PUBLIC HEALTH REPORTS

VOL. 53 JULY 8, 1938 NO. 27

PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

May 22–June 18, 1938

The accompanying table summarizes the prevalence of eight important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are published in the PUBLIC HEALTH REPORTS under the section "Prevalence of Disease." The table gives the number of cases of these diseases for the 4-week period ending June 18, the number reported for the corresponding period in 1937, and the median number for the years 1933–37.

DISEASES ABOVE MEDIAN PREVALENCE

Smallpox.—The incidence of smallpox continues at a relatively high level. The North Atlantic region remained practically free from the disease, but in all other sections of the country the incidence was considerably above that for the corresponding period in 1937 and was also well above the average for recent years. For the country as a whole, the number of cases (1,366) reported for the current period represents an excess of more than 80 percent over the preceding 5-year median figure for this period.

A comparison of geographic regions of the United States shows that smallpox is normally most prevalent in the Northern Pacific, Mountain, and North Central regions, but since 1934 the disease has been considerably above the normal expectancy in those regions and has gradually spread into other areas which normally have a low incidence. In the East South Central region the number of cases (46) was more than nine times the average for this period, and the East South Central region reported 198 cases as compared with a median of 62 cases. The 11 cases reported from the South Atlantic States was the largest number reported in that region since 1933.

Influenza.—The incidence of influenza (2,120 cases) during the 4 weeks ending June 18 was slightly above the average for preceding years. The West South Central and Pacific regions seemed to be mostly responsible for the increase; in all other areas the situation was very favorable.

Measles.—The incidence of measles remained relatively high; the number of cases reported for the current period was 79,233, as against

approximately 45,000 for the corresponding period in each of the 2 preceding years. In the New England, West South Central, and Pacific regions the incidence was considerably below the average for recent years; but in all other regions there was a much higher incidence than normally occurs at this season of the year. In the Mountain region the number of cases (2,838) was almost three times the 1933–37 median for this period; the East North Central and South Atlantic regions reported approximately twice the average incidence, while an increase of more than 25 percent occurred in each of the other regions. In 1935 and 1934 the cases for this period numbered approximately 91,000 and 90,000 respectively.

Typhoid fever.—The total number of cases (1,023) of typhoid fever reported for the current period was only slightly above the median number for the 5 preceding years. The increase seemed to be mostly due to an excess of cases in the South Central and Mountain regions. The 29 cases reported from the West North Central region was the lowest recorded during this period in recent years; in other areas the numbers of cases compared very favorably with the average incidence of recent years.

Number of reported cases of 8 communicable diseases in the United States during the 4-week period May 22–June 18, the number for the corresponding period in 1937, and the median number of cases reported for the corresponding period in 1933–37 [1]

Division	Current period	1937	5-year median	Current period	1937	5-year median	Current period	1937	5-year median	Current period	1937	5-year median
	Diphtheria			Influenza [2]			Measles [3]			Meningococcus meningitis		
United States [1]	1,260	1,367	1,686	2,120	2,206	2,073	79,233	15,289	49,129	220	363	363
New England	29	46	58	15	6	12	3,096	3,589	5,341	7	15	15
Middle Atlantic	237	266	334	29	42	40	24,521	18,292	17,798	54	64	64
East North Central	239	297	330	111	314	341	29,576	12,999	12,999	31	51	79
West North Central	78	89	170	63	183	157	5,235	482	4,115	12	11	28
South Atlantic	171	181	206	345	402	451	7,731	4,157	4,157	36	95	95
East South Central	98	92	92	135	137	160	1,429	1,758	1,182	40	70	37
West South Central	165	213	210	864	704	617	1,424	1,738	1,738	13	33	26
Mountain	103	41	51	122	109	109	2,838	952	952	4	5	8
Pacific	140	142	132	436	309	175	3,383	1,322	4,861	23	19	18
	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
United States [1]	87	164	164	12,685	17,305	17,305	1,366	839	751	1,023	804	981
New England	2	5	7	1,772	1,425	1,377	0	0	0	17	14	29
Middle Atlantic	9	10	13	3,802	4,913	4,989	0	0	0	87	74	78
East North Central	12	13	14	3,799	6,567	6,567	239	166	88	87	93	93
West North Central	3	7	7	1,165	1,925	1,925	505	412	365	29	45	66
South Atlantic	12	16	12	518	472	639	11	3	4	276	179	262
East South Central	21	58	8	162	194	194	46	5	5	165	115	140
West South Central	20	31	7	315	508	207	198	41	62	243	220	207
Mountain	2	0	3	352	387	387	126	109	64	62	26	30
Pacific	6	24	24	800	914	952	241	103	103	57	38	41

[1] 48 States. Nevada is excluded and the District of Columbia is counted as a State in these reports.
[2] 44 States and New York City.
[3] 46 States. Mississippi and Georgia are not included.

DISEASES BELOW MEDIAN PREVALENCE

Poliomyelitis.—The poliomyelitis situation was very favorable. Slight increases over the preceding 4-week period were reported from some sections of the country, but they were only indicative of the increase of this disease that is normally expected at this season of the year. The 87 cases reported were only about 50 percent of the number reported for the corresponding period in 1937, when an outbreak of this disease that later reached epidemic proportions made its appearance at this time in the South Central regions. The cases for this period in 1936, 1935, and 1934 numbered 89, 240, and 911, respectively. In 1936 a minor outbreak occurred in the East South Central region; in 1935 the Atlantic Coast regions suffered the most from a more severe outbreak, and in 1934 the most severe epidemic since 1931 was in progress at this time in California and other Western States. A further increase of this disease may be expected as the seasonal peak is not generally reached until the latter part of September.[1]

Scarlet fever.—The seasonal decline of scarlet fever continued during the 4 weeks ending June 18. The number of cases (12,685) was the lowest recorded for this period in 8 years. More cases were reported from the New England and West South Central regions than normally occur at this season of the year, but in all other regions the incidence is below the average for recent years. After several years in which scarlet fever has been unusually prevalent in the Middle Atlantic and North Central regions the incidence there has dropped and is now definitely lower than the seasonal expectancy.

Diphtheria.—The incidence of diphtheria continued to be the lowest on record. For the 4 weeks ending June 18 there were 1,260 cases reported, as compared with 1,367, 1,487, and 1,686 for the corresponding period in 1937, 1936, and 1935. The current incidence was about 25 percent below the 1933–37 median for this period. In the Mountain region the number of cases (103) was more than two and one-half times the normal incidence for this season of the year, and the East South Central and Pacific areas reported slight increases over the seasonal expectancy; in all other parts of the country the incidence was comparatively low.

Meningococcus meningitis.—The number of cases of meningococcus meningitis reported for the current 4-week period was 220, about 60 percent of that for the corresponding period in 1937, which figure (363) also represents the median incidence for the preceding 5 years. The Pacific region reported a 20 percent increase over the average incidence for this season of the year, and in the East South Central region, where the disease was unusually prevalent at this time in each

[1] See page 1144.

of the 2 preceding years, the number of cases was slightly above the 1933–37 median. All other areas reported a relatively low incidence. The current incidence for the country as a whole is only about 10 percent above the average (approximately 200 cases) for the years 1932, 1933, and 1934, years in which the incidence of meningitis was unusually low.

MORTALITY, ALL CAUSES

The average death rate from all causes in large cities for the 4 weeks ending June 18, based on data received from the Bureau of the Census, was 10.8 per 1,000 inhabitants (annual basis). The average rate for the corresponding period in the 5 preceding years was 13.9. The current rate is the lowest since 1933, when a rate of 10.6 was recorded for this period.

MORTALITY DURING PERIODS OF EXCESSIVE TEMPERATURE[1]

By MARY GOVER, *Associate Statistician, United States Public Health Service*[2]

CONTENTS

INTRODUCTION

Weekly mortality from all causes in a particular locality frequently increases during the summer months to as much as four times the expected mortality for that season of the year (fig. 1.) That these sharp increases in mortality occur during weeks of exceptionally high temperature has been pointed out in a short note on mortality in the drought area in 1934 (*3*), and in a release from the Bureau of the Census which deals with mortality in 86 large cities during the heat waves of the summers of 1934 and 1936 (*8*). The peak of mortality from heat stroke in Kansas during June, July, and August of 1934 followed approximately 7 days of exceptionally high temperatures as shown by daily records of deaths and temperatures for that period (*1*).

In a study made by Shattuck and Hilferty (*9*), of deaths from excessive heat, in the expanding death registration area, 1900–28,

[1] From Statistical Investigations, Division of Public Health Methods, National Institute of Health, U. S. Public Health Service.

[2] Appreciation is expressed to Drs. S. D. Collins and L. J. Reed for suggestions and advice in the preparation of this paper.

and in Massachusetts in particular, it was shown that (*a*) the geographic distribution of deaths from excessive heat varies from year to year; (*b*) in years of high mortality from excessive heat, death rates in urban areas are higher than in rural areas; (*c*) mortality from excessive heat is relatively high during the first year of life, low thereafter up to the age of 20, rises gradually to the age of 70, and increases sharply after 70 years; (*d*) mortality among males and females is about equal under 20 years of age and over 70 years, but between 20 and 70 years of age rates for males are about three times those for females (Massachusetts); and (*e*) "meteorological data from Massachusetts for 1901, 1911, 1917, and 1925 indicate that unusually high temperature, persisting for several days at a time, was a factor of chief importance."

In a later analysis (*10*), made by the same authors, of death certificates in Massachusetts for 1911, when deaths from heat were remarkably numerous (1,105 deaths), the following conclusions were reached: (*a*) Considering all deaths from heat,[3] whether from heat stroke or from heat exhaustion and whether recorded on the certificate as a death from heat as a primary or secondary cause, death rates from heat effects increased markedly with increase in size of city; (*b*) deaths from primary sunstroke were significantly higher in Boston than in smaller towns and rural areas, and deaths primarily due to heat exhaustion did not vary with size of city; (*c*) "the type of response shows a definite correlation with age; sunstroke is far more common than exhaustion between the ages of 20 and 59, but exhaustion predominates after 60 years of age;" (*d*) among deaths in which heat is recorded as a secondary cause, exhaustion is far more common than sunstroke; and (*e*) among the causes associated with heat as a cause of death, diseases of the circulatory system stand first by a large margin. From this fact the authors conclude "that the circulatory system suffers particularly from the effects of excessive heat, and that the correlation of deaths from excessive heat with increasing age is due to the progressive diminution of adaptability of the circulatory system to stress of this kind."

In accordance with the Manual of Joint Causes of Death (*6*), the Bureau of the Census tabulates "excessive heat" as the primary cause of death in practically all cases in which excessive heat and some other cause of death are entered on the same certificate. Nearly all of the causes included in the remainder of the group of "external causes" are preferred over heat as the primary cause. Records of primary causes of death as usually tabulated and published would therefore show

[3] Two types of response to heat effects are recognized although their basic etiology may be the same (1) cases of "sun stroke" or "heat stroke" which are characterized by high body temperature and hot dry skin, and (2) cases of "heat exhaustion" in which the temperature is practically normal, the skin moist, and the circulatory disturbances like those of shock.

practically all deaths in which heat was indicated on the death certificate as a cause.

Annual rates of mortality from excessive heat in the registration States of 1920, from 1920 to 1934 (7), were as follows:

Year	Rate per 100,000	Year	Rate per 100,000	Year	Rate per 100,000
1920	0.31	1925	1.36	1930	1.21
1921	1.07	1926	.63	1931	2.30
1922	.45	1927	.48	1932	.51
1923	.55	1928	.57	1933	.81
1924	.41	1929	.41	1934	2.64

In 1921, 1925, 1930, 1931, and 1934 deaths from excessive heat were obviously well above the average in that area.

In Kansas, which was in the center of the drought area of 1934, there were reported 291 deaths from excessive heat for that year, as compared with 30 in 1933 (1); 159 of the 291 deaths occurred during the month of July. The total number of deaths reported in Kansas during July of 1934 was 2,175, or an excess of 604 deaths over the number reported in July 1933 (1,571 deaths) (7). The total of 159 deaths certified as due to excessive heat for July 1934 thus amounts to only 26 percent of the 604 excess deaths from all causes during July; the other 74 percent were deaths in which unfavorable weather was probably a contributory factor but with no mention of excessive heat on the certificate; if mention had been made, the death would have been tabulated as due to excessive heat.

The heat waves of both 1934 and 1936 severely affected mortality in the North Central section of the country. Specific death rates for the States of Kansas for July 1934 (7) and Illinois for July 1936 (5) show the distribution of excess mortality among specific causes during those years (table 1). Death rates for July 1933 in Kansas and for July 1935 in Illinois are included in table 1 for comparison with the corresponding rates for July of 1934 and 1936. Exclusive of "external causes," which includes "excessive heat," the largest excesses occurred in rates for cerebral hemorrhage, diseases of the heart, and nephritis. Rates for pneumonia and diabetes also show some excess. No other single cause as tabulated in the abridged International List of Causes of Death shows an outstanding increase. The greatest actual excess mortality occurred in diseases of the heart in both Kansas in 1934 and in Illinois in 1936; and the largest percentage excess was in the rate for pneumonia for Kansas, and in diseases of the heart for Illinois in the respective years.

Since approximately 75 percent of the excess deaths during periods of extremely high temperature are not certified and not tabulated as due to "excessive heat," the excess rate for all causes is a better index of the total mortality associated with weather conditions than deaths

certified as due specifically to excessive heat. Among the various factors which make up the phenomenon of weather, temperature undoubtedly exerts the greatest influence on mortality, although humidity and wind velocity probably are a part of the unfavorable weather conditions. With respect to animal experimentation, high humidity combined with high temperature is known to increase the effects of heat (*4*).

TABLE 1.—*Monthly death rate from specific causes in Kansas for July 1933 and 1934, and in Illinois for July 1935 and 1936*

Diagnosis	Kansas		Illinois		Excess in the annual rate for—	
	1933	1934	1935	1936	July 1934 over the rate for July 1933 in Kansas	July 1936 over the rate for July 1935 in Illinois
	Death rate per 100,000 population (annual basis)					
All causes	988.1	1,369.5	1,013.2	1,414.3	+381.4	+401.1
Tuberculosis, all forms	41.5	30.2	55.0	56.9	−11.3	+1.9
Diabetes mellitus	15.7	26.4	23.3	30.9	+10.7	+7.6
Cerebral hemorrhage and softening	78.0	120.3	61.8	86.0	+42.3	+24.2
Diseases of the heart	210.7	258.2	247.8	348.9	+47.5	+101.1
Pneumonia, all forms	12.6	22.0	36.1	44.0	+9.4	+7.9
Diarrhea and enteritis (under 2 years)	15.1	17.0	11.3	9.2	+1.9	−2.1
Nephritis	80.5	118.4	89.6	113.3	+37.9	+23.7
Puerperal state	10.1	10.1	7.1	7.1	0	0
Automobile accidents	40.3	34.0	29.2	31.4	−6.3	+2.2
Other external causes	69.2	164.3	452.0	686.6	+95.1	+234.6
All other causes	414.5	568.6			+154.1	

SOURCE OF THE DATA

The data for this study are from the two following sources: (*a*) Weekly Rates of Mortality from all Causes in 86 Large Cities,[4] as published in the Weekly Health Index, issued by the Bureau of the Census, 1920–37 (*11*), and (*b*) Daily Maximum Temperatures, as published in Climatological Data for the United States, by Sections, issued by the United States Weather Bureau (*2*).

In order to compare actual death rates and maximum temperatures with corresponding normals, averages have been set up which represent as nearly as possible the normal or expected rates and temperatures for corresponding weeks of the year. The normal or expected death rate for individual cities for years prior to 1930 is a 3-week moving average of the mean of the death rates for corresponding weeks of the years 1924, 1926, and 1927, and for the years 1930–37 it is a similar average for the corresponding weeks of the years 1932, 1933, and 1935. In the years on which the norm is based, little or no increase in weekly mortality rates occurred during the summer weeks (fig. 1).

[4] The 86 cities are cities of 100,000 or more population in 1930, except Waterbury, Conn. (99,902) and Schenectady, N. Y. (95,692).

The weekly mean maximum temperature is an average of the seven daily maximum temperatures. The norm of maximum temperatures for individual cities was obtained from the Weather Bureau, and is an average of daily maximum temperatures over a period of 40–60 years.[5] In a few instances in which temperature norms were not available for a particular city, the record of both the actual and normal temperatures for a nearby city have been substituted in order to make use of the total number of cities for which weekly mortality records were obtainable.[6]

MORTALITY IN A TOTAL OF 86 LARGE CITIES IN THE SUMMERS OF 1925–37

Weekly mortality rates from all causes for 86 large cities during the months of May, June, July, August, and the first part of September of the years 1925 and 1930–37 are shown in figure 1. In 5 of these 9 years there are clearly defined peaks which occurred in the weeks ended June 13, 1925, July 4, 1931, July 28, 1934, July 18, 1936, and July 17, 1937. Slight increases in mortality occurred during July in 1930 and 1932 and during the first week of August 1933. During the summer of 1935, however, and the summers of 1926–29, which are not included in figure 1, weekly rates of mortality from all causes did not show any marked deviations from normal. The week of maximum mortality occurred in July in six of the years shown in figure 1, and during the first part of June and the first part of August, respectively, in two other years (fig. 1).

A comparison of maximum summer rates with a summer normal and with a normal for January, in all cities combined, is as follows:

Week ended—	Death rate per 1,000 population (annual basis)	
	Actual rate	Normal rate
July 4, 1931	12.5	10.2
July 28, 1934	12.3	10.0
July 18, 1936	17.0	10.1
July 17, 1937	12.3	10.0
Normal for January [1]	12.6	----------

[1] Based on the 4 weeks ended Jan. 27, 1934, which was a year relatively free from influenza mortality.

[5] Average daily maximum temperatures for the years for which records are obtainable in individual cities are not published regularly, but were generously supplied by the Weather Bureau for this purpose.

[6] The following substitutions of temperature records were made: Boston, Mass., for Cambridge, Somerville, Lowell, and Lynn; Providence, R. I., for Fall River and New Bedford, Mass.; Hartford, Conn., for Springfield and Worcester, Mass., and Waterbury, Conn.; New Haven, Conn., for Bridgeport; New York, N. Y., for Yonkers, N. Y., and Jersey City, Newark, and Paterson, N. J.; Philadelphia, Pa., for Camden, N. J., and Wilmington, Del.; Albany, N. Y., for Schenectady; Syracuse, N. Y., for Utica; Pittsburgh, Pa., for Akron, Canton, and Youngstown, Ohio; Fort Wayne, Ind., for South Bend; Lansing, Mich., for Flint; Minneapolis, Minn., for St. Paul; Kansas City, Mo., for Kansas City, Kans.; Fort Worth, Tex., for Dallas; Seattle, Wash., for Tacoma; San Francisco, Calif., for Oakland; Los Angeles, Calif., for Long Beach.

During 3 of the 4 years the maximum summer rate was about equivalent to a normal January rate and exceeded it in 1936 by 4.4 per 1,000.

The weekly rates shown in figure 1 are weighted averages of the rates in the total number of cities, and thus the size of the death rate

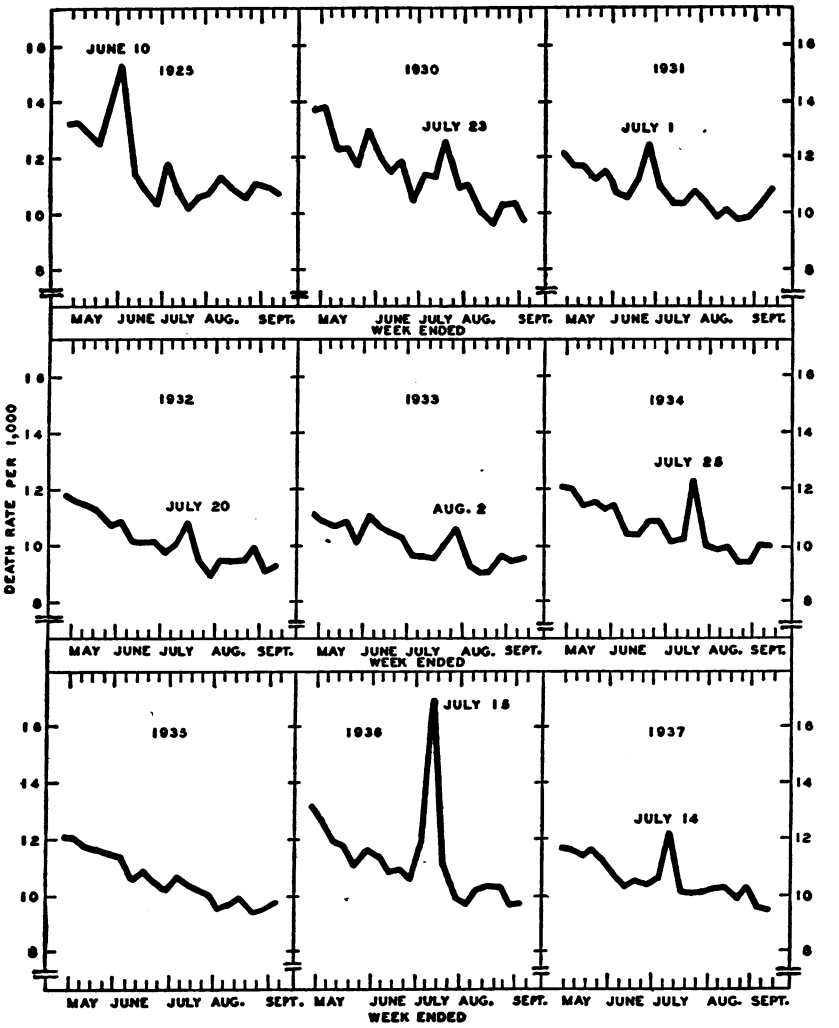

FIGURE 1.—Weekly death rate from all causes (annual basis) in about 86 large cities of the United States for 20 summer weeks of the years 1925, 1930–37. The dates are as of Wednesday of the peak weeks. (Rates from the Weekly Health Index, U. S. Bureau of the Census.)

in the peak week is influenced by the area which was most severely affected. As will be shown later, the area of high mortality was largely confined to the eastern coast cities in 1925 and 1937, and to the North Central section in 1931 and 1934. Although the rates for the affected individual cities in 1934 were greater than similar rates in

1937,[7] the rise in the curve for all cities combined is about as great in 1937 as in 1934, owing to the concentration of the population in the East, which was the area of high mortality in 1937.

GEOGRAPHIC DISTRIBUTION OF EXCESS MORTALITY

Figure 2 is a spot map on which are located areas with marked excess mortality; it gives some idea of the severity and extent of the different periods of excess mortality. Excess mortality as represented in this figure is the sum of the excess in the annual rates for the 3 weeks which center on the peak week for all cities combined. Dots represent cities with an excess of 10 or more per 1,000; circles enclosing a cross, an excess of 5 to 9 per 1,000; and plain circles, an excess of less than 5 per 1,000. The sum of the excess for 3 weeks is used because the maximum excess does not usually occur in the same week in each section of the country. The 86 cities include 26 cities in the North Atlantic region, 35 cities in the North Central, 14 cities in the Southern, and 11 cities in the Western region.[8]

In 1925 (fig. 2, top) the 10 cities with an excess of 10 or more per 1,000 for the 3 weeks ended June 20 were all located in the North Atlantic area. In the same region 7 other cities had a 3-week excess of 5 to 9 per 1,000, and only 6 of the 23 North Atlantic cities had a 3-week excess of less than 5 per 1,000. In the North Central area eight cities also showed a 3-week excess of 5 to 9 per 1,000; with the exception of St. Paul, these eight cities were confined to the eastern part of the North Central area. Four cities in the Southern region and two in the Western had an excess of 5 to 9 per 1,000. The excess mortality in the North Atlantic cities occurred mainly during the week ended June 13, in the North Central during the week ended June 6, and in the Texas cities during the week ended June 20.

