

PUBLIC HEALTH REPORTS

VOL. 37

JULY 7, 1922

No. 27

THE DECLINE IN THE DEATH RATE, 1901-1910, AND 1910-1920.¹

The gross death rate from all causes in the original registration States² declined from 17.2 per 1,000 in 1900 to 15.6 in 1910 and 13.9 in 1920, a decrease of 9.3 per cent in the first decade and 10.9 per cent in the second decade. If we take into consideration the fact that a secondary but severe epidemic of influenza-pneumonia occurred in the early part of 1920, the indicated decline from 1910 to 1920 is less than it would have been had 1920 been a normal year. In 42 cities in the United States having a population of over 100,000, the excess death rate during the 1920 epidemic period from influenza-pneumonia alone was about 1.13 per 1,000. If the same excess may be presumed to have occurred in these original registration States, the death rate in 1920 would have been approximately 12.8 per 1,000, and the decline from 1910 would have been about 18 per cent.³

A comparison of the specific death rates and the expectation of life at various ages for the three periods suggests that, in addition to the accelerated decline in the mortality rate during the decade 1910-1920, some extremely interesting and highly significant changes have taken place. Such a comparison has been made possible in a table recently published by the statistical bureau of the Metropolitan Life Insurance Co. in its Statistical Bulletin for May, 1922. The table is reproduced below.

Death rates per 1,000 and complete expectation of life in original registration States, 1901, 1910, and 1920.

Age.	1901		1910		1920	
	Death rate per 1,000.	Complete expectation of life.	Death rate per 1,000.	Complete expectation of life.	Death rate per 1,000.	Complete expectation of life.
Under 1.....	124.48	49.24	114.62	51.49	90.11	54.29
5.....	6.05	54.98	4.66	56.21	4.43	57.19
10.....	2.67	51.14	2.27	52.15	2.12	53.06
15.....	3.47	46.81	2.84	47.73	3.13	48.66
20.....	5.89	42.79	4.68	43.53	4.68	44.54
30.....	7.97	35.51	6.51	35.70	6.55	36.80
40.....	10.10	28.34	9.39	28.20	7.94	29.14
50.....	14.59	21.26	14.37	20.98	12.76	21.54
60.....	27.02	14.76	28.53	14.42	25.66	14.69
70.....	56.41	9.30	59.52	9.11	59.48	9.13
80.....	127.23	5.30	130.28	5.25	128.88	5.32
90.....	252.95	2.95	249.62	3.03	247.63	3.02
100.....	453.73	1.58	401.91	1.85	398.70	1.87

¹ From the Statistical Office, U. S. Public Health Service.

² Including Connecticut, Indiana, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and the District of Columbia.

³ The death rate in 1900, in fact, was also abnormally high in the area, because of an epidemic of influenza-pneumonia in March and April. The decline of 9.3 per cent from 1900 to 1910, therefore, is an overstatement rather than an understatement of the decrease in causes other than epidemic influenza-pneumonia.

The comparison is more easily made if the differences between the rates at each age and the percentages of decrease or increase are shown, as in the following table.

Increase or decrease in the death rate at specified ages, 1910 over 1901, and 1920 over 1910; in original registration states.

Age.	Increase (+) or decrease (-)				Age.	Increase (+) or decrease (-)			
	Rate per 1,000		Per cent.			Rate per 1,000		Per cent.	
	1910 over 1901.	1920 over 1910.	1910 over 1901.	1920 over 1910.		1910 over 1901.	1920 over 1910.	1910 over 1901.	1920 over 1910.
Under 1.....	-9.84	-24.51	- 7.9	-21.4	50.....	- .22	-1.61	-1.5	-11.2
5.....	-1.39	- .23	-23.0	-49.4	60.....	+1.60	-2.02	+5.8	-10.2
10.....	- .40	- .15	-15.0	-11.6	70.....	+3.11	- .04	+5.6	- .1
15.....	- .03	+ .29	-18.2	+10.2	80.....	+3.05	-1.40	+2.4	-1.1
20.....	-1.21	.....	-20.5	.....	90.....	-3.33	-1.79	-1.3	- .8
25.....	-1.40	+ .04	-18.3	+ .6	100.....	-51.82	-3.21	-11.4	- .8
30.....	.....	.....	-7.0	-15.4					
40.....	- .71	-1.45							

Keeping in mind the facts that we are considering a limited area and that changes in the character of the population arising from the flow and ebb of immigration may have been factors influencing the death rates at certain ages, it may be observed that—

1. In the period 1901-1910, there was no decrease in the death rate in the principal older ages, from about 50 to 80, the chief declines being at the ages of 5 to 30. The decrease in the rate among infants under one year of age was only 8 per cent as compared with approximately 20 per cent in childhood, adolescence, and young adult life.

2. In the period 1910-1920, on the other hand, the greatest decline occurred in the death rate among infants and young children. A marked change in the trend of the rate for middle and old age is also evident. Instead of insignificant decreases or actual increases as found in the rate at the ages of 40 and over in the period 1901-1910, the percentage of decrease in the period 1910-1920, was quite definitely significant (10-15 per cent) at the ages of 40, 50, and 60, and only became insignificant at the ages of 70 and 80.

3. The increases in the death rate at the ages of 15 and 30, and the absence of change at the age of 20 in 1920 as compared with 1910, may be accounted for partially by the peculiar age distribution of deaths due to the influenza epidemic in the late winter and early spring of 1920. An accurate estimate of the abnormal mortality at various ages in 1920 is almost impossible, because of the difficulty of establishing a satisfactory normal age distribution for 1920 of influenza-pneumonia deaths, as well as of deaths from certain other causes that apparently increased during the epidemic period. But from such data as we have immediately at hand, the death rate from

influenza-pneumonia alone during the 1920 epidemic was about five times as high as the usual rate from influenza and pneumonia in the age periods "0-14" and "45+," and about twenty times as high as the usual rate in the age period 15-44. It appears certain that had it not been for the epidemic of influenza in 1920, the death rates in that year at the ages of 15, 20, and 30 would have shown a decline over the corresponding rates in 1910. How much of a decrease would have been indicated is at the present time difficult to say.

The changes in the death rates have altered materially the complete expectation of life in 1920 as compared with 1910 and 1901. From the figures prepared by the Bureau of the Census and the Metropolitan Life Insurance Co., have been computed the increases or decreases in the expectation of life in 1910 over 1901 and 1920 over 1910, as shown in the following table.

Increase or decrease in complete expectation of life at specified ages: 1910 over 1901 and 1920 over 1910: Original registration States.

Age.	Increase (+) or decrease (-) in—			Age.	Increase (+) or decrease (-) in—		
	1920 over 1901 (years).	1910 over 1901 (years).	1920 over 1910 (years).		1920 over 1901 (years).	1910 over 1901 (years).	1920 over 1910 (years).
Under 1.....	+5.05	+2.25	+2.80	50.....	+ .28	- .28	+ .55
5.....	+2.21	+1.23	+ .98	60.....	+ .13	- .34	+ .27
10.....	+1.92	+1.01	+ .91	70.....	- .17	- .19	+ .02
15.....	+1.85	+ .92	+ .93	80.....	+ .02	- .05	+ .07
20.....	+1.75	+ .74	+1.01	90.....	+ .07	+ .08	- .01
30.....	+1.29	- .19	+1.10	100.....	+ .29	+ .27	+ .02
40.....	+ .80	- .14	+ .94				

The "expectation of life" tells the story in a better way than do the mortality rates. In 1910, at the ages of 40 to 80 the expectation of life had actually decreased over what it was in 1901. But in 1920, in spite of abnormally high mortality, especially in certain age groups, from the influenza epidemic, there was a gain in the expectation of life over 1910 in practically every age shown.

THE RELATIVE PARASITICIDAL VALUE OF ARSPHENAMINE AND NEOARSPHENAMINE.

WITH A DESCRIPTION OF THE TRYPANOCIDAL TEST.

By CARL VOEGTLIN, Professor of Pharmacology, and D. W. MILLER, Scientific Assistant, United States Public Health Service.

About 12 years have now elapsed since the introduction of arspenamine and nearsphenamine as remedies for the treatment of syphilis, and yet no conclusive clinical evidence has been furnished as to whether or not these drugs are of equal effectiveness in curing

the disease. The reasons for this lack of information are obvious if the varying nature of the disease in different patients and the length of time required for its treatment are considered. Such factors make the appraisal of the curative value of these drugs very difficult indeed. To be sure, the majority of experienced syphilographers hold the opinion that arsphenamine is more effective than neoarsphenamine, but we have failed to locate any clinical report which would clearly prove this point.

The great difficulties encountered in the solution of this important question in the clinic have forced various investigators to resort to experimental procedures in order to settle it. The great advantage of the latter method consists in the fact that experimental infections are subject to accurate control. Ehrlich and Hata (1911) conducted comparative therapeutic tests with chicken spirillosis and relapsing fever in mice, and arrived at the conclusion that 0.6 gram of arsphenamine is equivalent in curative value to 0.9 gram of neoarsphenamine, a ratio of 1 to 1.5. Castelli (1912) reports a ratio 1 to 1.78 for relapsing fever in mice, 1 to 1.7 for chicken spirillosis, and 1 to 1.5 for rabbit syphilis. Schamberg, Kolmer, and Raiziss (1920), established on rats infected with *Trypanosoma equiperdum* an average ratio of 1 to 1.75, in testing out various lots of arsphenamine and neoarsphenamine. Voegtlin and Smith (1921), also studied this question on rats infected with *Trypanosoma equiperdum*, using a technique which permits accurate measurement of the killing power of the drugs for a definite number of parasites in a given time. The average ratio found was 1 to 1.7.

In view of the great practical importance of this question in the control and eradication of syphilis, it appeared desirable to secure further data.

THE TRYPANOCIDAL TEST.

In the selection of any method for testing the relative parasiticidal value of such drugs as arsphenamine and neoarsphenamine, several considerations have to be taken into account. Accuracy above all is a prime requisite, and this should not be sacrificed for the sake of saving either labor or expense. At first thought it would appear that for the study of the curative value of these two drugs rabbits infected with *Treponema pallidum* should be chosen. However, this infection shows considerable variations in different rabbits and sometimes tends to recover spontaneously, thus making the results not quite reliable from the quantitative standpoint. It goes also without saying that it is utterly impossible in work on rabbit syphilis to gain an idea of the absolute number of parasites present in the animal at the time of the injection of the drug. It is therefore impossible to determine the absolute amount of drug necessary to kill a definite

number of parasites within the host. Our extensive experience with rats infected with *Trypanosoma equiperdum* has convinced us, and we fully agree in this matter with Schamberg, Kolmer, and Raiziss (1920) that this disease lends itself admirably for our purpose.

Nature of infection.—*Trypanosoma equiperdum* is the parasite which is responsible for so-called horse syphilis. This organism produces in horses and rabbits a chronic disease characterized by marked tissue changes. In albino rats the infection is characterized by its rapid progress, leading to the appearance of parasites in the blood and their rapid multiplication therein, so that the animal dies regularly within a few days. The natural resistance of rats to this organism is almost nil, for recent experiments have shown us that one or very few parasites injected intravenously will always produce death within 10 days. The multiplication of the parasites in the blood proceeds in logarithmic proportion, approximately 7 hours being required to double the number of parasites in the blood stream. The virulence of this parasite is remarkably constant once it has been carried in rats for a week or two. The principle of the trypanocidal test is based on the fact that a well-defined dose of the drug is required to kill a certain number of parasites within the blood of infected rats, i. e., the parasiticidal power of the drug is measured in terms of the number of parasites killed.

Technique of test.—Healthy albino rats from one breeding strain and weighing about 50 to 60 grams are put on a diet of milk, bread, and oats until they reach a weight of 100 to 150 grams, when they are ready to be used for the test. The animals should be nonpregnant. A series of such rats are inoculated with citrated blood from a seed rat. The latter, showing about 200,000 trypanosomes per cubic millimeter is bled by decapitation directly into 5 c. c. of saline solution containing 2 per cent sodium citrate. About 0.5 c. c. of this suspension of parasites is injected intraperitoneally into each rat. The amount of citrate used can be varied according to the number of parasites present in the seed rat. The above amount of the suspension will usually produce in 24 hours an infection of about 100,000 parasites per cubic millimeter of blood, and the animals will die if left untreated, as a rule two days later.

Counting the parasites.—The method of counting the parasites in the blood of an infected animal is essentially the one proposed by Kolmer (1915), who made use of the ordinary blood pipettes for counting red cells. The tip of the tail is nipped off. Slight pressure beginning at the base of the tail and moving up to the tip is sufficient to produce free bleeding. The first drop of blood appearing should be discarded. The blood pipette is then filled to the 5 mark with blood and made up to the 10 mark with diluting fluid. The pipette should be shaken for three minutes in order to obtain a homogeneous

distribution of the parasites. The suspension is then placed in a counting chamber and allowed to settle for five minutes. As the red cells are laked by the diluting fluid, the parasites are easily distinguished from the leucocytes. The number of squares to be counted will, of course, depend somewhat upon the number of parasites present. With a large number, fewer squares have to be counted.

The diluting fluid.—The diluting fluid is prepared as follows: 20 milligrams of crystal violet is dissolved in 200 c. c. of water, with slight warming; 700 milligrams of NaCl is added and 2 c. c. of formaldehyde, and the solution is cooled and filtered. This fluid should be made up fresh every day.

Injection of the drug.—The injection of the drug to be tested is carried out as follows: The drug is dissolved according to the usual procedure in distilled water, avoiding all unnecessary shaking and adjusting the concentration in such a way that the volume of the desired dose is within from 0.3 to 0.9 c. c. An accurately calibrated tuberculin syringe, provided with a 26-gauge Luer needle, is then filled with the freshly prepared solution, and the drug is immediately injected at a slow rate into the leg vein previously exposed by skin incision. It is not necessary to use anesthesia for this very simple operation. The rat is tied to a board provided with four nails to which the four legs are fastened by means of strings. The number of trypanosomes per cubic millimeter of blood should be within 100,000 to 250,000, preferably 100,000 to 150,000.¹ The choice of a uniform grade of infection is very important for accurate work, as Voegtlin and Smith (1920) have shown and subsequent experience has confirmed.

The minimum effective dose.—In order to compare the trypanocidal efficiency of various lots of arsphenamine or neoarsphenamine, graded doses of the drug are injected into a series of animals. It has been found that a variation of approximately 50 per cent between successive doses (1, 1.5, 2.25, 3.75, 5, 7.5, 10, etc.) is all that can be expected of the accuracy of the test. This is due to the fact that quantitative differences in the metabolism of the drug and the rate of excretion of the arsenic in different rats are sufficiently great to produce considerable variations in parasiticidal action. These variations make it necessary to test at least five rats at each dose. At the end of 24 hours after the injection of the drug, the number of parasites in the tail blood is again determined, first by a preliminary examination of a drop for the presence or absence of parasites, and then by a count of the blood specimens which were found positive in the

¹ If the parasite count should be below 100,000, treatment is delayed until later in the day, when the required stage of the disease has been reached. Thus, it sometimes happens that in a series of rats inoculated with the same volume of a given suspension, the number of parasites in the morning of the day instead of being 100,000 is 50,000. In this case the animals can be used in the afternoon of the same day.

preliminary examination. The method permits an accurate count of 1,000 or more parasites per cubic millimeter. Below 1,000 the count is unreliable, and therefore we have refrained from making counts in such cases and merely go by the result of the drop examination, calling it a trace, when only one parasite is found in several different microscopic fields of a fairly thick preparation.

The minimum effective dose is the dose required to bring the parasitic count within 24 hours to a trace or negative, or, in other words, the dose which kills from 100,000 to 250,000 parasites per cubic millimeter of blood. As a rule the blood is again examined at the end of 48 and 72 hours after treatment.

Extensive experience has shown us that with arsphenamine and neorarsphenamine the maximum effect upon the parasites is exerted within the first 24 hours, though occasionally a count of 1,000 or less may become trace or negative in 48 or 72 hours.

It should be stated for the benefit of those who have not had any experience with work of this nature that particular caution should be exercised not to use rats which have received at any previous time an injection of an arsenical, as this may lead to the production of arsenic resistant parasites and may thus render the result erroneous.

Value of trypanocidal test.—Our experience with this test during the last four years in the study of a large number of arsenicals has convinced us of its accuracy and practical importance. The objection which might be raised—namely, that the test really does not establish the relative parasiticidal efficiency of arsphenamine and neorarsphenamine with regard to *Treponema pallidum*—is not justified, for the reason that the curative ratio of these two drugs as established by Ehrlich and Hata and Castelli in spirochete infections, including rabbit syphilis, is practically the same as that determined by Voegtlin and Smith (1921) by means of this test. Every arsenical which was shown to be efficient in the treatment of rabbit and human syphilis was also shown to possess a high efficiency by means of the trypanocidal test, and vice versa. Reference is made only to cacodylic acid, monomethylarsenic acid (arrhenal), and ethylarsenic acid (monarson), substances which failed to free the blood of injected rats from parasites except with doses approaching the lethal dose. These negative observations were later on confirmed by Nichols on rabbit syphilis.

The strain of *Trypanosoma equiperdum* used in our work has not shown any change in resistance to a given drug during the last four years, the minimum effective dose remaining the same as long as the strain is carried in rats. If, for the sake of economy, it is necessary to preserve the strain in rabbits, we advise that before the strain is again used in the rat it be carried for at least two weeks in the rat

before being used for testing out drugs in a quantitative, comparative way. The use of a standard preparation of arsphenamine (or 3 amino 4 hydroxyphenylarsenious oxide) to test the absolute drug resistance of the strain of trypanosomes is strongly recommended. By the use of such a standard we have shown that the drug resistance of our original strain has not changed during four years, and with thousands of transfers in rats, truly a remarkable example of persistence of an inherited biological property.

ARSPHENAMINE AND NEOARSPHENAMINE.

