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THE PREVALENCE AND TREND OF DRUG ADDICTION IN THE UNITED STATES AND FACTORS INFLUENCING IT.

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Introduction.

There have been published during the past decade many estimates of the number of persons in the United States addicted to the use of narcotics. The numbers estimated range, in round numbers, from 100,000 to 1,000,000 (1–6). Some of the estimates are mere guesses, as they were based on nothing tangible, but most of them represent sincere attempts to arrive at accurate figures. All, however, are open to criticism on the ground that they are based on insufficient data, or that not all of the pertinent factors were taken into consideration. For the same reasons the published statements in which it is asserted that the present trend of addiction to narcotics in this country is upward are subject to criticism.

Owing to the lively interest which has been taken in the problem of addiction to narcotics throughout the world since the end of the World War, and as a result of the enactment of new laws for the more rigid control of narcotics in this country, there have been made available additional statistics on the traffic in narcotics and on certain other phases of addiction. It is believed that the proper interpretation of these statistics and their application to the problem in hand make possible a more accurate estimate of the number of narcotic addicts in this country than any heretofore published, and serve as a means with which to determine accurately the trend of addiction. For these reasons, the study herein reported was undertaken.

Number of Addicts.

It is realized that it is impossible at the present time to make an exact count of the persons addicted to narcotics in the United States, in an individual State, or even in one of our larger cities, because of the social and legal factors tending to make addiction a secret practice. It is believed, however, that it is possible, by utilizing all of the information now available, to delimit the number by certain maximum and minimum figures. With this object in view, a number of the more important narcotic surveys made in recent years were analyzed; also the reports made by agents of the Bureau of Internal Revenue and other persons on the narcotic clinics conducted in

different parts of the country; statistics on the dose of addiction, world production of narcotics, and the quantities inported into this country were compiled and studied; and numerous physicians in different parts of the country were interviewed in person to ascertain the number of addicts they were treating in the course of their practice. The results of these analyses and studies follow.

1. NUMBER BASED ON NARCOTIC SURVEYS AND CLINIC REPORTS.

Tennessee survey (4).—One of the most complete surveys of drug addiction for a large community was made in Tennessee by Lucius P. Brown, State food and drugs commissioner. In 1913 Tennessee passed a law regulating the sale of narcotic drugs and under it regulations were made which provided for the refilling of prescriptions for persons addicted to opiates. The purpose of these regulations was to minimize the suffering among addicts and to keep the traffic in opium from going into illegitimate channels. In order to obtain a regular supply, addicts were required to send to the pure food and drug inspector their own affidavit accompanied by one from a physician certifying as to their addiction and giving certain other information. In the discretion of the board of rules and regulations a permit would then be issued authorizing the refilling of the prescription. This permit would be surrendered by the addict to a pharmacist, who was required to make a copy and return the original to the food and drug inspector.

On January 1, 1915, after 12 months of operation, there were 2,370 persons of various ages, white and negro, registered under this system. Commissioner Brown was of the opinion that all of the addicts in Tennessee had not registered, and he fixed 5,000 as the probable number in the State. Using this figure as a basis he estimated 215,000 for the entire country. He then added 25 per cent to allow for conditions which he thought existed in more thickly settled communities and arrived at 269,000 as the possible number of addicts in the United States.

Treasury Department survey (5).—A special committee appointed by the Secretary of the Treasury in March, 1918, made the most comprehensive survey of drug addiction that has yet been made in the United States. One of the means used by this committee for securing information consisted of sending out questionnaires. For the purpose of ascertaining the number of addicts under treatment, questionnaires were sent to every physician registered under the Harrison Act, and replies were received from approximately 30⅔ per cent of them. A total of 73,150 addicts was reported. If there had been 100 per cent replies with the same average maintained, there would have been shown to be 237,655 addicts under treatment for the entire country.

Pennsylvania survey (7).—In 1917 there was created in Pennsylvania a bureau of drug control, operating under the State narcotic law. A survey made by this bureau shows that in 1922 there were treated in the hospitals and State institutions of Pennsylvania 1,652 addicts. For five years this bureau industriously collected the names and addresses of drug addicts living in Pennsylvania, and in that time they obtained less than 9,000 names. The chief of the bureau estimated that, counting the aged and infirm addicts and all persons who necessarily use narcotics for incurable diseases, there were not more than 20,000 habitual drug users in the State.