During the summer weeks of 1930, 1932, and 1933 the curve for all cities combined (fig. 1) shows only a slight excess mortality. These years have been omitted from figure 2. In 1930 there were 8 cities with an excess of 10 or more per 1,000 for the 3 weeks ended July 26,

[7] The maximum rate in the summer of 1925 was that for Trenton, N. J., 27.3 per 1,000; in 1931 for Peoria, Ill., 28.4 per 1,000; in 1934 for St. Louis, Mo., 34.0 per 1,000; in 1936 for Peoria, Ill., 46.4 per 1,000; and in 1937 for Fall River, Mass., 19.3 per 1,000.

[8] *North Atlantic:* Boston, Cambridge, Fall River, Lowell, Lynn, New Bedford, Somerville, Springfield, and Worcester, Mass.; Providence, R. I.; Bridgeport, Hartford, New Haven, and Waterbury, Conn.; Camden, Jersey City, Newark, Paterson, and Trenton, N. J.; New York and Yonkers, N. Y.; Philadelphia, Pa.; Wilmington, Del.; Baltimore, Md.; District of Columbia; and Richmond, Va.

North Central: Albany, Buffalo, Rochester, Schenectady, Syracuse, and Utica, N. Y.; Erie and Pittsburgh, Pa.; Akron, Canton, Cincinnati, Cleveland, Columbus, Dayton, Toledo, and Youngstown, Ohio; Evansville, Fort Wayne, Indianapolis, and South Bend, Ind.; Chicago and Peoria, Ill.; Louisville, Ky.; Detroit, Flint, and Grand Rapids, Mich.; Milwaukee, Wis.; Duluth, Minneapolis, and St. Paul, Minn.; Des Moines, Iowa; Kansas City and St. Louis, Mo.; Omaha, Nebr.; and Kansas City, Kans.

Southern: Knoxville, Memphis, and Nashville, Tenn.; Atlanta, Ga.; Birmingham, Ala.; Miami and Tampa, Fla.; New Orleans, La.; Oklahoma City, Okla.; and Dallas, El Paso, Fort Worth, Houston, and San Antonio, Tex.

Western: Denver, Colo.; Salt Lake City, Utah; Seattle, Spokane, and Tacoma, Wash.; Portland, Oreg.; and Long Beach, Los Angeles, Oakland, San Diego, and San Francisco, Calif.

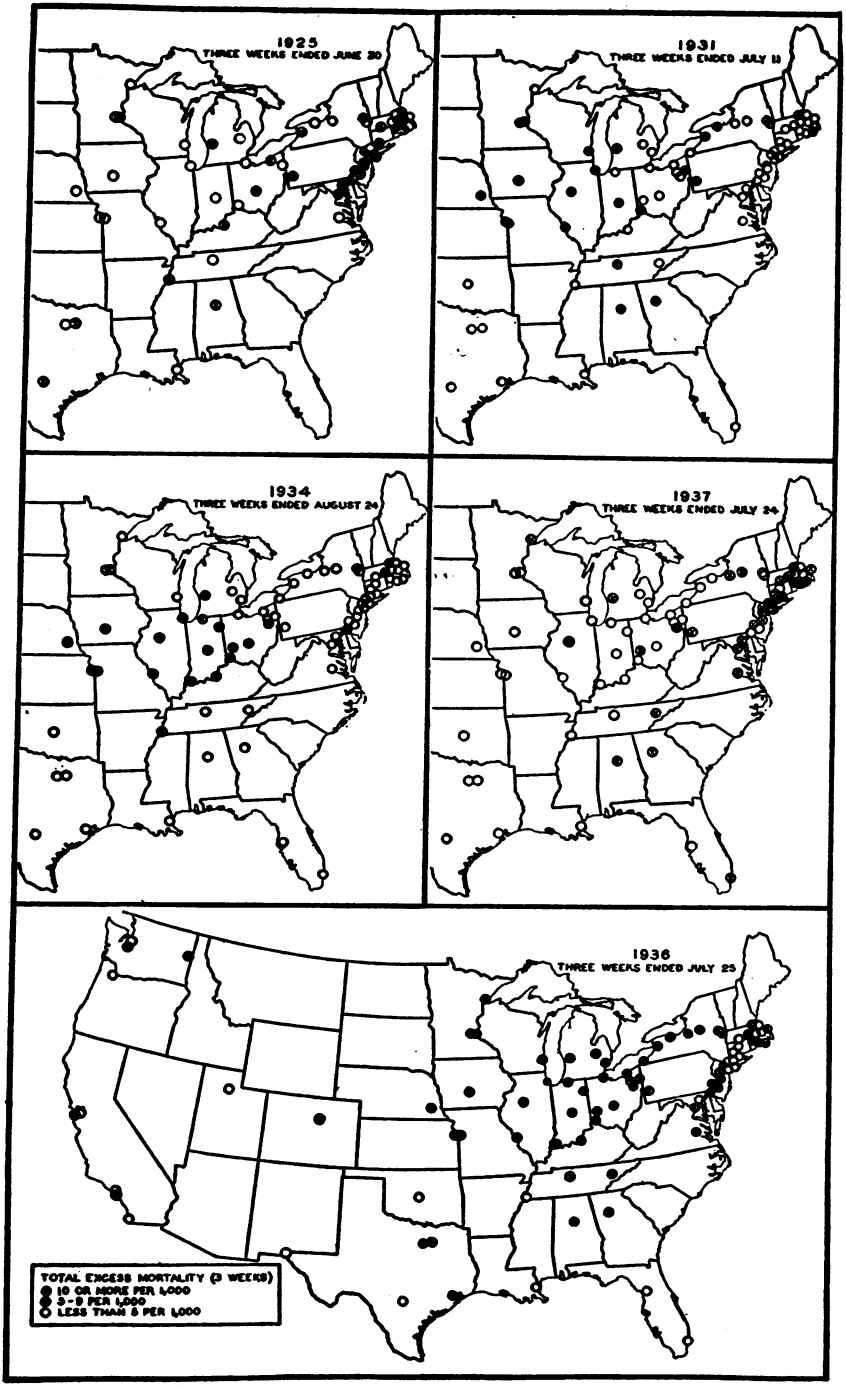

FIGURE 2.—Geographic distribution of excess mortality from all causes in large cities of the United States during 3 summer weeks ended June 20, 1925, July 11, 1931, August 24, 1934, July 25, 1936, and July 24, 1937. Total excess mortality is the sum of the excess in the annual rates for 3 weeks of each year.

namely, Trenton, N. J., Baltimore, Md., St. Louis, Mo., Omaha, Nebr., Birmingham, Ala., Memphis, Tenn., San Antonio, Tex., and San Francisco, Calif. Eight other cities in the North Atlantic, seven in the North Central, and two in the Southern area had an excess of 5 to 9 per 1,000. In neither 1932 nor 1933 did excess mortality in any city reach as high as 10 per 1,000 for the 3 weeks ended July 23 and August 5, respectively. In 1932 the area most affected included the States of Missouri, Kentucky, and Tennessee, and in 1933, Massachusetts, Connecticut, New Jersey, and Delaware.

In 1931 (fig. 2, top) 11 cities showed an excess of 10 or more per 1,000 for the 3 weeks ended July 11. Nine of these were in the North Central area and two in the Southern. Eight other cities in the North Central, two in the Southern, and three in the North Atlantic area had an excess of 5 to 9 per 1,000. The excess mortality occurred in the week ended July 4 in the western part of the North Central region, and in the week ended July 11 in the eastern part of the same region.

The 10 cities with an excess of 10 or more per 1,000 for the 3 weeks ended August 4, 1934 (fig. 2, middle) were all in the North Central area, in the States of western Ohio, central Indiana, central Illinois, Missouri, Kansas, and Nebraska. Seven other cities in eastern Ohio, northern Illinois, Michigan, Iowa, southern Illinois, and Kentucky had an excess of 5 to 9 per 1,000 for the 3-week period. Three cities in the North Atlantic, one in the Southern, and one in the Western region had an excess of 5 to 9 per 1,000. The excess mortality occurred during the week ended July 28 in practically all cities. In a few cities, notably Omaha, Nebr., and Kansas City, Mo., there was marked excess mortality in the weeks ended July 21 and July 28.

During the 3 weeks ended July 25, 1936 (fig. 2, bottom), all regions of the country experienced high mortality rates. In the North Central area 28 of the 35 cities had an excess of 10 or more per 1,000 and the other 7 had an excess of 5 to 9 per 1,000. Three cities in New Jersey had an excess of 10 or more per 1,000, and 11 others an excess of 5 to 9 per 1,000. In the Southern area one city had an excess of 10 or more, and six cities an excess of 5 to 9 per 1,000. The cities with no excess mortality were, in the main, the southern-most cities of the group. In the Western area one city had an excess of 10 or more, and four cities an excess of 5 to 9 per 1,000. The excess mortality extended over a period of 2 weeks, ended July 18, in a majority of the cities which had an excess in both the North Atlantic and North Central sections; and for 1 week, ended July 18, in the Southern and Western areas.

During the 3 weeks ended July 24, 1937 (fig. 2, middle), seven cities had an excess of 10 or more per 1,000; five of these were in the North Atlantic region and two in the North Central area. The 5 cities in the North Atlantic region were in New England and New York, but

15 other cities in this area had an excess of 5 to 9 per 1,000. In the northern part of the North Central region eight cities had an excess of more than 5 per 1,000. In the Southern and Western areas 7 cities out of 25 had some excess mortality. Excess mortality in the cities of the North Central region occurred largely in the week ended July 10, while in the North Atlantic region the excess mortality occurred mainly in the week ended July 17.

Considering the 5 years (fig. 2) in which marked excess mortality occurred during summer weeks, the maximum excess occurred in the North Central region in 3 of those years, 1931, 1934, and 1936. In the other 2 years (1925 and 1937), although the maximum excess occurred in the North Atlantic region, scattered cities in the North Central showed a decided increase in mortality. The areas with the smallest increase in mortality are in the South and West; however, the cities in the northern part of the Southern area, in Tennessee, Georgia, and Alabama, had some excess mortality in 4 of the 5 years. Although there was practically no excess mortality in the North Atlantic region during 2 of the 5 years (1931 and 1934), this area showed the maximum excess in both 1925 and 1937.

EXCESS MORTALITY AND TEMPERATURE

Averages of actual and normal weekly mortality rates for 3 weeks in 1925, 1931, 1934, 1936, and 1937 for cities grouped into the above-mentioned four broad geographic areas are shown in table 2. Since the areas are large, differences that occur in a relatively small number of cities in a specific area tend to be averaged out. The averages, however, show a greater excess in some areas than in others for the different years. Table 2 also contains the weekly averages of daily maximum temperature for cities in the same four areas, in order to show the relationship between mortality and temperature for separate regions in different years. Average mortality rates that show a marked excess, together with average maximum temperatures for the same week and for the preceding week, are printed in bold-faced type (table 2).

Considering the 5 years shown in table 2, the largest deviations in mean temperature from normal, the highest death rates, and the largest excess mortality occurred in either the North Central or the North Atlantic regions, although the highest actual mean temperatures occurred in the Southern area. Only in 1936 was the actual weekly mean temperature in the North Central region (96°) higher than in the Southern area (93°). Although the actual temperatures are higher in the Southern area, the deviations from normal are not as great in the South as in the areas in which marked excess mortality occurred. It is, therefore, the excess in temperature rather than the actual temperature which is associated with a marked increase in weekly mor-

tality, when all sections of the country are considered. This suggests that acclimatization is a factor in response to temperature.

TABLE 2.—*Weekly death rate from all causes and weekly maximum temperature for large cities of 4 geographic sections*[1] *during 3 summer weeks of 1925, 1931, 1934, 1936, and 1937*

	North Atlantic			North Central			South			West		
	1925: Week ended—											
	June 6	June 13	June 20	June 6	June 13	June 20	June 6	June 13	June 20	June 6	June 13	June 20
Death rate per 1,000 population (annual basis):												
Actual	14.4	16.6	10.9	13.4	12.1	10.3	15.1	16.8	17.1	12.1	13.0	12.0
Normal	11.9	11.6	11.4	12.1	11.8	11.6	15.5	15.3	15.4	12.0	11.9	11.6
Weekly mean of daily maximum temperature (F°.):												
Actual	91	80	84	89	80	83	92	90	95	65	69	74
Normal	73	75	77	74	76	78	85	87	88	68	70	71
Number of cities	23	23	23	25	25	25	7	7	7	7	7	7
	1931: Week ended—											
	June 27	July 4	July 11	June 27	July 4	July 11	June 27	July 4	July 11	June 27	July 4	July 11
Death rate per 1,000 population (annual basis):												
Actual	11.4	10.2	10.4	11.3	13.7	10.3	12.5	14.3	13.7	10.5	9.6	11.4
Normal	11.1	10.9	10.7	10.2	10.1	9.8	12.2	12.6	12.7	10.6	10.5	10.5
Weekly mean of daily maximum temperature (F°.):												
Actual	80	83	80	85	91	82	93	95	93	78	79	80
Normal	79	80	81	80	81	82	89	90	90	73	74	75
Number of cities	25	25	25	33	33	33	13	13	13	11	11	11
	1934: Week ended—											
	July 21	July 28	Aug. 4	July 21	July 28	Aug. 4	July 21	July 28	Aug. 4	July 21	July 28	Aug. 4
Death rate per 1,000 population (annual basis):												
Actual	10.4	10.0	9.9	10.6	14.9	10.3	12.6	13.8	11.7	10.6	11.1	10.3
Normal	10.4	10.2	9.8	10.0	9.9	9.6	12.6	12.3	12.1	10.6	10.6	10.6
Weekly mean of daily maximum temperature (F°.):												
Actual	87	84	83	91	91	86	96	94	92	77	80	79
Normal	83	83	82	84	84	83	90	91	90	77	77	78
Number of cities	26	26	26	35	35	35	14	14	14	11	11	11

[1] See p. 1128 footnote 8 for the cities included in each geographic section; a total of 86 cities in 1934, 1936, and 1937. Mortality for the following cities is not obtainable for 1925 and 1931 and therefore they are omitted from the above averages for those years:

North Atlantic: Bridgeport, Hartford, and Waterbury, Conn., in 1925; Hartford, Conn., in 1931.

North Central: Utica, N. Y., Erie, Pa., Akron, Canton, and Dayton, Ohio; Evansville, Fort Wayne, and South Bend, Ind.; Peoria, Ill.; and Detroit, Mich., in 1925; Evansville and Fort Wayne, Ind., in 1931.

South: Knoxville, Tenn.; Atlanta, Ga.; Miami and Tampa, Fla.; Oklahoma City, Okla.; El Paso and Houston, Tex., in 1925; Tampa, Fla., in 1931.

West: Seattle, Wash.; Long Beach, Los Angeles, and San Diego, Calif., in 1925.

TABLE 2.—*Weekly death rate from all causes and weekly maximum temperature for large cities of 4 geographic sections during 3 summer weeks of 1925, 1931, 1934, 1936, and 1937*—Continued

	North Atlantic			North Central			South			West		
	1936: Week ended—											
	July 11	July 18	July 25	July 11	July 18	July 25	July 11	July 18	July 25	July 11	July 18	July 25
Death rate per 1,000 population (annual basis):												
Actual	11.9	12.7	11.1	13.4	23.2	11.9	12.9	15.0	13.3	12.7	12.5	11.4
Normal	10.6	10.4	10.2	9.9	10.0	9.9	12.8	12.6	12.3	10.6	10.6	10.6
Weekly mean of daily maximum temperature (F°.):												
Actual	89	85	79	96	95	85	93	93	92	76	81	82
Normal	82	83	83	83	84	84	90	90	91	77	77	77
Number of cities	26	26	26	35	35	35	14	14	14	11	11	11
	1937: Week ended—											
	July 10	July 17	July 24	July 10	July 17	July 24	July 10	July 17	July 24	July 10	July 17	July 24
Death rate per 1,000 population (annual basis):												
Actual	11.5	14.0	11.5	10.7	10.9	9.7	12.6	12.6	12.6	11.6	10.7	11.2
Normal	10.7	10.6	10.4	9.8	9.9	10.0	12.5	12.8	12.6	10.5	10.6	10.6
Weekly mean of daily maximum temperature (F°.):												
Actual	89	83	83	89	86	84	90	93	91	77	76	80
Normal	81	82	83	82	83	84	90	90	90	75	77	77
Number of cities	26	26	26	35	35	35	14	14	14	11	11	11

The greatest excess in mortality and also in maximum temperature (table 2) was in the North Atlantic region in 1925 and 1937, and in the North Central in 1931, 1934, and 1936. The excess in temperature extends over a 2-week period in the regions where the excess in mortality is the highest, but is usually greatest in the week preceding the week of maximum excess mortality.

In addition to the excess in the North Central region in 1936, there was a relatively smaller excess in mortality and temperature for the North Atlantic and Southern regions. Although there was some increase in temperature in 1925 in the North Central region, the average death rate was only slightly above normal. When mortality rates for individual cities were examined, however, it was found that eight of these cities had an excess of 5 to 9 per 1,000 in the annual rates for the 3 weeks ended June 20. Similarly, four cities in the Southern area in 1931 and eight cities in the North Central area in 1937 had a 3-week excess of 5 or more per 1,000 (fig. 2), although the average death rate for the total number of cities in these regions is only slightly above normal.

CORRELATION BETWEEN EXCESS MORTALITY AND EXCESS TEMPERATURE

The association between excess mortality and excess temperature for individual cities is shown in figure 3 for each of the 5 years. The entries in the correlation tables are the frequency of occurrence of cities with each combination of deviation in mortality and in temperature. The deviation in mortality is for the week of maximum mortality for all cities as shown in figure 1 for each year; the deviation in temperature is for the week prior to that for excess mortality.

It is apparent that small deviations in temperature do not show any association with changes in mortality, but that large deviations in temperature are associated with marked excess mortality, and that the higher the temperature deviation the larger the excess mortality. The correlation, however, is not linear, and therefore the correlation coefficient "*r*" could not be used. Instead, the values of "*p*" for a nine-fold table [9] have been calculated using "less than 1", "1–3", and "4 or more" as the intervals for excess mortality and "less than 4", "4–9" and "10 or more" as intervals for excess temperature. The values of "*p*" are as follows:

Year	Number of cities	Probability (*p*) that there is no association between excess mortality and temperature
All 5 years	402	Less than 0.0000001.
1925	62	Less than 0.220.
1931	82	Less than 0.00002.
1934	86	Less than 0.002.
1936	86	Less than 0 000002.
1937	86	Less than 0.020.

For the total of 5 years (n=402), there is a definite association between deviation in mortality and deviation in temperature. In 3 of the 5 single years also the probability that the association is due to chance only is much less than 3 in 100, which can be used as indicating a significant association. In 1937 the value of "*p*" is 0.020. In 1925 it is 0.220, or, in other words, there is no significant association between deviations in temperature and mortality. The explanation of the lack of association in 1925, as shown by the value of "*p*," lies largely in the fact that the maximum excess in temperature occurred during a single week in all cities, while the maximum excess in mortality occurred in the same week as the maximum excess in temperature in the North Central region and in the week following in the North Atlantic region.

When daily temperature records for 1925 are examined it is seen that extreme temperatures occurred in the latter part of the week ended July 6 in the North Atlantic region and in the first part of the

[9] The value of "*p*" was obtained as outlined in Pearl's Medical Biometry and Statistics, 2d edition, pp. 317–322.

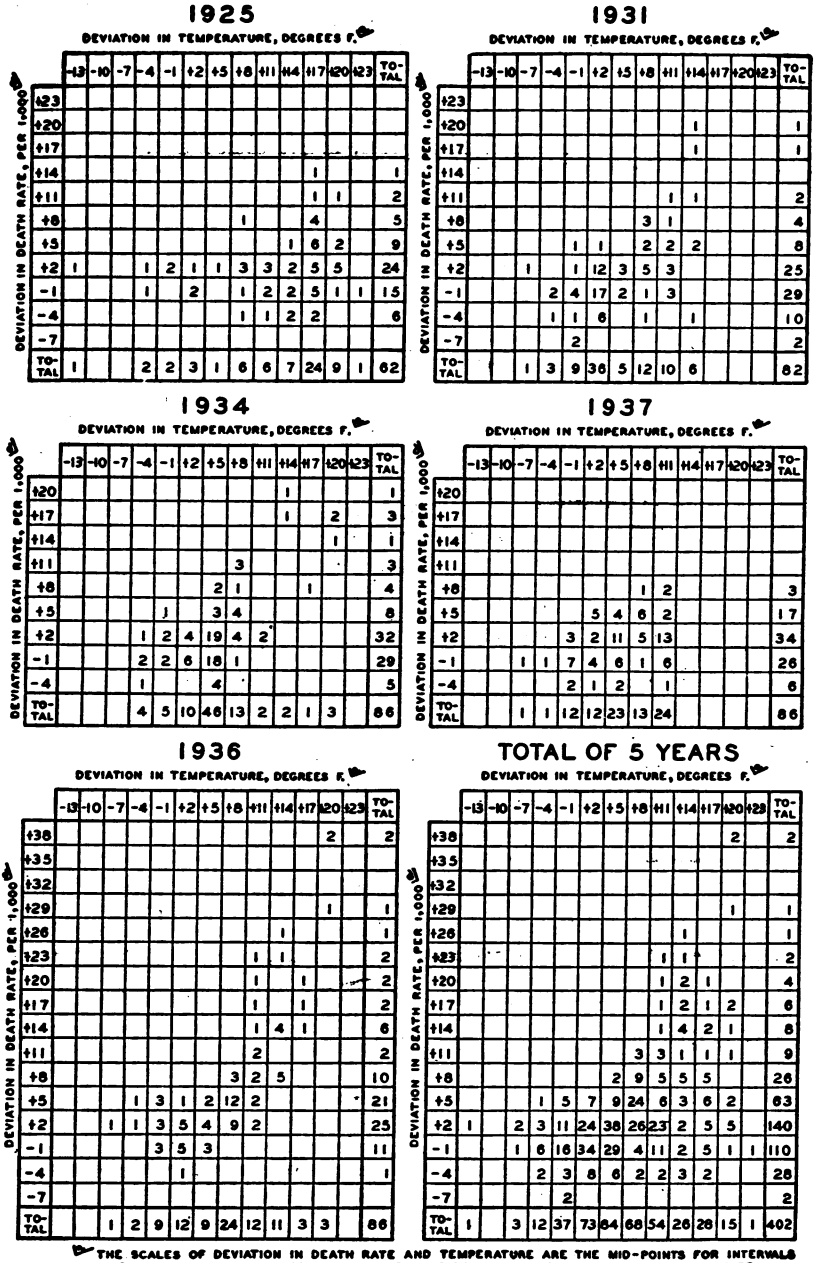

FIGURE 3.—Association between deviation from normal weekly death rate and deviation from normal weekly mean maximum temperature in 86 large cities of the United States for the week of maximum mortality during the summers of 1925, 1931, 1934, 1936, and 1937. (The week of maximum mortality was the week ended June 13, 1925, July 14, 1931, July 28, 1934, July 18, 1936 and July 17, 1937, (Fig. 1,). Deviations, in temperature are for the week prior to the week of maximum mortality.)

same week in the North Central region. In the North Atlantic region there were 20 cities with an excess mortality of 3 or more per 1,000; in 5 of these cities the maximum excess occurred during the week ended July 6, and in 15 others it occurred during the week ended July 13. In the North Central region, eight cities had an excess of three or more per 1,000 during the week ended July 6, and three during the following week ended July 13. Similarly, in 1937 a larger proportion of the cities in the North Atlantic area had marked excess in mortality in the week following the week of maximum temperature while in the North Central area the excess mortality and excess temperature occurred during the same week. In figure 3 the deviations in temperature are for the week preceding the week of maximum mortality as determined from the rates for all cities combined.