The above-described test was applied to 13 lots of arsphenamine and 15 lots of neoarsphenamine of different manufacture. Most of these preparations, with exception of neoarsphenamine Brand B, Lot 1, and Brand E, Lot 1, were of recent manufacture (last quarter of 1921). The doses of the drugs are expressed either as milligrams or as number of c. c. of a 1/100 arsenic equivalent solution per kilo body weight. The former mode of expression uses the absolute weight of the drug irrespective of its arsenic content, the latter permits a direct comparison of the parasitocidal value of the arsenic in the two drugs and is the preferable expression for purely scientific purposes. A 1/100 arsenic equivalent solution would be a 1/200 molecular solution of arsphenamine or neoarsphenamine if the impurities, such as inorganic salts, etc., are ignored. In addition to the parasitocidal power of the preparations, their toxicity was also established by the official toxicity test.

It will be seen from an examination of the accompanying tables that the trypanocidal power of arsphenamine of different manufacture is remarkably constant, varying only between 3 and 4.5 c. c. 1/100 arsenic equivalent solution per kilo body weight. This is quite in contrast with the great variability encountered with neoarsphenamine, which ranges from 2.25 c. c. for the most efficient preparation, to 7.5 for the least effective one. As far as the toxicity is concerned, both arsphenamine and neoarsphenamine show considerable variation, and particular attention is called to the low toxicity of some of the drugs studied as compared with commercial preparations produced about two years ago. Three lots of Brand B arsphenamine show a lethal dose of 280 mg., and a tolerated dose of 260 mg. per kilo, whereas the official requirements call for 120 mg. Again, in the case of neoarsphenamine, all of the lots examined passed at 300 mg. per kilo with the official test, the lethal dose varying between 360 and 520 mg. per kilo. This plainly indicates that the average arsphenamine and neoarsphenamine produced at the present time is considerably less toxic than were similar preparations manufactured two years ago, and this means, of course, that the process of manufacture has been considerably improved. This decrease in toxicity appears to have been accompanied by a corresponding decrease in

parasiticial power, as the minimal effective dose two years ago used to be on an average 3 c. c. or less for arsphenamine and 3 c. c. for neoarsphenamine. This is further seen by a comparison of the therapeutic ratio $\frac{m. l. d.}{m. e. d.}$ of the present lots and those studied earlier. The average ratio for arsphenamine is 20 and it was 17 two years ago; for neoarsphenamine it is 24 and two years ago it was 28. Evidently there is very little change in the ratio as would be expected if the toxicity and parasiticial power of these drugs are somewhat related.

The most important point brought out by this investigation is the fact that *neoarsphenamine is a much more variable product than arsphenamine as far as parasiticial power is concerned*, and this confirms the conclusions drawn by Voegtlin and Smith (1921) from a previous study. The physician using neoarsphenamine can therefore never be sure of obtaining a product of constant potency, unless he uses continuously one and the same lot; whereas the therapeutic potency of arsphenamine of different manufacture appears to be much more constant. In this respect, therefore, arsphenamine is decidedly superior to neoarsphenamine. It is conceded, however, that the technique for the clinical administration of the latter is simpler, and on this account neoarsphenamine appeals to the physician more than arsphenamine.

After this manuscript had been completed, an important report by Dale and White, of the National Institute for Medical Research in London, came to our attention. In this report it is shown that the trypanocidal test (modified slightly by the authors¹) is "a very valuable index, if not an accurately quantitative measure of the therapeutic activity of different samples of neoarsphenamine on syphilis in man." The results obtained with six different lots of neoarsphenamine on mice infected with *Trypanosoma equiperdum* and on cases of primary syphilis are given in the following table:

Preparation.	Minimal curative dose for mice infected with <i>T. equiperdum</i> .	Proportion of human cases in which spirochetes were detected 18-20 hours after injection of 0.45 g.
B3.....	0.015	0 out of 6.
A2.....	.02	0 out of 4.
A3.....	.02	1 out of 6.
C3.....	.02	1 out of 6.
C2.....	.02	3 out of 6.
B2.....	.05	9 out of 10.

These data therefore complete the evidence required to prove the practical value of the trypanocidal test.

¹ Mice were used instead of rats. With mice it was necessary to examine the blood for three days after the injection to obtain the maximum parasiticial effect. Various workers in this laboratory have found work with rats considerably less difficult than work with mice. The choice of the host, whether rat or mouse, is to be decided by the person who uses the trypanocidal test.

CONCLUSIONS.

1. The results obtained in this investigation confirm previous data from this laboratory to the effect that arsphenamine of different manufacture is fairly uniform in parasitocidal power, whereas neoarsphenamine shows great variations.
2. The toxicity of the average commercial arsphenamine and neoarsphenamine manufactured at the present time is considerably lower than that of preparations found on the market two years ago.
3. The technique of the trypanocidal test as elaborated in this laboratory during the last few years is described in detail.

REFERENCES.

- Castelli, G.: *Ztschr. f. Chemother.*, orig., 1912-13, p. 321.
Dale, H. H., and White, C. F.: *The Lancet*, Apr. 1922, CCII, p. 779.
Ehrlich, Paul, and Hata: *Die experimentelle Chemotherapie der Spirillosen*, Rebman, 1911.
Kolmer, J. A.: *Jour. Inf. Dis.*, 1915, XVII, p. 79.
Nichols, H. J.: *Jour. Am. Med. Assoc.*, 1921, LXXVI, p. 1335.
Schamberg, Kolmer, and Raiziss: *Am. Jour. Med. Sciences*, 1920, CLX, p. 25.
Voegtlin, Carl, and Smith, Homer W.: *Jour. Pharmacol. & Exp. Ther.*, 1920, XV, 453.
Voegtlin, Carl, and Smith, Homer W.: *Jour. Pharmacol. & Exp. Ther.*, 1921, XVI, p. 449.

TABLE I.—*Arsphenamine—Trypanocidal power of various lots of different manufacture: Trypanosome counts 24 hours after injection with drug.*
(The initial counts in practically all cases ranged from 100,000 to 250,000.)

Dose: 1/100 arsenic equiv. solution per Kilo.—	Brand A.			Brand B.			Brand C.			Brand D.		Brand E.	
	Lot 1.	Lot 2.	Lot 3.	Lot 1.	Lot 2.	Lot 3.	Lot 1.	Lot 2.	Lot 3.	Lot 1.	Lot 2.	Lot 1.	Lot 2.
2..... c. c.	22,000 5,000 3,500 3,000 Trace.	8,000 7,000 4,000 Trace.	11,000 7,500 2,000 Trace.	3,000 2,000 Trace.	15,000 7,000 9,000 1,000	19,000 Trace. Trace. Trace.	84,000 61,000 35,000 85,000 14,000	12,000 8,000 6,000 4,500	18,000 13,000 7,500 6,000 4,000	16,000 10,000 8,000 9,000 Trace.	10,000 8,000 3,000 3,000 Trace.	8,000 8,000 5,000 4,500	84,000 19,000 10,000 4,000 1,000
3.....	Trace. Trace. Trace.	4,000 Trace. Trace.	— — —	2,000 2,000 1,000 Trace.	10,000 — — —	6,000 Trace. Trace.	22,000 9,000 Trace. Trace.	3,500 Trace.	2,000 Trace.	Trace. Trace. Trace.	16,000 2,000	1,000 Trace. Trace. Trace.	9,000 6,000 5,000
4.5.....	— — —	— — —	— — —	— — —	— — —	— — —	Trace. Trace.	Trace. Trace.	Trace.	Trace. Trace.	Trace.	Trace.	Trace.

TABLE II.—*Arphenamine*—Trypanocidal power of various lots of different manufacture: Trypanosome counts 48 hours after injection with drug.

Dose: 1/100 arsenic equiv. solution per Hlo.	Brand A.			Brand B.			Brand C.			Brand D.		Brand E.	
	Lot 1.	Lot 2.	Lot 3.	Lot 1.	Lot 2.	Lot 3.	Lot 1.	Lot 2.	Lot 3.	Lot 1.	Lot 2.	Lot 1.	Lot 2.
	2.	+++ +++ +++ +++	+++ ++ + Trace.	+++ +++ ++ +	++ Trace. Trace.	++ ++ + Trace.	++ + Trace. -	+++ +++ +++ ++	+++ +++ ++ +	+++ +++ ++ +	++ ++ ++ +	++ ++ ++ +	++ ++ ++ +
3.	+ - - -	+++ - - -	- - - -	++ ++ ++ +	++ Trace. - -	++ Trace. - -	++ ++ + -	++ Trace. - -	+ - - -	Trace. - - -	+ - - -	Trace. - - -	+ - - -
4.5	- - - -	- - - -	- - - -	- - - -	Trace. - - -	Trace. Trace. - -	Trace. Trace. - -	Trace. Trace. - -	+ - - -	Trace. - - -	- - - -	Trace. - - -	Trace. - - -

TABLE VI.—*Neosarsphenamine—Toxicity of various lots of different manufacture.*

S—Animal survived 8 days following the injection of the drug.
 D—Animal died within 8 days after the injection of the drug.

Dose, mgm. per kilo.	Brand A.				Brand B.				Brand C.				Brand D.	
	Lot 1.	Lot 2.	Lot 3.	Lot 4.	Lot 1.	Lot 2.	Lot 3.	Lot 4.	Lot 1.	Lot 2.	Lot 3.	Lot 4.	Lot 1.	Lot 2.
240.....	S S S S S			S S S S S D	S S S S S		S S S S	S S S S						
280.....	S S S S S D S			S S S S S D		S S								
300.....	S S S S S S S	S D D D D D S	S S S S S D						S S S S S S S	S S S S S S S		S S S S S S S	S S S S S D	S S S S S S
320.....				D D D D D	S S S S S	S D S	S S S	S S S						
340.....		S D D D D S												
360.....	S S S S D S		S S S S S S		S S S S S S	S S D S	S S S S S	S S S S S S	S S S D S	S S S S S S S		S S S S S D	D D D D D D	D D D D D D
380.....	S S S D													
400.....	S S S S D S	D D D D D			S S S S S S	S S S S S S	S S S D	S S S S D	S D D D D				D D D D D D	
420.....			D D D D D							S S S S S S S				
440.....	S S S D				S S S S S S S	S S D D D	S D D D D	D D D D D D				S S S S D D		
460.....										S S S S S S				
480.....	S S D D D				S D D D D D	S S S S D				S S S D S		D D D D D		

TABLE VI.—*Neosarsphenamine*—Toxicity of various lots of different manufacture—Continued.

S—Animal survived 8 days following the injection of the drug.
D—Animal died within 8 days after the injection of the drug.

Dose, mgm. per kilo.	Brand A				Brand B				Brand C				Brand D	
	Lot 1	Lot 2	Lot 3	Lot 4	Lot 1	Lot 2	Lot 3	Lot 4	Lot 1	Lot 2	Lot 3	Lot 4	Lot 1	Lot 2
520	S	D	S	.....	.....	S	D	D	.....	.....
	S	D	D	.....	.....	S	D	D	.....	.....
	S	D	D	.....	.....	S	D	D	.....	.....
	S	D	D	.....	.....	S	D	D	.....	.....
	D	D	D	.....	.....	D	D	D	.....	.....
560	D	D	D	.....	.....	.....	.....	.....	.....	.....
	D	D	D	.....	.....	.....	.....	.....	.....	.....
	D	D	D	.....	.....	.....	.....	.....	.....	.....
	D	D	D	.....	.....	.....	.....	.....	.....	.....

TABLE VII.—*Arsphenamine*.

Preparation.	Arsenic content.	Approximate age of sample.	Minimal lethal dose.		Minimal effective dose.		Ratio: $\frac{m. l. d.}{m. e. d.}$
			C. c. 1/100 As equiv. solution.	Mgm. per kilo.	C. c. 1/100 As equiv. solution.	Mgm. per kilo.	
Brand A:		Months.					
Lot 1.....	31.86	4	76.6	180	3.0	7.05	25.5
Lot 2.....	31.89	4	85.1	200	4.5	10.58	18.9
Lot 3.....	31.67	4	59.1	140	3.0	7.11	19.7
Brand B:							
Lot 1.....	29.42	4	109.8	280	4.5	11.48	24.4
Lot 2.....	31.39	4	117.2	280	4.5	10.76	26.0
Lot 3.....	31.3	1	116.6	280	4.5	10.8	25.9
Brand C:							
Lot 1.....	30.83	1	98.8	240	4.5	10.94	21.9
Lot 2.....	31.3	1	100.0	240	4.5	10.8	22.2
Lot 3.....	31.01	1	82.6	200	4.5	10.99	18.4
Brand D:							
Lot 1.....	30.73	1	73.8	180	3.0	7.32	24.6
Lot 2.....	30.78	1	65.6	160	4.5	10.98	14.6
Brand E:							
Lot 1.....	31.86	3	68.1	160	4.5	10.58	15.1
Lot 2.....	31.86	3	59.6	140	4.5	10.58	13.2

TABLE VIII.—*Neosarsphenamine*.

Preparation.	Arsenic content.	Approximate age of sample.	Minimal lethal dose.		Minimal effective dose.		Ratio: $\frac{m. l. d.}{m. e. d.}$
			C. c. 1/100 As equiv. solution.	Mgm. per kilo.	C. c. 1/100 As equiv. solution.	Mgm. per kilo.	
Brand A:		Months.					
Lot 1.....	18.13	2	115.9	480	2.25	9.32	51.5
Lot 2.....	18.38	2	98.04	400	3.5	14.28	28.0
Lot 3.....	18.43	2	103.19	420	3.5	14.25	29.5
Lot 4.....	18.37	3	78.43	320	3.5	14.28	22.4
Brand B:							
Lot 1.....	18.79	12	120.32	480	5.0	19.95	24.1
Lot 2.....	18.88	3	130.98	520	7.5	29.78	17.5
Lot 3.....	18.69	2	109.73	440	7.5	30.68	14.6
Lot 4.....	18.32	2	107.58	440	5.0	20.45	21.5
Brand C:							
Lot 1.....	20.29	3	108.1	400	3.5	12.95	30.9
Lot 2.....	18.88	1	130.98	520	5.0	19.85	26.2
Lot 3.....	19.35	1	134.02	520	7.5	29.12	17.9
Lot 4.....	20.01	3	128.0	480	7.5	28.13	17.1
Brand D:							
Lot 1.....	20.33	1	97.5	360	5.0	18.45	19.5
Lot 2.....	20.38	1	97.8	360	5.0	18.4	19.6
Brand E:							
Lot 1.....	19.31	18	.....	.....	7.5	29.48	.....

CITY HEALTH OFFICERS, 1922.

Directory of Those in Cities of 10,000 or More Population.

Directories of the city health officers in the cities of the United States having a population of 10,000 or more have been published in the Public Health Reports^a for each year from 1916 to 1921 for the information of health officers and others interested in public health activities. These directories have been compiled from data furnished by the health officers. The cities included in this directory are those having 10,000 population or more according to the census of 1920.

The asterisk (*) indicates that the officer so designated has been reported to be a "whole-time" health officer. For this purpose a "whole-time" officer is defined as "one who does not engage in the practice of medicine or in any other business, but devotes all his time to official duties."

City.	Name of health officer.	Official title.
Alabama:		
Anniston.....	*G. A. Cryer, M. D.....	Calhoun County health officer.
Bessemer.....		
Birmingham.....	*Judson Davie Dowling, M. D.....	Jefferson County health officer.
Dothan.....	*T. E. Tucker, M. D.....	Houston County health officer.
Florence.....	*W. H. Abernethy, M. D.....	Lauderdale County health officer.
Gasden.....	*C. L. Murphree, M. D.....	Etowah County health officer.
Mobile.....	*Chas. A. Mohr, M. D.....	Mobile County health officer.
Montgomery.....	*J. L. Bowman, M. D.....	Montgomery County health officer.
Selma.....	*L. T. Lee, M. D.....	Dallas County health officer.
Tuscaloosa.....	*A. A. Kirk, M. D.....	Tuscaloosa County health officer.
Arizona:		
Phoenix.....	Isaac L. Garrison, M. D.....	City health officer and sanitary inspector.
Tucson.....	A. G. Schnabel, M. D.....	City physician.
Arkansas:		
Fort Smith.....	R. F. Parks, M. D.....	Health officer.
Hot Springs.....	Will W. Jackson, M. D.....	City physician.
Little Rock.....	*John Thames, M. D.....	City health officer.
North Little Rock.....	Shelby Atkinson, M. D.....	City physician.
Pine Bluff.....	Wm. Hunt Blankenship, M. D.....	Do.
California:		
Alameda.....	Arthur Hieronymus, M. D.....	Health officer.
Bakersfield.....	P. J. Cuneo, M. D.....	Do.
Berkeley.....	Ernest Howard Pape, M. D.....	Health officer and registrar.
Eureka.....	John N. Chain, M. D.....	City physician and health officer.
Fresno.....	C. Mathewson, M. D.....	City health officer.
Glendale.....	G. Kaemmerling, M. D.....	Health officer.
Long Beach.....	*G. E. McDonald, M. D.....	City health officer.
Los Angeles.....	*L. M. Powers, M. D.....	Health commissioner.
Oakland.....	Harry E. Foster, M. D.....	Health officer.
Pasadena.....	*Frank W. Hodgdon, jr., M. D.....	City health officer.
Pomona.....	*William H. Eaton, M. D.....	Pomona district health officer.
Richmond.....	Charles Robert Blake, M. D. I.....	Commissioner of health.
Riverside.....	William Burdick Wells, M. D.....	City health officer.
Sacramento.....	George Joyce Hall, M. D.....	Health officer and registrar.
San Bernardino.....	Colin C. Owen, M. D.....	Secretary board of health and registrar.
San Diego.....	Alex. M. Lesem, M. D.....	Health officer and superintendent.
San Francisco.....	*William C. Hassler, M. D.....	Health officer.
San Jose.....	Henry C. Brown, M. D.....	Do.
Santa Ana.....	J. I. Clark, M. D.....	City health officer.
Santa Barbara.....	*A. M. De Vilbiss, M. D.....	Health officer.
Santa Cruz.....	William Hugus Keck, M. D.....	Santa Cruz County physician and health officer.
Santa Monica.....	S. L. Berkley.....	Commissioner of public safety.
Stockton.....	*Nathan Sinai, D. V. M.....	Health officer.
Vallejo.....	E. A. Peterson, M. D.....	Do.
Venice.....	*I. L. Magee, M. D.....	Do.