On the basis of the 1922 census and 20,000 addicts for Pennsylvania, there would be a total of approximately 242,000 addicts in the United States.

United States Army findings (8).—The mobilization of man power following our entrance into the World War was a means of furnishing the country with valuable data concerning various diseases of young men and the conditions which disable. Data on addiction to narcotics were among the information thus obtained. Up to May 1, 1919, there had been recommended for rejection because of various mental and nervous diseases, 72,323 men out of a number approximated at 3,500,000 (9). Among those recommended for rejection, only 3,284 were drug addicts. Col. Pearce Bailey, chief of the section of neurology and psychiatry, in commenting on this, states that some persons particularly interested in drug addiction had warned them to be prepared for 500,000. He also intimates that there was very little traffic in drugs in the camps in this country and in France, as practically no cases of drug addiction were reported among the soldiers. He points out that access to drugs by the soldier was not easy, and "addicts, if they had been in France cut off from the drug, would have been found inevitably in the hospitals."

The Army rate, if applied to the entire population of this country as shown by the 1920 census, would give a total of approximately 99,500 addicts in round numbers; but this rate, for obvious reasons, can not be applied to the country as a whole.

Clinic reports made by revenue agents (10).—Early in 1919 there was a feeling among some members of the medical profession and officials in different parts of the country that it would relieve the suffering and distress of addicts who had been deprived of legal means of securing narcotics if a cheap source of supply was made available to them. In response to this feeling a number of clinics were opened and operated in different parts of the country for a variable period of time. Some were operated for a few months only, while others remained in operation several years.

The narcotic division of the Bureau of Internal Revenue has in its possession reports on 44 of these clinics, 34 of which contain statistical

information relative to the number of addicts treated, etc. These records have been reviewed and the data compiled therefrom are presented, together with the population of various cities in which the clinics were held, in the following table:

TABLE 1.—*Number of addicts attending clinics.*

City.	Population 1920 census.	Number of addicts.	City.	Population 1920 census.	Number of addicts.
California:			New York—Continued.		
Los Angeles	576,673	481	Hornell	15,025	16
San Diego	74,683	179	Middletown	18,429	30
Connecticut:			Oneonta	11,582	37
Bridgeport	143,555	79	Port Jervis	10,171	17
Hartford	138,036	105	Rochester	295,750	160
Meriden (city)	29,867	2	Saratoga Springs	13,181	12
New Haven	162,537	80	Syracuse	171,717	92
Norwalk (city)	27,743	19	Utica	94,156	25
Waterbury (city)	91,715	86	North Carolina:		
Georgia:			Durham	21,719	36
Atlanta	200,616	515	Ohio:		
Augusta	52,584	42	Youngstown	132,358	65
Macon	52,995	52	Rhode Island:		
Kentucky:			Providence	237,595	175
Paducah	24,735	35	Tennessee:		
Louisiana:			Knoxville	77,818	184
New Orleans	387,219	250	Memphis	162,351	325
Shreveport	43,874	419	Texas:		
New York:			Houston	138,276	122
Albany	113,344	120	West Virginia:		
Binghamton	66,800	32	Clarksburg	27,869	49
Buffalo	506,775	250	Total	4,182,952	4,123
Corning	15,820	22			
Elmira	45,393	10			

Most of the clinics were opened in 1919 and most of them were closed before 1921. One closed in 1923 and one still operates in a modified way.

In compiling the above figures from the reports, the highest number of addicts recorded at any one time or in a certain year are given. For instance, if at the time of inspection the clinic was taking care of 125 addicts and the records showed that 300 had been given narcotics in the course of the year, or the life of the clinic, if in operation for less than a year, this particular clinic was credited with 300 addicts. Or, if a statement was made that there were a certain number of addicts in the city, as in the case of Shreveport (419), the highest figure given was used. No reduction whatever was made in the totals for transients, although the reports show that many of the clinics treated addicts from distant as well as near-by places.

The table shows that there were 4,123 addicts in 34 cities having a total population of 4,182,952, or 0.98 addict per 1,000 persons. At this rate there would have been 104,300 addicts in the United States at that time.