Another fact of importance in considering the association between mortality and temperature is that consecutive days of extreme temperature have more effect upon mortality than variable temperatures. Likewise, 2 successive weeks of extreme temperature (table 2, 1936) have a very marked effect upon mortality. The daily number of deaths from "excessive heat" in Kansas (*1*) increased sharply during periods when the daily temperature was extreme and remained about constant. The number of days of continuous heat, therefore, should be taken into account in considering the effect of increased temperature on the death rate.

An attempt to set up indices which would take account of even the main facts mentioned above was abandoned because it led to indices that were too complex to have a clear meaning.

MORTALITY AND TEMPERATURE FOR GROUPS OF CITIES IN AREAS OF EXTREMELY HIGH TEMPERATURES

Curves of average mortality and temperature for groups of cities in severely affected areas are shown in figure 4 for a period of 8 weeks in 1925, 9 weeks in 1931, 1934, and 1937, and for 12 weeks of 1936. The daily maximum, the weekly averages of the daily maximum, and the normal maximum temperatures are shown in the upper half, and the average weekly and normal death rate in the lower half of each chart. The graphs for 1925 and 1937 are based on data for the total number of cities in the North Atlantic region for which data are available, 23 and 26 cities, respectively; for 1931, 10 cities are included; for 1934, 14 cities; and for 1936, 26 cities in the North Central region.[10] For these groups of cities the maximum death rate in 1925 was 16.6; in 1931, 19.8; in 1934, 22.5; in 1936, 25.2; and in 1937, 14.0 per 1,000 (table 3), as compared with an expected rate of 11.6, 10.1, 11.0, 9.8, and 10.6 per 1,000, respectively. In 3 of the 5 years, 1931, 1934, and 1936, weekly mean temperatures were high, during both the week of

[10] See table 3, footnotes 2–6, for the cities included in each year.

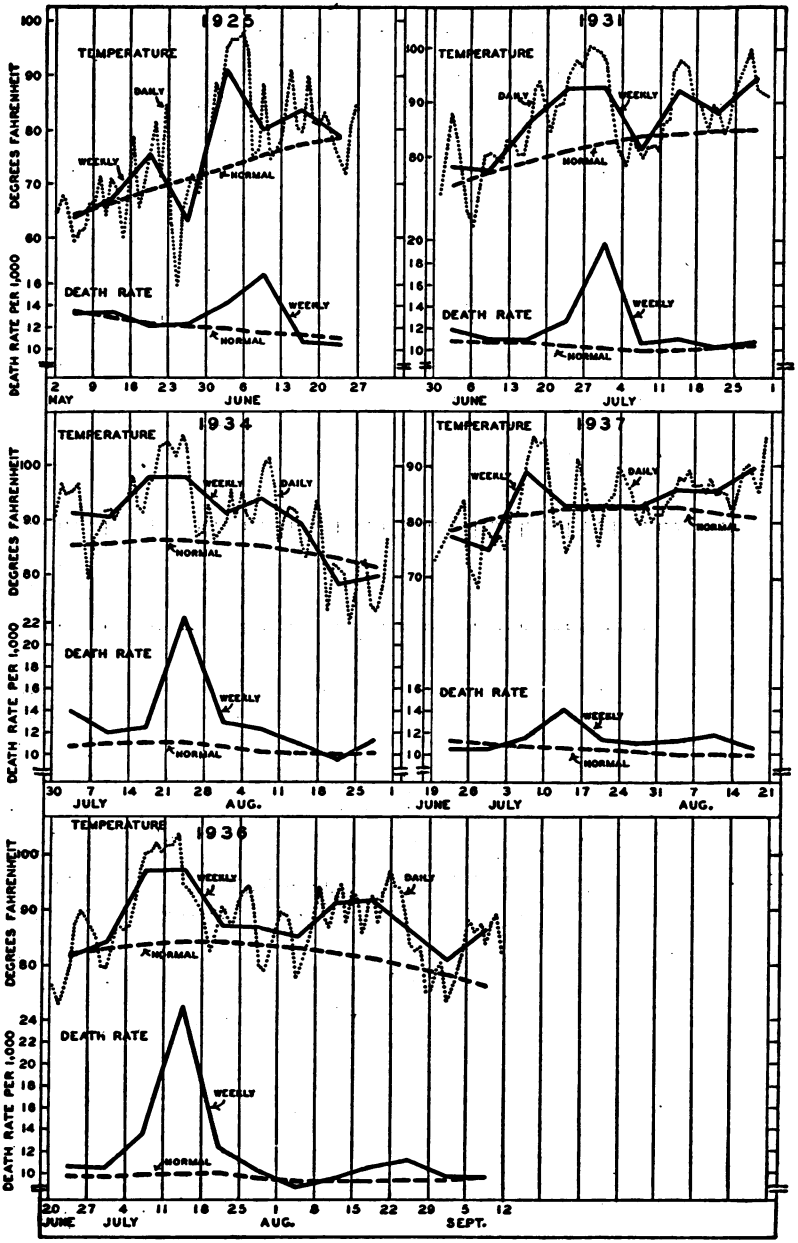

FIGURE 4.—Weekly death rate from all causes (annual basis) and daily and average weekly maximum temperature for groups of cities in areas of extreme temperature for approximately 9 summer weeks of the years 1925, 1931, 1934, 1936, and 1937. See table 3, notes 2-6, for the cities included in each year.

high mortality and the preceding week. In each year the maximum death rate was accompanied by a period of excessive temperatures, that is, an average daily maximum of 95° or more for a period of 5 days in 1925, 7 days in 1931, 8 days in 1934, 9 days in 1936, and 3 days in 1937 (table 3), which occurred in the week preceding or the week of maximum mortality. Prior to the period of excessive temperatures in each year, temperatures had been rising from subnormal over an interval of from 3 to 18 days (fig. 4).

TABLE 3.—*Weekly death rate from all causes and weekly maximum temperature for groups of cities in areas of extreme temperature, during 3 summer weeks of 1925, 1931, 1934, 1936, and 1937*

	1925 Week ended—			1931 Week ended—			1934 Week ended—			1936 Week ended—			1937 Week ended—		
	June 6	June 13	June 20	June 27	July 4	July 11	July 21	July 28	Aug. 3	July 11	July 18	July 25	July 10	July 17	July 24
Death rate per 1,000 population (annual basis);															
Actual	14.4	16.6	10.9	12.6	19.8	10.5	12.3	22.5	12.8	13.5	25.2	12.2	11.5	14.0	11.5
Normal	11.9	11.6	11.4	10.3	10.1	9.9	11.0	11.0	10.6	9.7	9.8	9.8	10.7	10.6	10.4
Weekly mean of daily maximum temperature (F°.):															
Actual	91	80	84	93	93	81	98	98	91	97	97	87	89	83	83
Normal	73	75	77	81	83	84	86	86	86	84	84	84	81	82	83
Number of days of continuous heat [1]	5			7			8			9			[1] 3		
Number of cities	[2] 23			[3] 10			[4] 14			[5] 26			[6] 26		

[1] Number of continuous days with a maximum temperature of 95° or over during the week prior to and the week of maximum mortality. The total of 3 days in 1937 includes 1 daily maximum of 94°.

[2] The cities included are: Boston, Cambridge, Fall River, Lowell, Lynn, New Bedford, Somerville, Springfield, and Worcester, Mass.; Providence, R. I.; New Haven, Conn.; Camden, Jersey City, Newark, Paterson, and Trenton, N. J.; New York and Yonkers, N. Y.; Philadelphia, Pa.; Wilmington, Del.; Baltimore, Md.; District of Columbia; and Richmond, Va.

[3] Chicago and Peoria, Ill.; Milwaukee, Wis.; Minneapolis and St. Paul, Minn.; Des Moines, Iowa; Kansas City and St. Louis, Mo.; Omaha, Nebr.; and Kansas City, Kans.

[4] Cincinnati, Columbus, and Dayton, Ohio; Evansville, Fort Wayne, Indianapolis, and South Bend, Ind.; Chicago and Peoria, Ill.; Des Moines, Iowa; Kansas City and St. Louis, Mo.; Omaha, Nebr.; and Kansas City, Kans.

[5] Akron, Canton, Cincinnati, Cleveland, Columbus, Dayton, Toledo, and Youngstown, Ohio; Evansville, Fort Wayne, Indianapolis, and South Bend, Ind.; Chicago and Peoria, Ill.; Detroit, Flint, and Grand Rapids, Mich.; Milwaukee, Wis.; Duluth, Minneapolis, and St. Paul, Minn.; Des Moines, Iowa; Kansas City and St. Louis, Mo.; Omaha, Nebr.; and Kansas City, Kans.

[6] Boston, Cambridge, Fall River, Lowell, Lynn, New Bedford, Somerville, Springfield, and Worcester, Mass.; Providence, R. I.; Bridgeport, Hartford, New Haven, and Waterbury, Conn.; Camden, Jersey City, Newark, Paterson, and Trenton, N. J.; New York and Yonkers, N. Y.; Philadelphia, Pa.; Wilmington, Del.; Baltimore, Md.; District of Columbia; and Richmond, Va.

Second heat waves, which followed the main heat waves of the summer, occurred during July or August in 4 of the 5 years (1931, 1934, 1936, and 1937) in the groups of cities shown in figure 4. The second heat waves were not so severe and did not affect all of the cities of these groups. Mortality for the groups of cities increased slightly in only two of the years, 1936 and 1937 (fig. 4). Individual cities of the groups also showed lower maximum temperature and, except for Kansas City and St. Louis, Mo. (1936), fewer days of continuous high temperature during the second heat wave. Death rates during the second heat wave were not extremely high in individual

cities, considering the total number of cities as well as the selected cities shown in figure 4. The largest excess mortality in 1931 was 3.8; in 1934, 9.6; in 1936, 6.2; and in 1937, 8.4 per 1,000. In each case the largest excess occurred in a city included in the groups shown in figure 4.

MORTALITY AND TEMPERATURE FOR SELECTED CITIES IN THE SUMMER OF 1936

Graphs similar to those of figure 4 are shown in figure 5 for 10 individual cities in the North Central region for 11 weeks of 1936. Seven of the cities were in the most severely affected area, and three were in the eastern part of the North Central region, in the States of New York and Pennsylvania.

Five of the cities shown in figure 5 had a weekly mean temperature of 100° or more during the week ended July 11; 102° in Evansville, Ind., Indianapolis, Ind., and Kansas City, Mo., and 101° in St. Louis, Mo., and Minneapolis, Minn. (table 4 and fig. 5). High temperatures continued in these cities for a period of approximately 2 weeks. Except for Kansas City, Mo., the same cities also had the highest rates of mortality; the maximum rate, 40.3 per 1,000, occurred in Minneapolis, Minn. The four cities of figure 5 (Chicago, Ill., Pittsburgh, Pa., Rochester and Syracuse, N. Y.) which had less than a week of continuing high temperature also had relatively small increases in mortality. The excess, however, is definite in each of the cities.

Although the highest temperatures during 1936 occurred in Kansas City, Mo., namely, 102° and 106° for the 2 weeks ended July 18, the maximum death rate was only 18.6 as compared with an expected rate of 11.0 per 1,000 (fig. 5). The excess in Kansas City, Kans., was also relatively low, 7.7 per 1,000. During the heat wave of 1934, Kansas City, Mo., experienced the highest temperatures and the longest period of extreme temperature; the weekly mean was 108° for the week ended July 21, 1934, and there were 41 days in which the maximum temperature was 95° or more from July 1 to the middle of August. The sum of the excess in the annual rates for 3 weeks ended August 3, 1934, for Kansas City was also the highest which occurred in any of the 86 cities. In 1936 the most extreme temperatures again occurred in Kansas City, as shown in figure 5; the heat waves of 1934 and 1936 were of about equal severity in that city. The maximum mortality in 1936, however, was only 18.6 in Kansas City, Mo., as compared with 35.4 per 1,000 in St. Louis, Mo. It seems probable that the comparatively low excess mortality during 1936 in Kansas City, Mo., is associated with the fact that the heat wave of 1936 followed so soon after a heat wave of equal severity in 1934.

In four of the cities shown in figure 5 a second period of extreme temperature occurred during August, following the earlier heat wave in July. Evansville, Ind., Indianapolis, Ind., and St. Louis, Mo.,

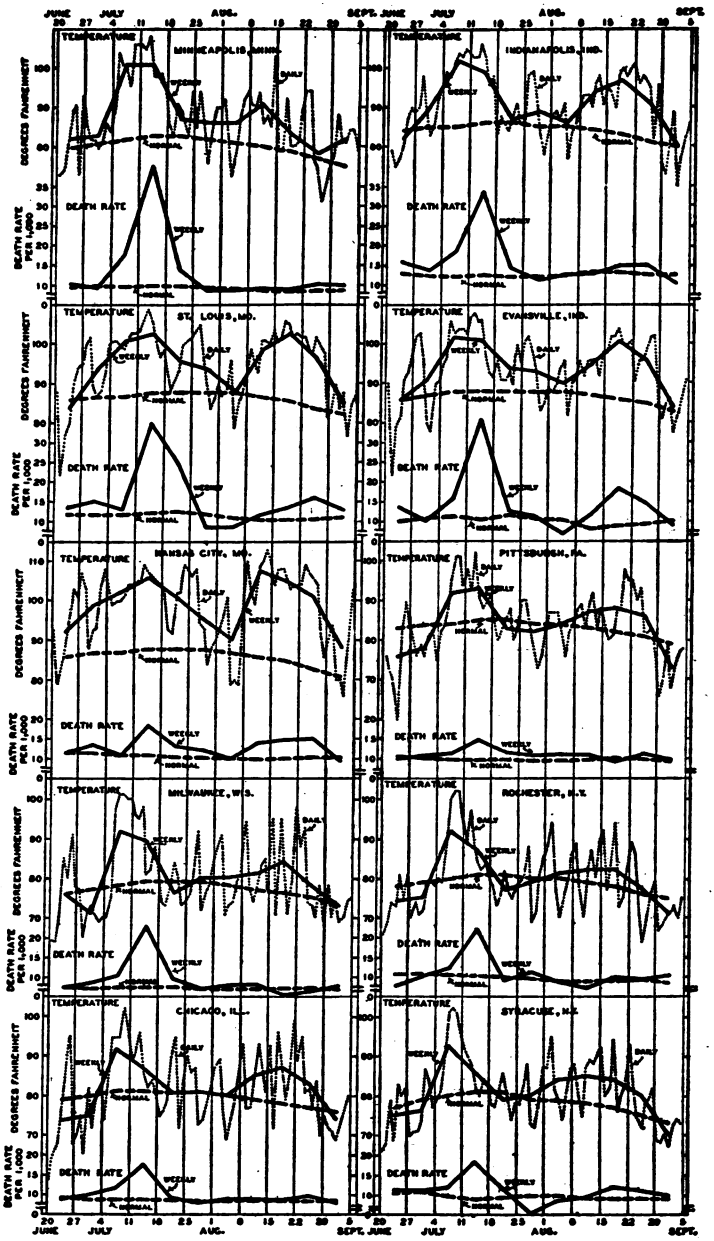

FIGURE 5.—Weekly death rate from all causes (annual basis) and daily and average weekly maximum temperature for 10 cities in an area of extreme temperature for 11 summer weeks of 1936.

(fig. 5) had temperatures in August which were only slightly lower than those which occurred in July. There is, however, a marked difference in the death rates during July and August; the excess in the weeks of maximum mortality is three to nine times as great in the earlier period (fig. 5).

TABLE 4.—*Weekly death rate from all causes and weekly maximum temperature for 10 cities in an area of extreme temperature during the summer of 1936*

	Evansville, Ind.	Indianapolis, Ind.	Kansas City, Mo.	St. Louis, Mo.	Chicago, Ill.	Milwaukee, Wis.	Minneapolis, Minn.	Pittsburgh, Pa.	Rochester, N. Y.	Syracuse, N.Y.
	Week ended July 18, 1936									
Death rate per 1,000 population (annual basis):										
Actual	36.0	33.5	18.6	35.4	17.8	22.9	40.3	14.9	22.1	18.1
Normal	10.5	12.2	11.0	12.5	8.8	7.4	10.0	9.6	10.4	8.9
	Week ended July 11, 1936									
Weekly mean of daily maximum temperature (F°.):										
Actual	102	102	102	101	92	92	101	92	92	93
Normal	88	85	87	87	81	78	82	84	80	80
	Week ended July 18, 1936									
Actual	101	99	106	103	87	89	101	93	87	86
Normal	88	86	88	88	81	79	83	85	81	81
Number of days of continuous heat [1]	12	14	16	15	5	8	13	[2] 7	4	4
	Week ended Aug. 29, 1936									
Death rate per 1,000 population (annual basis):										
Actual	[3] 18.5	14.8	15.1	16.3	9.6	6.5	10.0	11.1	9.6	11.0
Normal	[3] 9.0	12.4	10.4	10.9	8.4	7.1	8.5	9.8	9.3	8.9
	Week ended Aug. 22, 1936									
Weekly mean of daily maximum temperature (F°.):										
Actual	101	97	[4] 108	103	87	84	[4] 91	88	82	[4] 85
Normal	86	83	[4] 86	86	78	76	[4] 80	82	78	[4] 78
	Week ended Aug. 29, 1936									
Actual	96	91	[5] 105	97	83	78	[5] 83	86	77	[5] 84
Normal	85	81	[5] 85	84	77	75	[5] 79	81	76	[5] 77
Number of days of continuous heat [1]	8	9	20	17	0	0	0	0	0	0

[1] Number of continuous days with a maximum temperature of 95° or over during 1 or 2 weeks prior to and the week of maximum mortality.
[2] The 7 days include 2 days with a maximum of 94° and 93°, respectively.
[3] Death rates are for the week ended Aug. 22.
[4] Temperatures are for the week ended Aug. 15.
[5] Temperatures are for the week ended Aug. 22.

In St. Louis, Mo., during the 2 weeks ended July 4, 1931, the weekly mean temperature was 98° for both weeks, and the maximum mortality was 28.0 per 1,000; during the 2 weeks ended July 28, 1934, the mean temperatures were 102° and 100° and the maximum mortality 34.0 per 1,000; during the 2 weeks ended July 18, 1936, the mean temperatures were 101° and 103° and the maximum mortality 35.4 per 1,000; and during the 2 weeks ended August 29, 1936, the mean temperatures were 103° and 97° and the maximum mortality only 16.3 per 1,000. In other words, although the temperatures were markedly lower in July 1931 than they were in August 1936, the excess was three times as much in the week of maximum mortality in July 1931 as during the second heat wave in August of 1936. The comparatively low excess mortality during a second heat wave in a single year may be explained by the fact of acclimatization or, since the increase in mortality occurs largely among those with chronic circulatory diseases, that the majority of such deaths are hastened in the first heat wave of the summer.

SUMMARY

Mortality which is certified and recorded as due to "excessive heat" includes by no means all excess deaths which occur during periods of extreme temperature. During July of 1934 in Kansas, "excessive heat" accounts for only about one-quarter of the excess deaths which occurred during that month. The remainder of the excess was distributed largely among diseases of the heart, cerebral hemorrhage, nephritis, and pneumonia.

In 5 of the 13 years from 1925 to 1937 summer weekly rates of mortality in large cities rose as high as, or higher than, an average January rate. In at least 3 of the remaining 7 years smaller increases in mortality occurred.

These sharp increases in mortality occur most frequently during the month of July, but sometimes they occur in June or August. The area most often affected is roughly outlined by the States of Ohio, Indiana, Illinois, Missouri, Iowa, and Nebraska. The more northern States of Michigan, Wisconsin, and Minnesota, however, are sometimes a part of the affected area. The North Atlantic cities also frequently experience these sudden increases in mortality. The areas least frequently affected are the far South and the Pacific coast.

A comparison of weekly mortality and weekly temperature for the total of 86 cities shows a positive association between deviations from normal weekly death rates and deviations from normal weekly mean maximum temperatures for the preceding week.

Daily maximum temperatures for groups of cities and for individual cities in affected areas show that the excess in mortality is preceded

by at least several successive days of extreme temperature. Excess mortality during a second period of extreme temperature in any one year is slight when compared with the excess mortality during the first major heat wave of the summer, even when the second rise in temperature is extreme.

REFERENCES

(1) Brown, Earle G.: Deaths from excessive heat in Kansas, 1934. Pub. Health Rep., **50**: 546 (1935).
(2) Climatological data for the United States, by sections. Weather Bureau, Department of Agriculture. Government Printing Office, Washington, D. C., 1920–37.
(3) Collins, Selwyn D., and Gover, Mary: Maximum temperatures and increased death rates in the drought area. Pub. Health Rep., **49**: 1015 (1934).
(4) Hall, W. W., and Wakefield, E. G.: A study of experimental heat stroke. J. Am. Med. Assoc., **89**: 177 (1927).
(5) Illinois Health Messenger, State of Illinois Department of Public Health, 8: 118 (1936).
(6) Manual of Joint Causes of Death, Bureau of the Census, Department of Commerce. Government Printing Office, Washington, D. C., 1933.
(7) Mortality Statistics, Bureau of the Census, Department of Commerce. Government Printing Office, Washington, D. C., 1920–34.
(8) Release, Bureau of the Census, Department of Commerce, July 25, 1936.
(9) Shattuck, George C., and Hilferty, Margaret M.: Sunstroke and allied conditions in the United States. Am. J. Trop. Med., 12: 223 (1932).
(10) Shattuck, George C., and Hilferty, Margaret M.: Causes of death from heat in Massachusetts. New England J. Med., **209**: 319 (1933).
(11) Weekly Health Index, Bureau of the Census, Department of Commerce. Government Printing Office, Washington, D. C., 1920–37.

POLIOMYELITIS: PREVALENCE SINCE 1915 AND THE PRESENT SITUATION

By Brock C. Hampton, *Junior Administrative Assistant, Division of Sanitary Reports and Statistics, United States Public Health Service*

Although poliomyelitis does not rank high in the lists of diseases either with reference to the annual number of cases reported or as a cause of death, and in these respects even falls below the common communicable diseases of childhood, it has become one of the most dreaded of all our epidemic infections. This fear may arise from the frequent distressing crippling effects of the disease and from the feeling of insecurity which comes from the lack of defensive measures.

Along in May or June a normal seasonal increase in the incidence of poliomyelitis occurs in the United States, and this rise brings up the question of whether it indicates that an epidemic may be expected during the following summer. As a rule, if the seasonal rise starts early and abruptly in May or June, epidemic proportions may be expected for the year. However, in the epidemic year of 1931 the sharp rise did not begin until late in June, while in 1937 and 1930, which also might be considered years of unusual prevalence, the sharp rise started in May and the respective peak weeks for the year were not reached

until September and October. As early as June 11, 1935, Dr. Leake, of the Public Health Service, in a radio talk [1] prepared for the American Medical Association, predicted " a heavy year" for the disease, on the basis of the sharp increase in the preceding week. In that year there were 10,839 cases, exceeded only twice in the preceding 20 years—1931, with 15,790 cases, and 1916, the greatest epidemic year of record, with 27,363 cases.

