14
Expected	118	75	23	4	3	4	3	6
METER TESTERS								
Actual	284	173	67	7	3	4	11	19
Expected	157	100	31	6	3	5	4	8
JANITORS								
Actual	71	38	17	3	1	2	8	2
Expected	44	28	9	2	1	1	1	2
FIREMEN								
Actual	263	134	66	13	5	7	26	12
Expected	178	113	35	7	4	6	4	9

[1] The following occupations were included in the control group: Clerks, division heads, their assistants and subassistants, draftsmen, engineers, and salesmen.
[2] Title numbers 11, 31, 97–107, and 109 in the International List of the Causes of Death, third revision, Paris, 1920.
[3] Title numbers 108, 110–127 in the International List.
[4] Title numbers 70–84 in the International List.
[5] Title numbers 87–96 and 128–134 in the International List.
[6] Title numbers 151–154 in the International List.
[7] Title numbers 51–52 in the International List.

TABLE 8.—*Number of absences on account of disease groups specified, and number expected from the sickness rates of a control group among male employees of the Edison Electric Illuminating Co. of Boston in 1922, 1923, and 1924*—Contd.

Actual and expected number of absences	Sickness, exclusive of accidents	Respiratory diseases	Diseases of the digestive system	Diseases of the nervous system	Diseases of the circulatory and genito-urinary systems	Diseases of the skin	Rheumatism	All other diseases
INSPECTORS								
Actual	433	274	89	29	5	10	8	18
Expected	323	205	64	13	7	10	7	17
LABORERS								
Actual	212	133	30	6	2	3	26	12
Expected	161	102	32	6	4	5	4	8
INSTALLERS								
Actual	196	115	42	8	4	7	8	12
Expected	155	99	31	6	3	5	3	8
TESTMEN								
Actual	66	44	10	1	0	3	3	5
Expected	57	36	12	2	1	2	1	3
METER READERS								
Actual	115	64	33	3	1	5	2	7
Expected	109	69	22	4	3	3	2	6
TROUBLEMEN								
Actual	90	54	22	2	2	2	5	3
Expected	100	64	20	4	2	3	2	5
SWITCHMEN								
Actual	46	22	14	2	1	0	3	4
Expected	53	34	10	2	1	2	1	3
TELEPHONE OPERATORS								
Actual	48	31	10	3	0	1	0	3
Expected	58	37	12	2	1	2	1	3
STATION OPERATORS								
Actual	471	281	128	18	3	4	12	25
Expected	618	393	123	24	14	19	14	31

TABLE 9.—*Number of absences on account of disease groups specified, and number expected from the sickness rates of a control group [1] among female employees of the Edison Electric Illuminating Co. of Boston in 1922, 1923, and 1924*

Actual and expected number of absences	Sickness, exclusive of accidents	Respiratory diseases [2]	Diseases of the digestive system [3]	Diseases of the nervous system [4]	Dysmenorrhea [5]	Rheumatism [6]	All other diseases
CLERKS							
Actual	2,910	1,280	586	309	488	38	209
Expected	1,565	719	393	197	197	8	51
TELEPHONE OPERATORS							
Actual	83	44	20	6	5	0	8
Expected	66	31	17	8	8	0	2
SCRUBWOMEN							
Actual	61	38	9	4	0	4	6
Expected	62	28	16	8	8	0	2

[1] The following occupations were included in the control group: Stenographers, typists, dictophone operators.
[2] Title numbers 11, 31, 97–107, and 109 in the International List of the Causes of Death, third revision, Paris, 1920.
[3] Title numbers 108, 110–127 in the International List.
[4] Title numbers 70–84 in the International List.
[5] Title number 141 in the International List.
[6] Title numbers 51 and 52 in the International List.

In a number of instances the differences are not significant on account of the small numbers which frequently resulted when the disabilities among persons in a given occupation were subdivided according to the nature of the illness. The numbers involved of course have to be considered.

Among the repairmen and linemen, diseases of the digestive system, respiratory diseases, and rheumatism appear to have occurred at excessive frequency. The oilmen and oilers also experienced an abnormal number of digestive and respiratory illnesses. Only six absences on account of skin diseases, however, were reported among these men during the three-year period, although furunculosis (boils) may result from handling oil. Most of the oilmen and oilers, however, are employed in power stations equipped with shower-bath facilities which are used at the close of each tour, at which time the men make a complete change of clothing. This procedure may be sufficient to prevent the development of furunculosis under the amount of exposure to oil which is incident to the duties of the occupation.

SICKNESS ACCORDING TO LENGTH OF SERVICE IN DIFFERENT OCCUPATIONS

In the occupations exhibiting high disability rates, a question of interest is whether the excess in sickness occurred among the newer employees or among those who had been with the company for a considerable period. The latter may be expected to be a more selected group, inasmuch as persons ill-suited physically to the conditions of work in a given occupation tend to quit. [8] Hence an inordinate rate of sickness among employees of five or more years' service may be of greater significance from an occupational standpoint than a high rate of illness among the new recruits.

In measuring the sickness in these two groups, the number of absences on account of illness among persons who had been engaged in the occupation specified for less than five years was compared with the number of absences expected from the average rate of sickness among men of less than five years' service in the control group, and the ratio of actual to expected number of absences was computed. Similarly, the number of disabilities according to occupation among those of five or more years' service was compared with the number expected from the rate of sickness among men in the same service group in the occupations used as a control, and the ratio of actual to expected number ascertained. The higher ratio, of course, indicated which of the two service groups within the occupation experienced the greater excess in sickness frequency.

In order to obtain the equivalent number of persons under observation for one full year (years of life) during the three-year period in these two service groups, the distribution of persons on the pay roll as of July 15, 1923, according to the number of years employed by the company, was obtained according to occupation, as previously explained, and the percentage in each service group applied to the years of life in each occupation. The pay-roll distribution and the derived number of years of life in the two service groups are shown in Table 10.

[8] This tendency is indicated in morbidity data for a group of cement workers presented in "The Health of Workers in Dusty Trades; I. Exposure to Dust and Other Conditions in a Portland Cement Plant. Public Health Bulletin No. 176, U. S. Public Health Service. In press.

TABLE 10.—*Estimated number of years of life under observation in occupations specified during the three years ending December 31, 1924, according to number of years employed by the Edison Electric Illuminating Co. of Boston*

Occupations	Years of life under observation			Sample distribution of number on pay roll as of July 15, 1923		
	Years of service with the company					
	All lengths of service	Less than 5	5 or more	All lengths of service	Less than 5	5 or more
MALES						
All occupations	6,129	3,111	3,018	2,073	1,052	1,021
Control group [1]	1,538	813	725	537	284	253
Repairmen	204	150	54	79	58	21
Stock handlers	56	40	16	21	15	6
Linemen	286	230	56	103	83	20
Oilmen and oilers	148	89	59	55	33	22
Water tenders	63	21	42	24	8	16
Chauffeurs	146	63	83	49	21	28
Meter testers	194	118	76	66	40	26
Janitors	54	36	18	15	10	5
Firemen	219	124	95	69	39	30
Inspectors	398	200	198	137	69	68
Laborers	198	149	49	60	45	15
Installers	191	72	119	56	21	35
Testmen	70	57	13	26	21	5
Meter readers	134	97	37	47	34	13
Troublemen	124	7	117	35	2	33
Switchmen	65	28	37	21	9	12
Telephone operators	72	34	38	23	11	12
Station operators	762	210	552	258	71	187
All other occupations	1,207	573	634	392	178	214
FEMALES						
All occupations	1,508	1,041	467	510	352	158
Control group [2]	130	82	48	38	24	14
Clerks	1,112	828	284	384	286	98
Telephone operators	47	9	38	15	3	12
Scrubwomen	44	22	22	12	6	6
All other occupations	175	100	75	61	33	28

[1] Clerks, division heads, their assistants and subassistants, draftsmen, engineers, and salesmen.
[2] Stenographers, typists, and dictophone operators.

Occupations in which men of five or more years' service experienced more excessive disability rates than employees of less than five years' service, both in respiratory and in nonrespiratory diseases, were repairmen, oilmen and oilers, stock handlers, chauffeurs, laborers, and water tenders. The linemen of longer service had a considerably higher excess disablement rate from the nonrespiratory diseases than those employed less than five years, but in diseases of the respiratory system the ratio of actual to expected number of absences was about the same in either length-of-service group. The number of disabilities in excess of the expected number showed small differences according to length of service among the meter testers, janitors, and firemen.

TABLE 11.—*Number of absences on account of sickness in certain occupations among men of less than five years' service compared with five or more years in the company's service, and the number of absences expected from the sickness rates of the control group*[1]*: Years 1922, 1923, and 1924*

Actual and expected number of absences	Sickness, exclusive of accidents		Respiratory diseases [2]		Nonrespiratory diseases	
	Years of service with the company					
	Less than 5	5 or more	Less than 5	5 or more	Less than 5	5 or more
REPAIRMEN						
Actual	346	115	156	71	190	44
Expected	146	34	92	22	54	12
Ratio [3]	237	338	170	323	352	367
STOCK HANDLERS						
Actual	55	41	30	26	25	15
Expected	39	10	25	6	14	4
Ratio [3]	141	410	120	433	179	375
LINEMEN						
Actual	407	80	275	43	132	37
Expected	223	35	141	23	82	12
Ratio [3]	183	229	195	187	161	308
OILMEN AND OILERS						
Actual	153	90	86	42	67	48
Expected	86	37	54	24	32	13
Ratio [3]	178	243	159	175	209	369
WATER TENDERS						
Actual	25	74	13	33	12	41
Expected	20	27	13	17	7	10
Ratio [3]	225	274	100	194	171	410
CHAUFFEURS						
Actual	66	158	32	86	34	72
Expected	61	52	39	33	22	19
Ratio [3]	108	304	82	261	155	379
METER TESTERS						
Actual	197	87	117	56	80	31
Expected	115	48	73	31	42	17
Ratio [3]	171	181	160	181	190	182

[1] The following occupations were included in the control group: Clerks, division heads, their assistants and subassistants, draftsmen, engineers, and salesmen.

[2] Title numbers 11, 31, 97–107, and 109 in the International List of the Causes of Death, third revision, Paris, 1920.

[3] Ratio of actual to expected number of absences. When the two coincide, ratio = 100.

TABLE 11.—*Number of absences on account of sickness in certain occupations among men of less than five years' service compared with five or more years in the company's service, and the number of absences expected from the sickness rates of the control group: Years 1922, 1923, and 1924*—Continued

Actual and expected number of absences	Sickness, exclusive of accidents		Respiratory diseases		Nonrespiratory diseases	
	Years of service with the company					
	Less than 5	5 or more	Less than 5	5 or more	Less than 5	5 or more
JANITORS						
Actual	55	16	28	10	27	6
Expected	35	11	22	7	13	4
Ratio [1]	157	145	127	143	208	150
FIREMEN						
Actual	170	93	93	41	77	52
Expected	120	60	76	39	44	21
Ratio [1]	142	155	122	105	175	248
INSPECTORS						
Actual	244	189	144	130	100	59
Expected	194	125	123	80	71	45
Ratio [1]	126	151	117	163	141	131
LABORERS						
Actual	153	59	93	40	60	19
Expected	145	31	92	20	53	11
Ratio [1]	106	190	101	200	113	173
INSTALLERS						
Actual	98	98	61	54	37	44
Expected	70	75	44	48	26	27
Ratio [1]	140	131	139	113	142	163

[1] Ratio of actual to expected number of absences. When the two coincide, ratio =100.

Inasmuch as the frequency of illnesses of one day or longer did not show much variation according to age among the male employees of the company as a whole (*cf.* Fig. 1), it was deemed unnecessary to present the sickness rates according to occupation with the age factor eliminated. The age distribution of the personnel of certain occupations differed somewhat from that of the control group, as shown in Table 12, but it was found that in no occupation among the men did adjustment for differences in age distribution affect the rate as much as 16 per cent.

TABLE 12.—*Age distributions of employees of the Edison Electric Illuminating Co. of Boston, by occupations, as of July 15, 1923*

Occupations	Per cent			Number of persons			
	Under 25	25–44	45 and over	Total	Under 25	25–44	45 and over
MALES							
All occupations	21	57	22	2,073	443	1,182	448
Control group [1]	26	56	18	537	139	301	97
Repairmen	32	54	14	79	25	43	11
Linemen	28	59	13	103	29	61	13
Oilmen and oilers	13	71	16	55	7	39	9
Water tenders	0	67	33	24	0	16	8
Stock handlers	19	67	14	21	4	14	3
Chauffeurs	4	82	14	49	2	40	7
Meter testers	44	47	9	66	29	31	6
Janitors	7	40	53	15	1	6	8
Firemen	3	71	26	69	2	49	18
Inspectors	34	42	24	137	47	58	32
Laborers	10	63	27	60	6	38	16
Installers	14	66	20	56	8	37	11
Testmen	34	58	8	26	9	15	2
Meter readers	34	64	2	47	16	30	1
Telephone operators	39	52	9	23	9	12	2
Switchmen	14	57	29	21	3	12	6
Troublemen	0	71	29	35	0	25	10
Station operators	14	65	21	258	35	168	55
All other occupations	18	48	34	392	72	187	133
FEMALES							
All occupations	46	47	7	510	237	240	33
Control group [2]	45	39	16	38	17	15	6
Clerks	55	43	2	384	210	166	8
Telephone operators	7	86	7	15	1	13	1
Scrubwomen	0	50	50	12	0	6	6
All other occupations	15	65	20	61	9	40	12

[1] Clerks, division heads, their assistants and subassistants, draftsmen, engineers, and salesmen.
[2] Stenographers, typists, and dictophone operators.