New York City clinic (11).—A clinic not included in the foregoing list was the one located in New York City. This was one of the largest and one of the first of the kind to be opened. During the period April 10, 1919, to January 16, 1920, the New York City clinic

registered 7,464 addicts. Doctor Hubbard, director of the bureau of public health education, Department of Health of the City of New York, has written a report of this clinic and in his conclusion says "* * * the estimate of 1 per cent of our population addicted to the use of narcotic drug indulgence as a habit—addiction—is very likely greatly exaggerated."

Using the 1920 census as a basis for computation, the New York City rate would give approximately 140,600 addicts for the entire country.

Discussion of data obtained from surveys and reports.—Considered individually, the estimates of the total number of addicts in this country made on the basis of these surveys and reports might justly be characterized as unreliable. No doubt there is some element of error in each of them, but when it is considered that these surveys were made within several years of one another by persons using various methods and working independently of each other in different sections of the country, the fact that the minimum figure found was 99,500 (number based on the Army survey) and the maximum was 269,000 (Brown's estimate based on the Tennessee survey) indicates that these surveys taken as a whole are fairly reliable. All of them, except the Treasury Department, the Army, and the Tennessee surveys, involved factors tending to produce error in both directions. The others show results so similar that the errors in them may be considered to have counterbalanced one another.

Brown's survey for Tennessee, taking the 2,370 cases actually found, and not his estimate of 5,000, shows too few addicts, because it could not be expected that every addict in the State would register. The only question is, How much should his figures have been increased to represent actual conditions? He was, no doubt, the best judge of this, and his estimate of 5,000 may be considered as fairly accurate for the year in which it was made. In fact, his estimate is almost identical with the number which is obtained if the figures reported for the Memphis and Knoxville clinics in 1920 are used. These two cities, with a combined total population of 240,169, had a total of 509 addicts. Applying this rate to the whole State there would have been 5,122 addicts in Tennessee at that time. It is doubtful whether the figures obtained for two of its largest cities could justly be used to compute addiction for the State as a whole, but the records show that these two clinics were as well conducted as appears possible, and the claim made that transients were not treated was apparently substantiated by the Federal narcotic inspectors.

While Brown made what can be considered a fairly accurate estimate for Tennessee, it is believed that he erred in applying this rate of addiction to the entire country and in adding 25 per cent to allow for conditions which he thought existed in the more thickly settled

communities. This is clearly shown by the Treasury Department survey and the reports on the clinics.

The Treasury Department survey showed a higher rate of addiction for the Southern States than for the remainder of the country. In this survey the computed number of addicts for Alabama, Arizona, Arkansas, Florida, Georgia, Louisiana, Mississippi, Missouri, North Carolina, Oklahoma, Tennessee, Texas, and Virginia[1] was 97,387. These States according to the 1920 census, had a combined population of 29,189,730, and if the rate of addiction shown by them had been maintained throughout the country, the survey would have given 352,687 addicts instead of 237,655. Excluding Missouri and Texas from the list, the rate for other Southern States would have shown 345,044 addicts for the United States. Missouri, with only 14.2 per cent of the physicians replying, showed an unusually large number of addicts. The higher rate of addiction in the South shown by the Treasury Department survey is confirmed by the clinic surveys made from one to two years later, as well as by the Pennsylvania survey. The greater prevalence of addiction in the South, in spite of the greater possibilities for a purely delinquent type of addiction in the more thickly settled communities of the North, is undoubtedly to be attributed in part to the known value of opiates in treating diarrheal diseases, which are more common in warm climates, and in part to self-medication before the Harrison law went into effect, not only for diarrheal diseases but also for the discomforts arising from such diseases as hookworm and malaria, these diseases being much more prevalent in the States enumerated than in the remainder of the country.

Factors have been at work since 1915 which would be expected to wipe out the higher rate of addiction which the South may have had at that time. This may have happened already; but if we accept the surveys as reliable evidence that the group of States of which Tennessee is fairly representative were more highly addicted in 1915 than the remainder of the country, Brown's estimate of 215,000 for the entire country, based on 5,000 for Tennessee, should be reduced rather than increased.

The Treasury Department survey was made under conditions which rendered it extremely likely that more addicts were counted than actually existed.