¹ Also health officer for Contra Costa County.

^a Reprints Nos. 346, 416, 494, 539, 599, and 702 from the Public Health Reports.

City.	Name of health officer.	Official title.
Colorado:		
Boulder	John R. Barber, M. D.	Director of public health.
Colorado Springs	O. R. Gillett, M. D.	Health officer.
Denver	*Wm. H. Sharpley, M. D.	Manager health and charity.
Greeley	Thos. E. Atkinson, M. D.	Weld County physician.
Pueblo	W. E. Buck, M. D.	Chief of department of health, inspection and sanitation.
Trinidad	G. W. Robinson, M. D.	City physician.
Connecticut:		
Ansonia	Frederick C. Goldstein, M. D.	City health officer.
Bridgeport	*William Hall Coon, M. D.	Health officer.
Bristol	J. I. Woisard, M. D.	Do.
Danbury	G. E. Lemmar, M. D.	Health officer for city and town.
Derby	*Elmer T. Sharpe, M. D.	Designated examiner United States Veterans Bureau.
East Hartford	F. H. Mayberry, M. D.	Health officer.
Enfield	*George T. Finch, M. D.	Town health officer.
Fairfield	*Laurence E. Poole, M. D.	Health officer and school physician.
Greenwich	Albert E. Austin, M. D.	Health officer.
Hartford	*C. P. Botsford, M. D.	Superintendent board of health.
Manchester	D. C. Y. Moore, M. D.	Chairman board of health.
Meriden	Joseph A. Cooke, M. D.	Health officer.
Middletown	Thomas P. Walsh, M. D.	Do.
Milford	Willis S. Putney, M. D.	Town health officer.
Naugatuck		
New Britain	*Frederick P. Lee, M. D.	Superintendent of health.
New Haven	*Frank W. Wright, M. D.	Health officer.
New London	*Benjamin N. Pennell, D. V. S.	Do.
Norwalk	Robert E. Perdue, M. D.	City health officer.
Norwich	Edward J. Brophy, M. D.	Health officer.
Orange	Everett D. Mead.	Do.
Stamford	James J. Costanzo, M. D.	City health officer.
Stratford	George F. Lewis, M. D.	Town health officer.
Torrington		
Wallingford		
Waterbury	*Thomas J. Kilmartin, M. D.	Health officer.
Willimantic	W. P. S. Keating, M. D.	City health officer.
Windham	Frederick E. Wilcox, M. D.	Town health officer.
Delaware:		
Wilmington	*Robert S. McBirney, M. D.	Secretary board of health.
District of Columbia:		
Washington	*William C. Fowler, M. D.	Health officer.
Florida:		
Jacksonville	*Wm. W. MacDonell, M. D.	City health officer.
Key West	J. Y. Porter, sr., M. D.	Do.
Miami	*W. T. Lanier, M. D.	Chief of health division, department of public welfare.
Pensacola	W. D. Nobles, M. D.	City health officer.
St. Petersburg	A. J. Wood, M. D.	City physician and health officer.
Tampa	*Jesse R. Harris, M. D.	Health officer.
Georgia:		
Albany	*Hugo Robinson, M. D.	Dougherty County commissioner of health.
Athens	*J. D. Applewhite, M. D.	Clarke County commissioner of health.
Atlanta	*John P. Kennedy, M. D.	City health officer.
Augusta	Eugene E. Murphey, M. D.	Health officer.
Brunswick	*R. L. DeSaussure, M. D.	Glynn County commissioner of health.
Columbus	*J. A. Thrash, M. D.	City health officer.
Lagrange	*C. S. Kinzer, M. D.	Troup County commissioner of health.
Macon	*Chas. L. Ridley, M. D.	Health officer.
Rome	*B. V. Elmore, M. D.	Floyd County commissioner of health.
Savannah	*Conrad E. Koerper, M. D.	Health officer.
Valdosta	*Gordon T. Crozier, M. D.	Do.
Waycross		
Idaho:		
Boise	*Robert H. Pratt	Do.
Pocatello	C. W. Clark, M. D.	City and Bannock County physician.
Illinois:		
Alton	Daniel F. Duggan, M. D.	Health commissioner.
Aurora	Geo. W. Haan, M. D.	Do.
Belleville		
Berwyn	Chester C. Moe, M. D.	Health officer.
Bloomington	*J. M. Furstman, M. D.	Health director.
Blue Island	L. A. Burkhart	Health commissioner.
Cairo	B. S. Hutcheson, M. D.	City physician and health officer.
Canton	T. C. Hays, M. D.	City physician.
Centralia	J. W. Armstrong, M. D.	Health officer.
Champaign	W. E. Schowengerdt, M. D.	Do.
Chicago	*Herman N. Bundesen, M. D.	Commissioner of health.
Chicago Heights	G. F. Schreiber, M. D.	Health commissioner.
Cicero	Bret L. Vilna, M. D.	Do.
Danville	W. C. Dixon, M. D.	Do.
Decatur	*Wm. J. Harding	Health officer.

Also health officer for Denver County.
Address: 781 Main Street, Willimantic.

City.	Name of health officer.	Official title.
Illinois—Continued.		
East St. Louis.....	*C. W. Lillie, M. D.....	Health commissioner.
Elgin.....	*A. J. Volstorff.....	Health officer.
Evanston.....	Clarence T. Roome, M. D.....	Commissioner of health.
Forest Park.....	H. P. A. Carstens, M. D.....	Health commissioner.
Freeport.....	J. A. Poling, M. D.....	Do.
Galesburg.....	E. D. Wing, M. D.....	Do.
Granite City.....	J. J. Fitzgerald, M. D.....	City physician.
Herrin.....	Abbe Hicks.....	President board of health.
Jacksonville.....	*Raymond Voorhees Breakaw, M. D.....	Morgan County health officer.
Joliet.....	*Ed. J. Higgins, M. D.....	Commissioner of health.
Kankakee.....	Chas. K. Smith, M. D.....	Health officer.
Kewanee.....	H. N. Heffin, M. D.....	Commissioner of health.
La Salle.....	*Edmund W. Weis, M. D. ¹	Health commissioner.
Lincoln.....	J. T. Woodward, M. D.....	Medical member board of health.
Mattoon.....	E. F. Richardson, M. D.....	Health officer.
Maywood.....	Harold H. Roberts, M. D.....	Do.
Moline.....	Arvid E. Kohler, M. D.....	City physician.
Murphysboro.....	Frank Reeves.....	Commissioner of public health and safety.
Oak Park.....	Frank S. Needham, M. D.....	Commissioner of health.
Ottawa.....	W. A. Pike, M. D.....	Health officer.
Pekin.....	James E. Watson, M. D.....	Do.
Peoria.....	E. A. Garrett, M. D.....	Commissioner of health.
Quincy.....	*John W. H. Pollard, M. D.....	Health officer.
Rockford.....	N. O. Gunderson, M. D.....	Commissioner of health.
Rock Island.....	Albert N. Mueller, M. D.....	City physician.
Springfield.....	*Albert E. Campbell, M. D.....	Superintendent of health.
Streator.....	A. N. McCord, M. D.....	City physician.
Urbana.....	Austin M. Lindley, M. D.....	President board of health.
Waukegan.....	John C. Foley, M. D.....	City physician.
Indiana:		
Anderson.....	*Ernest M. Conrad, M. D.....	Secretary of health board.
Bloomington.....	C. E. Harris, M. D.....	Health officer.
Clinton.....	Ott Casey, M. D.....	Secretary board of health.
Crawfordsville.....	Aubrey L. Loop, M. D.....	City health officer.
East Chicago.....	Milton A. Given, M. D.....	Secretary board of health.
Elkhart.....	G. B. Hoopingarner, M. D.....	Do.
Elwood.....	Harry W. Fitzpatrick, M. D.....	Secretary department of health.
Evansville.....	Wallace C. Dyer, M. D.....	Secretary board of health.
Fort Wayne.....	J. H. Gilpin, M. D.....	Do.
Frankfort.....	John A. Van Kirk, M. D.....	Clinton County health commissioner.
Gary.....	William J. White, M. D.....	Health officer.
Hammond.....	William A. Buchanan, M. D.....	Secretary board of health.
Huntington.....	R. F. Frost, M. D.....	Do.
Indianapolis.....	*Herman G. Morgan, M. D.....	Health officer.
Jeffersonville.....	David C. Peyton, M. D.....	Clark County commissioner of health.
Kokomo.....	T. C. Cochran, M. D.....	City health officer.
La Fayette.....	A. J. Bauer, M. D.....	City health commissioner.
Laporte.....	Nell E. Funk, M. D.....	Secretary board of health.
Logansport.....	George D. Miller, M. D.....	Health officer.
Marion.....		Do.
Michigan City.....	Nelle C. Reed, M. D.....	Secretary board of health.
Mishawaka.....	L. P. Van Rie, M. D.....	City health officer.
Muncie.....	U. G. Poland, M. D.....	Secretary board of health.
New Albany.....	Chester C. Funk, M. D.....	Secretary board of health.
Newcastle.....		Do.
Peru.....	L. O. Malsbury, M. D.....	Health officer.
Richmond.....	Chas. E. Duffin, M. D.....	City health officer.
South Bend.....	Chas. S. Bosenbury, M. D.....	Secretary board of health.
Terre Haute.....	Geo. T. Johnson, M. D.....	Do.
Vincennes.....	Clarke E. Stewart, M. D.....	Health officer.
Whiting.....	William E. Putnam, M. D.....	Secretary department of health.
Iowa:		
Boone.....	William Woodburn, M. D.....	Health officer.
Burkington.....	George H. Steinle, M. D.....	City physician.
Cedar Rapids.....	W. E. Brown, M. D.....	Do.
Clinton.....	H. R. Sugg, M. D.....	Health officer.
Council Bluffs.....	Charles H. Bower, M. D.....	Do.
Davenport.....	*Harry Fendt.....	Do.
Des Moines.....	*H. L. Saylor, M. D.....	Health commissioner.
Dubuque.....	*D. C. Steelsmith, M. D., C. P. E.....	Dubuque County director of health.
Fort Dodge.....	*G. S. Welch.....	Health officer.
Fort Madison.....	Joseph M. Casey, M. D.....	Physician board of health.
Iowa City.....	A. W. Bennett, M. D.....	Health officer.
Keokuk.....	Bruce L. Gillfillan, M. D.....	Physician board of health.
Marshalltown.....	James F. Battin, M. D.....	Health officer.
Mason City.....	J. E. McDonald, M. D.....	Superintendent of health.
Muscatine.....	E. B. Fulliam, jr., M. D.....	City health physician.
Ottumwa.....	Margaret B. Mills, M. D.....	Do.
Sioux City.....		Do.
Waterloo.....	Harry W. Sigworth, M. D.....	Health officer.

¹ Health commissioner for three cities—La Salle, Peru, and Ogleby.

City.	Name of health officer.	Official title.
Kansas:		
Arkansas City	Ernest F. Day, M. D.	Health officer.
Atchison	Chas. W. Robinson, M. D.	Atchison County health officer.
Chanute	M. A. Duncan, M. D.	City health officer.
Coffeyville	W. H. Wells, M. D.	Health officer and city physician.
Eldorado	*J. W. Buckley	City health officer.
Emporia		
Fort Scott	John C. Lardner, M. D.	Secretary board of health.
Hutchinson	Guy R. Walker, M. D.	City physician.
Independence	C. O. Shepard, M. D.	Do.
Kansas City	*L. B. Gloyne, M. D.	Commissioner of health and sanitation.
Lawrence	*Arthur W. Clark, M. D.	Superintendent of public health.
Leavenworth	Chas. J. McGee, M. D.	City health officer.
Parsons	M. C. Ruble, M. D.	City physician.
Pittsburg		
Salina	S. T. Blades, M. D.	Health officer.
Topeka	*Earle G. Brown, M. D.	City health officer.
Wichita	*Milton O. Nyberg, M. D.	City physician.
Kentucky:		
Ashland		
Covington	J. P. Riffe, M. D.	City health officer.
Henderson	*William Vickers Neel, M. D.	Do.
Lexington	*Chas. H. Voorhies, M. D.	Do.
Louisville	*Ellis Owen, M. D.	Do.
Newport	John Todd, M. D.	Do.
Owensboro	*George W. DuVall, M. D.	Director Daviess County department of health.
Paducah	H. P. Linn, M. D.	City health officer.
Louisiana:		
Alexandria	*C. M. Abbott, M. D. ¹	Director of public health.
Baton Rouge	Philip H. Jones, M. D.	Health officer.
Lake Charles	J. G. Martin, M. D.	City health officer.
Monroe	G. I. Hirsch, M. D.	President board of health.
New Orleans	John Callan, M. D.	Superintendent of public health.
Shreveport	G. C. Chandler, M. D.	President board of health.
Maine:		
Auburn	*L. F. Hall, M. D.	Health officer.
Augusta	George A. Coombs, M. D.	Do.
Bangor	*H. D. McNeil, M. D.	Do.
Bath	*Chester S. Kingsley	City sanitarian.
Biddeford	John W. Mahoney	Health officer.
Lewiston	*Ludovic J. Dumont, M. D.	Do.
Portland	*Thomas Tetreau, M. D.	Do.
Sanford	*William Henry Kelly, M. D.	Do.
Waterville	*William James Young, M. D.	Health officer for Waterville, Winslow, and Vassalboro.
Maryland:		
Annapolis		
Baltimore	*Charles Hampson Jones, M. D.	Commissioner of health.
Cumberland	*Harvey H. Weiss	Health officer and registrar.
Frederick	Ira Jay McCurdy, M. D.	City health officer.
Hagerstown	S. M. Wagaman, M. D.	Washington County health officer.
Massachusetts:		
Adams		
Amesbury		
Arlington	*William H. Bradley	Agent board of health.
Attleboro	Ralph Porter Kent, M. D.	Health officer.
Belmont	*Henry Berger, jr., C. P. H.	Agent board of health.
Beverly	*Alonzo O. Woodbury	Clerk and agent board of health.
Boston	*Francis X. Mahoney, M. D.	Health commissioner.
Braintree	W. B. Skinner	Chairman board of health.
Brockton	Fred J. Ripley, M. D.	Health officer.
Brookline	Francis P. Denny, M. D.	Do.
Cambridge	S. B. Kelleher, M. D.	Medical inspector.
Chelsea	*William J. Randall	Health officer.
Chicopee	*Charles J. O'Brien	Secretary and agent board of health.
Clinton	*Frederick E. Murphy	Agent board of health.
Danvers	*Hugo Nappe	Health officer and milk inspector.
Dedham	John W. Pratt, M. D.	Secretary department of health.
Easthampton	C. C. Buckner	Agent board of health.
Everett	*William Gess	Do.
Fall River	*Samuel E. Morriss	Do.
Fitchburg	*Fred R. Brigham	Do.
Framingham	*Fred Stone Dodson	Executive officer and bacteriologist.
Gardner	*W. P. O'Donnell	Health officer.
Gloucester		
Greenfield	*George P. Moore	Health agent.
Haverhill	*George T. Lennon	Agent and clerk board of health.
Holyoke	*J. Sidney Wright	Agent and health officer.
Lawrence	Louis W. Huber	Chairman board of health.
Leominster	C. E. Bigelow, M. D.	Do.
Lowell	*Francis J. O'Hare	Agent board of health.
Lynn	Michael R. Donavan, M. D.	Commissioner of public health.
Malden	*Joseph A. Sanford	Inspector of health.

¹Also health officer for Rapides Parish.