The composite graph representing the seasonal incidence of poliomyelitis follows a rather definite form, as shown by the 9-year median

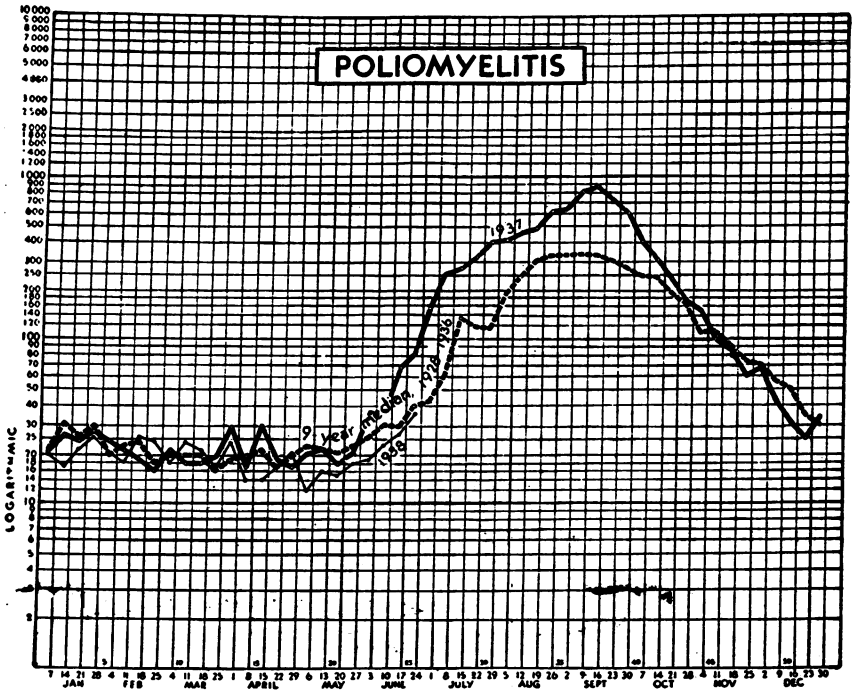

FIGURE 1.—Cases of poliomyelitis reported in the United States in 1937, 9-year median, and cases reported in 1933, plo.ted on a semi-logarithmic chart.

in the accompanying figure. The characteristics of the seasonal curve are a low and fairly uniform, almost horizontal line for the first 5 months of the year, a rise beginning usually in May or June and continuing until the peak is reached usually in August or early September, and then a gradual decline to the low horizontal winter and spring level.

Poliomyelitis occurs in all regions of the United States and at every season of the year. Although the usual seasonal prevalence is as shown in the accompanying graph, outbreaks of the disease may occur in the dead of winter. However, such outbreaks are not common.

[1] The polio situation. By J. P. Leake. (Mimeographed.)

The disease is said to occur in the tropics and among the Eskimos, but its heaviest incidence is in the cooler part of the temperate zone, and there in the summer and early fall. In an article published in a recent issue of the PUBLIC HEALTH REPORTS, Dr. Dauer, epidemiologist of the District of Columbia Health Department, discussed the epidemiology and geographical distribution of poliomyelitis in the United States since 1915.[2]

TABLE 1.—*Number of cases of poliomyelitis, case rates, deaths, death rates, and case fatality rates for the United States for the years 1915 to 1936, inclusive, with preliminary cases and case rates for 1937*

Year	Cases	Cases per 100,000 population	Deaths	Death rates per 100,000 population	Deaths per 100 cases
1915	1,634	3.1	691	1.0	42.3
1916	27,363	41.4	7,130	10.0	26.1
1917	4,082	5.4	1,182	1.6	29.0
1918	2,493	2.9	960	1.2	38.3
1919	1,932	2.4	747	.9	38.7
1920	2,325	2.8	769	.9	33.1
1921	6,266	6.9	1,597	1.8	25.5
1922	2,222	2.4	790	.8	35.6
1923	3,266	3.4	850	.9	26.0
1924	5,199	5.7	1,079	1.1	20.8
1925	5,926	5.6	1,519	1.5	25.6
1926	2,528	2.5	851	.8	33.7
1927	10,533	8.9	2,013	1.9	19.1
1928	5,113	4.6	1,381	1.2	27.0
1929	2,837	2.7	812	.7	28.6
1930	9,188	7.9	1,370	1.2	14.9
1931	15,790	14.6	2,096	1.8	13.3
1932	3,778	3.2	828	.7	21.9
1933	4,983	4.3	797	.6	16.0
1934	7,517	5.9	852	.7	11.3
1935	10,839	8.5	1,040	.8	9.6
1936	4,523	3.5	780	.6	17.2
1937	9,511	7.4			

The numbers of cases given in this table are those reported to the Public Health Service. Cases were less completely reported for years prior to 1927 than since that year. Deaths and death rates are taken from reports of the Bureau of the Census.

As shown in table 1, there have been 4 years since 1915 in which more than 10,000 cases were reported in the United States, the most important epidemic occurring in 1916, when the disease swept the country, with the largest numbers of cases and deaths ever recorded. The other years are 1927, with 10,533 cases, 1931 with 15,790 cases, and 1935 with 10,839 cases. The epidemic of 1916 was especially severe in New York City and Massachusetts. In the same 23-year period there are 2 other years in which the numbers of reported cases exceeded 9,000, viz, 1930 and 1937.

In 1935, 60 percent of the total number of cases reported occurred in New York, Massachusetts, Virginia, North Carolina, and California, representing 23 percent of the total population, whereas the epidemic of 1937 started in the lower Mississippi Valley, spread into the States along the Mississippi and Ohio Valleys, and later extended into the New England States and Canada. Outside the limits of this fan-like

[2] Studies on the epidemiology of poliomyelitis. By C. C. Dauer. Pub. Health Rep., June 24, 1938, pp. 1003-1020.

area, unusually high incidence was also noted that year in North Carolina, Colorado, Texas, and California. The general distribution for 1937 is shown in table 2, which gives the number of reported cases by States and geographic areas. It may be noted that 26 States reported from 100 to 698 cases, while 15 States reported less than 50 cases each.

TABLE 2.—*Number of cases of poliomyelitis reported in the United States during 1937*

State	Cases	State	Cases
New England:		South Atlantic—Continued.	
Maine	136	North Carolina	106
New Hampshire	25	South Carolina	42
Vermont	38	Georgia	92
Massachusetts	349	Florida	35
Rhode Island	21	East South Central:	
Connecticut	104	Kentucky	128
Middle Atlantic:		Tennessee	127
New York	636	Alabama	82
New Jersey	160	Mississippi	351
Pennsylvania	336	West South Central:	
East North Central:		Arkansas	341
Ohio	533	Louisiana	138
Indiana	146	Oklahoma	469
Illinois	780	Texas	637
Michigan	421	Mountain:	
Wisconsin	292	Montana	31
West North Central:		Idaho	15
Minnesota	355	Wyoming	40
Iowa	241	Colorado	218
Missouri	393	New Mexico	25
North Dakota	7	Arizona	25
South Dakota	37	Utah	33
Nebraska	218	Nevada	6
Kansas	246	Pacific:	
South Atlantic:		Washington	87
Delaware	8	Oregon	63
Maryland	82	California	690
District of Columbia	30		
Virginia	68	Total	9,511
West Virginia	68		

The case fatality rate (deaths per 100 cases) in the United States during the 22 years from 1915 to 1936, inclusive, as indicated by the number of cases reported to the Public Health Service and the deaths recorded by the Bureau of the Census, ranged between 9.6 and 42.3, with a case fatality rate for the entire period of 21.5. The highest rate, that shown for 1915, probably resulted in large part from unreported cases. The computed case fatality rates are lowest for epidemic years and highest for years of lowest incidence. This difference, however, is probably more apparent than real and due, no doubt, in greater part to lack of recognition and less complete reporting of mild cases during seasons of low incidence.

With reference to the poliomyelitis situation in the current year, there has been a total of 547 cases reported up to July 2 as compared with 815 for the same period last year. Up to and including the week ended April 2, there were 279 cases reported this year as compared with 277 last year, but by the end of the following week these figures

were 293 and 294, respectively, and in the succeeding weeks the accumulated totals for this year have been below those for the corresponding periods of last year. In 1937 the curve representing the reported cases began a rather sharp upward turn around the latter part of May, while this year that abrupt change did not occur until the first week in June, and the slope of the curve was much less sharp. While the future cannot be predicted with accuracy, the present indications are favorable, although a seasonal increase in the next few months is a certainty.

The important preventive measures to be observed during an epidemic, as outlined by Dr. Leake, are to protect children against undue fatigue or strain, avoid unnecessary contact and exposure, keep slightly ill or feverish children isolated and quiet, observe all quarantine rules, secure medical assistance promptly upon noticing suspicious symptoms, and keep the sick child as quiet as possible. Every aid should be given in the scientific study of the control of the disease. So far, the development of a specific preventive is a hopeful prospect rather than an accomplished fact; many competent investigators do not believe that serum has yet proved to be of definite value in the treatment of the disease, and there is considerable evidence to show that it may be harmful. Careful handling and protection of the muscles are particularly important in the very earliest stages.[3] Skillful protection before wrong positions are assumed and weakened muscles overused or stretched has meant the difference between resulting disability and restitution to normal life.

DIRECTORY OF WHOLE-TIME COUNTY HEALTH OFFICERS, 1938 [a]

Each year the Public Health Service publishes information as to the extent of whole-time rural health service in the United States, giving the names of the counties so served in each State.[b] The tabulation presented here supplements that information by giving the name, address, and official title of the whole-time county and district health officers. It would also serve a useful purpose to have a complete list of personnel for each whole-time county or district health unit, but since this would involve considerable detail, it is suggested that such information be obtained through communication with the health officer of any county or district listed in this directory.

[3] Care during the recovery period in paralytic poliomyelitis. By Henry O. Kendall and Florence P. Kendall, with an introduction by George E. Bennett, M. D., and Robert Johnson, Jr., M. D. Pub. Health Bull. 242. Gov't. Printing Office, 1938.

[a] As of January 1, 1938.

[b] To be published later.

State and county	Name of health officer	Post office	Official title
Alabama:			
Autauga	G. E. Newton, M. D.	Prattville	County health officer.
Baldwin	Arthur Vandergrind, M. D.	Bay Minette	Do.
Berbour	E. M. Moore, M. D.	Clayton	Do.
Bibb	R. O. Ingham, M. D.	Centerville	Do.
Blount	T. M. Towns, M. D.	Oneonta	Do.
Bullock	H. R. Owen, M. D.	Union Springs	Do.
Butler	C. J. Fisher, M. D.	Greenville	Do.
Calhoun	J. M. Kimmey, M. D.	Anniston	Do.
Chambers	A. I. Perley, M. D.	LaFayette	Do.
Cherokee	S. C. Tatum, M. D.	Center	Do.
Chilton	S. D. Sturkie, M. D.	Clanton	Do.
Choctaw	H. A. McClure, M. D.	Butler	Do.
Clarke	B. S. Black, M. D.	Grove Hill	Do.
Clay	O. F. Gay, M. D.	Ashland	Do.
Cleburne	F. R. Wood, M. D.	Heflin	Do.
Coffee	W. A. Dodson, M. D.	Elba	Do.
Colbert	R. E. Harper, M. D.	Tuscumbia	Do.
Conecuh	E. L. Kelly, M. D.	Evergreen	Do.
Coosa	W. H. Goff, M. D.	Rockford	Do.
Covington	C. D. McLeod, M. D.	Andalusia	Do.
Crenshaw	J. O. Foster, M. D.	Luverne	Do.
Cullman	M. S. Whiteside, M. D.	Cullman	Do.
Dale	W. L. Orr, M. D.	Ozark	Do.
Dallas	L. T. Lee, M. D.	Selma	Do.
DeKalb	C. F. Holler, M. D.	Fort Payne	Do.
Elmore	C. S. Cotlin, Jr., M. D.	Wetumpka	Do.
Escambia	W. J. Donald, M. D.	Brewton	Do.
Etowah	C. L. Murphree, M. D.	Gadsden	Do.
Fayette	R. V. Taylor, M. D.	Fayette	Do.
Franklin	N. P. Underwood, M. D.	Russellville	Do.
Geneva	W. J. Broad, M. D.	Geneva	Do.
Greene	D. H. Fryer, M. D.	Eutaw	Do.
Hale	B. M. Drake, M. D.	Greensboro	Do.
Henry	C. T. Martin, M. D.	Abbeville	Do.
Houston	W. T. Burkett, M. D.	Dothan	Do.
Jackson	A. S. Dix, M. D.	Scottsboro	Do.
Jefferson	J. D. Dowling, M. D.	Birmingham	Do.
Lamar	D. R. Brown, M. D.	Vernon	Do.
Lauderdale	J. E. Dunn, M. D.	Florence	Do.
Lawrence	W. J. Craig, M. D.	Moulton	Do.
Lee	A. H. Graham, M. D.	Opelika	Do.
Limestone	F. M. Hall, M. D.	Athens	Do.
Lowndes	E. F. Leatherwood, M. D.	Hayneville	Do.
Macon	Murray Smith, M. D.	Tuskegee	Do.
Madison	W. C. Hatchett, M. D.	Huntsville	Do.
Marengo	E. T. Norman, M. D.	Linden	Do.
Marion	T. L. Owings, M. D.	Hamilton	Do.
Marshall	Lee Weathington, M. D.	Guntersville	Do.
Mobile	O. L. Chason, M. D.	Mobile	Do.
Monroe	G. E. Maddison, M. D.	Monroeville	Do.
Montgomery	J. L. Bowman, M. D.	Montgomery	Do.
Morgan	L. R. Murphree, M. D.	Decatur	Do.
Perry	J. R. Long, M. D.	Marion	Do.
Pickens	J. J. Croley, M. D.	Carrollton	Do.
Pike	W. H. Abernethy, M. D.	Troy	Do.
Randolph	W. A. Edwards, M. D.	Wedowee	Do.
Russell	M. L. Shaddix, M. D.	Phenix City	Do.
Shelby	E. F. Sloan, M. D.	Columbiana	Do.
St. Clair	T. C. Elliott, M. D.	Ashville	Do.
Sumter	S. J. Williams, M. D.	Livingston	Do.
Talladega	J. H. Hill, M. D.	Talladega	Do.
Tallapoosa	C. C. Fargason, M. D.	Dadeville	Do.
Tuscaloosa	A. A. Kirk, M. D.	Tuscaloosa	D9.
Walker	A. M. Waldrop, M. D.	Jasper	Do.
Washington	C. M. Cole, M. D.	Chatom	Do.
Wilcox	E. L. McIntosh, M. D.	Camden	Do.
Winston	T. T. Box, M. D.	Double Springs	Do.
Arizona:			
Coconino	G. F. Manning, M. D.	Flagstaff	Director.
Maricopa	A. N. Crain, M. D.	Phoenix	Do.
Pima	L. H. Howard, M. D.	Tucson	Do.
Yuma	Robert M. Matts, M. D.	Yuma	Do.
District: Cochise-Santa Cruz.	R. B. Durfee, M. D.	Bisbee	Do.
Arkansas:			
Conway	Don W. Dykstra, M. D.	Morrilton	Medical director.
Craighead	L. L. Fatherree, M. D.	Jonesboro	Do.
Crittenden	B. M. Stevenson, M. D.	Marion	Do.
Drew	S. W. Chambers, M. D.	Monticello	Do.
Garland	J. F. Merritt, M. D.	Hot Springs	Do.
Independence	J. B. Askew, M. D.	Batesville	Do.
Jefferson	W. H. Bruce, M. D.	Pine Bluff	Do.

State and county	Name of health officer	Post office	Official title
Arkansas—Continued.			
Miller	Max F. McAllister, M. D.	Texarkana	Medical director.
Mississippi	Roy J. Schirmer, M. D.	Blytheville	Do.
Polk	F. S. Dozier, M. D.	Mena	Do.
Pulaski	J. A. Summers, M. D.	Little Rock	Do.
Sebastian	J. E. Johnson, M. D.	Fort Smith	Do.
St. Francis	W. A. Winters, M. D.	Forrest City	Do.
District No. 1	Roy J. Turner, M. D.	Fayetteville	Do.
Benton.			
Madison.			
Washington.			
District No. 2	W. C. Riggins, M. D.	Hamburg	Do.
Ashley.			
Chicot.			
Desha.			
District No. 3	J. K. Grace, M. D.	Arkadelphia	Do.
Clark.			
Hempstead.			
Nevada.			
District No. 4	Marcus T. Smith, M. D.	Conway	Do.
Cleburne.			
Faulkner.			
District No. 5	J. W. Ringgold, M. D.	Ashdown	Do.
Howard.			
Little River.			
Sevier.			
District No. 6	A. S. J. Clark, M. D.	Clarendon	Do.
Arkansas.			
Monroe.			
Prairie.			
District No. 7	R. C. Kennerly, M. D.	Camden	Do.
Calhoun.			
Dallas.			
Ouachita.			
District No. 8	W. B. Bruce, M. D.	Helena	Do.
Lee.			
Phillips.			
District No. 9	A. B. Tate, M. D.	Russellville	Do
Johnson.			
Pope.			
Yell.			
District No. 10	Thomas C. Watson, M. D.	Benton	Do.
Grant.			
Hot Springs.			
Saline.			
District No. 11	J. F. Hays, M. D.	Augusta	Do.
Cross.			
White.			
Woodruff.			
Jackson	M. B. Owens, M. D.	Newport	Assistant medical director.
District No. 12	J. B. Elders, M. D.	Walnut Ridge	Medical director.
Clay.			
Greene.			
Lawrence.			
Randolph.			
California:			
Alameda	I. O. Church, M. D., C. P. H.	Oakland	County health officer.
Contra Costa	W. A. Powell, M. D.	Richmond	Do.
Fresno	W. F. Stein, M. D.	Fresno	Do.
Imperial	W. F. Fox, M. D.	El Centro	Do.
Kern	Myrnie L. Gifford, M. D., C. P. H.	Bakersfield	Assistant county health officer.
Los Angeles	J. L. Pomeroy, M. D.	Los Angeles	County health officer.
Madera	L. A. Stone, M. D.	Madera	Do.
Monterey	R. M. Fortier, M. D.	Salinas	Do.
Orange	K. H. Sutherland, M. D.	Santa Ana	Do.
Riverside	W. A. Jones, M. D.	Riverside	Do.
San Bernardino	W. W. Fenton, M. D.	San Bernardino	Do.
San Diego	A. M. Lesem, M. D.	San Diego	Do.
San Joaquin	J. J. Sippy, M. D.	Stockton	District health officer.
San Luis Obispo	A. F. Gillihan, M. D.	San Luis Obispo	County health officer.
San Mateo	C. C. Gans, M. D.	San Mateo	Do.
Santa Barbara	R. C. Main, M. D.	Santa Barbara	Do.
Santa Cruz	J. D. Fuller, M. D., C. P. H.	Santa Cruz	Do.
Ventura	C. R. Wylie, M. D., C. P. H.	Ventura	Do.
Yolo	E. M. Bingham, M. D., C. P. H.	Woodland	Do.
Delaware:			
Kent	E. F. Smith, M. D.	Dover	Director.
New Castle	J. R. Downes, M. D.	Newark	Do.
Sussex	F. I. Hudson, M. D.	Georgetown	Do.

State and county	Name of health officer	Post office	Official title
Florida:			
Broward	J. W. McMurray, M. D., C. P. H.	Fort Lauderdale	Director.
Escambia	Temporary vacancy	Pensacola	Do.
Gadsden	K. K. Waering, M. D., C. P. H.	Quincy	Do.
Highlands	C. W. Pease, M. D., C. P. H.	Bartow	Acting director.
Hillsborough	J. S. Spoto, M. D., C. P. H.	Tampa	Director.
Jackson	R. N. Joyner, M. D., C. P. H.	Marianna	Do.
Leon	L. J. Graves, M. D.	Tallahassee	Do.
Monroe	J. B. Parramore, M. D., C. P. H.	Key West	Do.
Orange	Wm. P. Rice, M. D., C. P. H.	Orlando	Do.
Pinellas	W. H. Pickett, M. D., C. P. H.	Clearwater	Do.
Taylor	C. A. O'Quinn, M. D., C. P. H.	Perry	Do.
Tri-county health unit. Calhoun. Franklin. Gulf.	A. L. Stebbins, M. D., C. P. H.	Apalachicola	Do.
Georgia:			
Baldwin	O. F. Moran, M. D.	Milledgeville	Commissioner of health.
Bartow	A. C. Shamblin, M. D.	Cartersville	Do.
Bibb-Jones	J. D. Applewhite, M. D., M. P. H.	Macon	Do.
Bleckley	H. T. Adkins, M. D.	Cochran	Do.
Brooks	M. E. Groover, Jr., M. D.	Quitman	Do.
Bulloch	H. E. McTyre, M. D.	Statesboro	Do.
Burke	A. J. Davis, M. D.	Waynesboro	Do.
Calhoun	G. M. Anderson, M. D.	Morgan	Do.
Chatham	Victor H. Bassett, M. D.	Savannah	Do.
Clarke	W. W. Brown, M. D.	Athens	Do.
Clinch	F. A. Brink, M. D.	Homerville	Do.
Cobb	J. E. Lester, M. D.	Marietta	Do.
Coffee	Roy L. Johnson, M. D.	Douglas	Do.
Colquitt	T. H. Chesnutt, M. D.	Moultrie	Do.
Decatur	M. A. Fort, M. D., Ph. G., D. P. H.	Bainbridge	Do.
De Kalb	J. R. Evans, M. D., Ph. G.	Decatur	Do.
Dodge	J. L. Gallemore, M. D.	Eastman	Do.
Dougherty	Temporary vacancy	Albany	Do.
Floyd	B. V. Elmore, M. D.	Rome	Do.
Fulton	W. L. Gilbert, M. D.	Atlanta	Do.
Glynn - McIntosh - Camden.	M. E. Winchester, M. D., D. P. H., C. P. H.	Brunswick	Do.
Grady	H. R. Rankin, M. D.	Cairo	Do.
Hall	W. D. Cagle, M. D.	Gainesville	Do.
Hancock-Glascock	R. B. Griffin, M. D.	Sparta	Do.
Jefferson	S. C. Ketchin, M. D.	Louisville	Acting commissioner of health.
Jenkins	Glenn J. Bridges, M. D.	Millen	Commissioner of health.
Laurens	O. H. Cheek, M. D.	Dublin	Do.
Lowndes	G. T. Crozier, M. D., D. P. H.	Valdosta	Do.
Mitchell	C. O. Rainey, M. D., P. H. C.	Camilla	Do.
Montgomery-Toombs	Thomas W. Collier, M. D.	Lyons	Do.
Richmond	Thomas B. Phinizy, M. D.	Augusta	Do.
Spalding	T. O. Vinson, M. D.	Griffin	Do.
Sumter	W. F. Castellow, M. D.	Americus	Do.
Telfair-Wheeler	W. L. Shepeard, M. D.	McRae	Do.
Terrell	John R. Cain, M. D.	Dawson	Do.
Thomas	Herbert F. Readling, M. D.	Thomasville	Do.
Tift	Robert H. Haralson, M. D.	Tifton	Do.
Troup	S. C. Rutland, M. D.	La Grange	Do.
Walker-Catoosa	R. C. Shepard, M. D.	La Fayette	Do.
Walton	John L. Dorough, M. D.	Monroe	Do.
Ware	George E. Atwood, M. D., D. P. H.	Waycross	Do.
Washington	O. L. Rogers, M. D.	Sandersville	Do.
Whitfield	Charles F. Engelking, M. D.	Dalton	Do.
Worth	A. G. Hendrick, M. D.	Sylvester	Do.
Hawaii:			
Maui Island	Laurence M. Wiig, M. D.	Wailuku, Territory of Hawaii.	County health officer.