When this survey was started, the Harrison antinarcotic law had been in force for about three years. Consequently, addicts were having difficulty in securing a regular supply of narcotics and were forced to apply first to one physican and then to another. It is therefore likely that in many cases the same addict was reported by two

[1] South Carolina is not included because the Treasury Department survey of the State is unsatisfactory.

or more physicians. This would also apply in the case of transient addicts. It is also natural to suppose that a number of the physicians who replied to the questionnaire sent out reported any addict living in their neighborhood, whom they happended to know, regardless of whether or not some other physician was treating the addict at the time. Here again the same addict might be reported by more than one physician. In a State like New York, where only 37 per cent of the physicians replied, the exaggeration of actual conditions by estimation of the total number of addicts at the rate shown by the replies received is likely to have been large.

Evidence that the Treasury Department's figures are high is obtained by comparing the numbers 8,180 and 37,095 reported by the committee for Tennessee and New York, respectively, with the number of registrants in those States reported by State officials. Brown's survey for Tennessee showed only 2,370 addicts registered in that State in 1913, and Commissioner Herrick of the Narcotic Control Commission of New York State reported that there were only 13,000 (12) addicts (in round numbers) registered in the latter State in 1920. Herrick does not state how many of these were transients residing outside of the State. The clinic surveys of 13 cities of New York having a total population of 1,375,134 showed 823 addicts. At this rate there would have been 2,856 addicts in the State outside of New York City, or 10,320 in the entire State, using Hubbard's figures (7,464) for the city.

The actual count of less than 9,000 addicts in Pennsylvania compares favorably with the figure 10,202 for this State given by the Treasury survey. This close correlation is probably due in part to the five-year period over which the count was made and would seem to indicate that 9,000 is nearer the correct number for the State than 20,000, which was considered the extreme limit by the Pennsylvania officials.

The Army findings are the most important in indicating that the youth of the country are not addicted in great number. This survey differs from the others in that it was confined to one sex and a particular age group. If the rate shown by these figures is applied to the entire population, it would show about 99,500 addicts in the United States. Obviously no such general application can be made of a rate obtained by a restricted survey. It is known that addiction in children below 15 years of age is practically nil. It therefore becomes necessary before using the Army figures for general application to ascertain the relative rate of addiction of the two sexes and of the age groups between 18 and 30 and 30 upward.

Bailey (8) states that the military age is the age of election for drug addiction and that there are more men addicts than women, the inference being that the difference in rates between the sexes

and age groups below and above 30 are large. This is no doubt true of persons who are becoming addicted at the present time, because our laws are now preventing unnecessary addiction of innocent people. Also, at the time of the war the inference was true as to large cities, because conditions existed in them which attracted or perverted young adult males. In the New York City survey, for example, less than 25 per cent of addicts reported were females and 66 per cent of the entire number were below 30 years of age. If we accepted the Army rate and applied it to the population of the country as a whole under the conditions with respect to sex and age that prevailed at the New York City clinic, we would obtain a total of only 10,000 to 15,000 addicts, an estimate which is entirely too low.

In the light of the findings of other surveys it is apparent that throughout the country there is not a great difference in the rate of addiction between the sexes, and until recently it could not be stated with certainty that addiction among young adults was more frequent than among older people. Of the 2,370 addicts reported by Brown, 66.9 per cent were women and the average age of both sexes was 49 years, only 14.7 per cent being below 34 years of age. The average age at which addiction began was 37 years 10 months for the males and 37 years 6 months for the females. The percentage of females among 2,455 cases at the clinics was 44.25 and the average age at 31 of the clinics was 39 years for the males and 39 years 9 months for the females. Of 541 opium and opium alkaloid cases reported by Terry (13) for Jacksonville, Fla., 313 were females and 228 males.

The Army examiners no doubt missed some addicts. Bailey intimates that a few were not rejected, and it is probable a few more through shame or other motives said nothing of their addiction and were able to conceal their condition or its cause. The error introduced by these two factors must have been small, but a third factor must be considered. It is possible that a number of addicts were rejected by local boards for other conditions, and the addiction was not recorded because it was overlooked or was considered relatively unimportant. This would be especially likely to happen in severe cases of asthma and tuberculosis complicated by addiction. The rate of less than 1 in 1,000 shown by the Army figures is no doubt too low for the group surveyed, and it is impossible to estimate the extent of the error with any great degree of certainty—it may have been as much as 100 per cent.