CORRELATION OF INDUSTRIAL AND NONINDUSTRIAL ACCIDENTS AMONG THE MEN

In Table 13 the frequency of industrial accidents causing disability for one day or longer is compared with the nonindustrial accident rate, by occupations, among the male employees of the company. Industrial injuries should properly be stated in terms of the number of hours of exposure (man-hours), but in the absence of wide differences in the weekly work schedule of persons in the occupations listed, the rates as shown may be sufficiently correct for comparison with the frequency of nonindustrial injuries among the same groups of workers.

TABLE 13.—*Frequency of absence on account of industrial accidents compared with nonindustrial accidents, by occupations, among male employees of the Edison Electric Illuminating Co. of Boston in 1922, 1923, and 1924*

Occupations among male employees	Number of years of life under observation	Annual rate per 1,000 men on pay roll		Number of absences	
		Industrial accidents	Non-industrial accidents	Industrial accidents	Non-industrial accidents
All occupations	6,129	79	75	486	457
(1) Linemen	286	297	119	85	34
(2) Laborers	198	227	45	45	9
(3) Repairmen	204	152	167	31	34
(4) Troublemen	124	145	65	18	8
(5) Water tenders	63	143	95	9	6
(6) Chauffeurs	146	137	164	20	24
(7) Testmen	70	129	157	9	11
(8) Firemen	219	128	114	28	25
(9) Meter readers	134	127	60	17	8
(10) Occupations other than those named	1,207	120	77	145	93
(11) Meter testers	194	57	113	11	22
(12) Janitors	54	56	111	3	6
(13) Oilmen and oilers	148	54	101	8	15
(14) Stock handlers	56	54	107	3	6
(15) Installers	191	52	73	10	14
(16) Switchmen	65	31	108	2	7
(17) Salesmen	209	24	33	5	7
(18) Station operators	762	22	51	17	39
(19) Engineers	225	18	22	4	5
(20) Clerks	749	15	49	11	37
(21) Inspectors	398	13	63	5	25
(22) Division heads	250	0	48	0	12
(23) Draftsmen	105	0	86	0	9
(24) Telephone operators	72	0	14	0	1

For the purpose of ascertaining whether the nonindustrial accident rate varied or did not vary in accordance with the industrial accident rate, the coefficient of correlation was computed. A coefficient of 0.432 ± 0.112 was obtained, indicative to a fairly definite extent, of the existence of a relationship between the two sets of accident rates. A cause which suggests itself as being common to both is the personal factor in accidents, to which attention has in recent years been increasingly directed.[9] This is not to say that the nature of the accident hazard in any given occupation may not still largely determine the number of injuries occurring to persons following the occupation.

ACKNOWLEDGMENTS

The Edison Electric Illuminating Co. of Boston not only made their disability records available for study, but assisted generously in the tabulation and analysis of the data. To Mr. Herbert W. Moses, superintendent employment bureau, we are especially indebted for his cooperation and advice.

[9] The question of differing individual liability to accidents under uniform conditions of risk has been treated statistically by Major Greenwood and Hilda M. Woods in Report No. 4 of the Industrial Fatigue Research Board of Great Britain, in "A Report on the Incidence of Industrial Accidents upon Individuals, with Special Reference to Multiple Accidents," and by Ethel M. Newbold in "Practical Applications of the Statistics of Repeated Events, Particularly to Industrial Accidents," in Journ. Royal Statistical Society Vol. XC, Part III, 1927, London, England.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Two Years' Operation of the Sewage Treatment Plant at Worcester Mass. R. S. Lanphear. *Journal Boston Society of Civil Engineers*, vol. 14, No. 8, October, 1927, p. 450. (Abstract by H. D. Cashmore.)

Sewage has been treated since 1890 with marked success at Worcester. Advancements in treatment of sewage and recognition of the shortcomings of the old plant resulted in the construction of a new $3,800,000 plant, which was put in service in June, 1925.

The sewage from 235,000 people is treated in addition to storm sewage which is taken in from 35 per cent of the system. The plant is designed for a daily average of 28 million gallons, or an estimated population of 242,000 in 1939. Great fluctuation in volume is due to storms, but the system has been found capable of handling any amount. A great amount of industrial wastes is also handled.

The system consists of two large grit chambers which remove 4 cubic feet of material per million gallons of sewage, two bar screens at the outlet end of the grit chambers, 12 Imhoff tanks, each having a capacity in the sedimentation chamber and sludge compartment of 1.34 and 2.54 cubic feet, respectively, 4 pairs of dosing tanks, 4 units of trickling filters comprising 13.68 acres, 4 secondary settling tanks 60 by 120 feet in size, and 23 sludge drying beds which were formerly the old intermittent sand filters of 1 acre area each.

In 1926 the total cost of treatment of sewage averaged $7.37 per million gallons. In general, the plant works very well, but certain improvements can be made in the details which will increase the efficiency to some extent.

Progress on Cooperation with Ohio Manufactures in Proper Disposal of Industrial Wastes. F. H. Waring. Sixth Annual Report of Ohio Conference on Water Purification, 1926, pp. 60–63. (Abstract by R. E. Tarbett.)

Seventy-five filtration plants serving over half of the population of the State make control of stream pollution particularly important in Ohio. A stream pollution law and a sewer rental law have furnished the necessary remedial legislation. Plans for correcting industrial waste pollution have been developed through cooperation with manufacturers taken in groups according to the character of wastes produced.

The article covers the various groups that have been organized and the progress made by each. These groups at present include the by-product coke industry, the paper manufacturers, the milk and dairy industry, the canning industry. Many of these are not confining their activities to Ohio alone.

At present Ohio, Pennsylvania, West Virginia, Kentucky, Maryland, and New York are bound together in an agreement of uniform policies relative to interstate stream conservation, and Indiana, Illinois, and Tennessee have signified their desire to join the group.

Phenol Wastes in Ohio River Watershed. E. S. Tisdale. *Water Works*, vol. 66, No. 7, July, 1927, pp. 284–285. (Abstract by Arthur P. Miller.)

This article outlines the steps taken by States on the Ohio River Basin to eliminate phenolic and other tarry substances from the river and discusses the further cooperative agreements between those States which culminated in the Board of Public Health Engineers of the Ohio River Basin.

Nauseating medicinal tastes in Cleveland's public water supply in 1922 necessitated action on the part of the Ohio health authorities. At the request of the Ohio State Department of Health the United States Public Health Service in May, 1923, called a phenol conference in Washington to take testimony and evaluate this problem from a national standpoint. One month later the by-product coke companies met with that State health department and agreed

upon a policy to keep phenolic wastes out of Ohio streams. In January, 1924, at another conference called by the United States Public Health Service, an organization of States on the Ohio River watershed was effected. Following this meeting an engineer of the Public Health Service was detailed to make a study of the extent of phenol waste pollution.

In April, 1924, a meeting was held in Pittsburgh, where several State health departments and executives of all by-product coke manufacturers met to hear and discuss the Public Health Service report and to formulate policies for the cooperating States to carry out, working with the industries. In November, 1924, the State health departments of Pennsylvania, Ohio, and West Virginia entered into an interstate stream agreement with respect to phenol waste disposal. Kentucky later became a signatory to this agreement. In April, 1927, a survey by the respective State health departments showed that phenol discharges in the rivers had been greatly reduced and that complete elimination would soon be in effect. This cooperative effort between States led to the organization of the Board of Public Health Engineers of the Ohio River Basin.

Sewage Farm Covers 13,602 Acres. Anon. *Engineering News-Record*, vol. 99, No. 17, October 27, 1927, p. 669. (Abstract by A. S. Bedell.)

An abstract of an article in *The Engineer* (London), November 12, 1926, page 519, describing the method of sewage disposal of Melbourne metropolitan area (Victoria, Australia). The land was "originally treeless, almost stoneless, open plain country, somewhat clayey and poorly grassed," having an average annual rainfall of 18.14 inches.

The farm is sown with lucerne, pasture grasses, and clover, and is flooded with sewage and used for raising hay and for grazing. Except in winter or very wet weather, the farm takes 3 inches of sewage every two or three weeks, or 5½ feet per year, 8,084 acres being under irrigation. Dairying is not permitted, but grazing and raising cattle and sheep are carried on. On June 30, 1925, there were 6,671 cattle, 4,947 sheep, and 800 horses, with 200 employees on the farm. Revenue from grazing usually is greater than cost of sewage treatment, aside from capital charges, while in years of drought the revenue meets all charges.

City Sewage Disposal Plant Held to be a Nuisance. Warren J. Scott. *Water Works*, vol. 66, No. 10, October, 1927, p. 422. (Abstract by H. B. Hommon.)

Property owners of the town of Marlin, Tex., living near the sewage disposal plant brought suit against the City of Marlin to restrain the operation and the enlargement of the city's sewage disposal plant and to require the city to move the plant to another locality. The property owners alleged that the plant caused offensive odors and gases to emanate which were detrimental to health and prevented them from occupying their residences with any comfort. The cause was submitted on special issues, and by judgment of the trial court the city was permanently restrained from maintaining its existing sewage disposal plant and enjoined from enlarging it at the place where it was then located and was also required within six months to remove the plant to another place. The trial court's judgment was affirmed by the court of civil appeals, which said: "The evidence shows beyond controversy that the present system is exceedingly offensive to all of the appellees, as well as a large number of other citizens of Marlin * * * We think the evidence is sufficient to support the jury's finding that the proposed plant which the city is preparing to erect will cause the same offensive odors and that the same objections may be urged against it * * * It seems to be the settled law of this State that a city may, the same as a private individual, be restrained from maintaining a nuisance. * * *"

A Small Sewage Works in a Nottinghamshire Colliery District. E. J. Silcock. *Surveyor*, vol. 72, No. 1855, August 12, 1927, pp. 141–143. (Abstract by C. C. Ruchhoft.)

This plant was designed to be constructed in three units, each unit to treat the sewage from a population of 5,000. The first unit has been operating for some time, the second is about to be built, and the third will be built when needed. The plant receives sewage from a partially separate system and was designed for a flow of 20 gallons per capita per day. The detritus and screening chambers are in duplicate and have ample capacity to handle the sewage from a population of 15,000, so that a third installation will not be required. The plant, with the second unit, includes 2 Dortmund type tanks, 4 circular percolating bacteria beds, 2 secondary settling tanks also of the Dortmund type, 2 storm water tanks, 20 sludge dry beds, and a pumping station. The storm water is distributed by means of submerged orifices. One of these passes three times the dry weather flow to the settling tanks, while a second discharges from three to six times the dry weather flow to the storm-water tanks. The surplus flows over a weir to the stream outfall.

Rats, Fleas, and Plague in Japan. (Topi, pulci e peste in Giappone.) Guido Guerrini, Giorn. d. Reale Soc. Ital. d'Igiene. 1927, vol. 44, No. 1. 8 pp. Abstract by H. Harold Scott in *Tropical Diseases Bulletin*, vol. 24, No. 11, November, 1927, p. 933.

"This paper is largely statistical. Nearly half a million rats were examined during the 18 months from February, 1909, to July, 1910. Among this number 0.1 per cent of the *norvegicus* species were found infected with plague, but 1.55 per cent of *alexandrinus*. In Tokyo and Aichi the latter species was positive in 90.48 and 86.9 per cent, respectively; but in Prefecture of Miye *R.* [*M.*] *rattus* was positive in 53.68 per cent, *norvegicus* in 24.23, and *alexandrinus* in 22.09 per cent.

"As regards the fleas, *Ceratophyllus anisus* and *C. fasciatus* were widespread; *Paradoxospyllus curvispinosus*, a species peculiar to Japan, was very frequently met with, especially in Tokyo; *Xenopsylla cheopis* only rarely, in seaports; *Ctenopsylla cuniculi* common everywhere in the country. In Yokohama, among 2,508 fleas, there were 2,276, or 90.7 per cent, *C. anisus* and *P. curvispinosus* and only 9 of *X. cheopis* and *Pulex irritans* combined. Except *X. cheopis* all are most numerous in winter; they increase gradually from September to January, rapidly in January and February, and decrease rapidly in May.