State and county	Name of health officer	Post office	Official title
Idaho:			
Bannock	M. B. McQueen, M. D.	Pocatello	Director.
Kootenai	L. C. Krotcher, M. D. (temporary).	Coeur d'Alene	Acting director.
District	Robert B. Stump, M. D.	Twin Falls	Director.
Cassia.			
Gooding.			
Jerome.			
Twin Falls.			
District	M. W. Caskey, M. D.	Lewiston	Do.
Clearwater.			
Latah.			
Nez Perce.			
Illinois:			
District No. 1	W. C. Van Wormer, M. D.	Chicago	District health superintendent.
Cook.			
Dupage.			
Will.			
District No. 3	J. H. Poling, M. D.	Freeport	Do.
Carroll.			
Jo Daviess.			
Lee.			
Ogle.			
Stephenson.			
District No. 4	C. A. Peterson, M. D.	Moline	Do.
Bureau.			
Henry.			
Mercer.			
Rock Island.			
Whiteside.			
District No. 7	Sandor Horwitz, M. D.	Peoria	Do.
Marshall.			
Peoria.			
Putnam.			
Star.			
Tazewell.			
Woodford.			
District No. 10	John P. Walsh, M. D.	Greenview	Do.
Cass.			
Logan.			
Mason.			
Menard.			
Sangamon.			
District No. 12	Nettie M. Dorris, M. D.	Paris	Do.
Champaign.			
Coles.			
Douglas.			
Edgar.			
Vermilion.			
District No. 17	J. L. Bryan, M. D.	Xenia	Do.
Clay.			
Edwards.			
Jefferson.			
Marion.			
Wabash.			
Wayne.			
District No. 18	R. R. Cross, M. D.	Dahlgren	Do.
Franklin.			
Gallatin.			
Hamilton.			
Saline.			
White.			
Williamson.			
District No. 20	L. S. Barger M. D.	Golconda	Do.
Alexander.			
Hardin.			
Johnson.			
Massac.			
Pope.			
Pulaski.			
Union.			
Indiana:			
Lake	William D. Weis, M. D.	Crown Point	County health commissioner.
District No. 1	W. C. Kelly, M. D.	Princeton	Medical director.
Gibson.			
Pike.			
Posey.			
Warrick.			
District No. 2	C. A. Hicks, M. D.	Huntingburg	Do.
Crawford.			
Dubois.			

State and county	Name of health officer	Post office	Official title
Indiana—Continued.			
District No. 2—Con.			
Orange.			
Perry.			
Spencer.			
District No. 3	Charles K. Kincaid, M. D.	New Albany	Medical director.
Clark.			
Floyd.			
Harrison.			
Scott.			
Washington.			
District No. 4	George M. Brother, M. D.	Rising Sun	Do.
Dearborn.			
Jefferson.			
Ohio.			
Ripley.			
Switzerland.			
District No. 6	H. G. Steinmetz, M. D.	Bloomington	Do.
Brown.			
Monroe.			
Iowa:			
Des Moines	E. C. Sage, M. D., C. P. H.	Burlington	Director.
Polk	Thomas E. Eyres, M. D., C. P. H.	Des Moines	Do.
Washington	Daniel C. Barrett, M. D.	Washington	Do.
Woodbury	W. S. Petty, M. D.	Sioux City	Do.
District No. 1	R. M. Sorenson, M. D.	Le Mars	Do.
Lyon.			
Monona.			
O'Brien.			
Osceola.			
Plymouth.			
Sioux.			
District No. 2	Frank J. Condon, M. D.	Centerville	Do.
Appanoose.			
Clarke.			
Decatur.			
Marion.			
Monroe.			
Wayne.			
District No. 3	C. L. Putnam, M. D.	Des Moines	Do.
Calhoun.			
Dubuque.			
Jackson.			
Mahaska.			
Mitchell.			
Sac.			
Tama.			
Kansas:			
Butler	L. F. Steffen, M. D.	Eldorado	County health officer.
Lyon	C. H. Munger, M. D.	Emporia	Do.
Sedgwick	F. C. Beelman, M. D.	Wichita	Do.
Shawnee	F. E. McCord, M. D.	Topeka	Do.
Kentucky:			
Adair	J. T. Duncan, M. D.	Columbia	Do.
Allen	C. W. Holland, M. D.	Scottsville	Do.
Anderson	Lee A. Dare, M. D.	Lawrenceburg	Do.
Ballard	C. B. Billington, M. D.	Wickliffe	Do.
Barren	W. M. Chapman, M. D.	Glasgow	Do.
Bath	J. S. Goodpaster, M. D.	Owingsville	Do.
Bell	Adam Stacy, M. D., M. P. H.	Pineville	Do.
Boyd	R. D. Higgins, M. D., M. P. H.	Ashland	Do.
Breathitt	D. C. Parmenter, M. D.	Jackson	Do.
Bullitt	G. F. Brockman, M. D.	Shepherdsville	Do.
Butler	C. C. Threlkel, M. D.	Morgantown	Do.
Calloway	J. A. Outland, M. D.	Murray	Do.
Carter	Don E. Wilder, M. D.	Grayson	Do.
Casey	C. H. Blandford, M. D.	Liberty	Do.
Clay	L. H. Wagers, M. D.	Manchester	Do.
Crittenden	F. M. Rogers, M. D.	Marion	Do.
Edmonson	E. H. John, M. D.	Brownsville	Do.
Estill	R. R. Snowden, M. D.	Irvine	Do.
Fayette	Chas. D. Cawood, M. D., C. P. H.	Lexington	Do.
Fleming	Roy Orsburn, M. D.	Flemingsburg	Do.
Floyd	Marvin Ransdell, M. D.	Prestonsburg	Do.
Fulton	Chas. G. Baker, M. D.	Hickman	Do.
Gallatin	H. A. Shields, M. D.	Warsaw	Do.
Grant	N. H. Ellis, M. D.	Williamstown	Do.
Grayson	Layson Swann, M. D.	Leitchfield	Do.
Green	J. W. Miller, M. D.	Greensburg	Do.

State and county	Name of health officer	Post office	Official title
Kentucky—Continued.			
Greenup	R. L. Compton, M. D.	Greenup	County health officer.
Hancock	E. W. Atherton, M. D.	Hawesville	Do.
Hart	W. B. Turner, M. D.	Munfordville	Do.
Henderson	E. W. Sigler, M. D., C. P. H.	Henderson	Do.
Hopkins	C. R. Morton, M. D.	Madisonville	Do.
Jefferson	John D. Trawick, M. D.	Louisville	Do.
Kenton	H. C. White, M. D.	Covington	Do.
Knott	J. W. Duke, M. D.	Hindman	Do.
Knox	W. V. Bradshaw, M. D.	Barbourville	Do.
Laurel	J. D. Fouts, M. D.	London	Do.
Lawrence	A. M. Lyon, M. D.	Louisa	Do.
Lee	E. M. Brown, M. D.	Beattyville	Do.
Leslie	W. W. Buckhold, M. D.	Hyden	Do.
Letcher	R. D. Collins, M. D., M. P. H.	Whitesburg	Do.
Lewis	H. H. Bishop, M. D.	Vanceburg	Do.
Lincoln	E. E. Gambill, M. D.	Stanford	Do.
Livingston	J. E. Dunn, M. D.	Smithland	Do.
Logan	E. M. Thompson, M. D.	Russellville	Do.
McCracken	R. E. Teague, M. D., C. P. H.	Paducah	Do.
McCreary	C. R. Markwood, M. D.	Whitley City	Do.
McLean	P. D. Moore, M. D.	Calhoun	Do.
Madison	G. P. Wyman, M. D.	Richmond	Do.
Marshall	S. L. Henson, M. D.	Benton	Do.
Martin	Wm. N. Keith, M. D.	Inez	Do.
Mason	O. M. Goodloe, M. D., C. P. H.	Maysville	Do.
Meade	O. R. Lynch, M. D.	Brandenburg	Do.
Menifee	E. T. Riley, M. D.	Frenchburg	Do.
Metcalfe	H. T. Carter, M. D.	Edmonton	Do.
Monroe	T. L. Carter, M. D.	Tompkinsville	Do.
Muhlenberg	N. M. Atkins, M. D.	Greenville	Do.
Nicholas	J. W. Scudder, M. D.	Carlisle	Do.
Ohio	A. D. Park, M. D.	Hartford	Do.
Owsley	J. R. Aker, M. D.	Booneville	Do.
Perry	D. D. Turner, M. D.	Hazard	Do.
Pike	L. R. McCormack, M. D.	Pikeville	Do.
Powell	S. T. Scrivner, M. D.	Stanton	Do.
Pulaski	E. A. Steiner, M. D.	Somerset	Do.
Rockcastle	Walker Owens, M. D.	Mount Vernon	Do.
Rowan	T. A. E. Evans, M. D.	Morehead	Do.
Scott	Carl M. Gambill, M. D., M. P. H.	Georgetown	Do.
Spencer	M. H. Skaggs, M. D., C. P. H.	Taylorsville	Do.
Todd	L. A. Crosby, M. D.	Elkton	Do.
Trigg	W. G. Morgan, M. D.	Cadiz	Do.
Trimble	R. E. Wehr, M. D.	Bedford	Do.
Union	A. Y. Covington, M. D., C. P. H.	Morganfield	Do.
Warren	G. M. Wells, M. D.	Bowling Green	Do.
Wayne	Mack Roberts, M. D.	Monticello	Do.
Webster	C. M. Smith, M. D.	Dixon	Do.
Whitley	Temporary vacancy	Williamsburg	Do.
Wolfe	J. L. Cox, M. D.	Campton	Do.
District: Caldwell. Lyon.	J. M. Dishman, M. D.	Princeton	Do.
District: Carlisle. Hickman.	J. F. Harrell, M. D.	Bardwell	Do.
District: Clinton. Cumberland.	Max E. Blue, M. D.	Burkesville	Do.
District: Johnson. Magoffin.	H. K. Bailey, M. D.	Paintsville	Do.
Louisiana:[1]			
Acadia	R. E. Applewhite, M. D.	Crowley	Director.
Assumption	P. M. Payne, M. D.	Napoleonville	Do.
Avoyelles	L. W. Hollomar, M. D.	Marksville	Do.
Bienville	E. J. Young, M. D.	Arcadia	Do.
Bossier	H. N. Barnett, M. D.	Benton	Acting director.
Caddo-Shreveport	W. J. Sandidge, M. D., C. P. H.	Shreveport	Director.
Caldwell	Thomas Burk, M. D.	Columbia	Do.
Catahoula	L. C. Spencer, M. D., B. S.	Harrisonburg	Do.
Claiborne	W. W. Poimboeuf, M. D.	Homer	Do.
Concordia	John Schreiber, M. D.	Vidalia	Do.

[1] Parish.

State and county	Name of health officer	Post office	Official title
Louisiana—Continued.			
De Soto	R. A. Tharp, M. D.	Mansfield	Director.
East Carroll	F. A. Williams, M. D.	Lake Providence	Do.
Franklin	C. L. Mengis, M. D.	Winnsboro	Do.
Iberia	B. L. Stinson, M. D.	New Iberia	Do.
Iberville	J. Cyril Eby, M. D.	Plaquemine	Do.
Jefferson Davis	John M. Whitney, M. D., B. S.	Jennings	Do.
Lafayette	A. J. Comeaux, M. D.	Lafayette	Do.
Lafourche	H. S. Smith, M. D.	Thibodaux	Do.
La Salle	E. L. Miller, M. D.	Jena	Do.
Lincoln	R. H. Allen, M. D.	Ruston	Do.
Madison	E. S. Freeman, M. D.	Tallulah	Do.
Morehouse	N. P. Liles, M. D.	Bastrop	Do.
Natchitoches	W. W. Knipmeyer, A. B., M. D., C. P. H.	Natchitoches	Do.
Ouachita	G. D. Williams, M. D.	Monroe	Do.
Pointe Coupee	Edmond Klamke, M. D., M. P. H.	New Roads	Acting director.
Rapides	P. F. Murphy, M. D.	Alexandria	Director.
Red River	W. L. Treuting, M. D., B. S.	Coushatta	Do.
Richland	R. O. C. Green, M. D., B. S. in C. E.	Rayville	Do.
St. Charles	E. A. Schexnayder, M. D.	Hahnville	Do.
St. Landry	F. V. Boyd, M. D.	Opelousas	Do.
St. Martin	P. H. Fleming, M. D.	St. Martinville	Do.
St. Mary	F. S. Williams, M. D.	Franklin	Do.
Tensas	T. G. Ward, M. D.	St. Joseph	Do.
Terrebonne	M. F. Houston, M. D.	Houma	Do.
Union	J. G. Norris, M. D., B. S.	Farmerville	Do.
Vermilion	B. O. Morrison, M. D.	Abbeville	Do.
Washington	Ben Freedman, M. D.	Franklinton	Do.
Webster	W. C. Summer, M. D., B. A.	Minden	Do.
West Carroll	F. A. LaCour, M. D., B. S.	Oak Grove	Do.
Maine:			
District No. 1 Cumberland. Oxford. York.	John L. Pepper, M. D.	South Portland	District health officer.
District No. 2 Piscataquis. Somerset (except 2 towns. See District No. 6). Penobscot (lower part).	Charles N. Stanhope, M. D.	Dover-Foxcroft	Do.
District No. 3 Aroostook. Penobscot (upper part).	B. F. Porter, M. D.	Caribou	Do.
District No. 4 Hancock. Washington.	J. A. McDonald, M. D.	Machias	Do.
District No. 5 Knox. Lincoln. Sagadahoc. Waldo. Kennebec (lower part).	J. W. Loughlin, M. D.	Rockland	Do.
District No. 6 Cooperative Health Union: Franklin. Flagstaff Plantation (in Somerset County). Dead River Plantation (in Somerset County).	B. L. Arms, M. D.	Farmington	Health officer.
District No. 7 Motbov Health Union: Towns of Bradley, Milford, Old Town, Orono, Veazie.	H. L. Jackson, M. D.	Old Town	Do.

State and county	Name of health officer	Post office	Official title
Maryland:			
Allegany	J. P. Franklin, M. D.	Cumberland	Deputy State and county health officer.
	W. B. Johnson, M. D.	do	Assistant deputy State and county health officer.
Anne Arundel	W. J. French, M. D.	Annapolis	Deputy State and county health officer.
	A. F. Whitsitt, M. D.	do	Assistant deputy State and county health officer.
Baltimore	J. S. Bowen, M. D.	Towson	Deputy State and county health officer.
Calvert	I. N. King, M. D.	Prince Frederick	Do.
Caroline	G. E. Waters, M. D.	Denton	Do.
Carroll	W. C. Stone, M. D.	Westminster	Do.
Cecil	C. A. Kane, M. D.	Elkton	Do.
Charles	D. St. Clair Campbell, M. D.	La Plata	Do.
Dorchester	E. A. Jones, M. D.	Cambridge	Do.
Frederick	E. C. Kefauver, M. D.	Frederick	Do.
Garrett	J. P. Franklin, M. D.	Oakland	Acting deputy State and county health officer.
Harford	T. A. Callahan, M. D.	Bel Air	Deputy State and county health officer.
Howard	E. R. Davies, M. D.	Ellicott City	Do.
Kent	H. R. DuPuy, M. D.	Chestertown	Do.
Montgomery	V. L. Ellicott, M. D., D. P. H.	Rockville	Do.
Prince Georges	A. B. Hooton, M. D.	Upper Marlboro	Do.
Queen Annes	J. A. McCallum, M. D.	Centerville	Do.
St. Marys	E. C. Peck, M. D.	Leonardtown	Do.
Somerset	R. H. Johnson, M. D.	Princess Anne	Do.
Talbot	L. S. Welty, M. D.	Easton	Do.
Washington	W. R. Cameron, M. D.	Hagerstown	Do.
Wicomico	S. H. Hurdle, M. D.	Salisbury	Do.
Worcester	W. R. Willard, M. D., D. P. H.	Pocomoke City	Do.
Massachusetts:			
Barnstable	Almon P. Goff, M. D.	Hyannis	County health officer.
Berkshire [1]	Harold W. Stevens, M. D.	Great Barrington	Medical director.
Franklin	Walter W. Lee, M. D.	Greenfield	Health officer.
Nashoba [1]	James O. Wails, M. D., C. P. H.	Ayer	Director of public health.
Michigan:			
Alger-Schoolcraft	E. J. Brenner, M. D.	Manistique	Director.
Allegan	M. B. Beckett, M. D., C. P. H.	Allegan	Do.
Barry	R. B. Harkness, M. D.	Hastings	Do.
Bay	R. T. Westman, M. D.	Bay City	Do.
Branch	S. F. Leeder, M. D., D. P. H.	Coldwater	Do.
Calhoun	Hugh Robins, M. D.	Marshall	Do.
Chippewa	David Littlejohn, M. D., D. P. H.	Sault Ste. Marie	Do.
Delta	R. Lanting, M. D.	Escanaba	Do.
Dickinson	C. E. Merritt, M. D.	Iron Mountain	Do.
Eaton	T. E. Gibson, M. D., M. P. H.	Charlotte	Do.
Genesee	L. V. Burkett, M. D.	Flint	Do.
Hillsdale	E. G. McGavran, M. D., C. P. H.	Hillsdale	Do.
Houghton-Keweenaw	F. J. Austin, M. D.	Houghton	Do.
Iron	T. E. Camper, M. D.	Stambaugh	Do.
Isabella	F. R. Town, M. D.	Mount Pleasant	Do.
Kent	J. D. Brook, M. D.	Grand Rapids	Do.
Mason-Manistee	L. W. Switzer, M. D.	Manistee	Do.
Mecosta-Osceola	M. C. Igloe, M. D.	Big Rapids	Do.
Menominee	L. A. Berg, M. D.	Menominee	Do.
Midland	Edwin H. Place, M. D.	Midland	Do.
Oakland	J. D. Monroe, M. D.	Pontiac	Do.
Ontonagon-Baraga	C. C. Corkill, M. D.	Ontonagon	Do.
Ottawa	Ralph TenHave, M. D., C. P. H.	Grand Haven	Do.
Saginaw	V. K. Volk, M. D., D. P. H.	Saginaw	Do.
Sanilac	L. H. Gaston, M. D.	Sandusky	Do.
Van Buren	T. E. Gibson, M. D.	Paw Paw	Do.
Wexford	S. C. Moore, M. D.	Cadillac	Do.
Health district No. 1— Crawford. Kalkaska. Missaukee. Roscommon.	T. R. Laughbaum, M. D.	Lake City	Do.

[1] District.

State and county	Name of health officer	Post office	Official title
Michigan—Continued.			
Health district No. 2	Sue Thompson, M. D., C. P. H.	West Branch	Director.
Alcona.			
Iosco.			
Ogemaw.			
Oscoda.			
Health district No. 3	Carleton Dean, M. D., C. P. H.	Charlevoix	Do.
Antrim.			
Charlevoix.			
Emmet.			
Otsego.			
Health district No. 4	G. B. Moffat, M. D., D. P. H.	Rogers City	Do.
Alpena.			
Cheboygan.			
Montmorency.			
Presque Isle.			
Health district No. 5	Guy R. Post, M. D., C. P. H.	White Cloud	Do.
Lake.			
Newaygo.			
Oceana.			
Health district No. 6	C. D. Hart, M. D., C. P. H.	Newberry	Do.
Luce.			
Mackinac.			
Health district No. 7	E. V. Thiehoff, M. D., C. P. H.	Gladwin	Do.
Arenac.			
Clare.			
Gladwin.			
Minnesota:			
District No. 1	James R. Kingston, M. D.	Bemidji	District health officer.
Beltrami.			
Clearwater.			
Hubbard.			
Itasca.			
Koochiching.			
District No. 2	Floyd M. Feldman, M.D., D. P. H.	Mankato	Do.
Blue Earth.			
Freeborn			
Jackson.			
Martin.			
Mower.			
District No. 4	C. A. Scherer, M. D.	Duluth	Do.
Carlton.			
Cook.			
St. Louis.			
Chippewa Indian health unit [1].	Percy T. Watson, M. D., M. P. H.	Cass Lake	Medical director.
Mississippi:			
Adams	Andrew Hedmeg, M. D.	Natchez	Director.
Bolivar	R. D. Dedwylder, M. D.	Cleveland	Do.
Coahoma	N. C. Knight, M. D., C. P. H.	Clarksdale	Do.
Copiah	J. C. McGuire, M. D.	Hazelhurst	Do.
Forrest	B. D. Blackwelder, M. D., C. P. H.	Hattiesburg	Do.
Hancock	C. M. Shipp, M. D.	Bay St. Louis	Do.
Harrison	D. J. Williams, M. D.	Gulfport	Do.
Hinds	W. E. Noblin, M. D.	Jackson	Do.
Holmes	R. H. Onstott, M. D.	Lexington	Do.
Humphreys	J. W. Barkley, M. D.	Belzoni	Do.
Jackson	R. G. Lander, M. D.	Pascagoula	Do.
Jones	A. R. Perry, M. D., M. P. H.	Laurel	Do.
Lamar	J. N. Mason, M. D.	Purvis	Do.
Lauderdale	D. V. Galloway, M. D., M. P. H.	Meridian	Do.
Lee	W. H. Cleveland, M. D.	Tupelo	Do.
Leflore	L. A. Barnett, M. D.	Greenwood	Do.
Lincoln	W. R. May, M. D., C. P. H.	Brookhaven	Do.
Madison	C. C. Smith, M. D., C. P. H.	Canton	Do.
Marshall	V. B. Harrison, M. D., C. P. H.	Holly Springs	Do.
Monroe	C. H. Love, M. D.	Aberdeen	Do.
Pearl River	R J. Jones, M. D.	Poplarville	Do.

[1] Serves Indian population of northern part of the State.