City.	Name of health officer.	Official title.
Massachusetts—Continued.		
Marlboro.....	*John J. Cassidy.....	Agent board of health.
Medford.....	Paul Haley, M. D.....	Inspector for board of health.
Melrose.....	Clarence F. Holden, M. D.....	Chairman board of health.
Methuen.....	*Geo. F. Hart.....	Clerk board of health.
Milford.....	James J. Birmingham.....	Sanitary inspector.
Natick.....	William J. Cochran, M. D.....	Chairman board of health.
New Bedford.....	*Wm. G. Kirschbaum.....	Agent and executive officer.
Newburyport.....	*William Thurston.....	Agent and clerk.
Newton.....	*Francis Geo. Curtis, M. D.....	Chairman board of health.
North Adams.....	*Douglas W. Hyde.....	Agent board of health.
Northampton.....	*Geo. R. Turner.....	Do.
Northbridge.....	D. C. Duggan.....	Do.
Norwood.....	James J. Mulvehill, D. V. S.....	Health officer.
Peabody.....	*James J. Ray.....	Agent board of health.
Pittsfield.....	*A. L. Stone, M. D.....	Health officer.
Plymouth.....	Walter D. Shurtleff, M. D.....	Chairman board of health and health officer.
Quincy.....	Fred. E. Jones, M. D.....	Commissioner of health.
Revere.....		
Salem.....	*John J. McGrath.....	Agent board of health.
Saugus.....	Charles E. Light.....	Chairman board of health.
Somerville.....	Frank L. Morse, M. D.....	Medical inspector and bacteriologist.
Southbridge.....	*Albert R. Brown.....	Agent board of health.
Springfield.....	*William L. Young.....	Do.
Taunton.....	Thomas F. Cusick, M. D.....	Chairman board of health.
Wakefield.....	David Taggart.....	Health officer.
Waltham.....	Charles B. Fuller, M. D.....	Director public welfare commission.
Watertown.....	*John W. Tapper.....	Health officer.
Webster.....	Myron E. Cutler, M. D.....	Clerk and health officer.
Westfield.....	Robert M. Marr, M. D.....	Chairman board of health.
West Springfield.....	J. J. Lyaght.....	Agent board of health.
Weymouth.....	F. L. Doucett, M. D.....	Health officer.
Winchester.....		
Winthrop.....	*Smith A. Mowry.....	Health officer and agent board of health.
Woburn.....	*Edward F. Gorman.....	Agent and secretary board of health.
Worcester.....	Edward H. Trowbridge, M. D.....	Chairman Board of health.
Michigan:		
Adrian.....	J. P. Bland, M. D.....	Health officer.
Alpena.....	D. A. Cameron, M. D.....	Health physician.
Ann Arbor.....	John A. Wessinger, M. D.....	Health officer.
Battle Creek.....	*A. A. Hoyt, M. D.....	Do.
Bay City.....	John A. Keho, M. D.....	Do.
Benton Harbor.....	Carl A. Mitchell, M. D.....	Do.
Detroit.....	*Henry F. Vaughan, D. P. H.....	Commissioner of health.
Escanaba.....	Harry J. Defnet, M. D.....	Director of health department.
Flint.....	*Ray S. Dixon, M. D.....	Health officer.
Grand Rapids.....	*C. C. Siemons, M. D.....	Do.
Hamtramck.....	Paul A. Klebba, M. D.....	Do.
Highland Park.....	Wm. N. Braley, M. D.....	Do.
Holland.....	Byron B. Godfrey, M. D.....	Do.
Ironwood.....	*Clarence W. Olson, M. D.....	Do.
Ishpeming.....	*David Littlejohn, M. D.....	Do.
Jackson.....	*F. B. Town, M. D.....	Do.
Kalamazoo.....	*A. H. Rockwell, M. D.....	Do.
Lansing.....		Health officer and director department of public health and welfare.
Marquette.....	*S. Rowland Hill, M. D.....	Health director.
Monroe.....	*Charles P. Drury, M. D.....	Health officer.
Muskegon.....	Charles T. Southworth, M. D.....	City physician.
Owosso.....	*Charles F. Smith, M. D.....	Director of public health and welfare.
Pontiac.....	W. E. Ward, M. D.....	City health officer.
Port Huron.....	*C. A. Neafe, M. D.....	Director of public health.
Saginaw.....	T. H. Cooper, M. D.....	Health officer (acting).
Sault Ste. Marie.....	*William De Kleine, M. D.....	Health officer.
Traverse City.....	*John J. Griffin, M. D.....	City health officer.
Wyandotte.....	Geo. Arthur Holliday, M. D.....	Health officer.
	T. J. Langlois, M. D.....	City physician.
Minnesota:		
Austin.....	Clifford C. Leck, M. D.....	Chairman board of health.
Duluth.....	Edw. W. Fahey, M. D.....	Director of public health.
Fairbault.....	W. H. Robilliard, M. D.....	Health officer.
Hibbing.....	Hugh Williamson Reynolds, M. D.....	Health officer and chairman board of health.
Mankato.....	A. F. Kemp, M. D.....	Health commissioner.
Minneapolis.....	*Francis E. Harrington, M. D.....	Commissioner of public health.
Rochester.....	C. H. Mayo, M. D.....	Health officer.
St. Cloud.....	*Paul Scherer.....	Sanitary officer.
St. Paul.....	*Benj. F. Simon, M. D.....	Chief health officer.
Virginia.....	H. T. Ground, M. D.....	Health officer.
Winona.....	William V. Lindsay, M. D.....	Do.
Mississippi:		
Biloxi.....	G. F. Carroll, M. D.....	City health officer.
Columbus.....	W. R. McKinley, M. D.....	President city board of health.
Greenville.....	*A. J. Ware, M. D.....	Washington County health officer.
Hattiesburg.....	J. D. Donald, M. D.....	Forrest County health officer.
Jackson.....	H. F. Magee, M. D.....	Health officer.
Laurel.....	C. M. Hyde, M. D.....	Chairman board of health.

City.	Name of health officer.	Official title.
Mississippi—Continued.		
Meridian.....	T. J. Houston, M. D.....	City health officer.
Natchez.....	E. B. French, M. D.....	Do.
Vicksburg.....	S. Myers, M. D.....	Warren County health officer.
Missouri:		
Cape Girardeau.....	*Ernest E. Huber, M. D.....	Deputy State commissioner for Cape Girardeau County.
Carthage.....	H. A. La Force, M. D.....	City health officer.
Columbia.....	W. A. Norris, M. D.....	Boone County commissioner of health.
Hannibal.....	A. B. Blue, M. D.....	City physician.
Independence.....	H. A. Schroeder, M. D.....	Do.
Jefferson City.....		
Joplin.....	M. B. Harutin, M. D.....	Commissioner of health and sanitation.
Kansas City.....	*Eugene H. Bullock, M. D.....	Health commissioner.
Moberly.....	C. H. Dixon, M. D.....	Do.
St. Joseph.....	George M. Boteler, M. D.....	Health officer.
St. Louis.....	*Max C. Starkoff, M. D.....	Health commissioner.
Sedalia.....	*C. W. Lettwich.....	Sanitary officer.
Springfield.....	*Ed. S. Finch.....	Commissioner of health and sanitation.
Montana:		
Anaconda.....	Max A. Dorland, M. D.....	City health officer.
Billings.....	*B. C. Main, M. D.....	Health officer and Yellowstone County physician.
Butte.....	Frank J. Williams, M. D.....	Health officer and city physician.
Great Falls.....	*G. A. Fuson, M. D.....	Cascade County health officer.
Helena.....	*Arthur Jordan, M. D.....	Field agent and health officer for Lewis and Clark County.
Missoula.....	*F. D. Pease, M. D.....	Missoula County health officer.
Nebraska:		
Grand Island.....	Frank D. Ryder, M. D.....	City physician.
Hastings.....		
Lincoln.....	*Chauncey F. Chapman, M. D.....	Superintendent of health.
North Platte.....	Claude A. Selby, M. D.....	City physician.
Omaha.....	A. S. Pinto, M. D.....	Health commissioner.
Nevada:		
Reno.....	W. L. Samuels, M. D.....	Secretary board of health.
New Hampshire:		
Berlin.....	*Richard H. Coombs.....	Health officer and milk inspector.
Concord.....	*Charles E. Palmer.....	Sanitary officer.
Dover.....	*Wm. E. Whitesley.....	Executive officer.
Keene.....	*Fred. C. Nimo.....	Health officer.
Laconia.....		
Manchester.....	*Howard A. Streeter, M. D.....	Health officer.
Nashua.....	P. J. McLaughlin, M. D.....	Chairman board of health.
Portsmouth.....	George A. Trpdlck, M. D.....	Health officer.
New Jersey:		
Asbury Park.....	*B. H. Obert.....	Do.
Atlantic City.....	Samuel L. Sefasin, M. D.....	Do.
Bayonne.....	William W. Brooke, M. D.....	Do.
Belleville.....	W. Brand Smith.....	Do.
Bloomfield.....	Joseph C. Sallie, D. V. S.....	Do.
Bridgeton.....	*Charles E. Bellows, Ph. G.....	Sanitary inspector.
Camden.....	*John F. Leavitt, M. D.....	Health officer.
Clifton.....	J. P. Quinlan.....	Health inspector.
East Orange.....	*T. Dudley Ballinger.....	Health officer.
Elizabeth.....	*Louis J. Richards.....	Do.
Englewood.....	*John A. Manson.....	Sanitary inspector.
Garfield.....	Chas. E. Blesby, M. D.....	Health officer.
Gloucester City.....	J. Alonso Beck, M. D.....	Do.
Hackensack.....	*Malcolm Lewis.....	Do.
Harrison.....	*John T. McClure.....	Do.
Hoboken.....	Joseph F. X. Stack, M. D.....	Health commissioner.
Irvington.....	*Joseph K. Clickenger.....	Health officer.
Jersey City.....	*James J. Hagan.....	Do.
Kearny ¹	*H. V. Amerman.....	Do.
Long Branch.....	*R. Clifford Erickson.....	Do.
Millville.....		
Montclair.....	*Herbert B. Larnar.....	Do.
Morristown.....	*John F. Kilkenny.....	Sanitary inspector.
Newark.....	*Chas. V. Craster, M. D., Dip. P. H.....	Health officer.
New Brunswick.....	E. I. Cronk, M. D.....	Do.
Orange.....	*Lenore Young, R. N.....	Health officer and registrar.
Passaic.....	John N. Ryan, M. D.....	Health officer.
Paterson.....	T. A. Clay, M. D.....	Do.
Perth Amboy.....	*Chas. S. Thompson, D. V. S.....	Do.
Phillipsburg.....	Alma L. Williston, M. D.....	Health inspector.
Plainfield.....	*N. J. Randolph Chandler.....	Health officer.
Rahway.....	*Fred M. Williams.....	Executive officer and sanitary inspector.
Roosevelt.....		
Summit.....	H. P. Dengler, M. D.....	Acting health officer ²
Trenton.....	Alton S. Fell, M. D.....	Health officer.
Union ²	Grant P. Curtis, M. D.....	Do.

¹ Post office Arlington.² Post office Weehawken.

City.	Name of health officer.	Official title.
New Jersey—Continued.		
West Hoboken.....	*Frank A. Frederick.....	Health officer.
West New York.....	*Rudolph Kunze.....	Chief inspector.
West Ornage.....	*David E. Buckley.....	Health officer and registrar.
New Mexico:		
Albuquerque.....	*O. C. West, M. D.....	Bernalillo County health officer.
New York:		
Albany.....	James W. Wiltse, M. D.....	Health officer.
Amsterdam.....	Julius Schiller, M. D.....	Do.
Auburn.....	Thomas C. Sawyer, M. D.....	Do.
Batavia.....	John W. Baker, M. D.....	Do.
Beacon.....	Charles B. Dugan, M. D.....	Do.
Binghamton.....	C. J. Longstreet, M. D.....	Do.
Buffalo.....	*Francis E. Fronczak, M. D.....	Health commissioner.
Cohoes.....	John Archibold, M. D.....	Health officer.
Corning.....	Frank S. Swain, M. D.....	Do.
Cortland.....	A. C. Knapp, M. D.....	Do.
Dunkirk.....	G. E. Ellis, M. D.....	Do.
Elmira.....	Reeve B. Howland, M. D.....	Do.
Fulton.....	C. L. Fessenden, M. D.....	Do.
Geneva.....	C. W. Grove, M. D.....	Do.
Glens Falls.....	*Virgil D. Belleck, M. D.....	Do.
Gloversville.....	Alex. L. Johnson, M. D.....	Do.
Herkimer.....	Albert L. Fagan, M. D.....	Do.
Hornell.....	B. E. Wakeman, M. D.....	Do.
Hudson.....	Louis Van Hoesen, M. D.....	Do.
Illion.....	Frank B. Conterman, M. D.....	Do.
Ithaca.....	*Lowell T. Genung, M. D.....	Do.
Jamestown.....	*John J. Mahoney, M. D.....	*Superintendent of public health.
Johnstown.....	F. M. Neundorf, M. D.....	Health officer.
Kingston.....	Frank A. Johnston, M. D.....	Do.
Lackawanna.....	Alots Jokl, M. D.....	Do.
Little Falls.....	George S. Eveleth, M. D.....	Do.
Lockport.....	Thomas E. Spalding, M. D.....	City physician.
Middletown.....	J. L. Hamner, M. D.....	Health officer.
Mount Vernon.....	W. H. Purdy, M. D.....	Do.
Newburgh.....	Thomas J. Burke, M. D.....	Do.
New Rochelle.....	*Edwin H. Coddling, M. D.....	Do.
New York.....	*Royal S. Copeland, M. D.....	Commissioner of health and president board of health.
Niagara Falls.....	John L. Bishop, M. D.....	Health officer.
North Tonawanda.....	T. P. C. Barnard, M. D.....	Do.
Ogdensburg.....	J. W. Benton, M. D.....	City health officer.
Olean.....	W. E. MacDuffie, M. D.....	Commissioner of health.
Oneida.....	Nelson O. Brooks, M. D.....	Health officer.
Oneonta.....		
Ossining.....	Amos O. Squire, M. D.....	Do.
Oswego.....	Harvey S. Albertson, M. D.....	Do.
Peekskill.....	Fred A. Snowden, M. D.....	Do.
Plattsburg.....	J. H. Lakoque, M. D.....	Health officer and city physician.
Port Chester.....	Wm. J. Sheehan, M. D.....	Health officer.
Port Jervis.....	G. Otto Fobe, M. D.....	Do.
Poughkeepsie.....	*William H. Conger, M. D.....	Do.
Rensselaer.....		Do.
Rochester.....	*George W. Goler, M. D.....	Do.
Rome.....	Howard D. MacFarland, M. D.....	Do.
Saratoga Springs.....	C. B. Small, M. D.....	Do.
Schenectady.....	John H. Collins, M. D.....	Do.
Syracuse.....	O. W. H. Mitchell, M. D.....	Commissioner of health.
Tonawanda.....	John T. Harris, M. D.....	Health officer.
Troy.....	McVilvie Day Dickinson, M. D.....	Do.
Utica.....	Hugh H. Shaw, M. D.....	Do.
Watertown.....	Maurice D. Barnette, M. D.....	Do.
Watervliet.....	Wm. B. D. Van Auken, M. D.....	Health commissioner.
White Plains.....	Edwin G. Ramsdell, M. D.....	Health officer.
Yonkers.....	C. W. Buckmaster, M. D.....	Commissioner of public health.
North Carolina:		
Asheville.....	C. V. Reynolds, M. D.....	Health officer.
Charlotte.....	*W. A. McPhaul, M. D.....	City health officer.
Durham.....	*J. H. Epperson.....	Durham County superintendent of health.
Gastonia.....	C. J. McCombs, M. D.....	City physician.
Goldsboro.....	*Amzi J. Ellington, M. D.....	Director Goldsboro and Wayne County health department.
Greensboro.....	*L. E. Dempsey.....	City health officer.
High Point.....	*D. H. Milton.....	Health officer.
New Bern.....	*C. H. Verner, M. D.....	Do.
Raleigh.....	*A. C. Bulla, M. D.....	Wake County health officer.
Rocky Mount.....	*H. Lee Large, M. D.....	Superintendent department of health.
Salisbury.....	*C. W. Armstrong, M. D.....	Rowan County health officer.
Wilmington.....	*John H. Hamilton, M. D.....	New Hanover County health officer.
Wilson.....	*I. J. Smith, M. D.....	Wilson County health officer.
Winston-Salem.....	*R. L. Carlton, M. D.....	City health officer.
North Dakota:		
Fargo.....	F. O. Gronvold, M. D.....	Health physician.
Grand Forks.....	E. C. Haagensen, M. D.....	City health officer.
Minot.....	*Chas. K. Allen.....	Health officer.

City.	Name of health officer.	Official title.
Ohio:		
Akron	*Donald D. Shira, M. D.†	Director of health.
Alliance		
Ashtabula	A. J. Pardee, M. D.	Health officer.
Barberton	W. A. Mansfield, M. D.	Health commissioner.
Bellaire	Wm. J. Shepard, M. D.	Health officer.
Bucyrus	A. H. McCrory, M. D.	Health commissioner.
Cambridge	*W. J. Lewis	Do.
Canton	*W. K. Murray, M. D.	Commissioner of health.
Chillicothe	*G. E. Robbins, M. D.	Ross County commissioner of health.
Cincinnati	*Wm. H. Peters, M. D.	Health commissioner.
Cleveland	*Harry Langdon Rockwood, M. D.	Do.
Columbus	*James A. Beer, M. D.	Do.
Coshocton	Glenn E. Smith	Health officer.
Cuyahoga Falls	*Donald D. Shira, M. D.†	Commissioner of health.
Dayton	*A. O. Peters, M. D.	Do.
East Cleveland	George W. Stoker, M. D.	Director of health.
East Liverpool	Thomas W. Rhodes, M. D.	City health commissioner.
East Youngstown	Jas. S. Mariner, M. D.	Health commissioner.
Elyria	G. E. French, M. D.	Do.
Findlay	*Amos Beardsley	Do.
Fremont	E. L. Vermilya, M. D.	Commissioner of health.
Hamilton	M. F. Vereker, M. D.	Health commissioner.
Ironton	O. U. O'Neill, M. D.	Do.
Kenmore	*Donald D. Shira, M. D.†	Commissioner of health.
Lakewood	Wallace J. Benner, M. D.	Do.
Lancaster	C. H. Hamilton, M. D.	Health commissioner.
Lima	James B. Polling, M. D.	Do.
Lorain	Valloyd Adair, M. D.	Do.
Mansfield	John Maglott, M. D.	Do.
Marletta	John W. Donaldson, M. D.	Do.
Marion	*Chas. M. Tobin	Do.
Martins Ferry	*W. S. Tilton	Do.
Massillon	*John H. Williams	Health commissioner and registrar.
Middletown	G. D. Lummis, M. D.	Health commissioner.
Newark	William H. Knauss, M. D.	Do.
New Philadelphia	*Joseph Blickensderfer, M. D.	Tuscarawas County health commissioner.
Niles	W. A. Werner, M. D.	Health commissioner.
Norwood	*H. J. Wittenberg, M. D.	Do.
Piqua	J. G. Freshour, M. D.	Do.
Portsmouth	Oral D. Tatje, M. D.	Do.
Salem	T. T. Church, M. D.	Commissioner of health.
Sandusky	*F. M. Houghtaling, M. D.	Eric County health commissioner.
Springfield	*Oscar M. Craven, M. D.	Health director.
Steubenville	*Theodore W. Smith	Health commissioner.
Tiffin	J. A. Gosling, M. D.	Do.
Toledo	Daniel W. Iford, M. D.	Commissioner of health.
Warren	Geo. N. Simpson, M. D.	Health commissioner.
Youngstown	H. E. Welch, M. D.	Commissioner of health.
Zanesville	Beatrice T. Hagen, M. D.	Superintendent of health and sanitation.
Oklahoma:		
Ardmore	A. Y. Easterwood, M. D.	City physician.
Bartlesville	G. F. Woodring, M. D.	City superintendent of health.
Chickasha	E. L. Dawson, M. D.	Do.
Enid	M. A. Keiso, M. D.	Superintendent of health.
Guthrie	E. O. Barker, M. D.	City physician.
McAlester	W. C. Graves, M. D.	City health officer.
Muskogee	F. W. Ewing, M. D.	Muskogee County superintendent of health.
Oklahoma	J. T. Martin, M. D.	Oklahoma County health officer.
Oklmulgee	Fred S. Watson, M. D.	Okmulgee County health officer.
Sapulpa	James S. McAllister, M. D.	City health officer.
Shawnee	John H. Scott, M. D.	City superintendent of public health.
Tulsa	*W. W. Woody, M. D.	City superintendent of health.
Oregon:		
Astoria	Nellie S. Vernon, M. D.	Clatsop County health officer.
Eugene	Seth M. Kerron, M. D.	Lane County health officer.
Portland	*George Parrish, M. D.	Health officer.
Salem		
Pennsylvania:		
Allentown	*J. Treichler Butz, M. D.	Health officer.
Altoona	*T. G. Herbert	Chief division of health.
Ambridge	*Louis Herrmann	Health officer.
Beaver Falls	*Nelson W. Osmond	Do.
Berwick	*Parvin T. Groh	Do.
Bethlehem	S. E. Rauch, M. D.	City physician.
Braddock	*Jas. E. Wills	Health officer.
Bradford	*Carl L. Peterson	Do.
Bristol	*John M. Wright	Do.
Butler	*H. M. Stanley	Do.
Canonsburg	*A. H. Neebling	Do.
Carbondale	*Daniel L. Munley	Sanitary officer.
Carlisle	*A. P. Lizzman	Health officer.