"From examination of fleas caught in Yura all the species were shown to be carriers of plague except *Ceratophyllus felis.*"

Residual Germicidal Action of Water Treated with Ultra-Violet Rays. E. C Berndt. *Journal of the American Association for Promoting Hygiene* and *Public Baths*, vol. 9, 1927, pp. 36–38. (Abstract by J. L. Robertson.)

The proper exposure of water to ultra-violet rays destroys bacterial life without adding odor, taste, or irritating qualities to the water. When used in connection with swimming pools with re-circulating systems, the results obtained are far better than the law of purification by consecutive dilution would indicate. According to this law, two turnovers of a pool water per 24 hours would indicate a removal of 63 per cent of the impurities. Tests made using ultra-violet ray sterilization show much better results.

Recent tests made at the Detroit Athletic Club, to determine whether there was any residual germicidal action imparted to water exposed to ultra-violet rays, showed better results with ultra-violet ray treatment than with the method of simple dilution by adding pure city water, although the bathing load was 20 per cent higher at the time when the tests were run on the ultra-violet process.

Recently the United States Bureau of Standards published a report on an investigation of the germicidal action of ultra-violet radiation. The following conclusion of this report is quoted in this article:

"It is important to emphasize that our results, in general, are in agreement with those of recent investigators, showing that the killing of bacteria by ultraviolet rays is not due to the small amounts of toxic chemical substances that may be produced by the action of the rays on the water or other medium."

Swimming Pool Sanitation a Public Health Problem. H. P. Croft. *Journal of the American Association for Promoting Hygiene and Public Baths*, vol. 9, 1927, pp. 34–35 (Abstract by J. L. Robertson.)

That the control of indoor and outdoor swimming pools by health authorities is desirable for the promotion of public health is evidenced by two States having statutory regulations; seven State health departments adopting rules and regulations; eight State health departments acting in an advisory capacity; and eight others preparing or considering the preparation of rules and regulations.

With the increasing popularity of swimming pools in amusement parks, public schools, etc., sanitary control is desirable. The committee on bathing places of the American Public Health Association has put forth tentative regulations. That part of these regulations relating to the bacterial quality of the water was stressed, with the thought that the bacterial content is influenced by all factors entering into the design, operation, and supervision.

California State Board of Health Rules Governing Sanitation, Safety, and Cleanliness of Swimming Pools. Anon. *Journal of the American Association for Promoting Hygiene and Public Baths*, vol. 9, 1927, pp. 65–78. (Abstract by R. E. Tarbett.)

The new rules were adopted in 1926 and cover the bacteriological quality of the pool water, cleanliness of pool water, sanitation of premises, sputum contamination (by requiring a scum gutter), diseased persons, dressing room and sanitary conveniences, safety of bathers, laundry, operating records and report, and application for permit. Notes accompanying the rules cover the question of construction, water supply, and water treatment, including disinfection and copper sulphate treatment.

Under the rules, applications must be made and permits granted by the bureau of sanitary engineering of the State board of health. Where construction is contemplated, a report including detailed plans must be submitted.

An Experiment in Mosquito-Proofing Barracks of British Troops. A. Campbell Munro. *Journal of the Royal Army Medical Corps*, vol. 49, No. 4, October, 1927, pp. 248–255. (Abstract by R. E. Tarbett.)

The article covers experimental screening of certain barracks at Lahore and Amritsar, plains stations in the Lahore Military District, India. These two stations are located in the flat country having poor drainage, and are the most malarious of all the Indian stations.

Antilarval work has been carried on for many years, as has personal protection by the use of mosquito nets, mosquito lotions, fumigations, etc. Not all of the barracks at these two stations were screened. Barracks screened were long, single story, bungalow type, having a veranda 12 feet wide on one side. These verandas were pierced by a series of archways, the only openings to the veranda. A stout wooden framework was made in each archway, covered with brass wire gauze, 16 mesh, over which one-half inch rabbit netting was nailed for protection. Doorways were double screened with a 10-foot screen gangway between the doors. Doors opened outward and were fitted with double springs. Windows were screened on the outside. Fireplaces were temporarily filled with brick during the warm weather and all ventilators covered with wire gauze. One man per barrack room was detailed for the sole duty of keeping screens in good repair. It was made a court-martial offense to prop a screen door open or to pass a door so propped without removing the obstacle.

In addition to malaria prevention, other advantages were the dispensing with mosquito nets, which allowed the lowering of punkhas, the absence of flies and nonbiting insects as well as pest mosquitoes, and the actual lowering of the temperature in the rooms.

Malaria was as prevalent in the unscreened buildings at these two barracks in 1926 as in any other preceding year. During 1926 the malaria rate in the screened barracks in Amritsar was one-fourth the average rate for the three preceding years, and at Lahore one-fifth. At Lahore the rate was less than one-third the rate in the unscreened barracks.

The writer concludes that the screening of barracks properly carried out is a means of reducing malaria among troops, but can not be considered as a sole antimalaria measure, its efficacy being more or less in inverse ratio to the evening attractions outside the barracks.

Specifications and Analyses of Gravel and Filter Sand—Where Sand May Be Obtained. Lewis O. Bernhagen. Proceedings Ninth Texas Water Works Short School, January, 1927, pp. 169–172. (Abstract by W. M. Olson.)

Modern filter-plant operators must produce good water at low cost. The perforated underdrain system has resulted in economy in construction and operation, but demands extreme care in selecting and grading the gravel bed. Complete specifications for gravel are included. "Gravel should not have flat surfaces." Gravel should be uniformly graded, washed, and placed carefully in five layers, as follows:

Layer	Depth in inches	Size in inches
First	5½	1½ to 1.
Second	5	1 to ⅝.
Third	4½	⅝ to ⅜.
Fourth	4	⅜ to ⅛.
Fifth	3	⅛ to 10-mesh.

Filter sand should be round rather than sharp. Other specifications for sand depend upon the water to be handled. Complete specifications for sand for filtering an average water are given. The effective size should be from 0.35 to 0.40 millimeters, and the uniformity coefficient from 1.55 to 1.65. Depth of sand bed after washing to be at least 30 inches.

Suitable gravel may be found in Texas. "An almost ideal filter sand may be obtained at Red Wing, Minnesota." Native Texas sands need to be tested carefully to insure conformity to specifications. Sets of standard sieves may be obtained from chemical supply houses.

"Engineers should investigate local conditions with greater care than is usually exercised before recommending gravel and sand for a certain plant."

Determining Coagulant Dosage by Bottle Tests. Lewis I. Birdsall. Proceedings Ninth Texas Water Works Short School, January, 1927, pp. 264–265. (Abstract by W. M. Olson.)

River waters change rapidly in quality. These changes require corresponding changes in the amount of coagulant to be used in a water purification plant. Procedure is outlined for bottle tests to appraise the amount of coagulant required.

Prepare standard solution by dissolving 32.4 grams of coagulant in 1 liter of water. (One cubic centimeter contains one-half grain of coagulant.) Provide one-half gallon glass jars for water samples and 10 cubic centimeters pipette graduated to 0.1 cubic centimeter.

Add a measured amount of standard solution to several samples of water, shake vigorously, let stand until the floc has formed, and choose the most satisfactory treatment. Bottle experiments usually indicate a need for more coagulant than is necessary in actual operation.

DEATHS DURING WEEK ENDED JANUARY 28, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended January 28, 1928, and corresponding week of 1927. (From the Weekly Health Index, February 1, 1928, issued by the Bureau of the Census, Department of Commerce)

	Week ended Jan. 28, 1928	Corresponding week, 1927
Policies in force	69, 811, 802	66, 591, 039
Number of death claims	14, 644	13, 132
Death claims per 1,000 policies in force, annual rate	11. 0	10. 3

Deaths from all causes in certain large cities of the United States during the week ended January 28, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, February 1, 1928, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Jan. 28, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Jan. 28, 1928 [2]
	Total deaths	Death rate [1]		Week ended Jan. 28, 1928	Corresponding week 1927	
Total (69 cities)	7,546	13. 0	13. 3	740	787	61
Akron	28			2	8	22
Albany [3]	38	16. 5	15. 3	0	1	0
Atlanta	67	13. 8	16. 5	5	2	
White	33		14. 9	3	1	
Colored	34	(4)	20. 5	2	1	
Baltimore [3]	236	14. 9	15. 6	24	25	76
White	184		14. 3	20	19	80
Colored	52	(4)	23. 4	4	6	63
Birmingham	64	15. 0	18. 2	2	7	17
White	25		12. 6	0	4	0
Colored	39	(4)	27. 1	2	3	45
Boston	210	13. 7	14. 5	21	24	58
Bridgeport	31			2	1	37
Buffalo	157	14. 8	14. 9	22	15	94
Cambridge	26	10. 8	16. 0	3	6	53
Camden	27	10. 4	14. 9	2	3	32
Canton	20	9. 0	12. 0	2	3	48
Chicago [3]	721	11. 9	12. 1	45	76	39
Cincinnati	110	13. 9	16. 4	14	7	85
Cleveland	232	12. 0	10. 6	18	14	49
Columbus	75	13. 2	15. 6	6	7	56
Dallas	55	13. 2	10. 6	7	6	
White	41		9. 9	7	6	
Colored	14	(4)	15. 2	0	0	
Dayton	32	9. 1	13. 0	2	5	33
Denver	102	18. 1	18. 0	13	7	
Des Moines	32	11. 0	12. 6	3	4	50
Detroit	298	11. 3	13. 4	46	54	71
Duluth	15	6. 7	9. 1	1	4	23
El Paso	28	12. 4	11. 9	2	3	
Erie	18			1	1	21
Fall River [3]	26	10. 1	13. 4	1	4	17
Flint	26	9. 1	9. 1	4	6	51
Fort Worth	34	10. 6	14. 3	6	2	
White	29		13. 0	5	1	
Colored	5	(4)	23. 9	1	1	
Grand Rapids	18	5. 7	7. 1	0	3	0
Houston	74			5	6	
White	47			2	5	
Colored	27	(4)		3	1	
Indianapolis	106	14. 5	10. 0	10	7	76
White	83		9. 7	7	5	61
Colored	23	(4)	12. 8	3	2	182
Jersey City	82	13. 2	14. 8	9	13	67
Kansas City, Kans	26	11. 5	14. 2	4	7	84
White	18		10. 8	3	4	74
Colored	8	(4)	29. 5	1	3	145
Kansas City, Mo	101	13. 5	14. 7	5	10	35

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended January 28, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, February 1, 1928, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Jan. 28, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Jan. 28, 1928 [2]
	Total deaths	Death rate [1]		Week ended Jan. 28, 1928	Corresponding week 1927	
Knoxville	22	10.9	13.3	3	0	65
White	19		10.4	3	0	73
Colored	3	(4)	34.2	0	0	0
Los Angeles	294			29	30	83
Lowell	22	10.4	12.3	2	4	42
Lynn	22	10.9	12.9	1	1	25
Memphis	59	17.0	19.2	10	10	117
White	36		14.9	5	5	94
Colored	23	(4)	27.1	5	5	157
Milwaukee	102	9.8	10.7	11	18	49
Minneapolis	84	9.6	11.6	6	11	36
Nashville	51	19.2	20.1	7	5	110
White	32		16.3	6	4	128
Colored	19	(4)	29.5	1	1	60
New Bedford	24	10.5	9.2	5	6	108
New Haven	39	10.9	17.2	2	8	28
New Orleans	176	21.4	19.9	16	17	77
White	99		14.6	9	10	65
Colored	77	(4)	35.0	7	7	102
New York	1,523	13.2	12.1	191	130	77
Bronx Borough	196	10.8	9.0	16	12	48
Brooklyn Borough	507	11.5	9.9	70	43	70
Manhattan Borough	618	18.4	17.8	72	56	85
Queens Borough	158	9.7	8.8	28	15	113
Richmond Borough	44	15.3	13.9	5	4	90
Newark, N. J.	89	9.8	11.1	8	14	41
Oakland	50	9.5	11.1	2	7	22
Oklahoma City	26			0	1	
Omaha	48	11.3	11.4	2	6	23
Paterson	39	14.1	13.1	2	6	35
Philadelphia	525	13.3	14.0	48	48	65
Pittsburgh	207	16.1	14.1	34	27	111
Portland, Oreg	92			7	4	75
Providence	66	12.1	10.6	10	11	87
Richmond	59	15.9	14.7	9	6	118
White	39		12.6	5	4	101
Colored	20	(4)	19.7	4	2	147
Rochester	90	14.3	10.9	13	6	105
St. Louis	245	15.1	15.0	8	22	27
St. Paul	47	9.7	10.6	4	3	33
Salt Lake City [3]	30	11.4	14.2	1	4	16
San Antonio	70	16.8	15.3	15	4	
San Diego	46	20.1	22.6	1	1	19
San Francisco	182	16.3	16.8	4	9	25
Schenectady	18	10.1	7.8	0	2	0
Seattle	70	9.6	11.3	2	7	21
Somerville	22	11.2	11.3	4	4	138
Spokane	33	15.8	19.1	3	5	77
Springfield, Mass	37	12.9	13.1	5	5	79
Syracuse	47	12.3	15.1	5	6	61
Tacoma	27	12.8	13.1	0	1	0
Toledo	65	10.9	14.3	4	6	38
Trenton	33	12.4	16.8	2	8	34
Utica	30	15.1	19.7	2	1	45
Washington, D. C.	147	13.9	14.3	9	17	51
White	88		12.4	5	6	41
Colored	59	(4)	19.9	4	11	74
Waterbury	25			6	5	174
Wilmington, Del	32	13.0	14.4	0	4	0
Worcester	52	13.8	13.6	4	4	49
Yonkers	20	8.6	10.1	3	2	68
Youngstown	32	9.6	12.3	5	6	67