The clinics listed herein were located in nearly all parts of the country, and it would be only natural to infer that the number of addicts in attendance might be used as a basis for arriving at a fairly accurate estimate of the total number in the country. This

would be true if it were not for the fact that not all addicts living in the cities in which these clinics were established obtained their supplies of narcotics from them, and because of the fact that many of the addicts attending these clinics did not normally reside in the city in which they were located.

In the case of some of the clinics, addicts were admitted who resided within a radius of several miles of the cities in which they were located. This was probably the condition at most of the clinics, but is mentioned particularly in the reports on the clinics located in the smaller cities in New York, where addicts frequently came as far as 20 miles to obtain their supplies of narcotics. In some cases addicts living in rural districts about equidistant from two clinics would be enrolled at both. This was recorded of some of the Connecticut clinics where the distances separating them was not great.

Furthermore, since the passage of the Harrison law there has been observed to be an increasing tendency on the part of many addicts to move from place to place in search of cheap narcotics or to settle near the most available sources of supply. This is strikingly brought out in the history of the Shreveport clinic.

The Shreveport clinic was opened in May, 1919, and closed in February, 1923. At this clinic there was established a hospital in which addicts desiring to be cured could be treated and a dispensary where morphine was supplied to those supposed to be in need of the drug. The place was, therefore, doubly attractive. The policy of the clinic with respect to the addicts received for treatment was evidently most liberal. In a report on the clinic issued June 1, 1920, it was stated: "It is the desire of the clinic to care for those addicts from the city and State, but any newcomer is investigated and passed on." That many newcomers were admitted is evident from the following: The clinic at Houston, Tex., closed December 1, 1919, and a report on it made by an agent of the Bureau of Internal Revenue states that 75 per cent of the addicts in attendance moved to Shreveport. On March 15, 1921, the clinics at New Orleans and Alexandria closed, and at the end of March, 1922, the chief of the Shreveport clinic reported that a total of 740 addicts (14) had been enrolled at the latter. In a report made by an agent of the Bureau of Internal Revenue in September, 1922, when only 129 addicts were being supplied with narcotics at this clinic, it was shown that some of those in attendance were from Michigan, Indiana, Missouri, Mississippi, Texas, and various parts of Oklahoma and Louisiana. They had resided in Shreveport from three weeks to three years, and some frankly stated they had come for the sole purpose of receiving drugs from the clinic. One case convicted in Texas for

violation of the Harrison law came directly from Leavenworth Penitentiary to Shreveport in order to gain access to a cheap supply of morphine.

The tendency of addicts to migrate from place to place is confirmed by our own observations. One of the writers has personally treated addicts in Washington who have come for treatment from as far as Georgia and Tennessee, and other addicts interviewed have admitted receiving treatment in five different cities within a few years. We have seen addicts in Washington and Atlanta who have been on the register of the New York and other clinics. Patients have come to us within a few weeks after leaving a hospital in Philadelphia, and patients from Baltimore have told of other addicts in that city who went to Philadelphia for treatment.

Before the enactment of the Harrison law there was apparently quite a number of pure cocaine addicts, but at the present time this type is almost invariably addicted to some form of opium as well, hence it is unnecessary to take these addicts into consideration from a numerical standpoint. Because of the legal and economic obstacles to a career of narcotic addiction, the person who starts with cocaine to-day either discontinues it after a short time, which is not difficult to do, or takes so much that the symptoms of anxiety it brings on impel him to resort to morphine or heroin for relief. He then quickly becomes addicted to one of these drugs, and, after that, continues with an opiate supplemented by cocaine or discontinues the use of cocaine altogether. Of 150 addicts examined by one of us, only 7 used cocaine exclusively. Four of these had been addicted for periods of from two to eight months only; the other 3 had used the drug for less than two years, but had spent part of that time in jail. The remaining 143 were addicted to opium or its alkaloids; but 50 per cent of them were either using or had been using cocaine at some time during their addiction.