State and county	Name of health officer	Post office	Official title
Mississippi—Continued.			
Pike	T. P. Haney, Jr., M. D., C. P. H.	McComb	Director.
Sunflower	C. R. Gillespie, M. D.	Indianola	Do.
Tallahatchie	J. P. Ward, M. D.	Charleston	Do.
Union	I. B. Trapp, M. D.	New Albany	Do.
Warren	F. Michael Smith, M. D.	Vicksburg	Do.
Washington	J. W. Shackelford, M. D., M. P. H.	Greenville	Do.
Yazoo	H. L. McCalip, M. D., C. P. H.	Yazoo City	Do.
Health district	R. H. DeJarnette, M. D.	Rolling Fork	Do.
Issaquena.			
Sharkey.			
Missouri:			
Buchanan	W. S. Hull, M. D.	St. Joseph	County health officer.
Cass	E. M. Griffith, M. D.	Harrisonville	Do.
Greene	R. L. Russell, M. D.	Springfield	Do.
Jackson	J. T. Brennan, M. D.	Independence	Do.
Marion	E. M. Lucke, M. D.	Hannibal	Do.
Miller	L. M. Garner, M. D., C. P. H.	Tuscumbia	Do.
St. Louis	T. R. Meyer, M. D., C. P. H.	Clayton	Do.
District No. 1	W. H. Aufranc, M. D.	Charleston	District health officer.
Mississippi.			
Scott.			
District No. 2	T. L. Waddle, M. D.	Dexter	Do.
New Madrid.			
Stoddard.			
District No. 3	S. S. Barnes, M. D.	Kennett	Do.
Dunklin.			
Pemiscot.			
District No. 4	E. M. Bryan, M. D.	Poplar Bluff	Do.
Butler.			
Carter.			
Ripley.			
Wayne.			
District No. 5	C. W. Meinershagen, M. D.	Salem	Do.
Crawford.			
Dent.			
Howell.			
Oregon.			
Phelps.			
Pulaski.			
Reynolds.			
Shannon.			
Texas.			
District No. 6	Asa Barnes, M. D.	Ozark	Do.
Barry.			
Barton.			
Christian.			
Dade.			
Douglas.			
Jasper.			
Lawrence.			
McDonald.			
Newton.			
Ozark.			
Stone.			
Taney.			
Webster.			
Wright.			
District No. 7	R. D. Wright, M. D.	Osceola	Do.
Bates.			
Benton.			
Camden.			
Cedar.			
Dallas.			
Henry.			
Hickory.			
Laclede.			
Morgan.			
Polk.			
St. Clair.			
Vernon.			
Montana:			
Cascade	F. L. Watkins, M. D.	Great Falls	County health officer.
Gallatin	A. D. Brewer, M. D.	Bozeman	Do.
Lewis and Clark	R. G. M. Ehler, M. D.	Helena	City-county health officer.
Missoula	F. D. Pease, M. D.	Missoula	County health officer.

State and county	Name of health officer	Post office	Official title
Nebraska:			
Demonstration district health unit.	M. F. Schafer, M. D.	Gering	Director.
Banner.			
Morrill.			
Scotts Bluff.			
Demonstration district health unit.	D. M. Harris, M. D.	North Platte	Do.
Keith.			
Lincoln.			
Perkins.			
New Mexico:			
District No. 1	Frank W. Parker, Jr., M. D., C. P. H.	Santa Fe	District health officer.
Rio Arriba.			
Santa Fe.			
Taos.			
District No. 2	E. B. Beaver, M. D.	Gallup	Do.
McKinley.	G. Hill Hodel, M. D., serving ad interim.[4]	do	Deputy district health officer.
San Juan.			
District No. 3	J. O. Long, M. D., C. P. H.	Albuquerque	District health officer.
Bernalillo.			
Sandoval.			
District No. 4	C. W. Gerber, M. D.	Las Cruces	Do.
Dona Ana.			
Lincoln.			
Otero.			
Sierra.			
District No. 5	W. W. Johnston, M. D.	Las Vegas	Do.
Guadalupe.	W. A. Stark, M. D., serving ad interim.[5]	do	Deputy district health officer.
Mora.			
San Miguel.			
District No. 6	O. E. Puckett, M. D.	Carlsbad	District health officer.
Chaves.			
Eddy.			
Lea.			
District No. 7	J. C. Mitchell, M. D., C. P. H.	Silver City	Do.
Grant.			
Hidalgo.			
Luna.			
District No. 8	Harrison Eilers, M. D.	Los Lunas	Do.
Catron.	J. W. Elder, M. D., serving ad interim.[6]	do	Deputy district health officer.
Socorro.			
Torrance.			
Valencia.			
District No. 9	F. C. Diver, M. D.	Raton	District health officer.
Colfax.			
Harding.			
Union.			
District No. 10	R. P. Kandle, M. D.	Clovis	Do.
Curry.	R. H. Wilson, M. D., serving ad interim.[7]	do	Deputy district health officer.
DeBaca.			
Quay.			
Roosevelt.			
New York:			
Cattaraugus	H. R. O'Brien, M. D., C. P. H.	Olean	County health commissioner.
Columbia	L. Van Hoesen, M. D.	Hudson	Do.
Cortland	M. R. French, M. D., C. P. H.	Cortland	Do.
Suffolk	A. T. Davis, M. D.	Riverhead	Do.
Westchester	M. Nicoll, Jr., M. D.	White Plains	Do.
Albany district	F. E. Coughlin, M. D., D. P. H.	Albany	District health officer.
Albany.			
Rensselaer.			
Schenectady.			
Amsterdam District	J. E. Perkins, M. D., D. P. H.	Amsterdam	Do.
Fulton.			
Montgomery.			
Batavia subdistrict [8]	F. B. Amos, M. D., C. P. H.	Batavia	Assistant district health officer.
Genesee.			
Orleans.			
Wyoming.			
Binghamton district	A. H. Cummings, M. D., C. P. H.	Binghamton	District health officer.
Broome.			
Chenango.			
Tioga.			
Buffalo district	A. S. Dean, M. D., D. P. H.	Buffalo	Do.
Chautauqua.			
Erie.			
Niagara.			

[4] Dr. Beaver on leave of absence.
[5] Dr. Johnston on leave of absence.
[6] Dr. Eilers on study leave.
[7] Dr. Kandle on study leave.
[8] Under Buffalo district.

State and county	Name of health officer	Post office	Official title
New York—Continued.			
Geneva district	D. M. Griswold, M. D., D. P. H.	Geneva	District health officer.
Ontario.			
Seneca.			
Yates.			
Glens Falls district	B. Diefendorf, M. D	Glens Falls	Do.
Saratoga.			
Warren.			
Washington.			
Gouverneur district	S. W. Sayer, M. D	Gouverneur	Do.
Jefferson.			
Lewis.			
St. Lawrence.			
Hornell district	J. A. Conway, M. D	Hornell	Do.
Allegany.			
Chemung.			
Steuben.			
Ithaca district	R. D. Fear, M. D., D. P. H.	Ithaca	Do.
Schuyler.			
Tompkins.			
Kingston subdistrict [1]	H. L. Chant, M. D., C. P. H.	Kingston	Assistant district health officer.
Greene.			
Ulster.			
Middletown district	F. W. Laidlaw, M. D	Middletown	District health officer.
Orange.			
Rockland.			
Sullivan.			
New York City district.	M. D. Dickinson, M. D	New York City	Do.
Nassau.			
Oneonta district	R. D. Champlin, M. D., C. P. H.	Oneonta	Do.
Delaware.			
Otsego.			
Schoharie.			
Poughkeepsie district	B. E. Roberts, M. D	Poughkeepsie	Do.
Dutchess.			
Putnam.			
Rochester district	P. A. Lembcke, M. D. (temporary).	Rochester	Assistant district health officer.
Livingston.			
Monroe.			
Wayne.			
Saranac Lake district	J. P. Garen, M. D., C. P. H.	Saranac Lake	District health officer.
Clinton.			
Essex.			
Franklin.			
Hamilton.			
Syracuse district	P. J. Rafle, M. D., C. P. H.	Syracuse	Do.
Cayuga.			
Onondaga.			
Oswego.			
Utica district	H. J. Ball, M. D	Utica	Do.
Herkimer.			
Madison.			
Oneida.			
North Carolina:			
Anson	Loren Wallin, M. D	Wadesboro	County health officer.
Beaufort	David Emerson Ford, M. D.	Washington	Do.
Bladen	Robert S. Cromartie, M. D.	Elizabethtown	Do.
Buncombe	Howard L. Sumner, M. D.	Asheville	Do.
Cabarrus	Daniel G. Caldwell, M. D.	Concord	Do.
Columbus	Floyd Johnson, M. D	Whiteville	Do.
Craven	John S. Anderson, M. D.	New Bern	Do.
Cumberland	Malcolm Tennyson Foster, M. D.	Fayetteville	Do.
Davidson	Grover Cleveland Gambrell, M. D.	Lexington	Do.
Duplin	Ransom Lee Carr, M. D.	Kenansville	Do.
Durham	J. H. Epperson, M. S	Durham	Do.
Franklin	Richard F. Yarborough, M. D.	Louisburg	Do.
Gaston	Robert Edgar Rhyne, M. D.	Gastonia	Do.
Granville	Joseph A. Morris, M. D.	Oxford	Do.
Guilford	Roderick Mark Buie, M. D.	Greensboro	Do.
Halifax	Robert Sherwood McGeachy, M. D.	Weldon	Do.
Harnett	William Blair Hunter, M. D.	Lillington	Do.

[1] Under Middletown district.

State and county	Name of health officer	Post office	Official title
North Carolina—Contd.			
Hertford	Thomas G. Faison, M. D.	Winton	County health officer.
Johnston	J. H. Bunn, M. D.	Smithfield	Do.
Lenoir	Zebulon Vance Moseley, M. D.	Kinston	Do.
Mecklenburg	Edgar Hall Hand, M. D.	Charlotte	Do.
Moore	John Symington, M. D.	Carthage	Do.
Nash	T. O. Coppedge, M. D.	Nashville	Do.
New Hanover	Avon Hall Elliot, M. D.	Wilmington	Do.
Northampton	W. Raleigh Parker, M. D.	Jackson	Do.
Pitt	N. Thomas Ennett, M. D.	Greenville	Do.
Randolph	George Herbert Sumner, M. D.	Asheboro	Do.
Richmond	Robert Malcolm Bardin, M. D.	Rockingham	Do.
Robeson	Eugene Ramsey Hardin, M. D.	Lumberton	Do.
Rowan	Charles W. Armstrong, M. D.	Salisbury	Do.
Rutherford	Howard C. Whims, M. D.	Rutherfordton	Do.
Sampson	Jabez H. Williams, M. D.	Clinton	Do.
Stanly	Wayland Nash McKenzie, M. D.	Albemarle	Do.
Surry	Ralph J. Sykes, M. D.	Mount Airy	Do.
Vance	Alfred D. Gregg, M. D.	Henderson	Do.
Wake	Alexander C. Bulla, M. D.	Raleigh	Do.
Wayne	Samuel B. McPheeters, M. D.	Goldsboro	Do.
Wilkes	A. J. Eller, M. D.	Wilkesboro	Do.
Wilson	Wade Hampton Anderson, M. D.	Wilson	Do.
Districts:			
Avery-Watauga-Yancey.	Clarence Hunt White, M. D.	Burnsville	District health officer.
	Robert R. King, M. D.	Boone	Assistant district health officer.
Bertie-Chowan	Frank H. Garris, M. D.	Windsor	District health officer.
Burke-Caldwell	Warren Dallas Carter, M. D.	Morganton	Do.
Cherokee-Clay-Graham.	Zack Perry Mitchell, M. D.	Murphy	Do.
Edgecombe-Greene	Lorenzo Lynn Parks, M. D.	Tarboro	Do.
Forsyth-Stokes-Yadkin.	John Roy Hege, M. D.	Winston-Salem	Do.
Haywood Jackson-Macon-Swain-Transylvania.	Crete Nixon Sisk, M. D.	Waynesville	Do.
	Philip Grover Padgett, M. D.	Bryson City	Assistant district health officer.
Hyde-Tyrrell-Washington-Dare.	Sigma Van Lewis, M. D.	Plymouth	District health officer.
Orange-Person-Chatham.	William P. Richardson, M. D.	Chapel Hill	Do.
	Albert L. Allen, M. D.	Roxboro	Assistant district health officer.
North Dakota:			
Southeast district unit.	Robert G. White, M. D., M. S. P. H.	Valley City	District health officer.
Barnes.			
Dickey.			
LaMoure.			
Ransom.			
Sargent.			
Stutsman.			
Ohio:			
Allen	G. E. Miller, M. D.	Lima	Health commissioner.
Athens	J. M. Higgins, M. D.	Athens	Do.
Belmont	W. B. Baily, M. D.	St. Clairsville	Do.
Butler	C. J. Baldridge, M. D.	Hamilton	Do.
Clermont	J. A. Carter, M. D.	Batavia	Do.
Clinton	W. K. Ruble, M. D.	Wilmington	Do.
Crawford	G. T. Wasson, M. D.	Bucyrus	Do.
Cuyahoga	L. F. Hall, M. D.	Cleveland	Do.
Darke	W. D. Bishop, M. D.	Greenville	Do.
Delaware	B. B. Barber, M. D.	Delaware	Do.
Erie	F. M. Houghtaling, M. D.	Sandusky	Do.
Fairfield	W. R. Coleman, M. D.	Lancaster	Do.
Fayette	James F. Wilson, M. D.	Washington C. H.	Do.
Greene	G. E. Savage, M. D.	Xenia	Do.
Guernsey	D. L. Cowden, M. D.	Cambridge	Do.
Hamilton	E. H. Schoenling, M. D.	Cincinnati	Do.
Hancock	S. F. Whisler, M. D.	Findlay	Do.
Henry	J. R. Bolles, M. D.	Napoleon	Do.
Hocking-Vinton	W. B. Lacock, M. D.	Logan	Do.
Huron	B. C. Pilkey, M. D.	Norwalk	Do.
Jefferson	J. P. Young, M. D.	Steubenville	Do.

State and county	Name of health officer	Post office	Official title
Ohio—Continued.			
Lorain	F. R. Dew, M. D.	Oberlin	Health commissioner.
Lucas	T. W. Mahoney, M. D.	Toledo	Do.
Madison	Robert Trimble, M. D.	London	Do.
Mahoning	S. G. Patton, M. D.	Youngstown	Do.
Marion	N. Sifritt, M. D.	Marion	Do.
Medina	L. B. Kievit, M. D.	Medina	Do.
Meigs	W. S. Ellis, M. D.	Pomeroy	Do.
Mercer	F. E. Ayers, M. D.	Celina	Do.
Miami	K. C. Becker, M. D.	Troy	Do.
Montgomery	H. H. Pansing, M. D.	Dayton	Do.
Morrow	R. L. Pierce, M. D.	Mount Gilead	Do.
Muskingum	Beatrice T. Hagen, M. D.	Zanesville	Do.
Perry	F. J. Crosbie, M. D.	New Lexington	Do.
Pickaway	A. D. Blackburn, M. D.	Circleville	Do.
Preble	J. I. Nisbet, M. D.	Eaton	Do.
Richland	R. C. Rehder, M. D.	Mansfield	Do.
Ross	R. E. Bower, M. D.	Chillicothe	Do.
Seneca	D. W. Fellers, M. D.	Tiffin	Do.
Shelby	Paul C. Bratten, M. D.	Sidney	Do.
Stark	Floyd R. Stamp, M. D.	Canton	Do.
Summit	R. H. Markwith, M. D.	Akron	Do.
Trumbull	L. A. Connell, M. D.	Warren	Do.
Union	H. G. Southard, M. D.	Marysville	Do.
Washington	A. G. Sturgiss, M. D.	Marietta	Do.
Wayne	J. J. Sutter, M. D.	Wooster	Do.
Wood	H. J. Powell, M. D.	Bowling Green	Do.
Wyandot	L. W. Naus, M. D.	Upper Sandusky	Do.
Oklahoma:			
Carter	R. M. Parish, M. D.	Ardmore	Director county unit.
Cleveland	Guy H. Williams, M. D.	Norman	Do.
Kay	M. L. Peter, M. D.	Newkirk	Do.
Kingfisher	A. O. Meredith, M. D.	Kingfisher	Do.
LeFlore	Rush L. Wright, M. D.	Potean	Do.
Oklahoma	Albert Cates, M. D.	Oklahoma City	Do.
Payne	J. F. Hackler, M. D.	Stillwater	Do.
Pittsburg	Ernest Thomas, M. D.	McAlester	Do.
Pontotoc	Glen W. McDonald, M. D.	Ada	Do.
Seminole	George Hunter, M. D.	Wewoka	Do.
District No. 1	Grady F. Mathews, M. D.	Tahlequah	Director.
Adair.			
Cherokee.			
Delaware.			
Mayes.			
Sequoyah.			
District No. 2	Johnny A. Blue, M. D.	Guymon	Do.
Beaver.			
Cimarron.			
Harper.			
Texas.			
Oregon:			
Clackamas	Courtney Smith, M. D.	Oregon City	County health officer.
Clatsop	E. E. Berg, M. D.	Astoria	Do.
Douglas	C. R. Sharp, M. D.	Roseburg	Do.
Jackson	A. Erin Merkel, M. D.	Medford	Do.
Josephine	S. B. Osgood, M. D.	Grants Pass	Do.
Klamath	Neil Black, M. D.	Klamath Falls	Do.
Lane	E. L. Gardner, M. D.	Eugene	Do.
Marion	Vernon A. Douglas, M. D.	Salem	Do.
Umatilla	F. Sydney Hansen, M. D.	Pendleton	Do.
Union	D. R. Rich, M. D.	La Grande	Do.
Wasco	Harold M. Erickson, M. D.	The Dalles	Do.
Washington	D. C. McDonald, M. D.	Hillsboro	Do.
Rhode Island:			
North district health unit.	James P. O'Brien, M. D.	Woonsocket	District health officer.
Burrillville.[10]			
Cumberland.[10]			
Foster.[10]			
Gloucester.[10]			
Johnston.[10]			
Lincoln.[10]			
North Providence.[10]			
North Smithfield.[10]			
Scituate.[10]			
Smithfield.[10]			
Woonsocket.[10]			
South district health unit.	Raymond F. McAteer, M. D.	Peacedale	Do.
Charlestown.[10]			
Coventry.[10]			

[10] Township.

State and county	Name of health officer	Post office	Official title
Rhode Island—Contd.			
South district health unit—Continued.			
Exeter.[10]			
Hopkinton.[10]			
Narragansett.[10]			
North Kingstown.[10]			
Richmond.[10]			
South Kingstown.[10]			
Westerly.[10]			
West Greenwich.[10]			
West Warwick.[10]			
Southeast district health unit.	Joseph Castronovo, M. D.	Bristol	District health officer.
Barrington.[10]			
Bristol.[10]			
Jamestown.[10]			
Little Compton.[10]			
Middletown.[10]			
New Shoreham.[10]			
Portsmouth.[10]			
Tiverton.[10]			
Warren.[10]			
South Carolina:			
Aiken	J. T. Hair, M. D.	Aiken	Health director.
Anderson	Goodman Bare, M. D.	Anderson	Do.
Beaufort	W. Burns Jones, M. D.	Beaufort	Do.
Berkeley	W. K. Fishburne, M. D.	Moncks Corner	Do.
Charleston	Leon Banov, M. D.	Charleston	Do.
Cherokee	G. R. Westrope, M. D.	Gaffney	Do.
Colleton	C. L. Guyton, M. D.	Walterboro	Do.
Darlington	W. A. Carrigan, M. D.	Darlington	Do.
Dorchester	W. B. Montgomery, M. D.	St. George	Do.
Fairfield	J. L. Bryson, M. D.	Winnsboro	Do.
Florence	J. R. Claussen, M. D.	Florence	Do.
Greenville	J. N. Holtzclaw, M. D.	Greenville	Do.
Greenwood	J. E. Brodie, M. D.	Greenwood	Do.
Horry	P. H. Edwards, M. D.	Conway	Do.
Jasper	J. B. Wallace, M. D.	Ridgeland	Do.
Kershaw	A. W. Humphries, M. D.	Camden	Do.
Lancaster	A. J. Cauthen, M. D.	Lancaster	Do.
Marlboro	J. Y. O'Daniel, M. D.	Bennettsville	Do.
Newberry	J. C. Sease, M. D.	Newberry	Do.
Orangeburg	G. C. Bolin, M. D.	Orangeburg	Do.
Richland	E. P. White, M. D.	Columbia	Do.
Spartanburg	J. M. Beeler, M. D.	Spartanburg	Do.
Districts:			
Abbeville-Laurens	R. M. Street, M. D.	Laurens	Do.
Allendale-Bamberg-Barnwell-Hampton.	L. T. Claytor, M. D.	Barnwell	Do.
Calhoun-Lexington.	F. L. Geiger, M. D.	St. Matthews	Do.
Chester-Union-York.	J. L. Mims, M. D.	Chester	Do.
Chesterfield-Lee	L. A. Nimmons, M. D.	Bishopville	Do.
Clarendon-Sumter	H. G. Zerbst, M. D.	Sumter	Do.
Dillon-Marion	J. H. Pearce, M. D.	Dillon	Do.
Edgefield-McCormick-Saluda.	O. D. Garvin, M. D.	Edgefield	Do.
Georgetown-Williamsburg.	G. S. T. Peeples, M. D.	Georgetown	Do.
Oconee-Pickens	W. B. Furman, M. D.	Pickens	Do.
South Dakota:			
Charles Mix	P. R. Pinard, M. D.	Wagner	Director.
Dewey	T. H. Baer, M. D.	Timber Lake	Do.
Harding	J. H. Dickinson, M. D.	Buffalo	Do.
Hutchinson	R. H. Payne, M. D.	Tripp	Do.
Pennington	H. D. Lien, M. D.	Rapid City	Do.
Union	Wm. F. Bushnell, M. D.	Elk Point	Do.
First district	K. W. Navin, M. D.	Philip	Do.
Bennett.			
Haakon.			
Jackson.			
Jones.			
Mellette.			
Washabaugh.			
Tennessee:			
Blount	A. E. Hardison, M. D.	Maryville	Do.
Bradley	W. Carey Sanford, M. D.	Cleveland	Do.
Davidson	J. J. Lentz, M. D.	Nashville	County health officer.

[10] Township.

State and county	Name of health officer	Post office	Official title
Tennessee—Continued.			
Dyer	E. A. Gillis, M. D.	Dyersburg	Director.
Gibson	E. P. Bowerman, M. D.	Trenton	Do.
Giles	W. N. Sisk, M. D.	Pulaski	Do.
Greene	R. S. Cowles, M. D.	Greeneville	Do.
Grundy	U. B. Bowden, M. D.	Pelham	Do.
Hamilton	J. C. Eldridge, M. D.	Chattanooga	Do.
Hardeman	R. L. Cobb, M. D.	Bolivar	Do.
Hardin	J. W. Erwin, M. D.	Savannah	Do.
Humphreys	L. A. Beardsley, M. D.	Waverly	Do.
Knox	A. G. Hufstedler, M. D.	Knoxville	Do.
Lake	J. P. Moon, M. D.	Tiptonville	Do.
Lauderdale	C. W. Polk, M. D.	Ripley	Do.
Lincoln	M. C. Woodfin, M. D.	Fayetteville	Do.
Maury	H. C. Busby, M. D., C. P. H.	Columbia	Do.
Monroe	David M. Cowgill, M. D., C. P. H.	Madisonville	Do.
Montgomery	F. J. Malone, M. D.	Clarksville	Do.
Obion	W. B. Harrison, M. D.	Union City	Do.
Roane	J. C. Fly, M. D.	Kingston	Do.
Rutherford	J. B. Black, M. D., C. P. H.	Murfreesboro	Do.
Sevier	H. A. Sauberli, M. D.	Sevierville	Do.
Shelby	W. P. Moore, M. D.	Memphis	Do.
Sullivan	F. L. Moore, M. D., C. P. H.	Blountville	Do.
Sumner	W. M. Dedman, M. D.	Gallatin	Do.
Tipton	H. S. Rule, M. D.	Covington	Do.
Washington	E. E. Carrier, M. D., C. P. H.	Jonesboro	Do.
Weakley	M. D. Ingram, M. D.	Dresden	Do.
Williamson	Don C. Peterson, M. D., C. P. H.	Franklin	Do.
Wilson	R. C. Kash, M. D.	Lebanon	Do.
Districts:			
Anderson-Campbell.	A. J. Butler, M. D.	Clinton	Do.
Bledsoe - Sequatchie.	H. M. Roberson, M. D.	Pikeville	Do.
Carter-Unicoi	Henry Packer, M. D., D. P. H.	Elizabethton	Do.
Claiborne-Grainger-Hancock.	A. B. Shipley, M. D.	Tazewell	Do.
Jackson-Overton - Pickett - Fentress.	F. O. Pearson, M. D., C. P. H.	Livingston	Do.
Rhea-Meigs	E. N. Haller, M. D.	Dayton	Do.
Texas:			
Bell	E. W. Prothro, M. D.	Temple	Do.
Cameron	Grady Deaton, M. D.	San Benito	Do.
Dallas	H. E. Duncan, M. D., C. P. H.	Dallas	Do.
El Paso - Hudspeth - Culberson.	J. W. Tappan, M. D.	El Paso	Do.
Gregg	Jack C. Harper, M. D.	Longview	Do.
Hidalgo	D. R. Handley, M. D.	Edinburg	Do.
Nolan	Geo. A. Gray, M. D.	Sweetwater	Do.
Nueces	T. B. Wilson, M. D.	Corpus Christi	Do.
Potter	B. M. Primer, M. D., M. P. H.	Amarillo	Do.
Smith	A. E. Hill, M. D., C. P. H.	Tyler	Do.
Tarrant	W. B. Nies, M. D.	Fort Worth	Do.
Winkler	L. T. Cox, M. D.	Kermit	Do.
Utah:			
Davis	D. Keith Barnes, M. D., C. P. H.	Farmington	Do.
District No. 1	W. W. Bigelow, M. D., C. P. H.	Ogden	Deputy State health officer.
Box Elder.			
Cache.			
Daggett.			
Morgan.			
Rich.			
Summit.			
Weber.			
District No. 2	A. A. Jenkins, M. D., C. P. H.	Cedar City	Do.
Beaver.			
Garfield.			
Iron.			
Kane.			
Piute.			
Washington.			