[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] Deaths for week ended Friday, Jan. 27, 1928.
[4] 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; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; 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 February 5, 1927, and February 4, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended February 5, 1927, and February 4, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928
New England States:								
Maine	4	5	25	12	219	63	0	0
New Hampshire		1				16		0
Vermont	2				101	24	0	0
Massachusetts	111	118	21	15	169	1,486	1	3
Rhode Island	10	13			1	7	0	1
Connecticut	35	42	11	11	60	265	1	1
Middle Atlantic States:								
New York	402	482	[1] 154	[1] 47	803	1,234	7	15
New Jersey	102	152	37	19	44	367	1	4
Pennsylvania	335	356			950	1,487	1	5
East North Central States:								
Ohio		78		15		405		1
Indiana	57	33	51	57	236	80	0	0
Illinois	176	160	66	36	1,774	84	2	12
Michigan	139	66		4	219	459	0	5
Wisconsin	37	31	54	64	660	85	7	5
West North Central States:								
Minnesota	29	20		3	294	8	1	1
Iowa [2]	28	30			745	75	0	1
Missouri	57	56	8	6	233	80	1	0
North Dakota	4	15			94	6	1	1
South Dakota	7	3	7	2	183	27	0	0
Nebraska	6	19	20		143	3	0	0
Kansas	25	22	7	6	591	28	5	3
South Atlantic States:								
Delaware	2	4	6		1	13	0	0
Maryland [2]	46	43	69	53	26	504	1	1
District of Columbia	12	33	2		5	22	0	0
Virginia								
West Virginia	23	21	58	27	151	125	1	1
North Carolina	44	51			209	3,668	0	1
South Carolina	24	25	684	1,397	11	1,304	0	0
Georgia	24	17	171	218	119	314	5	0
Florida	26	22	11	6	66	7	1	0

[1] New York City only.

[2] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended February 5, 1927, and February 4, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928
East South Central States:								
Kentucky		12				205		0
Tennessee	19	24	93	110	179	526	0	0
Alabama	29	21	74	235	124	212	0	0
Mississippi	13	11						
West South Central States:								
Arkansas	6	7	106	170	8	384	0	2
Louisiana	21	14	13	37	140	212	1	0
Oklahoma [1]	17	42	311	255	98	108	1	1
Texas	64	95	174	453	9	89	0	1
Mountain States:								
Montana	2	20			88		7	6
Idaho	2		4		71	1	0	3
Wyoming	1	1	1		220	2	0	2
Colorado	9	14	1		188	52	2	10
New Mexico	2	5			43	157	0	0
Arizona	7	8			23	2	0	7
Utah [2]	13	4	2	7	453	2	0	1
Nevada								
Pacific States:								
Washington	10	31			189	292	4	1
Oregon	14	8	180	37	64	43	4	2
California	159	138	40	57	2,409	127	9	5

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928
New England States:								
Maine	0	3	32	45	0	0	2	0
New Hampshire		0		13		0		0
Vermont	0	0	4	8	0	0	0	0
Massachusetts	0	1	450	324	0	0	7	7
Rhode Island	0	0	32	40	0	0	0	0
Connecticut	1	2	116	85	0	6	1	0
Middle Atlantic States:								
New York	0	8	942	724	14	11	32	14
New Jersey	0	1	331	279	0	0	1	6
Pennsylvania	1	0	803	731	2	0	18	33
East North Central States:								
Ohio		2		392		42		15
Indiana	0	0	366	139	216	140	2	3
Illinois	0	3	438	362	37	30	17	16
Michigan	0	2	348	283	43	39	6	25
Wisconsin	0	1	146	217	15	35	2	6
West North Central States:								
Minnesota	0	0	275	163	4	5	3	1
Iowa [1]	1	1	92	114	6	74	0	2
Missouri	1	0	196	116	14	37	5	2
North Dakota	0	0	61	89	3	0	2	2
South Dakota	1	1	80	85	12	44	0	0
Nebraska	0	2	93	91	26	40	3	2
Kansas	1	0	192	179	29	119	0	0
South Atlantic States:								
Delaware	0	0	46	2	1	0	0	0
Maryland [1]	0	2	87	55	0	0	8	2
District of Columbia	0	0	25	36	2	0	0	0
Virginia								
West Virginia	0	1	59	59	13	13	12	3
North Carolina	0	0	66	48	60	129	5	4
South Carolina	1	3	11	10	23	4	9	9
Georgia	0	0	22	35	106	0	9	7
Florida	0	0	21	18	59	3	8	5

[1] Week ended Friday.

[2] Exclusive of Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended February 5, 1927, and February 4, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928	Week ended Feb. 5, 1927	Week ended Feb. 4, 1928
East South Central States:								
Kentucky		0		57		52		6
Tennessee	1	0	28	29	9	24	7	4
Alabama	0	0	18	16	71	1	7	4
Mississippi	0	0	17	13	48	7	9	2
West South Central States:								
Arkansas	0	0	7	76	3	6	5	12
Louisiana	0	0	9	16	12	14	4	11
Oklahoma [3]	0	0	65	57	41	233	9	7
Texas	0	3	37	141	331	96	1	9
Mountain States:								
Montana	0	0	116	0	33	44	0	1
Idaho	0	0	39	4	0	6	1	2
Wyoming	0	0	20	15	0	6	0	0
Colorado	2	0	176	105	17	24	1	2
New Mexico	1	2	21	35	2	0	3	2
Arizona	0	1	15	2	0	3	2	0
Utah [2]	0	0	32	6	8	18	0	0
Nevada								
Pacific States:								
Washington	0	2	159	74	64	40	4	2
Oregon	0	3	77	22	30	48	1	6
California	2	17	299	218	17	39	2	13

[2] Week ended Friday. [3] Exclusive of Tulsa.

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
December, 1927										
California	13	613	96	4	183	6	74	728	68	39
Florida	4	74	35	21	21	3	1	46	3	14
Idaho	5	20			6		1	72	28	1
Montana	13	16	15		4		3	90	84	3
North Carolina	4	346			5,727		3	317	203	12
Ohio	8	900	56		695		30	1,185	86	117
South Carolina	0	379	2,978	783	2,210	162	10	100	17	83
South Dakota	5	7	28		104		4	205	52	7
Tennessee	4	167	400	42	1,167	16	6	192	63	90
Washington	16	74	24		676		29	222	186	23

December, 1927

Chicken pox:

	Cases
California	1,116
Florida	55
Idaho	86
Montana	75
North Carolina	598
Ohio	1,722
South Carolina	211
South Dakota	58
Tennessee	130
Washington	315

Conjunctivitis:

Idaho	6

Dengue:

South Carolina	1

Dysentery:

California—	Cases
Amebic	5
Bacillary	4
Florida	7
Ohio	2
Tennessee	3

German measles:

California	292
Montana	2
North Carolina	14
Ohio	27
Washington	41

Hookworm disease:

California	1
Florida	22
South Carolina	211

	Cases
Impetigo contagiosa:	
Washington	10
Jaundice:	
California	4
Montana	1
Lead poisoning:	
Ohio	9
Lethargic encephalitis:	
California	7
Idaho	1
Montana	1
Ohio	9
Tennessee	1
Washington	2
Malta fever:	
California	1
Mumps:	
California	321
Florida	12
Idaho	43
Montana	4
Ohio	720
South Dakota	35
Tennessee	117
Washington	200
Ophthalmia neonatorum:	
North Carolina	1
Ohio	119
South Carolina	30
Paratyphoid fever:	
California	2
South Carolina	5
Washington	2
Rabies in animals:	
California	42
Idaho	1
South Carolina	15
Scabies:	
Washington	8
Septic sore throat:	
Montana	1
North Carolina	3
Ohio	82
Tennessee	2
Tetanus:	
California	5
Florida	6
Trachoma:	
California	9
Ohio	3
Trichinosis:	
California	2
Tularaemia:	
California	1
Typhus fever:	
Florida	2
Vincent's angina:	
Washington	1
Whooping cough:	
California	369
Florida	4
Idaho	1
Montana	11
North Carolina	364
Ohio	404
South Carolina	399
South Dakota	16
Tennessee	65
Washington	33

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the county and have an estimated aggregate population of more than 31,620,000. The estimated population of the 94 cities reporting deaths is more than 30,900,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended January 21, 1928, and January 22, 1927

	1928	1927	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	2,137	1,974	
100 cities	1,165	1,044	1,126
Measles:			
42 States	11,663	10,070	
100 cities	3,648	2,688	
Poliomyelitis:			
43 States	46	20	
Scarlet fever:			
43 States	4,846	5,633	
100 cities	1,626	2,284	1,450
Smallpox:			
42 States	1,161	843	
100 cities	133	121	118
Typhoid fever:			
43 States	198	255	
100 cities	37	41	51
Deaths reported			
Influenza and pneumonia:			
94 cities	1,201	1,183	
Smallpox:			
94 cities	0	1	
Kansas City, Mo.	0	1	

City reports for week ended January 21, 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 the median number of cases reported in the corresponding week 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 reports have not been received for the full nine years, data are used for as many years as possible, but no year ealier than 1919 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations 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	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									
Maine:									
Portland	76,400	12	2	0	0	0	0	0	1
New Hampshire:									
Concord	[1] 22,546	0	0	0	0	0	0	0	1
Manchester	84,000	0	2	0	0	0	1	0	5
Vermont:									
Barre	[1] 10,008	0	0	0	0	0	0	0	0
Burlington	[1] 24,089	1	0	0	0	0	3	0	0
Massachusetts:									
Boston	787,000	55	56	23	2	0	404	4	29
Fall River	131,000	3	6	1	1	2	2	1	4
Springfield	145,000	2	3	10	0	1	3	17	1
Worcester	193,000	12	6	6	0	0	3	55	4
Rhode Island:									
Pawtucket	71,000	1	1	1	0	0	2	2	4
Providence	275,000	6	10	13	1	1	11	4	10
Connecticut:									
Bridgeport	[2]	3	8	12	1	1	0	0	3
Hartford	164,000	11	8	4	1	1	2	5	6
New Haven	182,000	15	3	3	0	2	116	42	5
MIDDLE ATLANTIC									
New York:									
Buffalo	544,000	25	15	18	-------	0	392	56	15
New York	5,924,000	153	214	353	24	17	135	36	248
Rochester	321,000	8	13	14	-------	0	1	6	7
Syracuse	185,000	34	5	2	1	1	77	0	5
New Jersey:									
Camden	131,000	3	6	11	0	1	1	2	5
Newark	459,000	27	17	21	4	0	126	25	10
Trenton	134,000	0	5	0	0	0	10	0	3
Pennsylvania:									
Philadelphia	2,008,000	82	84	60	-------	17	49	57	65
Pittsburgh	637,000	35	20	36	-------	1	189	82	37
Reading	114,000	25	4	3	-------	1	2	2	1
Scranton	143,000	2	-------	13	-------	-------	1	0	-------
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	411,000	15	11	13	0	3	215	2	11
Cleveland	960,000	54	35	60	2	3	14	130	23
Columbus	285,000	8	6	3	3	1	3	11	5
Toledo	295,000	36	10	3	3	3	181	26	5
Indiana:									
Fort Wayne	99,900	1	4	6	0	0	0	0	3
Indianapolis	367,000	12	11	4	0	0	9	58	9
South Bend	81,700	4	1	0	0	0	0	0	0
Terre Haute	71,900	1	1	3	0	0	0	0	6
Illinois:									
Chicago	3,048,000	100	94	130	15	10	17	36	94
Springfield	64,700	5	1	5	4	3	1	13	2