† Commissioner of health for Cuyahoga Falls, Kenmore, and Summit County, and director of health for Akron.

City.	Name of health officer.	Official title.
Pennsylvania—Continued.		
Carnegie.....	A. A. Tartar.....	Health and ordinance officer.
Carrick.....	Wm. F. Bauman.....	Health officer.
Chambersburg.....	Walter J. Fahnestock.....	City health inspector.
Charleroi.....	*W. M. Darby.....	Health inspector.
Chester.....	*LaRoy R. Allen.....	Health officer.
Coatesville.....	F. P. Pennegar.....	Secretary board of health.
Columbia.....		
Connellsville.....	*George Hetzel.....	Sanitary police.
Dickson City.....		
Donora.....	*J. B. McCune.....	Health officer.
Dubois.....	Luther W. Quinn, M. D.....	City Physician.
Dunmore.....		
Duquesne.....	*John Butler.....	Health officer.
Easton.....	J. James Condran, M. D.....	City health officer.
Erie.....	J. W. Wright, M. D.....	Health officer.
Farrell.....	*W. C. Heinze.....	Do.
Greensburg.....	*T. Ray Hunter.....	Do.
Harrisburg.....	John M. J. Raunick, M. D.....	Health officer and director.
Hazleton.....	*P. J. Bonner.....	Health officer.
Homestead.....	*James L. King.....	Do.
Jeanette.....	*A. T. Coon.....	Chief health officer.
Johnstown.....		
Lancaster.....	*James H. Deen.....	Health officer.
Lebanon.....	E. H. Gingrich, M. D.....	Do.
McKeesport.....	Daniel Stratton.....	Superintendent department of public safety and health officer.
McKee's Rocks.....	*B. V. Anderson.....	Health officer.
Mahanoy.....	*John Sullivan.....	Do.
Meadville.....	*John L. Laley.....	Do.
Monessen.....	*Francis E. Gibson.....	Inspector public safety.
Mount Carmel.....	*F. Gross.....	Health officer.
Nanticoke.....	*Felix Grygo.....	Do.
New Castle.....	William L. Steen, M. D.....	Do.
New Kensington.....	*A. L. Davis.....	Do.
Norristown.....	*Chas. E. White.....	Do.
North Braddock.....	*Robert M. Sylves.....	Do.
Oil City.....	*Wm. J. Lewis.....	Health officer and plumbing inspector.
Old Forge.....	Rosario Fucito.....	Health officer.
Olyphant.....	*James L. O'Malley.....	Do.
Philadelphia.....	*C. Lincoln Furbush, M. D.....	Director of public health.
Phoenixville.....	Eugene Fogarty.....	Health officer.
Pittsburgh.....	*Carey J. Vaux, M. D.....	Director department of public health.
Pittston.....	*Thos. Sheridan.....	Sanitary officer.
Plymouth.....	*Frank C. Piszczek.....	Do.
Pottstown.....	*Clymer Missimer.....	Health officer.
Pottsville.....	*O. L. Kleckner.....	Do.
Punxsutawney.....		
Reading.....	*Ira J. Hain, M. D.....	Health officer.
Scranton.....	F. R. Wheelock, M. D.....	Director department of health.
Shamokin.....		
Sharon.....	C. Howard Moses, M. D.....	Health officer.
Shenandoah.....	*Cyrus Geise.....	Do.
Steelton.....	*F. G. Butler.....	Do.
Sunbury.....	*Victor A. Koble.....	Do.
Swissvale.....	*E. T. Roberts.....	Do.
Tamaqua.....	Lamont Ferrine.....	Do.
Uniontown.....	*W. C. Hall.....	City health officer.
Warren.....	R. N. Brown.....	Health officer.
Washington.....	*J. G. Dinsmore.....	Do.
West Chester.....	Enoch P. Hershey.....	Do.
Wilkes-Barre.....		
Wilkinsburg.....	*J. M. Snyder.....	Do.
Williamsport.....	C. E. Shaw, M. D.....	Do.
Woodlawn.....	*J. E. Tanner.....	Do.
York.....	J. Frank Small, M. D.....	Director of public health.
Rhode Island:		
Bristol.....	John H. Magee.....	Health officer.
Central Falls.....	A. R. V. Fenwick, M. D.....	Superintendent of health.
Cranston.....	Daniel S. Latham, M. D.....	Superintendent of health and city physician.
Cumberland.....		
East Providence.....	Irving W. Slack, M. D.....	Health officer.
Newport.....	*J. W. Sampson.....	Executive officer board of health.
Pawtucket.....	Charles H. Holt, M. D.....	Superintendent of health.
Providence.....	*Charles V. Chapin, M. D.....	Do.
Warwick.....		
West Warwick.....	Thomas F. Darby, M. D.....	Health officer.
Woonsocket.....	Thomas J. McLaughlin, M. D.....	Do.
South Carolina:		
Anderson.....	*James Carl Mitchell, V. M. D.....	Do.
Charleston.....	*J. Mercier Green, M. D.....	Do.
Columbia.....	*Jean B. La Borde, M. D.....	City health officer.
Florence.....	*Clarence C. Craft, M. D.....	Health officer.
Greenville.....	*Clarence E. Smith, D. V. S.....	Commissioner of health.
Spartanburg.....		

City.	Name of health officer.	Official title.
South Dakota:		
Aberdeen.....	*J. H. Swafford, M. D.....	Brown County health officer.
Sioux Falls.....	*William Mitchell Barnes, M. D.....	Assistant health officer.
Tennessee:		
Chattanooga.....	E. B. Wise, M. D.....	Director of health.
Jackson.....	*F. M. Murtaugh, M. D.....	City health commissioner.
Johnson City.....	J. F. Randall, M. D.....	City physician.
Knoxville.....	Wm. B. Cochrane, M. D.....	Director department of health.
Memphis.....	J. J. Durrett, M. D.....	Superintendent department of health.
Nashville.....	*W. E. Hibbett, M. D.....	City health officer.
Texas:		
Arlene.....	W. Auds Vee Cash, M. D.....	Taylor County health officer.
Amarillo.....	R. M. Walker, M. D.....	City health officer.
Austin.....	*C. H. Brownlee, M. D.....	Do.
Beaumont.....	B. McMeekin, M. D.....	Do.
Brownsville.....		
Cleburne.....	Wm. E. Lucey, M. D.....	City health officer.
Corpus Christi.....	W. E. Wills, M. D.....	Do.
Corsicana.....	Thomas O. Wills, M. D.....	Do.
Dallas.....	*Wilson T. Davidson, M. D.....	Director of public health.
Del Rio.....	Bl. F. Orr, M. D.....	City health officer.
Denison.....	W. T. Booth, M. D.....	Health officer.
El Paso.....	Hugh S. White, M. D.....	Do.
Fort Worth.....	A. W. Montague, jr., M. D.....	City health officer and city physician.
Galveston.....	W. L. Hoecker, M. D.....	City health physician.
Greenville.....	J. J. Handley, M. D.....	City health officer.
Houston.....	*A. H. Flickwir, M. D.....	Do.
Laredo.....	H. M. Austin, M. D.....	Do.
Marshall.....	Chas. E. Heartsill, M. D.....	Do.
Palestine.....		
Paris.....	Lewis Melvin Gooch, M. D.....	Do.
Port Arthur.....	J. Pat Reed, M. D.....	City physician.
Ranger.....	J. A. Shackelford, M. D.....	Do.
San Antonio.....	L. L. Shropshire, M. D.....	City health officer.
Sherman.....		
Temple.....	T. F. Bunkley, M. D.....	Do.
Texarkana.....	Wm. Hibbitts, M. D.....	Do.
Tyler.....	Albert Woldert, M. D.....	Do.
Waco.....	R. F. Minnock, M. D.....	Health officer and city physician.
Wichita Falls.....	W. P. Lowery, M. D.....	City health officer.
Utah:		
Ogden.....	*R. H. Wilson, M. D.....	Weber County commissioner of health.
Provo.....	L. C. Potter, M. D.....	Utah County physician.
Salt Lake City.....	W. Christopherson, M. D.....	Health commissioner.
Vermont:		
Barre.....	*Clarence H. Burr, M. D. 1	Health officer, district No. 5.
Burlington.....	*J. W. Courtney, M. D.....	Health officer.
Rutland.....	*Ebn D. Coffy, M. D.....	Health officer, district No. 7.
Virginia:		
Alexandria.....	*Louis E. Foules, M. D.....	Health officer.
Charlottesville.....	*R. E. Robertson, M. D.....	Do.
Danville.....	*R. W. Garnett, M. D.....	Do.
Lynchburg.....	*Mosby G. Perrow, Ph. D.....	Director of public welfare.
Newport News.....	*Coleman Bernard Ransoné, M. D.....	Superintendent of public health.
Norfolk.....	*Powhatan S. Schenck, M. D.....	Health commissioner.
Petersburg.....	Robert A. Martin, M. D.....	Health officer.
Portsmouth.....	*Lonsdale J. Roper, M. D.....	Director of public welfare.
Richmond.....	*C. C. Hindson, M. D.....	Health officer.
Roanoke.....	*W. Brownley Foster, M. D.....	Do.
Staunton.....	John E. Womack, M. D.....	Do.
Washington:		
Aberdeen.....	J. B. Kinne, M. D.....	Health officer and city physician.
Bellingham.....	W. W. Ballaine, M. D.....	Health officer.
Everett.....	I. W. Parsons, M. D.....	Do.
Seattle.....	*H. M. Read, M. D.....	Commissioner of health.
Spokane.....	*Ralph Hendricks, M. D.....	Health officer.
Tacoma.....	Charles F. Engels, M. D.....	Do.
Vancouver.....	Chas. MacCallum, M. D.....	City health officer.
Walla Walla.....	*Edwin A. Montague, M. D.....	Walla Walla County health officer.
Yakima.....	*H. H. Smith, M. D.....	Yakima County health officer.
West Virginia:		
Bluefield.....	T. E. Vass, M. D.....	Health officer.
Charleston.....	R. A. Ireland, M. D.....	Health commissioner.
Clarksburg.....	*Robert Linn Osborn, M. D.....	Health officer.
Fairmont.....	*J. A. Jamison, M. D.....	City health officer.
Huntington.....	A. J. Pickering, M. D.....	Health officer.
Martinsburg.....	A. Bruce Eagle, M. D.....	Health commissioner.
Morgantown.....	R. H. Edmondson, M. D.....	Health officer.
Moundsville.....	J. H. Luikart, M. D.....	Do.
Parkersburg.....	W. B. Richardson, M. D.....	City health officer.
Wheeling.....	*W. H. McLain, M. D.....	Health commissioner.

1 Address Montpelier.

City.	Name of health officer.	Official title.
Wisconsin:		
Appleton.....	Geo. W. Harrison, M. D.....	Health commissioner.
Ashland.....	*Lewis Marshal Field, M. D.....	Health officer.
Beloit.....	J. F. Farr, M. D.....	Health commissioner.
Eau Claire.....	A. C. Dana, M. D.....	Health officer.
Fond du Lac.....	*G. F. Goggins, M. D.....	Commissioner of health and city physician.
Green Bay.....	Fred. B. Welch, M. D.....	City health officer.
Janesville.....	*G. Windesheim, M. D.....	Commissioner of public health.
Kenosha.....	*A. M. Murphy.....	Commissioner of health.
La Crosse.....	*E. V. Brumbaugh, M. D.....	Health officer.
Madison.....	Max Staehle, M. D.....	Commissioner of health.
Manitowoc.....	S. Berglund, M. D.....	Health officer.
Marinette.....	*Geo. C. Ruhland, M. D.....	Commissioner of health.
Milwaukee.....	*Arthur Henri Broche, M. D.....	Health commissioner.
Oshkosh.....	*William W. Johnston, M. D.....	Commissioner of health.
Racine.....	*Joseph C. Elfers, M. D.....	Commissioner of public health.
Sheboygan.....	F. A. Southwick, M. D.....	Health commissioner.
Stevens Point.....	P. G. McGill, M. D.....	Do.
Superior.....	Geo. E. Peterson, M. D.....	Do.
Waukesha.....	*C. D. Partridge, M. D.....	Health officer.
Wausau.....	*S. C. McCorkle, M. D.....	Health commissioner.
West Allis.....		
Wyoming:		
Casper.....	*J. F. O'Donnell, M. D.....	Natrona County health officer.
Cheyenne.....	W. A. Wyman, M. D.....	Laramie County health officer.

IN MEMORIAM.

Laboratory Assistant William E. Gettinger, United States Public Health Service, died at Hamilton, Mont., June 30, 1922, of Rocky Mountain spotted fever, contracted while in line of duty and engaged in laboratory work in connection with the investigation of that disease, known to be one of the most fatal of diseases when contracted in the laboratory.

DEATHS DURING WEEK ENDED JUNE 24, 1922.

Summary of information received by telegraph from industrial insurance companies for week ended June 24, 1922, and corresponding week, 1921. (From the Weekly Health Index, June 27, 1922, issued by the Bureau of the Census, Department of Commerce.)

	Week ended June 24, 1922.	Corresponding week, 1921.
Policies in force.....	49, 543, 148	47, 225, 626
Number of death claims.....	8, 405	7, 787
Death claims per 1,000 policies in force, annual rate.....	8.8	8.6

Deaths from all causes in certain large cities of the United States during the week ended June 24, 1922, infant mortality, annual death rate, and comparison with corresponding week of 1921. (From the Weekly Health Index, June 27, 1922, issued by the Bureau of the Census, Department of Commerce.)

City.	Estimated population July 1, 1922.	Week ended June 24, 1922.		Annual death rate per 1,000 corresponding week, 1921.	Deaths under 1 year.		Infant mortality rate, week ended June 24, 1922. ¹
		Total deaths.	Death rate. ¹		Week ended June 24, 1922.	Corresponding week, 1921.	
Total.....	27,509,985	5,401	10.2	11.2	690	805	.....
Akron, Ohio.....	208,435	24	6.0	5.7	1	4	11
Albany, N. Y.....	116,223	29	13.0	15.4	0	3	0
Atlanta, Ga.....	220,047	62	14.7	16.6	14	13	.....
Baltimore, Md.....	762,222	151	10.3	12.8	22	31	62
Birmingham, Ala.....	191,017	48	13.1	14.3	12	9	.....
Boston, Mass.....	764,017	163	11.1	14.0	23	24	62
Bridgeport, Conn.....	142,555	32	11.6	8.3	1	6	12
Buffalo, N. Y.....	528,163	97	9.6	10.9	15	22	59
Cambridge, Mass.....	110,944	20	9.4	13.7	4	5	73
Camden, N. J.....	121,915	23	9.8	13.9	4	8	61
Chicago, Ill.....	2,833,288	465	8.6	10.3	59	84	.....
Cincinnati, Ohio.....	404,865	99	12.8	16.0	11	12	73
Cleveland, Ohio.....	854,003	125	7.6	9.9	22	29	57
Columbus, Ohio.....	283,455	53	10.9	10.8	5	0	53
Dallas, Tex.....	171,974	52	15.8	6.6	10	5	.....
Dayton, Ohio.....	161,824	26	8.4	9.6	5	4	85
Denver, Colo.....	267,591	48	9.4	13.7	7	4	.....
Detroit, Mich.....	983,678	155	8.1	9.2	30	42	58
Fall River, Mass.....	199,790	26	11.2	10.4	2	3	84
Fort Worth, Tex.....	114,717	20	9.1	.....	0	2	.....
Grand Rapids, Mich.....	143,572	24	8.7	12.6	6	5	33
Houston, Tex.....	150,087	20	6.9	15.9	7	8	.....
Indianapolis, Ind.....	333,257	108	16.6	12.5	8	6	61
Jersey City, N. J.....	305,911	53	9.0	10.0	9	12	57
Kansas City, Mo.....	343,988	85	12.9	12.3	10	11	.....
Los Angeles, Calif.....	634,886	151	12.4	13.8	23	16	95
Louisville, Ky.....	236,877	49	10.8	20.5	4	12	43
Lowell, Mass.....	114,423	22	10.0	7.3	3	4	50
Memphis, Tenn.....	167,862	65	20.2	23.0	4	8	.....
Milwaukee, Wis.....	476,603	83	9.1	8.9	12	11	59
Minneapolis, Minn.....	409,970	90	11.7	11.4	14	7	77
Nashville, Tenn.....	123,532	46	19.5	17.1	6	2	.....
New Bedford, Mass.....	127,542	16	6.5	9.6	4	2	59
New Haven Conn.....	169,987	42	12.9	10.6	3	7	37
New Orleans, La.....	399,616	119	15.5	16.6	17	13	.....
New York, N. Y.....	5,839,746	1,044	9.3	10.4	124	150	48
Newark, N. J.....	431,792	91	11.0	12.0	17	12	75
Norfolk, Va.....	124,915	29	12.1	9.5	8	0	142
Oakland, Calif.....	233,279	33	7.4	9.2	2	4	25
Omaha, Nebr.....	200,739	47	12.2	9.8	4	4	43
Paterson, N. J.....	138,521	29	10.9	12.9	3	7	46
Philadelphia, Pa.....	1,894,500	366	10.1	10.6	40	44	47
Pittsburgh, Pa.....	667,902	131	11.2	10.9	14	28	45
Portland, Oreg.....	269,240	53	10.3	11.4	9	4	89
Providence, R. I.....	241,011	49	10.6	12.4	5	10	40
Richmond, Va.....	178,368	38	11.1	17.5	5	14	61
Rochester, N. Y.....	311,548	47	7.9	8.0	6	9	46
St. Louis, Mo.....	795,008	166	10.9	9.7	12	14	.....
Salt Lake City, Utah.....	123,918	29	12.2	6.9	4	2	60
San Francisco, Calif.....	529,792	121	11.9	14.0	8	5	46
Seattle, Wash.....	315,312	70	11.6	6.9	6	3	51
Spokane, Wash.....	104,445	20	10.0	14.5	2	4	43
Springfield, Mass.....	140,052	21	7.8	9.6	0	4	0
Syracuse, N. Y.....	181,012	39	11.2	11.5	7	9	84
Toledo, Ohio.....	260,717	54	10.8	10.7	7	9	68
Trenton, N. J.....	125,075	35	14.6	11.9	4	7	61
Washington, D. C.....	437,571	101	12.0	13.6	8	12	46
Wilmington, Del.....	115,568	22	9.9	13.8	2	3	39
Worcester, Mass.....	182,449	37	10.2	9.6	4	8	43
Yonkers, N. Y.....	105,422	20	9.9	6.6	3	2	63
Youngstown, Ohio.....	144,070	20	7.2	9.7	7	10	92

¹ Annual rate per 1,000 population.

² Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and estimated births for 1921. Cities left blank are not in the registration area for births.

³ Enumerated population Jan. 1, 1920.

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 STATE SUMMARIES.

Telegraphic Reports for Week Ended July 1, 1922.

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

ALABAMA.		COLORADO.	
	Cases.	(Exclusive of Denver.)	Cases.
Cerebrospinal meningitis.....	1	Chicken pox.....	7
Diphtheria.....	17	Diphtheria.....	12
Malaria.....	42	Measles.....	3
Measles.....	6	Scarlet fever.....	12
Pellagra.....	16	Septic sore throat.....	1
Scarlet fever.....	3	Smallpox.....	1
Smallpox.....	10	Tuberculosis.....	60
Tuberculosis.....	17	Typhoid fever.....	5
Typhoid fever.....	76		
Typhus fever.....	1		
Whooping cough.....	18		
		CONNECTICUT.	
		Chicken pox.....	17
		Conjunctivitis (infectious).....	1
		Diphtheria:	
		Bridgeport.....	12
		Scattering.....	26
		German measles.....	5
		Malaria.....	2
		Measles:	
		Branford.....	17
		Bridgeport.....	21
		Hamden.....	23
		Hartford.....	10
		New Haven.....	55
		Norwalk.....	12
		Stamford.....	12
		West Haven.....	20
		Scattering.....	62
		Mumps.....	10
		Ophthalmia neonatorum.....	1
		Pneumonia (lobar).....	11
		Scarlet fever.....	25
		Smallpox.....	3
		Tetanus.....	1
		Trachoma.....	2
		Tuberculosis (all forms).....	39
		Typhoid fever.....	14
		Whooping cough.....	30
ARKANSAS.			
Chicken pox.....	3		
Diphtheria.....	2		
Hookworm disease.....	2		
Influenza.....	1		
Malaria.....	61		
Measles.....	3		
Pellagra.....	16		
Smallpox.....	5		
Trachoma.....	4		
Tuberculosis.....	31		
Typhoid fever.....	31		
Whooping cough.....	7		
CALIFORNIA.			
Diphtheria.....	146		
Influenza.....	6		
Leprosy—San Francisco.....	1		
Lethargic encephalitis:			
Los Angeles County.....	1		
San Francisco.....	1		
San Jose.....	1		
Measles.....	19		
Plague—Alameda County.....	1		
Poliomyelitis:			
Los Angeles.....	3		
Los Angeles County.....	1		
Scarlet fever.....	59		
Smallpox.....	21		
Typhoid fever.....	12		

FLORIDA.		KANSAS—continued.	
	Cases.		Cases.
Dengue.....	64	Influenza.....	2
Diphtheria.....	9	Measles.....	8
Influenza.....	57	Mumps.....	7
Malaria.....	31	Pneumonia.....	7
Pneumonia.....	43	Poliomyelitis.....	1
Poliomyelitis.....	1	Rabies.....	1
Scarlet fever.....	6	Scarlet fever.....	21
Smallpox.....	13	Smallpox.....	7
Tetanus.....	2	Tuberculosis.....	56
Typhoid fever.....	32	Typhoid fever.....	12
		Whooping cough.....	67
GEORGIA.		LOUISIANA.	
Chicken pox.....	4	Cerebrospinal meningitis.....	1
Diphtheria.....	8	Diphtheria.....	7
Dysentery (bacillary).....	3	Malaria.....	37
Malaria.....	38	Pellagra.....	5
Measles.....	3	Poliomyelitis.....	2
Mumps.....	5	Scarlet fever.....	4
Pneumonia.....	4	Smallpox.....	6
Poliomyelitis.....	2	Typhoid fever.....	37
Scarlet fever.....	5		
Septic sore throat.....	2	MAINE.	
Smallpox.....	9	Chicken pox.....	13
Tuberculosis (pulmonary).....	20	Diphtheria.....	8
Typhoid fever.....	48	Measles.....	10
Whooping cough.....	29	Pneumonia.....	3
		Scarlet fever.....	10
ILLINOIS.		Smallpox.....	9
Cerebrospinal meningitis:		Tuberculosis.....	9
Chicago.....	2	Typhoid fever.....	9
Mattoon.....	1	Whooping cough.....	6
Rock Island.....	1		
Diphtheria:		MARYLAND. ¹	
Chicago.....	106	Chicken pox.....	14
Scattering.....	63	Diphtheria.....	26
Influenza.....	1	Dysentery.....	3
Lethargic encephalitis—Chicago.....	1	Influenza.....	1
Pneumonia.....	88	Malaria.....	3
Poliomyelitis:		Measles.....	184
Chicago.....	1	Mumps.....	64
Schuyler County—Littleton Township.....	1	Ophthalmia neonatorum.....	1
Scarlet fever:		Paratyphoid fever.....	1
Chicago.....	34	Pneumonia (all forms).....	23
Scattering.....	34	Poliomyelitis.....	1
smallpox.....	9	Scarlet fever.....	17
Typhoid fever.....	27	Septic sore throat.....	2
Whooping cough.....	264	Smallpox.....	3
		Tetanus.....	1
INDIANA.		Tuberculosis.....	57
Diphtheria.....	12	Typhoid fever.....	10.
Rabies in animals:		Whooping cough.....	35
Green County.....	1		
Marion County.....	1	MASSACHUSETTS.	
Scarlet fever.....	13	Cerebrospinal meningitis.....	2
Smallpox.....	17	Chicken pox.....	30
Typhoid fever.....	7	Conjunctivitis (suppurative).....	5
		Diphtheria.....	95
IOWA.		German measles.....	5
Diphtheria.....	31	Influenza.....	4
Scarlet fever.....	12	Lethargic encephalitis.....	1
Smallpox.....	2	Malaria.....	4
		Measles.....	521
KANSAS.		Mumps.....	54
Chicken pox.....	15	Ophthalmia neonatorum.....	13
Diphtheria.....	32		

¹ Week ended Friday.

MASSACHUSETTS—continued.

	Cases.
Pneumonia (lobar).....	16
Poliomyelitis.....	3
Scarlet fever.....	93
Septic sore throat.....	4
Trachoma.....	2
Tuberculosis (all forms).....	151
Typhoid fever.....	8
Whooping cough.....	101

MINNESOTA.

Cerebrospinal meningitis.....	1
Chicken pox.....	2
Diphtheria.....	32
Influenza.....	1
Measles.....	69
Pneumonia.....	1
Scarlet fever.....	63
Smallpox.....	14
Tuberculosis.....	66
Typhoid fever.....	9
Whooping cough.....	1

MISSISSIPPI.

Cerebrospinal meningitis.....	1
Diphtheria.....	19
Influenza.....	5
Scarlet fever.....	4
Smallpox.....	1
Typhoid fever.....	59

MISSOURI.

Cerebrospinal meningitis.....	1
Chicken pox.....	11
Diphtheria.....	25
Epidemic sore throat.....	3
Measles.....	29
Mumps.....	12
Pneumonia.....	6
Poliomyelitis.....	1
Scarlet fever.....	13
Trachoma.....	1
Tuberculosis.....	41
Typhoid fever.....	10
Whooping cough.....	11

MONTANA.

Diphtheria.....	2
Rocky Mountain spotted or tick fever:	
Acton.....	1
Pryor.....	1
Roy.....	1
Scarlet fever.....	2
Smallpox.....	15
Typhoid fever.....	6

NEBRASKA.

Chicken pox.....	30
Diphtheria.....	6
Lethargic encephalitis:	
Omaha.....	1
Reynolds.....	1
Measles:	
Holdrege.....	27
Omaha.....	9
Scattering.....	7
1 Deaths.....	

NEBRASKA—continued.

	Cases.
Mumps.....	10
Scarlet fever.....	18
Smallpox.....	4
Tuberculosis.....	2
Typhoid fever.....	2
Whooping cough.....	3

NEW JERSEY.

Cerebrospinal meningitis.....	5
Chicken pox.....	39
Diphtheria.....	87
Influenza.....	4
Malaria.....	3
Measles.....	428
Pneumonia.....	42
Poliomyelitis.....	3
Scarlet fever.....	85
Typhoid fever.....	9
Whooping cough.....	113

NEW YORK.

(Exclusive of New York City.)

Diphtheria.....	107
Lethargic encephalitis.....	2
Measles.....	455
Pneumonia.....	54
Scarlet fever.....	147
Smallpox.....	2
Typhoid fever.....	20
Whooping cough.....	161

NORTH CAROLINA.

Chicken pox.....	13
Diphtheria.....	46
Measles.....	18
Scarlet fever.....	22
Septic sore throat.....	2
Smallpox.....	16
Typhoid fever.....	115
Whooping cough.....	219

OREGON.

Chicken pox.....	3
Diphtheria.....	4
Measles.....	3
Mumps.....	4
Pneumonia.....	13
Scarlet fever.....	3
Septic sore throat.....	1
Smallpox.....	7
Tuberculosis.....	6
Typhoid fever.....	2

SOUTH DAKOTA.

Cerebrospinal meningitis.....	11
Chicken pox.....	3
Diphtheria.....	9
Measles.....	6
Scarlet fever.....	10
Smallpox.....	2
Tuberculosis.....	7
Typhoid fever.....	2

TEXAS.	Cases.
Diphtheria.....	13
Measles.....	4
Pneumonia.....	2
Scarlet fever.....	6
Smallpox.....	3
Typhoid fever.....	8

VERMONT.	Cases.
Chicken pox.....	11
Diphtheria.....	6
Measles.....	2
Mumps.....	1
Pneumonia.....	1
Scarlet fever.....	12
Whooping cough.....	13

VIRGINIA.	Cases.
Lethargic encephalitis—Page County.....	1

WASHINGTON.	Cases.
Chicken pox.....	45
Diphtheria.....	21
Measles:	
Wenatchee.....	11
Scattering.....	7
Mumps.....	14
Pneumonia.....	1
Scarlet fever.....	15
Smallpox.....	9
Tuberculosis.....	7
Typhoid fever.....	11
Whooping cough.....	20

WEST VIRGINIA.	Cases.
Diphtheria.....	4
Smallpox.....	8

WEST VIRGINIA—continued.	Cases.
Tuberculosis:	
Charleston.....	1
Wheeling.....	14
Typhoid fever.....	6
Whooping cough.....	10

WISCONSIN.	Cases.
Milwaukee:	
Chicken pox.....	18
Diphtheria.....	9
German measles.....	3
Measles.....	48
Pneumonia.....	1
Scarlet fever.....	9
Smallpox.....	2
Tuberculosis.....	10
Whooping cough.....	159

Scattering:	Cases.
Chicken pox.....	42
Diphtheria.....	24
German measles.....	5
Influenza.....	2
Measles.....	51
Ophthalmia neonatorum.....	2
Pneumonia.....	3
Scarlet fever.....	41
Smallpox.....	29
Tuberculosis.....	67
Typhoid fever.....	7
Whooping cough.....	68

WYOMING.	Cases.
Chicken pox.....	1
Rocky Mountain spotted or tick fever:	
Hot Springs County.....	1
Johnson County.....	3
Lincoln County.....	3
Smallpox.....	7
Typhoid fever.....	2

Delayed Reports for Week Ended June 24, 1922.

DISTRICT OF COLUMBIA.	Cases.
Chicken pox.....	15
Diphtheria.....	10
Measles.....	35
Scarlet fever.....	4
Tuberculosis.....	48
Typhoid fever.....	5
Whooping cough.....	14

KENTUCKY.	Cases.
Chicken pox.....	2
Diphtheria.....	9
Dysentery.....	17
German measles.....	1
Measles:	
Logan County.....	8
Scattering.....	12
Pneumonia.....	5
Scarlet fever.....	2

KENTUCKY—continued.	Cases.
Septic sore throat.....	1
Smallpox.....	1
Tonsillitis.....	1
Tuberculosis:	
Jefferson County.....	27
Scattering.....	7
Typhoid fever.....	21
Whooping cough.....	16

MAINE.	Cases.
Chicken pox.....	4
Diphtheria.....	7
Influenza.....	2
Measles.....	10
Pneumonia.....	7
Scarlet fever.....	11
Tuberculosis.....	9
Whooping cough.....	2

SUMMARY OF CASES REPORTED MONTHLY BY STATES.

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

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Pollomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
<i>May, 1922.</i>										
California.....	14	634	166	13	187	3	4	581	176	68
Colorado.....		95	4		17		1	168	71	9
Hawaii.....		12	130		46			1		20
Iowa.....	1	40			13		2	113	76	4
Kansas.....	3	119	17	1	44		1	151	70	32
Mississippi.....	1	67	753	7,516	42	1,037	2	10	32	147
New Jersey.....	9	475	43	4	5,046		3	972	2	32
Ohio.....	12	480	41	1	5,627		2	588	241	122
Oklahoma.....		5	45	8		3		13	52	18
Oregon.....		54	2		8			42	33	13
Virginia.....	2	90	898	224	868	23	4	71	29	76

RECIPROCAL NOTIFICATION.

Connecticut—May, 1922.

Cases of communicable diseases referred during May, 1922, to other State health departments by department of health of the State of Connecticut.

Disease and locality of notification.	Referred to health authority of—	Why referred.
Measles: Colchester.....	State department of health, Albany, N. Y.	Patient lived at Brooklyn, N. Y., prior to her coming to Colchester, Conn.
Smallpox: New London.....	.....do.....	Residents of Columbiaville, Stockport, N. Y., had visited home in New London where smallpox appeared the day they left for Columbiaville.
Westport.....	State board of health, Providence, R. I.	Contact with an unrecognized smallpox case returned to his home in Central Village, R. I.

PLAGUE (HUMAN).

Elmhurst, Calif.

One case of human plague was reported in Elmhurst, a suburb of Oakland, Calif., June 29, 1922, in a child 3 years of age. It is believed that the infection was contracted in a locality 25 miles from Oakland.

SMALLPOX OUTBREAK.

Naknek, Bristol Bay, Alaska.

An outbreak of smallpox was reported at Naknek, Bristol Bay, Alaska, June 28, 1922. It was stated that several deaths had occurred.

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922.

ANTHRAX.

City.	Cases.	Deaths.
New York:		
New York.....	1	.....

CEREBROSPINAL MENINGITIS.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended June 17, 1922.		City.	Median for previous years.	Week ended June 17, 1922.	
		Cases.	Deaths.			Cases.	Deaths.
California:				New York:			
Los Angeles.....	0	1	.....	New York.....	9	1	2
San Francisco.....	0	1	.....	North Tonawanda.....	.....	.....	1
Connecticut:				Ohio:			
Norwalk.....	0	.....	1	Cambridge.....	.....	1	1
Illinois:				Findlay.....	.....	.....	1
Chicago.....	2	1	1	Pennsylvania:			
Indiana:				Erie.....	0	1	.....
South Bend.....	0	1	1	South Carolina:			
Maryland:				Columbia.....	0	1	.....
Baltimore.....	0	1	.....	Greenville.....	0	1	.....
Massachusetts:				Texas:			
Boston.....	2	2	.....	Dallas.....	0	1	1
Lawrence.....	0	1	.....	West Virginia:			
Northampton.....	0	1	1	Huntington.....	0	.....	1
Michigan:				Wisconsin:			
Detroit.....	2	1	1	Stevens Point.....	.....	1	.....
Port Huron.....	0	.....	1				
New Jersey:							
Perth Amboy.....	0	1	.....			

DENGUE.

City.	Cases.	Deaths.
Florida:		
Tampa.....	2	.....

DIPHTHERIA.

See p. 1665; also Telegraphic weekly reports from States, p. 1654, and Monthly summaries by States, p. 1658.

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

INFLUENZA.