In summing up it may be stated that according to Brown's survey 215,000 was approximately the number of addicts in the United States in 1915. The New York City, the Treasury Department, and the clinic surveys were made four or five years later. An objection to making a general application of the New York City survey is that the sex and age distribution of addicts shown by it does not obtain throughout the country. This was probably due in part to the fact already referred to, namely, that young addicts are attracted to large cities, and conditions exist in them which cause a delinquent type of addiction; and it is also due in part to the fact that some of the older addicts were being taken care of by physicians and were not counted when the survey was made. Just how far these two factors balance each other is not known, but the 140,600 indicated by the New York City survey in 1920 shows a reduction over the 1915 figures. The clinic

surveys made at the same time or a year later took in nearly all sections of the country and comprised a more representative group of population. These surveys show 104,300 addicts. The Pennsylvania figures, collected over a period of five years and ending about a year after most of the clinics were closed, show approximately 109,250 addicts in the United States in 1922 when the actual count of 9,000 is used. The Army rate is undoubtedly too low for the particular group surveyed, and for reasons already given it can not be used for estimating addiction in the population as a whole. The 1918 Treasury Department survey showing 237,655 addicts apparently contains an indeterminate error of exaggeration, as already pointed out. The highest estimate based on any unrevised survey is 269,000; the lowest, exclusive of the Army survey, is 104,300. These figures may therefore be accepted as the maximum and minimum numbers for the period 1915 to 1922; but from what has been brought out relative to the surveys it would seem that somewhat less than 215,000 is more nearly correct for the beginning, and about 110,000 the approximate number for the end of the period.

2. NUMBER BASED ON DOSAGE AND AVAILABLE SUPPLIES.

Addiction dose.—A striking point which becomes apparent on an analysis of the estimates of the nu ber of drug addicts in this country is that most of them were made without taking into consideration the quantities of narcotics available. In making an estimate on the basis of available narcotics it is first of all necessary to know approximately the size of the daily addiction dose. This has been determined from data obtained from the surveys, from the clinic reports, and from our own observations.

Addicts using morphine or heroin take from 2 to 60 grains daily; but the number using these two extremes is comparatively small. Many take regularly from 15 to 30 grains when they can obtain these drugs in the quantities desired. The average daily dose of morphine given at the clinics heretofore referred to, based on 1,976 cases, was 7¼ grains; but in nearly all cases the dose was smaller than the appetites of the addicts, because it was the policy to give at first only enough to maintain comfort and then reduce the amount when possible.

The usual beginning dose at the New York clinic was 10 grains, and it is stated that some patients showed unmistakable signs of suffering when reduced to 6 or 8 grains daily. At the Waterbury, Conn., clinic, where no effort was made to control dosage, the average daily dose given each patient was 14.2 grains of morphine. An examination of 25 professional men made by one of us revealed that they were taking an average of 17½ grains daily before they were investigated by the narcotic division of the Bureau of Internal Revenue.

After the investigation and at the time of the examination, the amount had been reduced to 8⅓ grains daily. Fifty other cases, nearly all of whom were heroin addicts, averaged 15½ grains of heroin or morphine daily; and of these, 6 took 5 grains, or less, and 9 took 25 grains, or more. From these three examples, it is reasonable to assume that with unrestricted access to the drug the average morphine and heroin addict would consume about 15 grains daily. Many of the addicts attending the clinics complained about the amount they received, and some of them freely admitted that they bought additional supplies elsewhere. At the Memphis clinic, where the average dose was 3 grains, 60 per cent of the patients interviewed admitted buying more from peddlers. Eighty-six per cent of Brown's cases were addicted to morphine, and of these, the males received 8.86 grains and the females 8.22 grains daily.

Addicts who take opium as gum opium, or in the form of laudanum, consume smaller quantities expressed in terms of the alkaloids than those who take the drug as morphine or heroin. Reduced to terms of morphine, the average daily dose of Brown's 172 laudanum users was 3.3 grains, and of his 120 gum opium users, 15.3 grains. This latter figure seems rather higher than one would expect, and we believe gum opium users as a rule consume less than this.

Accurate data on the quantities of opium consumed by opium smokers are available in the statistics on opium smoking in Formosa, where opium is a Government monopoly and where all smokers are required to be licensed. Published statistics (15) of this kind show that for the five-year period 1910 to 1914, inclusive, the average per capita consumption of 87,690 opium smokers was approximately 2½ pounds annually.