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended January 21, 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			
EAST NORTH CENTRAL—continued									
Michigan:									
Detroit	1,290,000	45	71	51	5	6	213	48	33
Flint	136,000	7	7	5	0	0	4	82	2
Grand Rapids	156,000	5	4	1	0	0	18	5	3
Wisconsin:									
Kenosha	52,700	22	2	2	0	0	1	1	0
Madison	47,600	4	0	0	0	------	0	5	------
Milwaukee	517,000	69	23	5	0	0	2	15	14
Racine	69,400	3	2	6	0	0	1	4	0
Superior	[1] 39,671	0	1	0	0	0	0	3	4
WEST NORTH CENTRAL									
Minnesota:									
Duluth	113,000	0	3	0	0	0	0	0	1
Minneapolis	434,000	78	22	20	0	2	1	16	11
St. Paul	248,000	7	16	2	0	1	0	30	9
Iowa:									
Davenport	[1] 52,469	0	1	1	0	------	0	0	------
Des Moines	146,000	0	4	0	0	------	0	0	------
Sioux City	78,000	6	2	0	0	------	83	11	------
Waterloo	36,900	3	0	1	0	------	1	0	------
Missouri:									
Kansas City	375,000	19	9	2	2	2	2	139	20
St. Joseph	78,400	2	3	1	0	3	0	0	5
St. Louis	830,000	18	53	41	0	0	44	20	------
North Dakota:									
Fargo	[1] 26,403	5	0	0	0	0	1	3	2
Grand Forks	[1] 14,811	3	1	0	0	------	0	0	------
South Dakota:									
Aberdeen	[1] 15,036	3	0	0	0	------	0	0	------
Nebraska:									
Lincoln	62,000	19	2	0	0	0	0	15	0
Omaha	216,000	11	5	3	0	0	1	2	10
Kansas:									
Topeka	56,500	28	2	0	1	1	0	0	5
Wichita	92,500	11	4	1	0	0	0	0	4
SOUTH ATLANTIC									
Delaware:									
Wilmington	124,000	0	3	2	0	0	1	2	9
Maryland:									
Baltimore	808,000	109	42	14	22	5	305	15	38
Cumberland	[1] 33,741	0	1	1	2	0	0	0	6
Frederick	[1] 12,035	1	0	0	0	0	0	0	1
District of Columbia:									
Washington	528,000	12	21	32	1	1	5	0	13
Virginia:									
Lynchburg	30,500	11	2	0	0	0	0	1	2
Norfolk	174,000	25	3	1	0	0	6	3	10
Richmond	189,000	5	6	7	0	1	41	1	6
Roanoke	61,900	0	1	1	0	2	3	0	3
West Virginia:									
Charleston	50,700	0	2	2	0	0	0	0	1
Wheeling	[1] 56,208	15	1	0	0	0	0	0	5
North Carolina:									
Raleigh	[1] 30,371	3	1	5	0	0	14	0	0
Wilmington	37,700	0	1	3	0	0	153	4	1
Winston-Salem	71,800	2	1	1	0	0	84	16	1
South Carolina:									
Charleston	74,100	0	1	0	130	1	7	0	6
Columbia	41,800	12	1	0	0	1	175	17	3
Greenville	[1] 27,311	------	0	------	------	------	------	------	------
Georgia:									
Atlanta	([2])	6	4	5	29	3	1	4	17
Brunswick	[1] 16,809	0	0	0	0	0	12	3	0
Savannah	94,900	0	1	4	9	1	47	2	3
Florida:									
Miami	[1] 69,754	10	------	1	0	0	0	3	5
St. Petersburg	[1] 26,847	------	0	------	------	0	------	------	0
Tampa	102,000	6	1	4	0	0	1	1	5

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended January 21, 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			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,500	2	1	0	0	0	22	0	3
Lexington	47,500	2	-------	2	0	1	2	4	2
Louisville	311,000	4	7	6	5	0	15	6	21
Tennessee:									
Memphis	177,000	5	5	7	0	6	234	15	2
Nashville	137,000	0	1	0	0	5	2	6	6
Alabama:									
Birmingham	211,000	6	3	3	19	9	5	7	15
Mobile	66,800	0	2	4	1	0	0	0	1
Montgomery	47,000	5	1	1	4	-------	0	0	-------
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	0	0	1	0	-------	0	0	-------
Little Rock	75,900	0	2	0	0	0	65	0	3
Louisiana:									
New Orleans	419,000	0	13	7	17	10	3	0	31
Shreveport	59,500	8	2	2	0	0	17	0	5
Oklahoma:									
Oklahoma City	(2)	3	3	3	14	0	3	0	2
Tulsa	133,000	4	2	2	0	-------	1	4	-------
Texas:									
Dallas	203,000	20	7	11	5	3	1	0	8
Fort Worth	159,000	30	4	2	0	0	2	2	4
Galveston	49,100	0	1	1	0	0	5	0	5
Houston	[1] 164,954	3	6	14	0	3	2	0	9
San Antonio	205,000	1	2	2	1	0	47	0	14
MOUNTAIN									
Montana:									
Billings	[1] 17,971	1	0	0	0	0	0	0	0
Great Falls	[1] 29,883	0	0	0	0	0	2	0	0
Helena	[1] 12,037	0	0	1	0	0	0	0	0
Missoula	[1] 12,668	1	1	0	0	0	1	0	0
Idaho:									
Boise	[1] 23,042	2	0	0	0	0	0	2	0
Colorado:									
Denver	285,000	47	11	9	-------	7	6	28	17
Pueblo	43,900	22	2	2	0	0	1	0	1
New Mexico:									
Albuquerque	[1] 21,000	5	0	1	0	0	38	3	0
Utah:									
Salt Lake City	133,000	24	3	7	0	1	1	0	3
Nevada:									
Reno	[1] 12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(2)	14	5	0	0	-------	179	16	-------
Spokane	109,000	12	3	0	0	-------	0	0	-------
Tacoma	106,000	8	4	0	0	0	8	8	4
Oregon:									
Portland	[1] 282,383	34	11	5	0	1	9	1	6
California:									
Los Angeles	(2)	40	48	31	29	4	5	20	32
Sacramento	73,400	4	3	1	0	0	3	0	0
San Francisco	567,000	60	21	17	3	1	13	23	6

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended January 21, 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		
NEW ENGLAND											
Maine:											
Portland	3	5	0	0	0	0	0	0	0	11	20
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	12
Manchester	2	0	0	0	0	2	0	0	0	0	25
Vermont:											
Barre	1	0	0	0	0	0	0	0	0	0	1
Burlington	1	1	0	0	0	0	0	0	0	0	5
Massachusetts:											
Boston	78	113	0	0	0	13	1	1	0	81	254
Fall River	3	17	0	0	0	2	0	2	0	0	24
Springfield	8	16	0	0	0	0	0	0	0	13	40
Worcester	12	10	0	0	0	6	0	1	0	9	54
Rhode Island:											
Pawtucket	1	2	0	0	0	1	0	0	0	0	14
Providence	9	39	0	0	0	2	0	0	0	2	75
Connecticut:											
Bridgeport	12	9	0	0	0	2	0	0	0	3	34
Hartford	8	6	0	0	0	3	0	0	0	4	
New Haven	11	3	0	0	0	1	0	0	0	37	36
MIDDLE ATLANTIC											
New York:											
Buffalo	25	28	0	0	0	5	1	0	0	28	136
New York	249	310	0	0	0	92	11	5	0	195	1,570
Rochester	14	6	0	0	0	1	0	0	0	5	80
Syracuse	15	23	0	0	0	3	0	1	0	28	38
New Jersey:											
Camden	6	5	0	0	0	0	0	0	0	2	36
Newark	29	20	0	0	0	6	1	1	0	68	88
Trenton	5	5	0	0	0	3	1	0	0	4	31
Pennsylvania:											
Philadelphia	92	104	1	0	0	20	3	0	0	66	516
Pittsburgh	44	25	0	0	0	10	1	0	0	12	174
Reading	2	25	0	0	0	2	0	0	0	4	32
Scranton		0		0				0		5	
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	21	21	1	0	0	11	1	0	0	2	133
Cleveland	45	33	1	0	0	16	1	1	0	56	196
Columbus	11	17	1	0	0	7	0	0	0	1	88
Toledo	14	9	0	1	0	8	0	0	1	4	80
Indiana:											
Fort Wayne	6	5	1	0	0	2	0	1	0	0	27
Indianapolis	9	15	12	5	0	3	0	0	0	2	112
South Bend	3	1	1	1	0	0	0	0	0	0	12
Terre Haute	4	0	0	5	0	1	0	0	0	0	30
Illinois:											
Chicago	145	143	2	2	0	45	3	5	0	151	680
Springfield	2	11	0	0	0	1	0	0	0	5	22
Michigan:											
Detroit	100	107	3	1	0	26	1	1	0	83	274
Flint	10	25	1	0	0	0	0	1	0	7	18
Grand Rapids	14	5	1	0	0	2	1	0	0	2	29
Wisconsin:											
Kenosha	2	8	1	0	0	0	0	0	0	2	6
Madison	4	4	1	0			0	0		0	
Milwaukee	30	38	2	0	0	9	0	0	0	19	110
Racine	7	6	1	0	0	0	0	0	0	12	13
Superior	3	2	1	0	0	1	0	0	0	0	13
WEST NORTH CENTRAL											
Minnesota:											
Duluth	10	3	1	0	0	1	0	1	0	3	26
Minneapolis	60	20	6	0	0	7	1	0	0	1	96
St. Paul	33	19	9	0	0	2	0	0	0	7	65

City reports for week ended January 21, 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		
WEST NORTH CENTRAL—contd.											
Iowa:											
Davenport	1	9	2	3			0	0		0	
Des Moines	7	21	2	16			0	0		0	36
Sioux City	2	1	2	2			0	0		0	
Waterloo	2	1	1	0			0	0		2	
Missouri:											
Kansas City	15	9	3	1	0	6	0	0	0	11	111
St. Joseph	3	3	0	20	0	1	0	0	0	0	39
St. Louis	48	39	3	2	0	8	1	0	0	13	260
North Dakota:											
Fargo	2	2	1	0	0	0	0	0	0	2	9
Grand Forks	0	0	0	0			0	0		0	
South Dakota:											
Aberdeen	1	1	0	0			0	0		1	
Nebraska:											
Lincoln	4	2	0	5	0	0	0	0	0	12	13
Omaha	5	12	9	1	0	2	0	0	0	0	62
Kansas:											
Topeka	2	0	1	0	0	0	0	0	0	13	25
Wichita	4	6	1	36	0	0	0	0	0	1	31
SOUTH ATLANTIC											
Delaware:											
Wilmington	6	2	0	0	0	0	0	0	0	0	37
Maryland:											
Baltimore	41	47	0	0	0	11	2	0	1	26	253
Cumberland	0	1	0	0	0	0	0	0	0	0	19
Frederick	0	1	0	0	0	0	0	0	0	0	1
Dist. of Columbia:											
Washington	24	29	0	0	0	12	1	0	0	10	162
Virginia:											
Lynchburg	1	0	0	0	0	2	0	0	0	1	18
Norfolk	3	8	0	0	0	3	0	0	0	0	
Richmond	5	8	0	0	0	4	1	1	0	1	51
Roanoke	1	6	0	0	0	2	0	0	0	4	24
West Virginia:											
Charleston	1	4	0	0	0	1	0	0	0	0	17
Wheeling	2	2	0	0	0	1	0	0	1	0	23
North Carolina:											
Raleigh	1	2	0	1	0	0	0	0	0	3	14
Wilmington	0	0	0	0	0	0	0	0	0	0	11
Winston-Salem	2	0	4	0	0	0	0	0	0	0	
South Carolina:											
Charleston	1	0	0	0	0	2	0	0	0	1	27
Columbia	1	0	1	0	0	0	0	0	0	4	15
Greenville	0		1				0				
Georgia:											
Atlanta	4	5	4	1	0	5	0	0	0	1	84
Brunswick	0	0	0	0	0	1	0	0	0	0	6
Savannah	0	0	1	6	0	3	1	1	0	2	28
Florida:											
Miami		0		0	0	1		0	0	0	30
St. Petersburg	0		0		0	0	0		0		16
Tampa	1	3	0	0	0	2	1	1	0	0	33
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	2	0	1	0	0	0	0	0	1	23
Lexington		0		0	0	3		0	0	0	16
Louisville	6	25	0	1	0	4	0	0	0	6	85
Tennessee:											
Memphis	7	3	2	2	0	6	0	1	0	2	77
Nashville	3	1	1	0	0	3	0	3	0	0	52
Alabama:											
Birmingham	6	3	4	7	0	7	1	0	0	0	89
Mobile	1	2	0	0	0	3	1	0	0	0	19
Montgomery	1	2	1	0			1	2		2	