State and county	Name of health officer	Post office	Official title
Utah—Continued.			
District No. 3	E. L. Van Aelstyn, M. D., C. P. H.	Price	Deputy State health officer.
Carbon.			
Emery.			
Grand.			
San Juan.			
District No. 4	L. M. Farner, M. D., C. P. H.	Provo	Do.
Duchesne.			
Salt Lake.			
Tooele.			
Uintah.			
Utah.			
Wasatch.			
District No. 5	E. H. Silverstone, M. D., C. P. H.	Richfield	Do.
Juab.			
Millard.			
Sanpete.			
Sevier.			
Wayne.			
Virginia:			
Albemarle	Robert D. Hollowell, M. D., C. P. H.	Charlottesville	Health officer.
Arlington	Earle G. Brown, M. D.	Arlington	Do.
	Edw. V. Jones, Jr., M. D.	do	Assistant health officer.
Augusta	John C. Neale, Jr., M. D., C. P. H.	Staunton	Health officer.
	Hugh M. Wallace, M. D.	do	Assistant health officer.
Fairfax	Edw. M. Holmes, Jr., M. D., C. P. H.	Fairfax	Health officer.
Halifax	Daniel C. Steelsmith, M. D., C. P. H.	South Boston	Do.
Hanover	(Temporary vacancy)	Ashland	
Henrico	John D. Hamner, Jr., M. D.	Henrico C. H., Richmond, Va.	Acting health officer.
Lee	James M. Suter, M. D.	Jonesville	Health officer.
Montgomery	Wm. W. Fuller, M. D.	Christiansburg	Do.
Northampton	James N. Dudley, M. D., C. P. H.	Eastville	Do.
Pittsylvania	B. Randolph Allen, M. D.	Chatham	Do.
Pulaski	Harold M. Kelso, M. D.	Pulaski	Do.
Southampton	Peter P. Causey, M. D.	Courtland	Do.
Sussex	John H. Bonner, M. D.	Stony Creek	Do.
Washington	George R. Carpenter, M. D.	Bristol	Do.
Wythe	Joseph L. Hundley, M. D.	Wytheville	Do.
Districts:			
Alleghany-Rockbridge.	Robert P. Cooke, M. D.	Lexington	Do.
	James H. Gordon, M. D.	do	Assistant health officer.
Brunswick-Greensville-Mecklenburg.	Thomas H. Valentine, M. D.	Lawrenceville	Health officer.
Buchanan-Russel-Tazewell.	Vernon A. Turner, M. D.	Richlands	Do.
Buckingham-Nottoway-Prince Edward.	Wm. A. Brumfield, M. D.	Farmville	Do.
Dickenson-Scott-Wise.	John R. Massie, M. D.	Norton	Do.
Isle of Wight-Nansemond.	Chas. C. Hedges, M. D.	Suffolk	Do.
Norfolk-Princess Anne.	Josiah Leake, M. D.	Portsmouth	Do.
Peninsula health district.	Chester L. Riley, M. D.	Williamsburg	Do.
Elizabeth City.			
James City.			
Warwick.			
York			
Valley health district.	Shockley D. Gardner, M. D.	Luray	Do.
Greene.	Linwood Farley, M. D., serving ad interim.[11]	do	Assistant health officer.
Madison.			
Page.			
Rappahannock.			
Rockingham.			
Shenandoah.			
Warren.			

[11] Dr. Gardner on study leave.

State and county	Name of health officer	Post office	Official title
Washington:			
Chelan	C. R. Fargher, M. D.	Wenatchee	County-city health officer.
Clallam	Leland E. Powers, M. D.	Port Angeles	Do.
Clark	J. A. Kahl, M. D.	Vancouver	Do.
King	W. D. Hunt, M. D.	Seattle	County health officer.
Pierce	N. E. Magnussen, M. D.	Tacoma	Do.
Snohomish	Burton Johnson, M. D.	Everett	Do.
Spokane	A. E. Lien, M. D.	Spokane	Do.
Walla Walla	A. E. Eyres, M. D.	Walla Walla	County-city health officer.
Whatcom	R. W. Kite, M. D.	Bellingham	County health officer.
Whitman	Richard A. Koch, M. D.	Colfax	Do.
Yakima	Lloyd Moffitt, M. D.	Yakima	County-city health officer.
District: Cowlitz. Wahkiakum.	A. L. Ringle, M. D.	Kelso	District health officer.
District: Douglas. Grant.	A. S. Baker, M. D.	Coulee City	Do.
District: Mason. Thurston.	Sanford Lehman, M. D.	Olympia	Do.
West Virginia:			
Berkeley	C. A. Thomas, M. D.	Martinsburg	Health officer.
Boone	R. L. Hunter, M. D.	Madison	Do.
Brooke	W. T. Booher, M. D.	Wellsburg	Do.
Fayette	C. E. Watkins, M. D.	Fayetteville	Do.
Hancock	Thomas H. Bruce, M. D.	New Cumberland	Do.
Harrison	A. J. Kemper, M. D.	Clarksburg	Do.
Kanawha	T. E. Cato, M. D.	Charleston	Do.
Logan	Otto J. Swisher, M. D.	Logan	Do.
Marion	J. W. Davis, M. D.	Fairmont	City and county health officer.
Marshall	W. G. C. Hill, M. D.	Moundsville	Health officer.
Monongalia	E. L. White, M. D.	Morgantown	Acting health officer.
Ohio	Reece M. Pedicord, M. D.	Wheeling	City and county health officer.
Preston	C. Y. Moser, M. D.	Kingwood	Health officer.
Raleigh	W. W. Hume, M. D.	Beckley	Do.
Wetzel	J. B. Hozier, M. D.	New Martinsville	Do.
Wood	A. D. Knott, M. D., D. P. H.	Parkersburg	Do.
District No. 1: Braxton. Clay. Nicholas. Webster.	L. W. Frame, M. D.	Sutton	Do.
District No. 2: Greenbrier. Monroe. Pocahontas.	A. Wilson Brown, M. D.	Lewisburg	Do.
District No. 3: Jackson. Mason. Putnam Roane.	Bruce H. Pollock, M. D.	Pt. Pleasant	Do.
District No. 4: Calhoun. Gilmer. Lewis. Upshur.	J. A. Markley, M. D.	Weston	Do.
Wisconsin:			
Eau Claire	H. V. Gibson, M. D.	Eau Claire	Medical director, County Sanitary Unit.
District No. 1: Columbia Crawford. Dane. Grant. Green Iowa. LaFayette. Richland. Sauk.	G W. Henika, M. D.	Madison	District health officer.
District No. 2: Jefferson. Kenosha. Milwaukee. Racine. Rock. Walworth. Waukesha.	George B. Hoyt, M. D.	Elkhorn	Do.
District No. 3: Calumet. Dodge. Fond du Lac.	V. A. Guder, M. D.	Fond du Lac	Do.

State and county	Name of health officer	Post office	Official title
Wisconsin—Continued.			
District No. 3—Contd.			
Manitowoc.			
Ozaukee.			
Sheboygan.			
Washington.			
Winnebago.			
District No. 4	Edwin H. Jorris, M. D.	Sparta	District health officer.
Adams.			
Green Lake.			
Juneau.			
La Crosse.			
Marquette.			
Monroe.			
Vernon.			
Waushara.			
District No. 5	L. M. Morse, M. D.	Neillsville	Do.
Buffalo.			
Clark.			
Jackson.			
Marathon.			
Pepin.			
Portage.			
Trempeleau.			
Wood.			
District No. 6	Allan Filek, M. D.	Green Bay	Do.
Brown.			
Door.			
Kewaunee.			
Marinette.			
Oconto.			
Outagamie.			
Shawano.			
Waupaca.			
District No. 7	F. P. Daly, M. D.	Chippewa Falls	Do.
Barron.			
Chippewa.			
Dunn.			
Pierce.			
Polk.			
Rusk.			
St. Croix.			
District No. 8	R. L. Frisbie, M. D.	Rhinelander	Do.
Florence.			
Forest.			
Langlade.			
Lincoln.			
Oneida.			
Price.			
Taylor.			
Vilas.			
District No. 9	John W. Lowe, M. D.	Ashland	Do.
Ashland.			
Bayfield.			
Burnett.			
Douglas.			
Iron.			
Sawyer.			
Washburn.			

DEATHS DURING WEEK ENDED JUNE 18, 1938

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

	Week ended June 18, 1938	Corresponding week, 1937
Data from 87 large cities of the United States:		
Total deaths	7,686	[1] 7,517
Average for 3 prior years	7,833	
Total deaths, first 24 weeks of year	206,249	227,136
Deaths under 1 year of age	493	[1] 457
Average for 3 prior years	528	
Deaths under 1 year of age, first 24 weeks of year	12,809	14,008
Data from industrial insurance companies:		
Policies in force	69,250,632	69,874,140
Number of death claims	12,077	12,579
Death claims per 1,000 policies in force, annual rate	9.1	9.4
Death claims per 1,000 policies, first 24 weeks of year, annual rate	9.8	10.8

[1] Data for 86 cities.

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.

In these and the following tables, a zero (0) indicates a positive report and has the same significance as any other figure, while leaders (------) represent no report, with the implication that cases or deaths may have occurred but were not reported to the State health officer.

Cases of certain diseases reported by telegraph by State health officers for the week ended June 25, 1938, rates per 100,000 population (annual basis), and comparison with 1937 and 5-year median

Division and State	Diphtheria				Influenza				Measles			
	Week ended—				Week ended—				Week ended—			
	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 23, 1937, cases	1933–1937 median
New England:												
Maine	0	0	1	1	12	2	------	1	323	53	21	21
New Hampshire	0	0	0	0	------	------	------	------	92	9	27	14
Vermont	0	0	1	0	------	------	------	------	1,321	97	2	37
Massachusetts	1.2	1	6	9	------	------	------	------	614	521	417	478
Rhode Island	0	0	1	1	------	------	------	------	77	10	43	43
Connecticut	10	3	9	6	------	------	1	------	207	69	65	134
Middle Atlantic:												
New York	12	30	45	45	[1] 1.4	[1] 2	[1] 2	[1] 4	1,035	2,573	1,020	1,215
New Jersey	18	15	6	8	2	2	3	2	399	332	700	647
Pennsylvania	7	14	17	40	------	------	------	------	399	778	1,362	1,362
East North Central:												
Ohio	8	10	18	17	------	------	8	4	324	419	1,634	472
Indiana	9	6	5	7	------	------	3	9	120	80	301	66
Illinois	21	32	42	42	6	9	9	10	279	422	438	438
Michigan [2]	9	8	23	21	1.1	1	------	------	1,529	1,416	288	288
Wisconsin	7	4	7	3	20	11	15	15	2,876	1,614	40	186
West North Central:												
Minnesota	4	2	1	4	------	------	1	1	385	196	2	103
Iowa	0	0	3	6	------	------	1	------	392	192	11	40
Missouri	16	12	6	14	12	9	23	23	35	27	26	93
North Dakota	0	0	2	1	15	2	219	------	303	41	------	21
South Dakota	0	0	1	1	------	------	------	------	------	------	2	2
Nebraska	19	5	0	2	------	------	------	------	287	75	8	19
Kansas	14	5	14	5	------	------	1	1	344	123	13	94

See footnotes at end of table.

73193°—38——4

Cases of certain diseases reported by telegraph by State health officers for the week ended June 25, 1938, rates per 100,000 population (annual basis), and comparison with 1937 and 5-year median—Continued

Division and State	Diphtheria				Influenza				Measles			
	Week ended—				Week ended—				Week ended—			
	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median
South Atlantic:												
Delaware [3]	0	0	0	0					60	3	3	15
Maryland [2 3]	9	3	5	4	3	1		1	252	81	98	119
District of Columbia [3]	25	3	7	6					183	22	43	21
Virginia [3]	12	6	5	8					322	167	117	174
West Virginia	17	6	3	6	22	8	5	5	347	124	43	87
North Carolina [3]	21	14	15	8	3	2		1	1,039	696	378	273
South Carolina [4]	11	4	0	1	128	46	52	52	133	48	63	62
Georgia [4]	10	6	3	8					93	55		
Florida [4]	12	4	7	5			1	1	41	13		7
East South Central:												
Kentucky	18	10	3	6	7	4	3	3	112	63	301	131
Tennessee	7	4	3	3	16	9	13	13	79	44	75	75
Alabama [4]	4	2	10	8	5	3	6	6	153	85	36	35
Mississippi [3]	8	3	5	5								
West South Central:												
Arkansas	3	1	0	1	10	4	4	4	153	60	7	9
Louisiana	20	8	12	12	22	9	26	11	42	17	3	9
Oklahoma [3 4]	6	3	2	2	31	15	27	20	94	46	20	20
Texas [4]	21	25	32	32	110	130	66	40	57	67	273	176
Mountain:												
Montana	0	0	0	0				1	532	55	11	21
Idaho [3]	0	0	2	0	74	7	1	1	42	4	20	5
Wyoming [3]	0	0	2	0					111	5	2	2
Colorado [3 5]	24	5	0	2					458	94	46	46
New Mexico	25	2	5	3	12	1			148	12	31	16
Arizona	38	3	2	2	215	17	15	4	152	12		13
Utah [2 3]	40	4	0	0					2,532	252	65	41
Pacific:												
Washington	3	1	1	1					50	16	74	178
Oregon [3]	20	4	1	1	41	8	6	11	168	33	2	24
California	20	24	31	31	9	11	10	24	433	511	162	558
Total	12	292	364	336	16	313	52	1 371	477	11, 632	8, 288	8, 283
25 weeks	19	11, 940	11, 359	[6]15,101	87	43, 332	272, 576	[6]101,981	1, 198	730, 197	218, 508	[6]634,539

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Week ended—				Week ended—				Week ended—			
	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median
New England:												
Maine	0	0	0	0	0	0	0	0	115	19	7	10
New Hampshire	0	0	0	0	0	0	0	0	82	8	5	5
Vermont	0	0	0	0	0	0	0	0	109	8	1	5
Massachusetts	1.2	1	3	1	0	0	1	1	257	218	152	155
Rhode Island	0	0	1	0	0	0	0	0	84	11	24	14
Connecticut	0	0	2	0	3	1	0	0	135	45	64	46
Middle Atlantic:												
New York	1.6	4	7	7	0.4	1	3	3	141	350	272	344
New Jersey	1.2	1	3	2	0	0	0	1	60	50	58	84
Pennsylvania	0.5	1	15	7	0	0	0	0	66	128	709	359

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended June 25, 1938, rates per 100,000 population (annual basis), and comparison with 1937 and 5-year median—Continued

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Week ended—				Week ended—				Week ended—			
	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median
East North Central:												
Ohio	0.8	1	4	4	1.5	2	2	2	57	74	169	169
Indiana	1.5	1	1	1	0	0	1	0	42	28	32	35
Illinois	3	4	1	5	0.7	1	1	1	115	173	247	290
Michigan [2]	0	0	2	2	0	0	0	0	334	309	431	212
Wisconsin	9	5	1	1	0	0	1	1	150	84	143	242
West North Central:												
Minnesota	0	0	0	1	0	0	1	0	94	48	58	58
Iowa	0	0	0	0	0	0	0	0	45	22	55	55
Missouri	0	0	0	1	0	0	1	0	80	61	22	22
North Dakota	0	0	1	0	7	1	0	0	96	13	48	29
South Dakota	0	0	0	0	15	2	0	0	45	6	6	6
Nebraska	0	0	0	0	0	0	0	0	38	10	5	10
Kansas	3	1	2	0	0	0	1	1	70	25	34	25
South Atlantic:												
Delaware [2]	0	0	0	0	0	0	0	0	100	5	1	1
Maryland [2 3]	6	2	1	2	0	0	0	0	140	45	14	36
District of Columbia [2]	8	1	1	1	0	0	0	0	108	13	9	7
Virginia [2]	6	3	2	4	4	2	3	1	35	18	2	12
West Virginia	3	1	1	1	3	1	0	0	61	22	28	24
North Carolina [2]	4	3	2	2	1.4	1	6	1	19	13	9	13
South Carolina [4]	3	1	0	0	0	0	1	1	8	3	2	1
Georgia [4]	0	0	0	0	5	3	1	0	17	10	8	6
Florida [4]	0	0	1	1	3	1	1	0	9	3	2	2
East South Central:												
Kentucky	5	3	3	3	2	1	2	0	39	22	15	15
Tennessee	7	4	1	1	2	1	7	0	14	8	3	6
Alabama [4]	7	4	10	1	13	7	5	5	5	3	4	4
Mississippi [2]	0	0	0	0	10	4	18	0	0	0	5	5
West South Central:												
Arkansas	0	0	1	0	0	0	7	1	15	6	8	2
Louisiana	0	0	1	1	10	4	2	1	12	5	5	6
Oklahoma [2 4]	2	1	0	1	2	1	8	0	29	14	9	9
Texas [4]	1.6	2	0	2	0	0	0	1	54	64	59	31
Mountain:												
Montana	0	0	0	0	0	0	0	0	77	8	13	13
Idaho [2]	0	0	0	0	0	0	0	0	21	2	13	2
Wyoming [5]	0	0	0	0	0	0	0	0	67	3	2	11
Colorado [2 5]	0	0	1	0	0	0	0	0	146	30	8	15
New Mexico	0	0	0	0	0	0	0	0	111	9	11	11
Arizona	0	0	0	0	13	1	0	0	25	2	5	8
Utah [2 3]	0	0	0	0	0	0	0	0	181	18	12	12
Pacific:												
Washington	0	0	1	0	0	0	0	0	57	18	25	34
Oregon [3]	0	0	0	0	0	0	0	0	122	24	23	20
California	0	0	4	4	1.7	2	9	9	93	110	100	134
Total	1.8	44	73	73	1.5	37	82	82	88	2,168	2,937	2,937
25 weeks	3	1,857	3,648	[6] 3,536	0.8	514	[6] 657	865	208	128,743	155,134	[6] 168,735

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended June 25, 1938, rates per 100,000 population (annual basis), and comparison with 1937 and 5-year median—Continued

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough	
	Week ended—				Week ended—				Week ended—	
	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases	June 26, 1937, cases	1933–1937 median	June 25, 1938, rate	June 25, 1938, cases
New England:										
Maine	0	0	0	0	6	1	0	1	213	35
New Hampshire	0	0	0	0	10	1	0	0	----	----
Vermont	0	0	0	0	0	0	0	0	245	18
Massachusetts	0	0	0	0	0	0	2	2	110	93
Rhode Island	0	0	0	0	8	1	0	0	139	18
Connecticut	0	0	0	0	3	1	2	1	288	96
Middle Atlantic:										
New York	0	0	0	0	2	6	12	12	194	483
New Jersey	0	0	0	0	7	6	0	4	277	231
Pennsylvania	0	0	0	0	3	6	12	26	91	177
East North Central:										
Ohio	0	0	4	1	3	4	10	11	77	100
Indiana	44	29	6	1	15	10	4	3	23	15
Illinois	5	8	9	2	6	9	7	12	148	224
Michigan [2]	2	2	1	0	4	4	1	4	351	325
Wisconsin	7	4	2	6	0	0	4	4	367	206
West North Central:										
Minnesota	14	7	10	4	2	1	0	1	87	44
Iowa	39	19	18	4	6	3	0	1	29	14
Missouri	69	53	3	1	8	6	0	12	48	37
North Dakota	7	1	11	1	0	0	1	1	103	14
South Dakota	53	7	1	1	8	1	2	0	23	3
Nebraska	0	0	8	8	0	0	0	0	4	1
Kansas	25	9	3	4	6	2	3	4	467	167
South Atlantic:										
Delaware [3]	0	0	0	0	0	0	0	0	240	12
Maryland [2 3]	0	0	0	0	9	3	4	4	174	56
District of Columbia [3]	0	0	0	0	0	0	3	0	67	8
Virginia [3]	0	0	0	0	10	5	13	10	191	99
West Virginia	3	1	1	0	14	5	2	9	215	77
North Carolina [3]	4	3	0	0	51	34	7	13	521	349
South Carolina [4]	0	0	0	0	89	32	26	26	220	79
Georgia [4]	0	0	0	0	85	50	30	53	93	55
Florida [4]	0	0	0	0	0	0	1	1	44	14
East South Central:										
Kentucky	0	0	0	0	32	18	20	20	77	43
Tennessee	2	1	0	0	43	24	16	17	79	44
Alabama [4]	0	0	0	0	23	13	8	17	115	64
Mississippi [2]	5	2	0	0	46	18	11	11	----	----
West South Central:										
Arkansas	8	3	0	0	38	15	27	16	64	25
Louisiana	0	0	0	0	54	22	9	21	93	38
Oklahoma [3 5]	6	3	2	2	20	10	12	12	104	51
Texas [4]	7	8	3	3	35	42	26	26	208	246
Mountain:										
Montana	10	1	23	3	0	0	3	3	252	26
Idaho [3]	63	6	4	0	42	4	1	1	74	7
Wyoming [3]	22	1	1	2	0	0	0	0	133	6
Colorado [3 5]	0	0	1	1	34	7	2	0	112	23
New Mexico	74	6	0	0	25	2	2	4	284	23
Arizona	101	8	0	0	38	3	5	2	570	45
Utah [2 3]	0	0	0	0	10	1	1	0	693	69
Pacific:										
Washington	53	17	1	6	3	1	0	1	204	65
Oregon [3]	96	19	3	4	5	1	2	2	244	48
California	6	7	26	7	4	5	10	10	207	244
Total	9	225	141	144	15	377	301	371	169	4,117
25 weeks	19	11,750	7,219	[6] 4,700	6	3,940	3,370	[6] 4,084	177	107,601