City.	Cases.		Deaths, week ended June 17, 1922.	City.	Cases.		Deaths, week ended June 17, 1922.
	Week ended June 18, 1921.	Week ended June 17, 1922.			Week ended June 18, 1921.	Week ended June 17, 1922.	
Alabama:				Massachusetts:			
Birmingham.....			3	Saugus.....	1		
Montgomery.....		1		Minnesota:			
California:				Minneapolis.....			1
Berkeley.....	1			New Jersey:			
Long Beach.....	2			Newark.....	1		
Los Angeles.....			1	New York:			
Oakland.....	3	1	1	Buffalo.....	2		
San Diego.....		1	1	Cohoes.....	1		
San Francisco.....		1	1	New York.....	11	5	2
Santa Ana.....			1	Saratoga Springs.....	3		
Connecticut:				North Carolina:			
Hartford.....			1	Rocky Mount.....			1
Florida:				Ohio:			
Tampa.....		4		Akron.....		1	
Georgia:				Columbus.....	2		
Atlanta.....	1		1	Oregon:			
Illinois:				Portland.....			1
Chicago.....	6	5	4	Pennsylvania:			
Freeport.....			1	Philadelphia.....	3	3	1
Oak Park.....	1			Utah:			
Louisiana:				Salt Lake City.....			1
New Orleans.....			1				
Maryland:							
Baltimore.....	4						
Cumberland.....		1					

LEPROSY.

City.	Cases.	Deaths.
Illinois:		
East St. Louis.....	1	
New York:		
New York.....	1	

LETHARGIC ENCEPHALITIS.

Texas:		
Galveston.....		1

MALARIA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Arkansas:			New Jersey:		
Little Rock.....	2		Bloomfield.....	1	
North Little Rock.....	2		Passaic.....	1	
Florida:			New York:		
Tampa.....	2		New York.....	2	
Georgia:			Tennessee:		
Macon.....	4		Memphis.....	7	
Savannah.....	1		Texas:		
Valdosta.....	8	1	Beaumont.....		1
Kansas:			Houston.....		1
Topeka.....	1		Virginia:		
Maryland:			Norfolk.....		1
Baltimore.....	1				

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

MEASLES.

See p. 1665; also Telegraphic weekly reports from States, p. 1654, and Monthly summaries by States, p. 1658.

PELLAGRA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Connecticut:			South Carolina:		
Danbury.....	1		Charleston.....		1
Georgia:			Texas:		
Savannah.....		1	Dallas.....	1	
Valdosta.....		1	Fort Worth.....		1
Louisiana:					
New Orleans.....	1	1			

PNEUMONIA (ALL FORMS).

Alabama:			Maine:		
Birmingham.....		7	Auburn.....		1
Mobile.....		2	Biddeford.....		2
Montgomery.....		1	Portland.....		2
California:			Maryland:		
Alameda.....	1		Baltimore.....	18	9
Bakersfield.....		1	Massachusetts:		
Glendale.....		1	Arlington.....	1	
Long Beach.....	2		Boston.....		7
Los Angeles.....	13	8	Cambridge.....	3	2
Oakland.....	5	1	Chelsea.....		2
Pasadena.....		2	Fall River.....		1
Sacramento.....	1		Gardner.....		2
San Diego.....		4	Lowell.....		1
San Francisco.....		5	Lynn.....	1	
Stockton.....		2	Malden.....		2
Vallejo.....		2	New Bedford.....		3
Colorado:			Somerville.....	2	2
Denver.....		8	Southbridge.....		2
Connecticut:			Springfield.....	1	
Bridgeport.....	1		Waltham.....	1	
Hartford.....	2		Watertown.....		1
New Haven.....		3	Worcester.....		1
Norwich.....		1	Michigan:		
District of Columbia:			Ann Arbor.....		1
Washington.....		5	Detroit.....	30	14
Florida:			Flint.....		1
Tampa.....	1		Kalamazoo.....		1
Georgia:			Marquette.....	1	
Albany.....	1		Muskegon.....		3
Atlanta.....		2	Pontiac.....	1	
Savannah.....		4	Minnesota:		
Valdosta.....		3	Hibbing.....		1
Illinois:			Minneapolis.....		1
Alton.....	1		Rochester.....		1
Aurora.....		1	St. Paul.....		2
Bloomington.....		1	Missouri:		
Chicago.....	96	27	Kansas City.....	7	5
Cicero.....		1	Springfield.....		2
Decatur.....		1	Nebraska:		
East St. Louis.....		1	Omaha.....		3
Elgin.....		1	New Hampshire:		
Freeport.....		1	Nashua.....		2
Galesburg.....		1	New Jersey:		
Oak Park.....	1		Atlantic City.....		1
Peoria.....		1	Belleville.....	1	
Rockford.....		1	East Orange.....	1	
Springfield.....		2	Elizabeth.....		1
Indiana:			Englewood.....		1
Fort Wayne.....		1	Hoboken.....		1
Hammond.....		1	Morristown.....		1
Indianapolis.....		2	Newark.....	12	3
Logansport.....		1	Orange.....	1	
Muncie.....		3	Passaic.....		2
South Bend.....		1	Perth Amboy.....		2
Kansas:			Plainfield.....	1	
Topeka.....	1		Tronton.....	2	
Kentucky:			New York:		
Covington.....		1	Albany.....	2	
Lexington.....		1	Buffalo.....	7	2
Louisville.....		5	Coloos.....		1
Louisiana:			Hornell.....		1
New Orleans.....	10	9	Lackawanna.....	2	1

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
New York—Continued.			Pennsylvania:		
Little Falls.....	1	1	Philadelphia.....	52	25
Lockport.....	2	1	Rhode Island:		
Middletown.....	2	1	Pawtucket.....		1
Mount Vernon.....	1	1	Providence.....		2
New York.....	177	100	Tennessee:		
Niagara Falls.....	7	4	Memphis.....		3
Rochester.....	11	4	Nashville.....		1
Saratoga Springs.....	2	1	Texas:		
Syracuse.....	2	1	Dallas.....		2
Watertown.....	1	1	El Paso.....		3
White Plains.....	3	1	Fort Worth.....		1
Yonkers.....	3	3	Houston.....		2
North Carolina:			Waco.....		1
Charlotte.....		2	Utah:		
Ohio:			Salt Lake City.....		1
Akron.....	4	1	Virginia:		
Cambridge.....		3	Norfolk.....		3
Canton.....		3	Petersburg.....		2
Cleveland.....	19	17	Richmond.....		1
Columbus.....		3	West Virginia:		
Dayton.....	1	1	Huntington.....		1
Mansfield.....	1	1	Wisconsin:		
Newark.....		2	Kenosha.....		1
Toledo.....		3	Milwaukee.....	2	1
Youngstown.....		3	Racine.....		1
Oklahoma:			Superior.....		1
Oklahoma.....		2	Wyoming:		
Oregon:			Cheyenne.....		1
Portland.....		5			

POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended June 17, 1922.		City.	Median for previous years.	Week ended June 17, 1922.	
		Cases.	Deaths.			Cases.	Deaths.
California:				Rhode Island:			
Los Angeles.....	0	2	1	Providence.....	0	3	1
Kentucky:				South Carolina:			
Louisville.....	0	1	1	Columbia.....	0	1	1
New York:				West Virginia:			
New York.....	1	1	1	Charleston.....	0		1

RABIES IN ANIMALS.

City.	Cases.	City.	Cases.
California:		Massachusetts:	
Los Angeles.....	4	Winthrop.....	1
Pasadena.....	2	Missouri:	
Stockton.....	1	Kansas City.....	1
Kentucky:			
Louisville.....	1		

SCARLET FEVER.

See p. 1665; also Telegraphic weekly reports from States, p. 1654, and Monthly summaries by States, p. 1658.

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

SMALLPOX.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended June 17, 1922.		City.	Median for previous years.	Week ended June 17, 1922.	
		Cases.	Deaths.			Cases.	Deaths.
Alabama:				Minnesota:			
Mobile.....	1	2	2	Duluth.....	3	3	
California:				Minneapolis.....	19	2	
Alameda.....	0	1		St. Paul.....	7	4	
Bakersfield.....	0	1		New York:			
Berkeley.....	0	1		Niagara Falls.....	0	3	
Los Angeles.....	1	4		North Carolina:			
Oakland.....	0	4		Durham.....	0	2	
Sacramento.....	0	2		North Dakota:			
Stockton.....	0	1		Grand Forks.....	2	1	
Colorado:				Ohio:			
Denver.....	17	1		Chillicothe.....	0	1	
Connecticut:				Columbus.....	1	1	
Bridgeport.....	0	2		Dayton.....	0	1	
Georgia:				New Philadelphia.....	0	1	
Albany.....	0	1		Oklahoma:			
Atlanta.....	7	2		Oklahoma.....	5	1	
Savannah.....	0	1		Oregon:			
Illinois:				Portland.....	9	7	
Peoria.....	1	1		South Dakota:			
Springfield.....	2	1		Sioux Falls.....	1	1	
Indiana:				Tennessee:			
Fort Wayne.....	1	1		Memphis.....	2	1	
Indianapolis.....	6	4		Texas:			
Iowa:				Dallas.....	4	1	
Burlington.....	0	3		Washington:			
Council Bluffs.....	1	1		Everett.....	0	1	
Mason City.....	0	10		Tacoma.....	4	1	
Kansas:				West Virginia:			
Kansas City.....	2	1		Bluefield.....	1	2	
Kentucky:				Wisconsin:			
Louisville.....	0	2		Milwaukee.....	5	4	
Owensboro.....		1		Oshkosh.....	2	1	
Michigan:				Superior.....	1	9	
Ann Arbor.....	0	1					

TETANUS.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
California:			Minnesota:		
Los Angeles.....		1	Rochester.....		1
San Diego.....		1	Ohio:		
Illinois:			Columbus.....		1
Chicago.....	2	1	Texas:		
Michigan:			Houston.....		1
Ann Arbor.....	2		Virginia:		
			Portsmouth.....		1

TUBERCULOSIS.

See p. 1665; also Telegraphic weekly reports from States p. 1654.

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

TYPHOID FEVER.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended June 17, 1922.		City.	Median for previous years.	Week ended June 17, 1922.	
		Cases.	Deaths.			Cases.	Deaths.
Alabama:				Montana:			
Anniston.....	0	1		Missoula.....	0	1	
Birmingham.....	5		1	Nebraska:			
Mobile.....	0	1	1	Omaha.....	0		1
Tuscaloosa.....	0	1		New Jersey:			
Arkansas:				Atlantic City.....	0	1	
Fort Smith.....	0	2		Morristown.....	0	1	
Little Rock.....	0	1		Newark.....	1	3	1
North Little Rock.....	1	1		Passaic.....	0	1	
California:				Paterson.....	0	1	
Los Angeles.....	2	3		New York:			
Pasadena.....	0	2		Albany.....	1	1	
Riverside.....	0	1		New York.....	15	9	4
San Francisco.....	1	2		North Carolina:			
Stockton.....	0	4	1	Charlotte.....	0	3	
Colorado:				Durham.....	0	1	
Denver.....	0	1		Ohio:			
Connecticut:				Cincinnati.....	1	1	
Derby.....	0		1	Cleveland.....	3	1	
Hartford.....	0	1		Findlay.....	0	1	
Milford.....	0	1		Lima.....	0	1	
New Haven.....	1	6		Toledo.....	1		1
District of Columbia:				Youngstown.....	1	1	1
Washington.....	3	4	2	Pennsylvania:			
Georgia:				Canonsburg.....	0	4	
Albany.....	2	2		Erle.....	0	1	
Atlanta.....	2		1	Hazleton.....	0	1	
Macon.....	0	5		Philadelphia.....	9	4	
Rome.....	1	1		Plymouth.....	0	1	
Savannah.....	2	1		Uniontown.....	0	1	
Valdosta.....	1	3		Rhode Island:			
Illinois:				Providence.....	1	1	
Chicago.....	4	2		South Carolina:			
Decatur.....	0	1		Charleston.....	5	3	1
Springfield.....	0	1		Columbia.....	1	6	
Indiana:				Greenville.....	0	3	
Indianapolis.....	2	1		Tennessee:			
Muncie.....	0	1		Knoxville.....	0	5	
South Bend.....	0	1		Memphis.....	1	1	
Kansas:				Nashville.....	3	4	
Wichita.....	0		1	Texas:			
Kentucky:				Dallas.....	1	6	
Lexington.....	0	1		El Paso.....	0		1
Louisville.....	1	1		Galveston.....	1	1	
Louisiana:				Houston.....	4		2
New Orleans.....	5	1	3	Utah:			
Maine:				Salt Lake City.....	1	1	
Portland.....	0	1		Virginia:			
Maryland:				Charlottesville.....		3	
Baltimore.....	5	2		Petersburg.....	0	1	1
Massachusetts:				Portsmouth.....	1		1
Boston.....	3	4	1	Richmond.....	2	2	
Leominster.....	0	1		Washington:			
Lynn.....	0	1		Seattle.....	0	1	
Michigan:				Spokane.....	0	1	
Detroit.....	5	1		Tacoma.....	0	1	
Kalamazoo.....	0	1		West Virginia:			
Minnesota:				Charleston.....	1		1
Hibbing.....	0	1		Clarksburg.....	0	1	
Minneapolis.....	0		1	Wheeling.....	0	1	
Missouri:				Wisconsin:			
St. Louis.....	4	1	1	La Crosse.....	0	1	
				Oshkosh.....	0		1

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

City.	Population Jan. 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alabama:										
Annisson.....	17, 724		1							
Birmingham.....	178, 270	60	2		15				4	6
Mobile.....	60, 151	30								2
Montgomery.....	43, 464	16	1						2	2
Arkansas:										
Fort Smith.....	28, 811	7	1							
Hot Springs.....	11, 696	4								
Little Rock.....	64, 997								10	
California:										
Alameda.....	28, 806	5	1				4			
Bakersfield.....	18, 638	10	1							1
Berkeley.....	55, 896	14	2		2		1			1
Eureka.....	12, 923	8	2		3					1
Glendale.....	13, 536	4								1
Long Beach.....	55, 593	13	2		1		1			
Los Angeles.....	576, 673	192	39	3	1		30		47	31
Oakland.....	216, 361	40	12	1	1		8		1	1
Pasadena.....	45, 354	20	1						2	2
Richmond.....	16, 843	3	3							
Riverside.....	19, 341	9	1						1	3
Sacramento.....	65, 857	14	7				3			2
San Bernardino.....	18, 721	10			1					
San Diego.....	74, 683	32	10	3			5		5	8
San Francisco.....	508, 410	116	26	1	11		7		28	5
Santa Ana.....	15, 466	8	1							
Santa Barbara.....	19, 441	2								
Santa Cruz.....	10, 917	3								1
Stockton.....	40, 286	8	1		1		3		1	
Vallejo.....	21, 107	6							1	
Colorado:										
Denver.....	256, 369	71	6	1	10		7			13
Pueblo.....	42, 908	17	7				1		4	4
Connecticut:										
Bridgeport.....	143, 538	31	3		11		6		6	2
Bristol.....	20, 620	5			2				2	2
Danbury (city).....	18, 943	2	1							
Derby.....	11, 238	3								
Fairfield (town).....	11, 475	2					1			
Hartford.....	138, 036	27	2		21		2		2	2
Manchester (town).....	18, 370	3								
Milford (town).....	10, 193	1	1		6		1		7	4
New Haven.....	162, 519	27	1		114	3	7		7	4
New London.....	25, 688	4			1			1	1	1
Norwalk.....	27, 700	11				1				1
Norwich (town).....	29, 685	6			2					
Delaware:										
Wilmington.....	110, 168	23					9			3
District of Columbia:										
Washington.....	437, 571	102	2		27		3		19	12
Florida:										
Tampa.....	51, 252	17	1						1	1
Georgia:										
Albany.....	11, 555		1							
Atlanta.....	200, 616	58					1			3
Brunswick.....	14, 413	1								
Macon.....	52, 995				1					
Savannah.....	83, 252	23							1	1
Valdosta.....	10, 783	13							2	2
Idaho:										
Boise.....	21, 393	16								
Pocatello.....	15, 001	2								
Illinois:										
Alton.....	24, 682	9	3						1	1
Aurora.....	36, 297	12	4		5				3	
Bloomington.....	28, 725	6	1				1		2	1
Centralia.....	12, 491	4								
Chicago.....	2, 701, 705	561	131	13	507	4	71	2	239	43
Chicago Heights.....	19, 653	2								1
Cicero.....	44, 995	6	2		10					1
Decatur.....	43, 818	7	3		2		1		23	1
East St. Louis.....	66, 740	17	1				1		1	1
Elgin.....	27, 454	12					1		3	
Evanston.....	37, 215	11			6					