City reports for week ended January 21, 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		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	1	0	0	----	----	0	0	----	2	----
Little Rock	2	0	1	0	0	5	1	0	1	1	----
Louisiana:											
New Orleans	6	1	0	0	0	13	2	3	1	3	185
Shreveport	0	2	1	0	0	2	0	0	0	0	24
Oklahoma:											
Oklahoma City	2	0	1	16	0	0	0	0	0	0	36
Tulsa	2	1	0	3	----	----	0	0	----	0	----
Texas:											
Dallas	4	6	2	1	0	2	0	0	0	1	54
Fort Worth	1	6	0	0	0	3	0	1	0	0	30
Galveston	0	1	1	0	0	2	1	0	0	0	20
Houston	2	5	2	0	0	4	1	0	0	0	67
San Antonio	0	6	0	0	0	12	1	0	0	0	65
MOUNTAIN											
Montana:											
Billings	2	0	1	0	0	0	0	0	0	7	10
Great Falls	1	8	1	2	0	0	1	0	0	0	2
Helena	1	0	0	0	0	0	0	0	0	0	2
Missoula	1	0	1	2	0	0	0	0	0	0	1
Idaho:											
Boise	2	1	0	0	0	0	1	0	0	0	4
Colorado:											
Denver	12	10	2	0	0	12	0	1	0	6	114
Pueblo	2	5	0	1	0	0	1	0	0	7	7
New Mexico:											
Albuquerque	1	3	0	0	0	7	0	0	0	0	14
Utah:											
Salt Lake City	3	5	2	7	0	1	0	0	0	3	32
Nevada:											
Reno	1	1	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	12	2	3	3	----	----	1	2	----	5	----
Spokane	4	17	4	17	----	----	0	0	----	0	----
Tacoma	3	8	4	1	0	0	0	0	0	3	27
Oregon:											
Portland	6	4	7	23	0	2	0	0	0	0	----
California:											
Los Angeles	30	26	5	1	0	30	2	0	2	18	276
Sacramento	1	3	1	0	0	0	1	0	0	0	23
San Francisco	15	38	2	3	0	18	1	1	0	5	164

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	1	4	0
Worcester	0	0	1	0	0	0	0	0	0
Connecticut:									
Hartford	0	0	1	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	0	0	0	2	0	0	1	2	1
New Jersey:									
Newark	1	0	1	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	1	1	0	0	0	0	0	0	0
Pittsburgh	0	0	1	0	0	0	0	0	0

City reports for week ended January 21, 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
EAST NORTH CENTRAL									
Ohio:									
Cleveland	2	0	0	0	0	0	1	0	0
Columbus	0	0	0	0	0	0	0	2	0
Illinois:									
Chicago	8	2	0	0	0	0	0	1	1
Springfield	1	0	0	0	0	0	0	0	0
Michigan:									
Detroit	0	0	1	1	0	0	0	0	1
Wisconsin:									
Milwaukee	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	2	0	0	0	0	0	0	0	0
Iowa:									
Des Moines	1	------	0	------	0	------	0	0	------
Missouri:									
Kansas City	0	0	0	0	0	0	0	2	0
St. Louis	3	1	1	0	0	0	0	0	0
North Dakota:									
Fargo	0	0	3	1	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	0	0	0	0	0	0	0	0
Virginia:									
Richmond	1	1	0	0	0	0	0	0	0
West Virginia:									
Charleston	0	1	0	0	0	0	0	0	0
North Carolina:									
Raleigh	0	0	0	0	0	2	0	0	0
South Carolina:									
Charleston	0	0	0	0	1	0	0	0	0
Georgia:									
Savannah [1]	0	0	0	0	3	1	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Louisville	1	0	0	0	0	0	0	0	0
Tennessee:									
Nashville	0	0	0	0	0	1	0	0	0
Alabama:									
Birmingham	1	0	0	0	1	1	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	1	0	0	0	0	0	0	0
Louisiana:									
New Orleans	0	0	0	0	2	2	0	0	0
Texas:									
Dallas	0	0	0	0	1	1	0	0	0
Houston	0	1	0	0	1	1	0	0	0
MOUNTAIN									
Colorado:									
Denver	6	1	0	0	0	0	0	0	0
Pueblo	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	2	1	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	1	------	0	------	0	------	0	0	------
Spokane	2	------	0	------	0	------	0	0	------
Tacoma	0	0	0	0	0	0	0	1	0
Oregon:									
Portland	1	0	0	0	0	0	0	1	0
California:									
Los Angeles	1	0	0	0	1	1	0	2	0

[1] Typhus fever: 1 case at Savannah, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended January 21, 1928, compared with those for a like period ended January 22, 1927. The population figures used in computing the rates are approximate estimates as of July 1, 1927 and 1928, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,050,000 in 1927 and 31,657,000 in 1928. The 95 cities reporting deaths had nearly 30,370,000 estimated population in 1927 and nearly 30,961,000 in 1928. 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, December 18, 1927, to January 21, 1928—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926–27[1]

DIPHTHERIA CASE RATES

	Week ended—									
	Dec. 25, 1926	Dec. 24, 1927	Jan. 1, 1927	Dec. 31, 1927	Jan. 8, 1927	Jan. 7, 1928	Jan. 15, 1927	Jan. 14, 1928	Jan. 22, 1927	Jan. 21, 1928
101 cities	[2] 163	201	176	185	198	[3] 169	186	200	175	[4] 193
New England	160	193	158	165	158	149	174	200	151	168
Middle Atlantic	140	233	171	221	182	202	176	253	191	252
East North Central	[5] 182	212	193	200	223	176	189	220	170	192
West North Central	113	123	165	125	188	115	158	111	146	138
South Atlantic	[6] 214	143	173	129	222	[7] 154	215	142	161	[4] 145
East South Central	150	127	186	112	137	90	248	50	152	105
West South Central	168	344	223	264	252	[8] 246	244	204	170	152
Mountain	137	117	137	63	126	71	117	115	117	168
Pacific	225	157	155	141	230	123	193	143	232	125

MEASLES CASE RATES

101 cities	[2] 209	285	231	322	384	[3] 518	339	566	451	[4] 603
New England	167	536	184	708	253	917	195	1,021	549	1,248
Middle Atlantic	22	251	22	331	31	466	38	500	49	478
East North Central	[5] 249	157	294	160	427	265	406	300	545	326
West North Central	77	38	61	46	259	134	192	109	277	259
South Atlantic	[6] 62	797	179	832	204	[7] 1,461	202	1,496	301	[4] 1,514
East South Central	31	713	78	397	106	1,566	96	1,521	203	1,387
West South Central	103	84	13	113	186	[8] 197	302	268	447	560
Mountain	2,780	18	3,545	36	5,227	62	3,434	106	5,074	97
Pacific	879	257	697	283	1,517	383	1,478	526	1,342	531

SCARLET FEVER CASE RATES

101 cities	[2] 253	187	267	210	318	[3] 208	366	258	384	[4] 269
New England	248	281	356	346	491	340	479	398	537	508
Middle Atlantic	212	173	235	200	285	196	338	266	368	268
East North Central	[5] 255	212	245	257	288	234	345	285	336	286
West North Central	371	202	385	193	449	203	556	261	517	224
South Atlantic	[6] 171	145	238	149	231	[7] 152	258	168	280	[4] 209
East South Central	243	117	176	117	233	190	213	140	335	190
West South Central	125	92	150	126	153	[8] 103	141	124	194	88
Mountain	975	171	893	234	950	195	1,112	301	1,345	265
Pacific	303	191	252	126	340	184	376	220	319	240

[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, 1926, 1927, and 1928, respectively.
[2] Terre Haute, Ind., and Norfolk, Va., not included.
[3] Atlanta, Ga., and Fort Smith, Ark., not included.
[4] Greenville, S. C., not included.
[5] Terre Haute, Ind., not included.
[6] Norfolk, Va., not included.
[7] Atlanta, Ga., not included.
[8] Fort Smith, Ark., not included.

Summary of weekly reports from cities, December 18, 1927, to January 21, 1928—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926–27—Continued

SMALLPOX CASE RATES

	Week ended—									
	Dec. 25, 1926	Dec. 24, 1927	Jan. 1, 1927	Dec. 31, 1927	Jan. 8, 1927	Jan. 7, 1928	Jan. 15, 1927	Jan. 14, 1928	Jan. 22, 1927	Jan. 21, 1928
101 cities	[3] 14	16	14	15	22	[3] 17	22	23	20	[4] 22
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	1	0	0	0	1	0	1	0
East North Central	[5] 16	12	7	12	32	9	21	7	17	9
West North Central	28	77	40	79	57	105	69	146	59	121
South Atlantic	[6] 30	20	41	4	27	[7] 12	51	26	34	[4] 14
East South Central	36	20	47	10	41	5	86	15	25	55
West South Central	26	13	21	4	41	[8] 16	25	28	62	4
Mountain	18	99	9	144	0	106	0	142	0	106
Pacific	43	26	21	29	60	26	37	31	63	64

TYPHOID FEVER CASE RATES

101 cities	[2] 10	11	12	7	8	[3] 5	9	8	7	[4] 6
New England	40	9	24	14	9	7	21	14	2	9
Middle Atlantic	5	10	7	4	6	3	8	5	5	3
East North Central	[5] 3	8	5	5	5	3	1	3	6	6
West North Central	10	8	4	10	8	2	6	8	4	2
South Atlantic	[6] 16	16	34	13	7	[7] 15	16	2	7	[4] 5
East South Central	16	25	21	10	25	20	15	55	10	30
West South Central	17	17	17	21	25	[8] 0	17	20	4	12
Mountain	0	9	27	18	9	9	9	0	27	9
Pacific	21	10	16	0	8	5	21	10	21	8

INFLUENZA DEATH RATES

95 cities	[2] 15	17	17	19	20	[7] 19	21	24	21	[4] 25
New England	7	5	12	5	16	16	14	7	5	18
Middle Atlantic	14	11	21	14	18	13	20	21	20	19
East North Central	[5] 10	13	15	10	17	10	16	13	25	17
West North Central	11	10	8	8	14	4	10	14	4	18
South Atlantic	[6] 34	20	17	22	16	[7] 21	23	37	20	[4] 27
East South Central	36	46	26	56	48	89	37	78	16	105
West South Central	18	73	13	82	42	82	42	66	42	66
Mountain	27	27	46	72	63	53	99	62	54	71
Pacific	4	24	0	31	10	24	14	37	31	17

PNEUMONIA DEATH RATES

95 cities	[2] 137	135	164	157	195	[7] 170	179	191	183	[4] 179
New England	151	121	172	146	181	103	191	179	207	156
Middle Atlantic	166	127	180	158	208	186	204	214	197	193
East North Central	[5] 109	105	134	135	169	140	152	158	138	137
West North Central	91	98	118	108	116	124	124	112	116	137
South Atlantic	[6] 153	186	187	188	229	[7] 231	189	252	278	[4] 230
East South Central	109	204	191	183	213	235	207	225	255	251
West South Central	84	233	150	310	238	238	178	287	195	308
Mountain	164	243	201	198	368	195	197	168	215	186
Pacific	184	165	198	138	210	176	169	142	134	142

[2] Terre Haute, Ind., and Norfolk, Va., not included.
[3] Atlanta, Ga., and Fort Smith, Ark., not included.
[4] Greenville, S. C., not included.
[5] Terre Haute, Ind., not included.
[6] Norfolk, Va., not included.
[7] Atlanta, Ga., not included.
[8] Fort Smith, Ark., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1927 and 1928, 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	
			1927	1928	1927	1928
Total	101	95	31,050,300	31,657,000	30,369,500	30,960,700
New England	12	12	2,242,700	2,274,400	2,242,700	2,274,400
Middle Atlantic	10	10	10,594,700	10,732,400	10,594,700	10,732,400
East North Central	16	16	7,820,700	7,991,400	7,820,700	7,991,400
West North Central	12	10	2,634,500	2,683,500	2,518,500	2,566,400
South Atlantic	21	21	2,890,700	2,981,900	2,890,700	2,981,900
East South Central	7	6	1,028,300	1,048,300	980,700	1,000,100
West South Central	8	7	1,260,700	1,307,600	1,227,900	1,274,100
Mountain	9	9	581,600	591,100	581,600	591,100
Pacific	6	4	1,996,400	2,046,400	1,512,100	1,548,900

FOREIGN AND INSULAR

PLAGUE ON VESSEL

Steamship "Dryden"—At Liverpool, England, from ports on the La Plata River—Rodent plague.—The finding of seven plague-infected rats on the steamship *Dryden* at Liverpool, England, from ports on the La Plata River, Argentina, was reported January 20, 1928. The *Dryden* arrived at Liverpool January 5 and sailed for Glasgow, Scotland, January 15, 1928.

THE FAR EAST

Report for the week ended January 7, 1928.—The following report for the week ended January 7, 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 present in the following ports:

PLAGUE

India.—Rangoon, Bassein.
Ceylon.—Colombo.

CHOLERA

India.—Calcutta, Rangoon, Moulmein.
Straits Settlements.—Singapore.
Siam.—Bangkok.
French Indo-China.—Saigon-Cholon.

SMALLPOX

Egypt.—Suez.
India.—Karachi, Bombay, Cochin, Tuticorin, Madras, Vizagapatam, Calcutta, Rangoon.
Siam.—Bangkok.
French Indo-China.—Saigon.
Japan.—Moji.

Returns for the week ended January 7 were not received from Canton, China, or Vladivostok, Union of Socialist Soviet Republics.