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Rocky Mountain spotted fever, week ended June 25, 1938, 22 cases, as follows: Delaware, 1; Maryland, 1; District of Columbia, 1; Virginia, 4; North Carolina, 3; Oklahoma, 1; Idaho, 4; Colorado, 1; Utah, 3; Oregon, 3.
[4] Typhus fever, week ended June 25, 1938, 38 cases, as follows: South Carolina, 1; Georgia, 14; Florida, 4; Alabama, 6; Oklahoma, 1; Texas, 12.
[5] Colorado tick fever, week ended June 25, 1938, 8 cases, as follows: Wyoming, 1; Colorado, 7.
[6] 3-year median.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Meningitis, meningococcus	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
January 1938										
Arizona	6	37	478	--	11	2	2	49	2	7
February 1938										
Arizona	3	26	585	5	40	1	0	65	12	4
March 1938										
Arizona	1	21	554	4	123	--	1	39	36	14
April 1938										
Arizona	2	13	251	6	172	3	0	44	15	4
May 1938										
Arizona	0	9	136	1	77	3	1	28	24	10
District of Columbia	2	29	3	--	66	--	0	71	0	6
Florida	2	23	10	23	591	16	6	15	0	24
Georgia	3	23	44	278	1,033	116	2	39	2	47
Illinois	10	133	38	20	6,158	2	3	1,618	89	30
Kansas	5	17	17	1	1,939	--	0	376	70	2
Louisiana	3	33	34	43	138	26	7	33	2	31
Mississippi	4	24	1,640	3,746	1,498	730	3	22	7	25
Oklahoma	4	12	176	47	710	35	0	66	90	26
South Dakota	5	3	9	--	11	--	0	84	68	1
Texas	7	108	688	21	689	172	4	282	--	47
Virginia	12	43	160	9	1,614	25	1	78	0	14

January, 1938

Arizona:	Cases
Chickenpox	163
Dysentery (bacillary)	44
German measles	5
Mumps	33
Trachoma	29
Undulant fever	1
Whooping cough	136

February 1938

Arizona:	
Chickenpox	188
Dysentery (bacillary)	31
German measles	9
Mumps	41
Trachoma	40
Whooping cough	171

March 1938

Arizona:	
Chickenpox	288
Dysentery (bacillary)	37
German measles	1
Mumps	77
Trachoma	15
Undulant fever	2
Whooping cough	233

April 1938

Arizona:	
Chickenpox	164
Dysentery (bacillary)	55
German measles	6
Mumps	58
Trachoma	20
Undulant fever	2
Whooping cough	270

May 1938

Chickenpox:	Cases
Arizona	106
District of Columbia	104
Florida	165
Georgia	110
Illinois	1,641
Kansas	262
Louisiana	23
Mississippi	433
Oklahoma	105
South Dakota	70
Texas	628
Virginia	180
Dengue:	
Florida	1
Mississippi	1
Texas	8
Dysentery:	
Arizona (bacillary)	31
Florida (amoebic)	3
Florida (bacillary)	3
Georgia (amoebic)	11
Georgia (bacillary)	152
Illinois (bacillary)	14
Illinois (amoebic carriers)	14
Kansas (bacillary)	7
Louisiana (amoebic)	5
Louisiana (bacillary)	1
Mississippi (amoebic)	155
Mississippi (bacillary)	2,423
Oklahoma (amoebic)	3
Oklahoma (bacillary)	3
Texas (bacillary)	44
Virginia (bacillary)	223

May 1938

Encephalitis, epidemic or lethargic:	Cases
Arizona	1
Illinois	8
Louisiana	1
Texas	2
German measles:	
Arizona	11
Illinois	115
Kansas	8
Hookworm disease:	
Florida	690
Georgia	735
Louisiana	7
Mississippi	506
Impetigo contagiosa:	
Illinois	9
Mumps:	
Arizona	21
Florida	89
Georgia	172
Illinois	870
Kansas	459
Louisiana	2
Mississippi	297
Oklahoma	18
South Dakota	18
Texas	227
Virginia	187
Ophthalmia neonatorum:	
Arizona	1
Illinois	4
Louisiana	1
Mississippi	4

Summary of monthly reports from States—Continued

May 1938

	Cases
Paratyphoid fever:	
Georgia	3
Illinois	4
Texas	3
Virginia	1
Puerperal septicemia:	
Georgia	2
Mississippi	28
South Dakota	1
Rabies in animals:	
Florida	10
Illinois	42
Louisiana	15
Mississippi	12
Texas	4
Rabies in man:	
Florida	1
Louisiana	1
Mississippi	1
Rocky Mountain spotted fever:	
District of Columbia	3
Illinois	2
Virginia	6
Septic sore throat:	
Florida	4
Georgia	36
Illinois	4
Kansas	2

May 1938

	Cases
Septic sore throat—Con.	
Louisiana	5
Oklahoma	24
Virginia	10
Tetanus:	
Georgia	2
Illinois	2
Kansas	1
Oklahoma	1
South Dakota	2
Trachoma:	
Arizona	16
Georgia	24
Illinois	16
Mississippi	12
Oklahoma	6
South Dakota	1
Trichinosis:	
Illinois	2
Tularaemia:	
Georgia	3
Illinois	7
Kansas	2
Louisiana	4
Oklahoma	4
Texas	5
Virginia	5
Typhus fever:	
Florida	16
Georgia	51

May 1938

	Cases
Typhus fever—Con.	
Louisiana	1
Mississippi	1
Texas	21
Undulant fever:	
Florida	8
Georgia	9
Illinois	16
Kansas	14
Louisiana	9
Mississippi	1
Oklahoma	111
Texas	41
Virginia	1
Vincent's infection:	
Florida	51
Illinois	20
Kansas	8
Whooping cough:	
Arizona	196
Florida	102
Georgia	353
Illinois	609
Kansas	585
Louisiana	107
Mississippi	1,387
Oklahoma	193
South Dakota	78
Texas	1,191
Virginia	371

PLAGUE INFECTION FOUND IN GROUND SQUIRRELS IN IDAHO

Under date of June 23, 1938, Senior Surg. C. R. Eskey, reported plague infection found in tissue from 1 ground squirrel (*Citellus armatus*) shot June 2, 1938, 11 miles south of Turner, Bannock County, Idaho.

PLAGUE INFECTION FOUND IN GROUND SQUIRRELS AND IN FLEAS FROM GROUND SQUIRRELS IN MONTANA

Under date of June 23, 1938, Senior Surg. C. R. Eskey, reported plague infection found in ground squirrels (*Citellus richardsoni*) and in fleas from ground squirrels (*Citellus elegans* and *Citellus richardsoni*) in Beaverhead County, Montana, as follows:

Tissue obtained from 2 ground squirrels found dead, June 11, 1938, 6½ miles north of Dillon.

Tissue obtained from 3 ground squirrels shot June 11, 1938, 6½ miles north of Dillon.

Forty-two fleas collected from 120 ground squirrels, shot June 1, 1938, 7½ miles northeast of Dillon.

Two hundred eighteen fleas collected from 40 ground squirrels shot June 10, 1938, 8 miles northwest of Dillon.

WEEKLY REPORTS FROM CITIES

City reports for week ended June 18, 1938

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	150	59	22	3,918	429	1,329	12	396	46	1,276	----
Current week [1]	108	28	15	3,910	351	956	20	371	37	1,373	----
Maine:											
Portland	0	----	0	18	4	1	0	0	1	6	30
New Hampshire:											
Concord	0	----	0	0	0	0	0	0	0	0	6
Manchester	0	----	0	0	1	0	0	0	0	0	21
Nashua	0	----	0	0	0	0	0	1	0	0	12
Vermont:											
Barre	0	----	0	0	0	0	0	2	0	0	6
Burlington	0	----	0	0	0	0	0	0	0	10	7
Rutland	0	----	0	0	0	0	0	0	0	0	3
Massachusetts:											
Boston	1	----	0	143	12	76	0	5	0	24	186
Fall River	0	----	0	0	1	1	0	2	0	3	32
Springfield	0	----	0	150	0	3	0	1	0	4	37
Worcester	0	----	0	1	1	15	0	2	0	9	41
Rhode Island:											
Pawtucket	0	----	0	0	0	1	0	0	0	0	8
Providence	0	----	0	0	3	6	0	1	0	19	58
Connecticut:											
Bridgeport	0	1	0	3	1	5	0	1	0	0	20
Hartford	0	----	0	1	3	13	0	0	0	5	----
New Haven	0	1	----	4	2	0	0	1	0	10	49
New York:											
Buffalo	0	----	1	3	4	24	0	7	0	27	135
New York	12	1	5	1,511	74	145	0	85	6	296	1,381
Rochester	0	----	0	33	4	14	0	1	0	3	57
Syracuse	0	----	0	156	3	4	0	1	0	6	36
New Jersey:											
Camden	3	----	0	5	2	0	0	1	0	3	36
Newark	0	1	0	15	5	7	0	5	0	34	93
Trenton	0	----	0	0	2	0	0	4	0	0	39
Pennsylvania:											
Philadelphia	6	2	1	252	24	69	0	23	5	40	479
Pittsburgh	4	----	0	6	12	14	0	7	0	25	122
Reading	0	----	0	14	0	0	0	0	0	2	14
Scranton	0	----	----	3	----	0	0	----	0	2	----
Ohio:											
Cincinnati	2	2	2	8	5	6	0	5	0	8	108
Cleveland	4	6	0	149	10	33	0	7	1	37	173
Columbus	1	1	1	7	3	2	0	9	0	0	90
Toledo	0	1	1	53	1	9	0	4	0	15	53
Indiana:											
Anderson	0	----	0	0	2	0	0	1	0	4	15
Fort Wayne	0	----	0	2	2	8	0	0	0	0	23
Indianapolis	1	----	0	47	10	19	1	4	1	4	91
South Bend	0	----	0	13	0	0	0	0	0	0	13
Terre Haute	0	----	0	0	0	0	1	0	0	0	17
Illinois:											
Alton	0	----	0	0	0	0	0	0	0	0	8
Chicago	21	2	1	87	28	144	0	38	1	134	625
Elgin	0	----	0	1	4	1	0	0	0	1	14
Moline	0	----	0	0	0	0	0	0	0	4	13
Springfield	1	----	0	4	0	1	0	0	0	5	18
Michigan:											
Detroit	7	1	0	100	6	126	0	16	1	131	229
Flint	0	----	0	90	4	4	0	0	0	15	27
Grand Rapids	0	----	0	76	2	10	0	0	0	2	41
Wisconsin:											
Kenosha	0	----	0	43	0	1	0	0	0	3	9
Madison	0	----	0	166	0	1	0	0	0	6	13
Milwaukee	0	----	0	17	1	31	0	4	0	83	76
Racine	0	----	0	30	0	11	0	0	0	10	8
Superior	0	----	0	21	0	2	0	0	0	2	6

[1] Figures for Little Rock, Ark., estimated; report not received.

City reports for week ended June 18, 1938—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Minnesota:											
Duluth	0	------	0	25	0	2	0	3	0	5	21
Minneapolis	0	------	0	119	3	7	9	1	0	13	116
St. Paul	0	------	0	12	3	2	0	1	0	8	57
Iowa:											
Cedar Rapids	0	------	--------	12	-------	0	1	-------	0	4	--------
Davenport	-------	------	--------	-------	-------	-------	-------	-------	-------	-------	-------
Des Moines	0	------	0	9	0	18	0	0	0	0	36
Sioux City	0	------	--------	91	-------	0	0	-------	0	5	--------
Waterloo	0	------	--------	1	-------	3	0	-------	0	0	--------
Missouri:											
Kansas City	1	------	0	4	2	7	1	9	1	2	86
St. Joseph	2	------	0	1	0	0	0	0	0	0	26
St. Louis	4	------	0	2	4	17	0	11	2	1	192
North Dakota:											
Fargo	0	------	0	2	1	0	0	0	0	0	10
Grand Forks	0	------	--------	3	-------	0	0	-------	0	1	--------
Minot	0	------	0	3	0	0	1	0	0	6	4
South Dakota:											
Aberdeen	0	------	--------	0	-------	1	0	-------	0	4	--------
Nebraska:											
Lincoln	0	------	--------	28	-------	4	0	-------	0	6	--------
Omaha	0	------	0	55	4	1	0	1	0	0	63
Kansas:											
Lawrence	0	------	0	4	0	0	0	0	0	2	1
Topeka	0	------	0	35	2	2	0	0	0	26	16
Wichita	0	------	0	5	2	1	1	0	0	4	19
Delaware:											
Wilmington	1	------	0	0	2	2	0	1	0	4	34
Maryland:											
Baltimore	0	------	0	32	11	28	0	13	1	50	225
Cumberland	0	------	0	9	0	2	0	1	0	0	10
Frederick	0	------	0	0	0	0	0	0	0	0	1
Dist. of Col.											
Washington	6	------	0	28	3	10	0	7	0	9	140
Virginia:											
Lynchburg	0	------	0	1	0	0	0	0	1	3	5
Norfolk	0	------	0	0	1	3	0	3	0	1	31
Richmond	0	------	0	143	5	1	0	2	0	1	57
Roanoke	0	------	0	1	0	3	0	0	1	0	9
West Virginia:											
Charleston	0	------	0	0	2	0	0	1	0	0	25
Huntington	0	------	--------	0	-------	1	0	-------	0	0	--------
Wheeling	0	------	0	5	1	3	0	0	0	3	19
North Carolina:											
Gastonia	0	------	--------	0	-------	0	0	-------	0	4	--------
Raleigh	0	------	0	7	1	0	0	3	0	10	29
Wilmington	0	------	0	3	1	0	0	0	0	3	10
Winston-Salem	0	------	0	61	0	0	0	3	0	8	12
South Carolina:											
Charleston	0	1	0	0	1	0	0	3	0	0	29
Florence	0	------	0	0	0	0	0	0	5	0	13
Greenville	0	------	0	2	1	0	0	0	0	5	13
Georgia:											
Atlanta	0	2	0	1	0	2	2	6	1	12	65
Brunswick	0	------	0	7	0	0	0	0	0	0	5
Savannah	0	------	0	5	0	1	0	2	0	7	31
Florida:											
Miami	0	------	0	5	3	2	0	0	0	5	28
Tampa	1	------	0	8	1	1	0	0	0	2	17
Kentucky:											
Ashland	0	------	0	0	1	0	0	2	0	0	9
Covington	0	------	0	1	0	0	0	0	0	6	12
Lexington	0	------	0	0	0	0	0	0	0	0	23
Louisville	3	3	0	41	5	8	0	9	0	9	79
Tennessee:											
Knoxville	0	------	0	2	1	0	0	0	0	2	17
Memphis	0	------	0	3	4	0	0	4	0	1	88
Nashville	0	------	0	17	3	2	0	0	1	13	40
Alabama:											
Birmingham	0	------	0	5	3	2	0	5	1	0	69
Mobile	0	------	0	0	0	0	0	2	0	0	18
Montgomery	1	------	--------	1	-------	0	0	-------	0	5	--------

City reports for week ended June 18, 1938—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Arkansas:											
Fort Smith	0	----	----	1	----	0	0	----	0	1	----
Louisiana:											
Lake Charles	0	----	0	0	0	0	0	0	0	0	4
New Orleans	2	2	1	8	9	0	0	7	5	54	147
Shreveport	0	----	0	0	4	0	0	1	1	0	35
Oklahoma:											
Muskogee	0	----	----	4	----	0	0	----	0	0	----
Oklahoma City	1	----	0	0	2	4	0	2	0	0	45
Tulsa	0	----	----	23	----	0	7	----	0	6	----
Texas:											
Dallas	1	1	1	7	2	2	0	6	2	17	50
Galveston	0	----	0	0	1	2	0	3	0	0	10
Houston	1	----	0	0	2	1	1	3	1	1	61
San Antonio	0	----	0	0	5	1	0	2	0	0	46
Montana:											
Billing	0	----	0	2	0	0	0	0	0	8	6
Great Falls	0	----	0	1	2	0	0	0	0	13	9
Helena	0	----	0	0	0	0	0	0	0	0	2
Missoula	0	----	0	0	0	0	0	0	1	0	4
Idaho:											
Boise	0	----	0	0	0	0	0	0	0	0	5
Colorado:											
Colorado Springs	0	----	0	0	1	0	0	2	0	5	11
Denver	8	----	0	7	8	9	0	3	0	4	69
Pueblo	0	----	0	27	0	3	0	0	1	9	9
New Mexico:											
Albuquerque	0	----	0	2	2	4	0	1	0	3	12
Utah:											
Salt Lake City	0	----	0	168	3	5	0	0	0	16	37
Washington:											
Seattle	0	----	0	4	3	0	1	5	0	25	73
Spokane	0	----	0	2	0	1	0	1	0	11	32
Tacoma	0	----	0	0	2	3	2	0	0	4	22
Oregon:											
Portland	0	1	0	26	0	5	2	1	0	0	61
Salem	0	3	----	0	----	0	0	----	0	0	----
California:											
Los Angeles	17	3	1	40	10	28	1	15	1	26	324
Sacramento	0	----	0	32	1	1	0	3	0	17	20
San Francisco	1	1	1	6	3	9	0	8	0	31	169

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Rhode Island:				District of Columbia:			
Providence	1	1	0	Washington	3	0	0
Connecticut:				Louisiana:			
Bridgeport	0	0	1	New Orleans	2	0	1
New York:				Shreveport	0	0	2
New York	11	3	4	Oklahoma:			
Pennsylvania:				Oklahoma City	1	0	0
Philadelphia	1	0	0	Texas:			
Scranton	1	0	0	Houston	1	0	0
Indiana:				California:			
South Bend	1	0	0	Los Angeles	1	0	1
Illinois:							
Chicago	0	0	1				

Dengue.—Cases: Charleston, S. C., 1.
Encephalitis, epidemic or lethargic.—Cases: New York, 1; Philadelphia, 1; Cleveland, 1.
Pellagra.—Cases: Atlanta, 4; Brunswick, 1; Savannah, 8; Birmingham, 3; Montgomery, 1.
Typhus fever.—Cases: Baltimore, 1; Charleston, S. C., 1; Miami, 2.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—2 weeks ended June 4, 1938.—During the 2 weeks ended June 4, 1938, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia [1]	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis	1	1	1	6	4			1	1	15
Chickenpox		26		177	570	192	82	10	198	1,255
Diphtheria				76	6	5		1		88
Erysipelas				10	7	3	1		1	22
Influenza		7			5	1			2	15
Measles		94		210	1,366	23	4	29	18	1,744
Mumps		46	5		179	85	1	16	10	342
Paratyphoid fever								1		1
Pneumonia		7			81		11		14	113
Poliomyelitis				3	6		1		1	11
Scarlet fever		20	38	183	166	44	52	51	50	604
Smallpox						8				8
Trachoma									2	2
Tuberculosis	2	5	37	119	114	7	4	4	29	321
Typhoid fever			4	15	2	2			2	25
Undulant fever				1	6		1		2	10
Whooping cough		19		144	263	28	35		129	618

[1] For 2 weeks ended June 8, 1938.

CUBA

Habana—Communicable diseases—4 weeks ended June 4, 1938.—During the 4 weeks ended June 4, 1938, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	13	1	Tuberculosis	10	2
Malaria	[1] 13	1	Typhoid fever	[1] 24	6
Scarlet fever	1				

[1] Includes imported cases.

Provinces—Notifiable diseases—4 weeks ended May 28, 1938.—During the 4 weeks ended May 28, 1938, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	2	3		5	1	1	12
Chickenpox		14	7	6	6	5	38
Diphtheria	1	13	1		1	1	17
Dysentery	1			3			4
Hookworm disease		4		4	1		9
Leprosy		2		1	1	2	6
Malaria	52	12	7	32	7	66	176
Measles		17	17	4	1	2	41
Poliomyelitis						1	1
Scarlet fever		1	1	1		1	4
Tetanus, infantile			1				1
Tuberculosis	9	75	33	40	42	35	234
Typhoid fever	12	60	22	48	26	70	238
Whooping cough		1				2	3
Yaws						9	9

EGYPT

Infectious diseases—Second quarter 1937.—During the second quarter of 1937, certain infectious diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	1		Mumps	424	4
Cerebrospinal meningitis	47	28	Plague	59	35
Chickenpox	830	18	Poliomyelitis	4	1
Diphtheria	298	128	Puerperal septicemia	130	110
Dysentery	850	132	Rabies	11	11
Erysipelas	1,504	325	Scarlet fever	20	
Influenza	2,963	236	Tetanus	93	73
Jaundice, epidemic	1	1	Tuberculosis (pulmonary)	1,330	568
Leprosy	118	16	Typhoid fever	1,433	283
Lethargic encephalitis	1		Typhus fever	1,392	204
Malaria	4,234	15	Undulant fever	7	2
Measles	6,044	1,425	Whooping cough	1,058	61

Vital statistics—Second quarter 1937.—Following are vital statistics for Egypt for the second quarter of 1937:

Number of live births	48,640
Live births per 1,000 inhabitants	41.5
Number of stillbirths	988
Number of deaths	39,633
Deaths per 1,000 inhabitants	33.9
Deaths under 1 year of age	14,012
Deaths under 1 year of age per 1,000 live births	288

GERMANY

Vital statistics—Fourth quarter 1937.—Following are vital statistics for Germany for the fourth quarter of 1937:

Number of marriages	181, 145
Number of live births	310, 118
Number of live births per 1,000 population	18. 3
Number of stillbirths	7, 721
Total deaths	195, 415
Deaths per 1,000 population	11. 5
Deaths under 1 year of age	17, 738
Deaths under 1 year of age per 100 live births	5. 7

Vital statistics—Year 1937.—Following are vital statistics for Germany for the year 1937:

Number of marriages	618, 971
Number of live births	1, 275, 212
Number of live births per 1,000 population	18. 8
Number of stillbirths	31, 362
Total deaths	793, 192
Deaths per 1,000 population	11. 7
Deaths under 1 year of age	81, 596
Deaths under 1 year of age per 100 live births	6. 4

JAMAICA

Communicable diseases—4 weeks ended June 11, 1938.—During the 4 weeks ended June 11, 1938, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis		1	Leprosy		2
Chickenpox	8	9	Puerperal fever		2
Diphtheria	1	3	Tuberculosis	46	85
Dysentery	8	5	Typhoid fever	4	45

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

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for June 24, 1938, pages 1049–1064. A similar cumulative table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

Cholera

China.—Cholera has been reported in China as follows: Week ended June 18, 1938, 16 deaths from cholera in Macao, and more than 500 cases of cholera with approximately 200 deaths in Swatow.

Plague

Brazil.—Plague has been reported in Brazil as follows: Ceara State—March 1938, 2 cases, 1 death; April 1938, 6 cases, 3 deaths. Parahyba State—February 1938, 1 case, 1 death; March 1938, 3 cases, 1 death.

Senegal—M'Bour Subdivision.—During the week ended June 18, 1938, 1 case of plague was reported in M'Bour Subdivision, Senegal.

United States.—A report of plague infection in Bannock County, Idaho, and Beaverhead County, Mont., appears on page 1172 of this issue of PUBLIC HEALTH REPORTS.

Smallpox

Brazil—Bahia State—Sao Salvador.—During the month of February 1938, 1 case of smallpox was reported in Sao Salvador, Bahia State, Brazil.

Venezuela.—Smallpox (alastrim) has been reported in Venezuela as follows: Guarico State, May 1–15, 1938, 1 death; Yaracuy State, April 16–30, 1938, 2 deaths, May 1–15, 1938, 1 death.

Yellow Fever

Gold Coast—Akuse.—On June 18, 1938, 1 suspected case of yellow fever was reported in Akuse, Gold Coast.

Sudan (French)—Segou Circle—Kokry.—On June 20, 1938, 1 fatal case of suspected yellow fever was reported in Kokry, Segou Circle, French Sudan.