The various laws designed to restrict the use of narcotics by addicts have almost completely done away with opium smoking in this country and have tended to drive laudanum and gum opium users, who have failed to be cured, to the use of the alkaloids, because in this form the drug is much less bulky and consequently can be more easily obtained and concealed. The proportion using the bulky preparations is therefore steadily decreasing. Only 22.55 per cent of Terry's 541 opium and morphine addicts and 12.31 per cent of Brown's cases used laudanum or gum opium. In the clinics, not counting the New York City clinic, the percentage of gum opium and laudanum users was only 2 per cent. At the New York City clinic all of the addicts were given the alkaloids regardless of the opiate which they were accustomed to use. Terry's and Brown's figures, together with those of the clinics mentioned, show that there has been a gradual progression from laudanum and opium to morphine and heroin. Of 170 cases closely examined by one of us in 1923, all except 2 were addicted to the alkaloids, and both of these were over

60 years of age, but a few of the others had begun by using laudanum or opium. It is therefore safe to base the present-day dosage on morphine and heroin, and, because nearly all addicts in this country now use these alkaloids, the consumption per addict on an opium basis would be expected to be larger than it was 10 or 15 years ago; but there are other factors to be considered.

Although the unrestricted access which addicts had to narcotics before the Harrison law and the various State laws were enacted naturally tended to make the dose of morphine, the alkaloid chiefly used for addiction in those days, comparatively large, the ease with which the other opiates could be procured caused many people to become addicted to laudanum and opium, the doses of which expressed as morphine are much lower. It is probable that these two factors influencing dosage counterbalanced one another, the result being that the average daily dose on a morphine basis was about the same at that time as it is to-day.

Another factor not to be lost sight of in influencing the relative size of the average dose is the effect which recently enacted laws have had in preventing innocent, normal people from becoming addicted. Because of this factor, addiction is becoming more and more a vicious practice of unstable people, who, by their nature, have abnormal cravings which impel them to take much larger doses than those which were taken by the average normal person who so often innocently fell a victim to nacrotics some years ago. Normal people now either do not become addicted or are, as a rule, quickly cured, leaving as addicts an abnormal type with large appetite and little means for satisfying it. DeQuincy (16) states that for a time he used as laudanum 320 grains of opium daily. Such an addict would now quickly discard laudanum and use the equivalent (about 40 grains) in morphine or heroin. Having in mind all the factors influencing dosage, we feel safe in assuming that the average dose, when opium and its alkaloids were cheap and access to them was easy, was not greater than it is to-day.

From our studies, it seems probable that the average addict would consume about 15 grains of morphine or heroin daily if allowed to fully satisfy his appetite for these drugs, but the effect of the law and the high cost of peddled narcotics tends to restrict the amount in practically all cases, and no doubt in many cases holds them down to a dose which barely maintains bodily comfort. Therefore, in order not to overestimate the amount, we have, for purposes of computation, set the average daily dose at 6 grains, an amount considerably smaller than that shown by the clinics. Our observations lead to the conclusion that the average addiction dose of cocaine is about the same as that of morphine.

Quantities of narcotics available in the United States.—To supply with their daily dose the large number of addicts asserted by some to be residing in this country would require enormous quantities of narcotics—quantities far in excess of those imported at the present time or during any period in the past. This is clearly shown in Table 2.

TABLE 2.—*Opium and opium alkaloids entered into United States for consumption.*

Decade.	Population of the United States.	Opium (over 9 per cent morphine) entered for consumption annually.	Opium (smoking) entered for consumption annually.	Opium (total) entered for consumption annually.	Opium alkaloids entered for consumption annually.	Number of addicts which opium (over 9 per cent morphine) and opium alkaloids would supply with 6 grains morphine sulphate daily.	Number of opium smokers which could be supplied at 2½ pounds per year.
		Pounds.	*Pounds.*	*Pounds.*	*Ounces.*		
1860–1869	34,000,000	110,305	21,176	131,481	588	44,143	8,470
1870–1879	44,000,000	192,602	48,049	241,307	2,296	77,410	19,219
1880–1889	56,000,000	328,392	85,988	414,381	20,212	135,221	34,395
1890–1899	68,000,000	513,070	92,462	605,533	20,193	209,023	36,985
1900–1909	83,000,000	480,009	148,168	628,177	17,511	195,278	59,267
1910–1919	98,000,000	366,054	None.	366,054	27,143	151,671	None.
1920–1923	106,000,000	144,805	None.	144,805	5,282	57,856	None.