BRAZIL

Rio de Janeiro—Communicable diseases—1926-1927.—Communicable diseases have been reported for the city of Rio de Janeiro for the year 1926 and the first six months of 1927, as follows:

Disease	Cases		Disease	Cases	
	Year 1926	January to June, 1927		Year 1926	January to June, 1927
Cerebrospinal meningitis	25	12	Plague	4	
Chicken pox	46	42	Poliomyelitis	1	2
Diphtheria	240	134	Scarlet fever		1
Dysentery	133	160	Smallpox	4,146	87
Influenza	37	34	Tetanus	1	2
Leprosy	25		Trachoma	2	
Lethargic encephalitis	1		Typhoid fever	243	89
Malaria	122	196	Whooping cough	9	18
Measles	21	58			

CANADA

Provinces—Communicable diseases—Week ended January 21, 1928.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended January 21, 1927, as follows:

Diseases	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	12							12
Smallpox				52		39	1	92
Typhoid fever	6	2	32	13		1		54

Quebec—Communicable diseases—Week ended January 21, 1928.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended January 21, 1928, as follows:

Disease	Cases	Disease	Cases
Chicken pox	53	Scarlet fever	114
Diphtheria	62	Smallpox	7
German measles	6	Tuberculosis	89
Influenza	4	Typhoid fever	32
Measles	161	Whooping cough	28

Quebec—Vital statistics—November, 1927.—Births and deaths in the Province of Quebec for the month of November, 1927, were reported as follows:

Estimated population	2,604,000	Deaths from—	
Births	5,746	Diphtheria	55
Birth rate per 1,000 population	26.48	Heart disease	307
Deaths	2,538	Influenza	35
Death rate per 1,000 population	11.70	Measles	11
Deaths under 1 year	697	Pneumonia	195
Infant mortality rate	121.30	Poliomyelitis	1
Deaths from—		Scarlet fever	19
Accidents (all)	74	Syphilis	2
Cancer	137	Tuberculosis (pulmonary)	160
Cerebrospinal meningitis	3	Tuberculosis (other forms)	36
Diabetes	28	Typhoid fever	23
Diarrhea	97	Whooping cough	29

St. John, New Brunswick—Health statistics—Lowered typhoid fever prevalence—Year ended October 3, 1927.—Information relative to health conditions at St. John, New Brunswick, Canada, shows a lowered typhoid fever prevalence, a total of 9 cases being reported for the city of St. John and 2 cases for the county, as compared with 13 cases for the city and 10 cases for the county reported during the previous 12 months. One typhoid-fever death was reported. This was stated as showing the first fatal case of the disease reported in three years. From 1920 to 1923 the average annual typhoid-fever

occurrence was 57 cases, and in the period 1924 to 1927 an average of 19 cases for each year.

Tuberculosis.—There were reported during the year 121 cases of tuberculosis with 66 deaths for the city and district. Of the deaths, 57 were of city residents, being 6 in excess of the tuberculosis deaths reported for the previous year.

Other communicable diseases.—Other communicable diseases reported were: Chicken pox, 56 cases; epidemic influenza and lethargic encephalitis, each, 2 cases with 2 deaths; measles, 12 cases; poliomyelitis, 1 case with 1 death.

Infant mortality—Child-welfare work.—Infant mortality reported at St. John, New Brunswick, during the year 1927 was stated to have been less than 90 per 1,000 living births as compared with a figure slightly in excess of 98 per 1,000 living births reported for the year 1926 and 151 for the year 1920. The improvement noted was attributed to efficient child-welfare work and personal visits of nurses to more than 800 infants, or more than two-thirds of the total population of under 1 year.

IRAQ

Cholera—December 18–24, 1927.—During the week ended December 24, 1927, 3 cases of cholera were reported in Iraq. The occurrence was in the city of Baghdad.

MADAGASCAR

Plague—November 1–15, 1927.—During the half month ended November 15, 1927, 112 cases of plague with 101 deaths were reported in the island of Madagascar. The distribution according to Provinces was as follows: Antisirabe, 8 cases, with 7 deaths; Itasy, 17 cases with 16 deaths; Moramanga, 7 cases with 6 deaths; Tananarive, 80 cases with 72 deaths, including Tananarive town with 9 cases, 7 deaths. The distribution according to type of disease was: Bubonic, 61 cases; pneumonic, 36 cases; septicemic, 15 cases.

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 tables 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		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— October 29	November, 1927 5	12	19	26	December, 1927 3	10	17	24	31	January, 1928 7
China:																
Amoy	C	2	28	72	16											
	D		7	3												
Canton	C	8	31	36	14	5	1	6			1					
	D	5	16	25	14	5	1	5			1					
Foochow	C	P	P	P	P											
Hong Kong	C	2	P	1	P											
	D	1														
Shanghai (cases reported) only in foreigners	C		1	6	3											
	D		20	74	7											
Swatow	C	72	42	P	P	P	P									
	D	1		P	P	P	P									
Tientsin	C	P	P	15	2	P	P									
Dutch East Indies: Java—Batavia	C						1	2	25	2	1					
	D						1	2	15	2	1					
India	C	46,137	45,163	31,390	20,160	5,303	4,845	5,987	6,912							
	D	24,081	22,051	15,895	10,371	2,867	2,641	3,350	4,005							
Bombay	C	75	42	3				2								
	D	35	30	2				2								
Calcutta	C	95	87	76	101	28	35	65	71	156						
	D	48	40	39	64	22	25	42	49	106	77	55	43	48	27	
Madras	C	424	547	59	14			6	7			1				
	D	204	278	48	8			3	4	1		1				
Rangoon	C	2	1	2	6		1		1	3	1	2				
	D	2	1	2	5	1		3	4	2	1	2	1	1	1	
Tuticorin	C				1						6		2			
	D				1	7	5	10	15		6	6	2			
India (French):																
Karikal	C	56	18	1			1									
	D	45	12	1			1									
Pondicherry	C	37	12	15			1				5					
	D	24	11	15			1				5					

Indo-China: Saigon	C			1	1												2
	D																1
Iraq:[1]																	
Amarah	C					4	8	3	2		1	1					
	D					6	8	3	2		1	1					
Baghdad	C						10	13	8	3	38				3		
	D						5	2	2	3	38						
Diwaniyah	C					4	3	1	2								
	D					2			1								
Diyala	C										1						
	D										1						
Dulaim	C										1						
Hillah	C					7	3	5	53		7						
	D					6	2	1	29		4						
Kerbala	C					1	4	2	2								
	D					1	5	2	2								
Kut	C					9	1	5									
	D					4	1	3									
Montafiq	C							4	14		8						
	D							2	10		8						
Ramadi	C					19	18	27	21								
	D					10	23	14	16		1						
Japan: Yokohoma	C	1															
	D	1															
Philippine Islands: Manila	C	1	1														
Siam	C	81	77	40	18	14	23	43	30	19	29	18					
	D	59	53	24	11	10	15	25	26	11	19	13					
Bangkok	C	6	2	3	5		1		3		1	1	1	2	3	7	
	D	1	1	1	3		1		1		1		1	2	1	3	
Straits Settlements: Singapore	C					1		4	2	1	2		2	3	12	3	
	D					1		4		2			2	1	3	5	
On vessel:																	
S. S. Adrastus: At Yokohoma, Japan	C		1														
	D		1														
S. S. Tabaristan: At Basra, Iraq	C				1												

Place		July, 1927	August, 1927	September, 1927	October, 1927	November, 1927			December, 1927		
						1-10	11-20	21-30	1-10	11-20	21-31
Indo-China (French):											
Annam	C	911	1,628	640	167	13	75	38	16	2	
Cambodia	C	87	89	75	102	56	1	28	21	12	39
Cochin-China	C	257	68	144	91	21	27	52	17	38	58
Laos	C	20	190	16	35	10					
Tonkin	C	1,093	180	24				1			2

[1] From July 24 to Oct. 22, 1927, 926 cases and 677 deaths were reported in Iraq. Of these, 166 cases and 126 deaths occurred in Amarah; 417 cases and 337 deaths in Basra; 81 cases and 47 deaths in Diwaniyah; 19 cases and 12 deaths in Hillah; 34 cases and 21 deaths in Kerbala; 8 cases and 6 deaths in Kut; and 185 cases and 118 deaths in Muntafiq.

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

PLAGUE

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

Place		July 3-30, 1927	July 31-Aug. 27 1927	Aug. 28-Sept. 24 1927	Sept. 25-Oct. 22 1927	Week ended— October 29	November, 1927 5	12	19	26	December, 1927 3	10	17	24	31	January 1928 7
Algeria: Oran	C		4	1			1		1							
	D		3	1												
Argentina:																
Bahia Blanca District	C									1	1	1				
Cordoba Province	C		2		P	P	P			10				1	1	
Entre Rios	C		5													
Firmat	C												1			
Quilino	C									1	1	1				
Rosario	C									1	1	1	1	2	3	
Unacha	C												1			
Azores: St. Michaels Island	C	2	2	2	3	1		1	1	1	1	1		1		1
	D			1	1							1				
British East Africa:																
Tanganyiki	C	P	P		P	P	P									
Ucanda	C	528	456	226	99											
	D	413	345	158	88											
Canary Islands: Las Palmas	C				9					1			2			2
Ceylon: Colombo	C		1	3	1					1	1					1
	D			3												1
China:																
Amoy	C	P														
Tungliao	D				200											
Tientsin	C		2													
Dutch East Indies:																
Balik-Papan	C													1		
	D													1		
Cheribon	C										1					
	D										1					
Batavia and West Java	C	40	71	68	130	41	29	31	34	45	43	32				
	D	40	71	68	129	41	29	31	34	44	43	32				
East Java and Madura	C	29	28	18	17	3	4	2	1	5	3					
	D	29	27	18	17	3	4	2	1	5	3					
Java	D			432	779	191	213									
Makassar	C						2	2	2	1		1		2	1	
	D						2	2	2	1		1		2	1	

Egypt:																	
Alexandria	C		2	1						5	3	2	2	3			
	D									5	2				1		
Suez	C			1													
Greece:																	
Athens and Piraeus	C		1	3	1												1
	D				1												
Mitylene	C		1	5	1	1		2		1	1	1					
Patras	C		2	2	1		1										
	D				1		1										
Hawaii Territory: Hawaii	D		1														
India	C	404	1,391	2,710	3,246	812	1,015	856	919	1,193							
	D	241	836	1,428	1,792	495	551	485	554	668							
Bombay	C	14	14	7	4												
	D	13	11	5	3										1		
Calcutta	C			18													
	D			10													
Madras	C	255		465	583		83	152		190							
	D	115		230	298		54	80		111							
Rangoon	C	21	15	6	11	5	2		4	5	2	6					
	D	20	14	6	11	5	2		4	5	2	5		2	3		
Indo-China: Saigon	C			2					1								
Senegal:																	
Baol	C	41	23	72	95				P		P						
	D	22	13	33	40												
Cayor	C	126	227	463	176	32	8	8	P								
	D	74	166	233	88	20	4	4									
Dakar	C	67	46	20	1												
	D	41	32	12													
Louga	C			5	8												
	D			4													
M'Bour	C	28															
	D	23															
Rufisque	C	104	44	16													
	D	82	38	12													
Thies	C	7		9	1	1											
	D	3		7													
Tivaouane	C	43															
	D	29															
Siam	C				13					2							
	D				9		1			1							
Bangkok	C				2												
	D						1										
Straits Settlements: Singapore	C								1								
	D								1								
Turkey: Constantinople	C			1	1					1	1						
	D				1						1						
Union of South Africa:																	
Cape Province	C											2					
	D					2						1					
Orange Free State	C	4							1	8	P						
	D	4							1	6							

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

PLAGUE—Continued

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

Place		July 3-30, 1927	July 31-Aug. 27, 1927	Aug. 28-Sept. 24, 1927	Sept. 25-Oct. 22, 1927	Week ended— October 29	November, 1927 5	12	19	26	December, 1927 3	10	17	24	31	January, 1928 7
U. S. S. R.:																
Chita District	C				1											
	D				1											
Northern Caucasus	C			14	1											
	D			10												
On vessel:																
At La Plata, from Rosario Argentina	C														1	
S. S. Aghios Gerasimos at Vigo, Spain	C								3							

Place		July	August	September	October	November	December
Algeria: Algiers	C				2		
British East Africa: Kenya	C	13	61	21	18	28	
Ecuador: Guayaquil	C	5	7	3	4	9	5
	D					3	2
Indo-China (French)	C			14	3	3	
Madagascar	C	46	98	170	166		
	D	43	89	154	155		
Ambositra Province	C	6	1		6		
	D	6	1		6		
Antisirabe Province	C		34	5	19		
	D		34	4	19		
Itasy Province	C	14	11	21	16		
	D	14	7	20	15		

Place		July	August	September	October	November	December
Madagascar—Continued.							
Moramanga Province	C	5	4	3	24		
	D	5	4	3	20		
Tananarive Province	C	21	48	142	99		
	D	19	43	127	93		
Mauritius	C			1			
Peru	C	8	11	15	14		
	D	7	6	6	5		
Callao	D	3					
Lima	D				1		
Syria: Beirut	C			1	1		

Indo-China (French), 3 cases, Dec. 11-20; Beirut, Syria, 1 case, Dec. 1-10.