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Illinois—Continued.										
Freeport.....	19,669	7					1			
Galesburg.....	23,834	7	2							
Kewanee.....	16,026	5			1				1	
La Salle.....	13,050	2	1		1				1	
Mattoon.....	13,552	4								
Oak Park.....	39,830	16			13		1			
Pooria.....	76,121	22								1
Quincy.....	35,978	12					1			
Rockford.....	65,651	14			11			1		1
Rock Island.....	35,177	5	1						2	2
Springfield.....	59,183	14	1				1		1	1
Indiana:										
Anderson.....	29,767	4			4					
Clinton.....	10,962	4								
Crawfordsville.....	10,139	4			1					
East Chicago.....	35,967	6			1					1
Fort Wayne.....	86,549	22	4				6			
Frankfort.....	11,585	2			1					
Hammond.....	36,004	5			4				1	1
Huntington.....	14,000	2					1			
Indianapolis.....	314,194	74	5		96		1		2	4
Kokomo.....	30,067	7								1
La Fayette.....	22,486	3								
Logansport.....	21,626	8								
Mishawaka.....	15,195	1								
Muncie.....	36,624	12								
South Bend.....	70,983	9			36		1			
Terre Haute.....	66,083	15			1					1
Iowa:										
Clinton.....	24,151		5							
Council Bluffs.....	36,162	9	2		9					
Davenport.....	56,727		2	1						
Des Moines.....	126,468						7	1		
Dubuque.....	39,141		3							
Iowa City.....	11,267						1			
Marshalltown.....	15,731		1				1			
Mason City.....	20,065						1			
Muscatine.....	16,068	3					2			1
Waterloo.....	36,230				1					
Kansas:										
Coffeyville.....	13,452	1								
Kansas City.....	101,177				2				24	
Lawrence.....	12,456	3								
Parsons.....	16,028	6			1		3		1	
Salina.....	15,085	7	1						3	
Topeka.....	50,022	5	2						5	
Wichita.....	72,128	16	3		4		5		2	
Kentucky:										
Covington.....	57,121	15			2					1
Lexington.....	41,534	15			20					2
Louisville.....	234,891	54	6	1			2		19	12
Owensboro.....	17,424								1	
Paducah.....	24,735				1		1			
Louisiana:										
New Orleans.....	387,219	137	4				2		20	13
Maine:										
Auburn.....	16,985	5					1			
Bangor.....	25,978								1	
Bath.....	14,731	0								
Biddeford.....	18,008	10								1
Lewiston.....	31,791	3					1			
Portland.....	69,272	21	4		3		6			2
Maryland:										
Baltimore.....	733,826	198	10		162	1	4		30	26
Cumberland.....	29,837	8							1	
Massachusetts:										
Adams.....	12,967	3								
Amesbury.....	10,036	3								
Arlington.....	18,665	5			21					
Attleboro.....	19,731	1			1				2	
Belmont.....	10,749	5			1		1			
Beverly.....	22,561	4			27		1			
Boston.....	748,060	205	47	2	160	2	20	1	57	23

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Massachusetts—Continued.										
Braintree	10,580	1							1	1
Brookline	37,748				18			1	1	
Cambridge	109,694	29			54		1	4	3	
Chelsea	43,184	6	1		6					
Chicopee	36,214	1			1					
Clinton	12,979	3					1			
Dedham	10,792	4			1					1
Easthampton	11,261	6	1		4			4	1	
Everett	40,120	6	1		4		2			1
Fall River	120,485	25	7		3		3	4	5	4
Frammingham	17,033	7			1		3		1	1
Gardner	16,971		1		2		1	2		
Greenfield	15,462	3			1					
Haverhill	53,884	13	1				2	2	2	2
Lawrence	94,270	22			4			3	3	
Leominster	19,744	5						1	1	
Lowell	112,479	14	1		2		3	1	8	1
Lynn	99,148	22	3		8			2	2	2
Malden	49,103	8	5		7		2			
Medford	39,038	5	1		1		1	2		
Melrose	18,204	6			5					
Methuen	15,189	5			4		3			1
New Bedford	121,217	27	7				5	6	1	1
Newburyport	15,618	3			1					
North Adams	22,282	8						1		1
Northampton	21,951	4			11					
Pittsfield	41,751	6	2				1			
Plymouth	13,045	5								
Quincy	47,876	6			13		1			
Saugus	10,874	2			1					
Somerville	93,091	18			10		3	4	4	4
Southbridge	14,245	5						1	1	1
Springfield	129,563	19			91			2	2	1
Taunton	37,137	7						2		
Wakefield	13,025	3			1					
Waltham	30,915	6			1			1		
Watertown	21,457	1			5		1			
Webster	13,258	4			4					
West Springfield	13,443	1								
Westfield	18,604	3			1					
Winthrop	15,455	1								
Woburn	16,574	3					1			
Worcester	179,754	34			9		1	4		4
Michigan:										
Alpena	11,101		1							
Ann Arbor	19,516	9			7		2			
Battle Creek	36,164		1		12		6			
Benton Harbor	12,233	3	3	1					1	
Detroit	993,739	179	40	3	88	5	46	70	18	2
Flint	91,599	12	1		32		3			
Grand Rapids	137,634	23	1		1		4	3		
Hamtramck	48,615	0	3		4			1		
Jackson	48,374	10								
Kalamazoo	48,858	16	12	1	1		6			1
Marquette	12,718	3			1					
Muskegon	36,570	11			2					
Port Huron	34,273	7			29					
Port Huron	25,944	5	1		12					
Sault Ste. Marie	12,096	3								1
Minnesota:										
Duluth	98,917	6	1		1		2		2	
Faribault	11,089	1			1					
Hibbing	15,089	7	1				6	1		
Minneapolis	380,582	75	8		52	2	22	2	33	5
Rochester	13,722	18					1			1
St. Cloud	15,873	3			3		3			
St. Paul	234,595	48	13		63		17		18	2
Winona	19,143	6	2		12		1			
Missouri:										
Cape Girardeau	10,232				1					
Independence	11,696	1								
Joplin	29,855				1					
Kansas City	324,410	99	3		24				14	9

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Popula- tion Jan. 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Missouri—Continued.										
St. Joseph	77,939	24	1							
St. Louis	772,897	180	21		8		11		42	18
Springfield	39,631	14								1
Montana:										
Anaconda	11,668	3								
Billings	15,100	6								1
Great Falls	24,121	9	2							
Missoula	12,668	3								
Nebraska:										
Lincoln	54,934	10			15					
Omaha	191,601	59	6	1	16		1			5
Nevada:										
Reno	12,016	6								1
New Hampshire:										
Berlin	16,104	0	1							
Dover	13,020	3								
Keene	11,210	4			1			1		1
Nashua	28,379	3								
New Jersey:										
Asbury Park	12,400	1			4		4			
Atlantic City	50,682	11	1		3				1	
Bayonne	78,754				41				5	
Belleville	15,660				2					
Bloomfield	22,019	4	1		3					
Clifton	26,470	1			6		1			
East Orange	50,710	1			23	1	2		5	
Elizabeth	95,682	8			18		2		1	
Englewood	11,627	2			11					1
Garfield	19,381	3								
Hackensack	17,667	5			3					
Harrison	15,721				5					
Hoboken	68,166	11	1		4		1		1	1
Kearny	26,724	3			19				2	
Montclair	28,810	3	1		1		2			
Morristown	12,548	3	1		3		1			
Newark	414,216	77	8		144		14	1	19	10
Orange	33,268	8			9		2			
Passaic	63,824	12	1		23		5		1	
Paterson	135,966		4		61		5			
Perth Amboy	41,707	5			4		2		3	
Phillipsburg	16,923	2								
Plainfield	27,700	9	1		35	1	8			
Rahway	11,042	2			12		1		1	
Summit	10,174	0								
Trenton	119,289	32	3		37		1		4	3
Union	20,651		1		3		2		2	
West New York	29,926	1	1		7		2		1	
West Orange	15,573	1	1		2				2	
New Mexico:										
Albuquerque	15,157	4	1		1		3		2	2
New York:										
Albany	113,344		1		1				3	
Auburn	36,192	5	1				1			1
Buffalo	506,775	108	7	3	8		21	1	25	10
Cohoes	22,987	3	2							
Geneva	14,648	1								
Glens Falls	16,638	7							1	1
Hornell	15,025	1			16				3	
Hudson	11,745	4								
Ithaca	17,004	5	3							
Jamestown	38,917	6			2		4			1
Lackawanna	17,918	3							5	1
Little Falls	13,029	3								
Lockport	21,308	4			4		1			
Middletown	18,420				1					
Mount Vernon	42,726	16			24		1			1
Newburgh	30,366	7			83					
New York	5,621,151	1,255	210	22	872	40	89	3	1,295	112
Niagara Falls	50,760	9	4		52		4			1

¹ Pulmonary tuberculosis only.

CITY REPORTS FOR WEEK ENDED JUNE 17, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
New York—Continued.										
North Tonawanda.....	15,482	2	3		2		4			
Olean.....	20,506	4			1				1	
Peekskill.....	15,888	3			1				1	
Port Chester.....	16,573	3			9					
Poughkeepsie.....	35,000	7			1				3	
Rochester.....	295,750	56	11	1	101		1	1		1
Rome.....	26,341	6					1			2
Saratoga Springs.....	13,181	4							1	
Schenectady.....	88,723	18					4		4	2
Syracuse.....	171,717	45	9	2	8		9		9	1
Troy.....	72,013	25					1		5	3
Watertown.....	31,285	12	3	1	1		2		2	1
White Plains.....	21,031	1			2				1	
Yonkers.....	100,226	20	2	1	32		3			1
North Carolina:										
Charlotte.....	46,338	24	2		1				5	2
Durham.....	21,719	5	1						5	1
Rocky Mount.....	12,742	5								
Salisbury.....	13,584	3								
Wilmington.....	33,372	16			1			1		
Winston-Salem.....	48,395	15					1		5	
North Dakota:										
Fargo.....	21,961	0								
Ohio:										
Akron.....	208,435	30	1			31		4		10
Ashkabula.....	22,082	2			1				2	
Barberton.....	18,811	3	1						4	
Bucyrus.....	10,425	2								1
Cambridge.....	13,104	2			2					2
Canton.....	87,081	16	5		9					
Chillicothe.....	15,831	3								
Cincinnati.....	401,247	97	2		40	1	3		18	14
Cleveland.....	796,836	167	26	1	310	5	30		50	17
Cleveland Heights.....	15,236				16		1			
Columbus.....	237,031	63	3		29		2		7	3
Dayton.....	152,559	37	1		13		2		3	
East Cleveland.....	27,292	4	2	1	9		2		2	
Findlay.....	17,021	5								
Fremont.....	12,468	3	2		1					
Hamilton.....	39,675	5			1					
Kenmore.....	12,683				13					
Lancaster.....	14,766	6								
Lima.....	41,306	12	1	1			1			
Lorain.....	37,295	1							3	
Mansfield.....	27,824	5			7				2	
Marion.....	27,891		1							
Martins Ferry.....	11,634	2			1					
Middletown.....	23,584	3			1				1	
Newark.....	26,718	3	3		6		4			
Niles.....	13,080	2					1			1
Norwood.....	24,966	2			5					
Piqua.....	15,044	4								
Salem.....	10,305	6			37	1				
Sandusky.....	22,897	2			1					1
Springfield.....	60,840	14	3		1				3	1
Staubenville.....	28,508	7	2				1			
Toledo.....	243,109	48	5		110		4		6	5
Youngstown.....	132,358	3	3		26		1			
Zanesville.....	29,569	6	1				2			
Oklahoma:										
Oklahoma.....	91,258	18	1						2	
Oregon:										
Portland.....	258,288	47	6	1	1		3		2	2
Pennsylvania:										
Allentown.....	73,502				1					
Altoona.....	60,331		1		6					
Beaver Falls.....	12,802		1		5					
Berwick.....	12,181				5					
Bethlehem.....	50,358		2		10		2		1	
Bristol.....	10,273				8					
Canonsburg.....	10,632				3					
Carlisle.....	10,916				7					
Chambersburg.....	13,171				1					

FOREIGN AND INSULAR.

GREECE.

Cholera—Athens.

A fatal case of cholera was reported at Athens, Greece, June 29, 1922.

Scarlet Fever—Smallpox—Syra Island.

Under date of May 26, 1922, 57 cases of scarlet fever with 9 deaths and 12 cases of smallpox with 5 deaths were reported on Syra Island, Greece.

JAMAICA.

Epidemic Alastrim.

The reappearance of epidemic alastrim has been reported in the Island of Jamaica, with 234 cases notified during the week ended June 17, 1922. The epidemic was stated to be prevalent chiefly in the parishes of St. James, St. Elizabeth, and Hanover.

POLAND.

Typhus Fever—Recurrent Typhus—March 26–April 29, 1922.¹

During the period March 26 to April 29, 1922, 7,155 cases of typhus fever and 5,432 cases of recurrent typhus were reported in Poland.

Typhus Fever—Warsaw.

During the period April 23 to May 20, 1922, 80 cases of typhus fever were reported at Warsaw, Poland, occurring among permanent and transient residents.²

UNION OF SOUTH AFRICA.

Plague-Infected Wild Rodent—Orange Free State.

During the week ended May 13, 1922, the finding of a dead plague-infected squirrel on Grootkom Farm, Orange Free State, was reported. The farm was stated to adjoin Trucart's Berg Farm, on which the finding of a plague-infected mouse was reported during the week ended May 6, 1922.³

¹ Public Health Reports, June 16, 1922, p. 1488.

² Public Health Reports, June 3, 1922, p. 1378.

³ Public Health Reports, June 30, 1922, p. 1608.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER.**Reports Received During Week Ended July 7, 1922.¹****CHOLERA.**

Place.	Date.	Cases.	Deaths.	Remarks.
Greece:				
Athens.....	June 29.....	1	1	
India:				
Bombay.....	Apr. 23-29.....	1	1	
Calcutta.....	do.....	89	79	
Madras.....	May 21-27.....	1		
Philippine Islands:				
Province—				
Camarines Sur.....	Mar. 25-Apr. 1.....	1	1	
Siam:				
Bangkok.....	Apr. 30-May 13.....	4	3	

PLAGUE.

Ceylon:				
Colombo.....	May 6-13.....	1	1	
China:				
Amoy.....	May 7-20.....		22	May 20: From 10 to 20 deaths reported daily.
Foochow.....	May 7-13.....	4	4	
Egypt:				
City—				
Suez.....	May 24.....	1		Jan. 1-May 31, 1922: Cases, 156; deaths, 73.
Province—				
Assiout.....	May 30.....	1	1	Septicemic.
Benisouef.....	May 26-31.....	1	1	
Gharbieh.....	May 23-30.....	11	5	
India:				
Bombay.....	Apr. 23-29.....	42	28	
Calcutta.....	do.....	13	13	
Madras Presidency.....	May 21-27.....	1		
Java.....				Month of April, 1922: Report of the seven provinces of Java: Cases, 413; deaths, 405.
Siam:				
Bangkok.....	Apr. 30-May 13.....	1	1	
Straits Settlements:				
Singapore.....	do.....	2	2	
Union of South Africa:				
Orange Free State—				
Grootkom Farm.....	May 7-13.....			One dead plague-infected rodent found. Locality adjoins Trucart's Berg Farm, on which plague-infected mouse was found preceding week.

SMALLPOX.

Asia Minor:				
Smyrna.....	May 14-20.....	2		
Arabia:				
Aden.....	May 7-June 3.....	20	8	
Brazil:				
Pars.....	May 29-June 3.....	2		
Rio de Janeiro.....	May 14-20.....	11	2	
Sao Paulo.....	Apr. 10-16.....	1		
British East Africa:				
Kenya Colony—				
Dar es Salaam.....	Apr. 16-29.....	11		
Zanzibar.....	May 1-31.....	26	6	
Canada:				
Manitoba—				
Winnipeg.....	May 6-June 17.....	3		
New Brunswick—				
Madawaska County.....	June 4-17.....	6		
Ontario—				
Ottawa.....	June 10-17.....	11		
China:				
Amoy.....	May 7-20.....			Present.
Foochow.....	May 14-20.....	1		
Nanking.....	May 7-13.....			Do.

¹ From medical officers of the Public Health Service, American consuls, and other sources. For reports received from Dec. 31, 1921, to June 30, 1922, see Public Health Reports for June 30, 1922. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued.**Reports Received During Week Ended July 7, 1922—Continued.****SMALLPOX—Continued.**

Place.	Date.	Cases.	Deaths.	Remarks.
China—Continued.				
Tientsin.....	May 14-20.....			Present.
Tsingtau.....	May 9-15.....	1	1	
Greece:				
Saloniki.....	May 1-21.....	3		
Syra Island.....	May 26.....	12	5	
Dominican Republic:				
Santo Domingo.....	June 4-10.....	1	6	Present in surrounding country.
Great Britain:				
Sheffield.....	May 28-June 10.....	4		
India:				
Bombay.....	Apr. 23-29.....	4	2	
Calcutta.....	do.....	20	14	
Madras.....	May 14-20.....	43	18	
Malta.....	May 16-31.....	1		
Mexico:				
Manzanillo.....	June 6-12.....		2	
Spain:				
Valencia.....	May 21-27.....	2	1	
Straits Settlements:				
Singapore.....	Apr. 30-May 13.....	4		
Switzerland:				
Basel.....	May 28-June 3.....	1		
Berne.....	May 14-20.....	1		
Union of South Africa:				
Cape Province.....	May 7-13.....			Outbreaks. Do. Do.
Orange Free State.....	do.....			
Southern Rhodesia.....	May 11-17.....	33		
Transvaal.....	May 7-13.....			

TYPHUS FEVER.

Algeria:				
Algiers.....	May 1-31.....	16	4	
Oran.....	June 1-10.....		1	
Asia Minor:				
Smyrna.....	May 14-20.....	2		
Austria:				
Vienna.....	May 7-13.....	1		
Bulgaria:				
Sofia.....	May 28-June 3.....	1		
China:				
Antung.....	May 15-21.....	1		
Foochow.....	May 14-20.....	1		
Manchuria—				
Harbin.....	May 8-21.....	3		
Egypt:				
Cairo.....	Mar. 19-25.....	2	4	
Port Said.....	May 28-June 3.....	1		
Germany:				
Berlin.....	Apr. 30-May 6.....		1	May 1-6, 1922: 5 cases typhus fever at quarantine station of Osternothafen, in persons returning from Russia.
Greece:				
Saloniki.....	May 1-21.....	23		
Mexico:				
Mexico City.....	Apr. 23-May 20.....	59		Mar. 16-Apr. 20, 1922: Cases, 7,155. Recurrent typhus, cases, 5,432. Among permanent and transient residents.
Poland:				
Warsaw.....	Apr. 23-May 20.....	80		
Portugal:				
Oporto.....	May 4-10.....	2	1	
Spain:				
Seville.....	May 21-June 3.....		1	
Tunis:				
Tunis.....	June 4-10.....	2		
Union of South Africa:				
Cape Province.....	May 7-13.....			Outbreaks. Do. Do. Aug. 7-13, 1922: 2 new cases.
Natal.....	do.....			
Transvaal.....	do.....			
Yugoslavia:				
Bosnia-Herzegovina.....	Aug. 7-13.....	1		
Voivodina.....	do.....	1		