SMALLPOX

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

Place		July 3-30, 1927	July 31-Aug. 27, 1927	Aug. 28-Sept. 24, 1927	Sept. 25-Oct. 22, 1927	Week ended— October 29	November, 1927 5	12	19	26	December, 1927 3	10	17	24	31	January, 1928 7	14	21
Algeria	C			382	683		294	218	149									
Algiers	C												3	3				
Oran	C	14	9	16	11		10	4	6	9	11	10	9	8	15	2		
Arabia: Aden	C	2							1		1		1					
	D	1																
Brazil:																		
Para	C		1															
Rio de Janeiro	C	4	6	10		1												
	D	4	4	9		1												
British East Africa: Tanganyiki	D		21	8	P	P	P											
British South Africa:																		
Northern Rhodesia	C	48	55	39	164	150	10	22	3	57	15	125						
	D	2	1	2	11	40	23		1	18	7							
Southern Rhodesia	C								3									
Canada:																		
Alberta	C	42	17	17	23	6	2	1	1	7	3	3	6		3	3	5	1
Calgary	C	5	1															
Edmonton	C				1	1				6		1	1			3	2	
British Columbia: Vancouver	C			2								4		1	3	3	1	
Manitoba	C		13	9	7	3	14		2	1	3	1	2	2	2	2	5	
Winnipeg	C	3	5	4	2				2			1	1	1			1	1
New Brunswick	C			2										1				
Nova Scotia	C			1	1													
Halifax	C				1													
Ontario	C	63	60	22	96	64	38	77	85	71	90	82	104		53	83	76	52
Hamilton	C										2							
Kingston	C								1					1				
Ottawa	C	37	27	40	67	47	17	51	19	10	19		34	18	9	20	23	20
Toronto	C	5		2	10	2	16	3	13		25	14		7		11	10	
Windsor	C				9													
Quebec	C	12	1		8	7	3	12	3	8	5	3		14	3	10	17	7
Montreal	C							1						1		1	6	3
Quebec	C										2		2				3	
Riviere du Loup	C								3									
Saskatchewan	C	25	14	68	31	5	12	2	14	9	15	19	15	12	13	15	12	39
Moose Jaw	C		10	16	3													
Regina	C	2	8		5			1				2			4			
Saskatoon	C																	

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

SMALLPOX—Continued

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

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— October 29	November, 1927 5	12	19	26	December, 1927 3	10	17	24	31	January, 1928 7	14	21
Ceylon: Colombo	C		1								1							
	D		1															
China:																		
Antung	C	3																
Canton	C			1														
	D			1														
Chefoo	C			1	P					P								
	D			1														
Foochow	C	P	P	P	P		P			P								
Hong Kong	C	3	1	2														
	D	3	1	2														
Manchuria—																		
Changchun	C	4								1								
Dairen	C				1		2											
	D				1													
Fushun	C	1		1				1					2					
Harbin	C	1																
Mukden	C	3			2	1												
Pensihu	C	1			1													
Tientsin	C	11		4	13	8				4	1							
Dutch East Indies:																		
Batavia and West Java	C	2	4		4			25										
	D							15										
East Java and Madura	C	8	4	22	8	1	3	5		4	3							
	D				1													
Egypt	C	4		3							4							
	D			1	1							1						
Cairo	C										1							
Great Britain:																		
England and Wales	C	721	568	508	473	199	219	258	226	233	366	230	212	255	247	275		
Birmingham	C		1		1													
Bradford	C					1	5	3	2	9	6							
Bristol	C				6	1			3	2	4	2						
Cardiff	C					1										1		
Leeds	C	2	5	3	7	1	1	1	2	3	3	6	4	4	6	1		

Manchester	C				3		1	1	4	2	5	10	8		1	2		
Newcastle-upon-Tyne	C	1	1	2	6	2	6		1	28	18	5	4	2	13	2		
Sheffield	C	11	2	1	10	4			2	1	8			3		1		
Stoke-on-Trent	C		1													1		
Greece: Saloniki	D	1	2															
Guinea: (French), Beyla	C	9																
India	C	11,340	5,911	4,398	3,153	779	805	1,235	1,233									
	D	3,140	1,668	1,120	715	190	200	211	326									
Bombay	C	38	33	12	10	2			4				4					
	D	21	19	8	2	2			1									
Calcutta	C	93	27	22	5				5	4	3	11	7		17			
	D	70	25		6				2	2	1	6	2		17			
Madras	C	4	6	7	8	3		2	2	2	2	5	2	2				
	D	1		2		1		1		1	1	1		1				
Rangoon	C	37	14	9	17	4		1	1	5	2	1			28			
	D	11	3	2	3	1				1	1				13			
India (French):																		
Karikal	C	2	3	1	2													
	D	2	3	1	2													
Pondicherry	C	22	39	37	38													
Indo-China: Saigon	D	20	31	37	38													
	C	1	1	1														
Iraq:																		
Baghdad	C			1	7			5		1	5							
	D			1	4			4			5							
Basra	C	1	1	4	2				3						2			
	D	1	1	4	2				1						1			
Italy: (Rome and vicinity)	C	1		1														
Jamaica (outside Kingston) (alastrim)	C	15	6	9	9	7				1		1	1		2			
Kingston	C			3	2													
Japan: Nagasaki	C	17	2															
	D	5	1															
Mexico	D	93	73															
Acapulco	C			2				1										
	D			2				1								1		
Chihuahua	D																	
Guadalajara	D									1							1	
Manzanillo	D																	
Mexico City and surrounding territory	C									1	1	1	1					
Monterey	C	6																
	D	4																
San Lois Potosi	D	4	1															
Torreon	D		1		2													
Palestine: Jerusalem	C										1							
Paraguay	D	2																
Persia: Teheran	D	2																
Poland	C	7	2															
	D	2	1															
Portugal:																		
Lisbon	C	4		3	8	1	2				1							
Oporto	C			1														

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

SMALLPOX—Continued

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

Place		July 3-30, 1927	July 31-Aug. 27, 1927	Aug. 28-Sept. 24, 1927	Sept. 25-Oct. 22, 1927	Week ended—												
						October 29	November, 1927				December, 1927					January, 1928		
							5	12	19	26	3	10	17	24	31	7	14	21
Siam	C	34	51	27	6				1		8							
	D	9	10	15														
Bangkok	C	5		3					1		1							
	D	1		1														
Spain:																		
Malaga	D								1	1								
Valencia	C				1			1							1	1		
Straits Settlements: Singapore	C		1										3					
Sumatra: Medan	C												2					
	D																	
Union of South Africa:																		
Cape Province	C	P	P		P													
Orange Free State	C		P						P	P	P	P						
Transvaal	C				P	7												
Venezuela: Maracaibo	D	1		2	1													

Place		September, 1927			October, 1927			November, 1927			December, 1927		
		1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31
Algeria	C	110	162	110	182	386	115						
Oran	C	4		12	6		5						
Indo-China	C	6	6	9	5	4	16	13	3	22	10		

Place		September, 1927			October, 1927			November, 1927			December, 1927		
		1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31
Syria:													
Beirut	C										1		1
Damascus	C		1	4	14	8			13		4	6	

Place		July	August	September	October	November	December
Angola	C	42	2	5	73		
	D				2		
Congo	C			5	77		
Cuanza-Norte	C			1			
Cuanza-Sul	C				2		
Loanda	C			1			
Zaire	C			3	4		
Brazil: Porto Alegre	C	5	3	3	4		
British East Africa: Zanzibar	C				2		
	D				1		
Chosen	C	19	2				
	D	6					
Ecuador, Guayaquil	C		2	2	1	1	4
France	C	23	6	8	7	4	

Place		July	August	September	October	November	December
Gold Coast	C	1	1	5			
Greece	C	3	3	4	4		
Latvia	C				2		
Mexico	D	93	73	55			
Morocco	C	53	76	51	81		
Nigeria	C	492	91	237			
	D	83	20	70			
Spain: Madrid	D					1	
U. S. S. R.:							
Railways, etc	C	11	6				
Other territories in Europe	C	146	111				
Transcaucasus, Siberia, and Central Asia	C	36	29				
Ukraine	C	16	4				

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

TYPHUS FEVER

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

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— Oct. 29	November, 1927 5	12	19	26	December, 1927 3	10	17	24	31	January, 1928 7	14
Bulgaria: Sofia	C				17	3	1	2					1	1	4	1	
	D						1										
Chile:																	
Antofagasta	D				1												
Talcahuano	D	1															
Valparaiso	C	2		1				1		1	1						
	D		2	1				1	1								
China:																	
Manchuria—Harbin	C	3	2					1									
Tientsin	C	1		2													
Egypt	C	24	2		12		4			1	7	3		1			
	D	1	3		5						5	1					
Port Said	C				1						1						
Ireland (Irish Free State):																	
Cork County	C	1										3				1	
Donegal County, Letterkenny	C				4												
Mexico:																	
Guadalajara	D									1							
Mexico City, including municipalities in Federal district	C	16	17	19	18	9	6	2	11	7	6	4		4	4	4	3
	D						2						1	1	3	1	
Palestine:																	
Haifa	C		4		2				1	1							
Herzliah	C									1							
Jaffa	C		2		1					1							
Nazareth	C	1	2							1							
Safad	C	1	2							1		1					
Tel-Aviv	C		1	1	2				1	1	1						
Poland	C	99	50	35	19	35	12	6	11	13	28	17					
	D	10	6	2	4	6	3		2	1	5						
Portugal: Oporto	C		1			1								1			
Rumania	C	27	36	16	17				2	6	8						
	D	4	1		2												
Syria: Aleppo	C			2													

Tunisia	C	29	14	1	3			1					1	1							
Union of South Africa:																					
Cape Province	C	P	P	P	P		P	P	P	P	P	P									
Natal	C	P	P	P	P		P	P	P	P	P	1									
Orange Free State	C	P			P							P									
Transvaal	C	18	1		5		P	P	P	P	P										

Place		1927				November, 1927			December, 1927		Place		1927				November, 1927			December, 1927	
		July	August	September	October	1-10	11-20	21-30	1-10	11-20			July	August	September	October	1-10	11-20	21-30	1-10	11-20
Algeria	C	67	33	10	12						Bulgaria	C	12	24	7	2					
	D	13			1							D		1	2	1					
Algiers	C	2	2	6	2						Morocco	C	148	76	7	11	5	14	7	5	6

Place		July	August	September	October	November
Argentina	C					1
Chosen	C	72	17			
	D	8				
Chemulpo	C	1	2			
Gensan	C	2				
Seoul	C	2	3		2	
	D	1			1	
Czechoslovakia	C	6				
Greece: Athens	C	1		2		
Japan	C	1				
Latvia	C	6				
Lithuania	C	44	18	7	9	18
	D	5	8	1	1	1

Place		July	August	September	October	November
Mexico	D	12	38	14		
Peru:						
Arequipa	D		2	1	2	
Lima	D	8				
U. S. S. R.:						
Railways, etc	C	36	22			
Transcaucasus, Siberia, and Central Asia	C	79	60			
Ukraine	C	96	85			
Other territories in Europe	C	732	552			
Yugoslavia	C	11	9		1	1
	D	4	1			

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

YELLOW FEVER

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

Place		Week ended—																
		September, 1927				October, 1927				November, 1927				December, 1927				
		3	10	17	24	1	15	22	29	5	12	19	26	3	10	17	24	31
Belgian Kongo: Boma and Matadi	C																	7
Dahomey: Grand Popo	C												1					
	D												1					
Ivory Coast	C																1	
	D																1	
Liberia: Monrovia	C		1															
Nigeria	C			2														
	D			2														
Senegal	C					5		5	9	16	6	7						
	D					5		4	8	10	4	6						
Dakar	C			P					3	6		5	2	1	4			1
	D								2	4		4	2	1	4			1
Geoul	C					1												
	D					1												
Goree, island of	C	2																
	D	2																
Kebener	C						1	1										
	D						1	1										
Kelle	C						2		1									
	D						1		1									
Keur Samba Kane	C								1	1								
Keur Madiop	C								1		1							
	D								1									
Khombole	C					1						1						
	D					1						1						
Louga	C					1			2	1	1							
	D					1			2	1	1							
Mekhe	C							1	1	2	2							
	D								1	1	1							
M'Dande	C							1		2	1							
	D							1		1								
Pout	C				1													
	D				1													
Rufisque	C						1											
	D						1											

St. Louis	C					1												
	D					1												
Sebikotane	C							1		2	1							
	D							1			1							
Thies	C			1	2	1		1	1	2	1	1						
	D			1	2	1		1	1	2	1	1						
Tiaroye	C	1																
	D	1																
Tivaouane	C		1															
On vessel S. S. Desirade, at Leixoes, Portugal	C			1														
	D			1														

Place		July	August	September	October
Gold Coast	C	15	2	6	1
	D	4	2	4	1