The data given on imports were obtained from published reports of the Department of Commerce of the United States (17). The phrase "entered for consumption" is used in these reports to distinguish merchandise received in this country and immediately turned over to the importer, from that which is received and stored in warehouse until withdrawn by the importer. The designation "entered for consumption" therefore does not imply that the opium and opium alkaloids so labeled are completely consumed in this country. Some of the opium thus designated may be exported. That not all of the opium so designated is actually consumed in this country is shown by statistics published by the Bureau of Internal Revenue. For the past few years this bureau has compiled statistics on the amounts actually withdrawn from custody of the customs for domestic consumption. For the fiscal year 1922 this amounted to 130,599 pounds (18). The amount reported as entered for consumption by the Department of Commerce was 141,552 pounds; or, in other words, 10,953 pounds less than the amount reported as "entered for consumption" was actually consumed in this country.

In addition to the quantities of opium and opium alkaloids entered for consumption, the table shows the number of addicts that the yearly importations of nonsmoking opium and opium alkaloids would

supply. This has been computed on the basis that opium contains on the average 10 per cent of anhydrous morphine ($C_{17}H_{19}O_3N$) and that 1 part of the latter will make 1¼ parts of morphine sulphate [$(C_{17}H_{19}O_3N)_2 \cdot H_2SO_4 + 5H_2O$]. Data are also given showing the number of opium smokers which a year's importation of smoking opium would supply at the rate of 2½ pounds per capita.

Making no deduction for the opium used in medical practice or for exportation, the table shows that 209,023 is the greatest number of addicts that could have subsisted for a year during any period of 10 years on the opium imported into this country, exclusive of smoking opium. This was for the period 1890–1899. It is of course known that much of the former was used in legitimate practice and some was exported, leaving a supply insufficient for so many addicts. During this same period there were imported 92,462 pounds of smoking opium, sufficient to supply in round numbers, an additional 37,000 addicts. If, however, proper deductions are made for the opium exported and for that used legitimately, this additional number would be largely if not completely wiped out. Since the Government has had a check on the opium traffic there has never been less than 100,000 pounds imported in a year, and it has already been shown that some of this is exported. Assuming that all of the opium imported was used for the satisfaction of addiction the amount would have been sufficient to supply about 246,000 addicts.

These figures are given for a period prior to the time when restrictions were placed on the traffic in opium, and there was no incentive to the smuggling trade as there is to-day. It is, therefore, believed that at no time have there been more than 246,000 opium addicts in the United States.

This statement is made with the knowledge that heroin is now being used generally by addicts in certain sections of the country, particularly along the Atlantic seaboard from Washington northward. The figures given in the table have been computed on a morphine sulphate basis. On a heroin hydrochloride basis the available supply of narcotics would have to be increased by approximately 12 per cent. As only a portion of the addicts who formerly used morphine now use heroin, the small addition which it would be necessary to make to the total number because of that change would be offset by the number who use opium or laudanum, for which the morphine sulphate equivalent has been given.

To the 246,000 opium addicts must be added 18,000 possible cocaine addicts, making a possible grand total of 264,000 addicts of all kinds for the period stated. It has, however, been shown in the discussion of the surveys that at the present time the cocaine addict is a mixed type who uses both opium and cocaine and is therefore unimportant from the standpoint of numerical estimate.

The amount of cocaine produced in the world as well as that imported into the United States has always been small in comparison with opium production and importation. An examination of Table 3 shows that the number of addicts in the United States using cocaine alone, based on legitimate importation and assuming that all of the coca leaves and cocaine imported annually was used for the satisfaction of addiction, could never have been more than approximately 18,300.

TABLE 3.—*Coca leaves and cocaine entered into United States for consumption.*

Period.	Population.	Coca leaves entered for consumption annually.	Cocaine, ecgonine and salts, entered for consumption annually.	Coca leaves and coca alkaloids in cocaine hydrochloride equivalents.	Number of addicts that could be supplied on a cocaine hydrochloride dosage of 6 grains per day.
		Pounds.	*Ounces.*	*Grains.*	
1908–1914	92,000,000	962,281	14,809	40,150,953	18,334
1915–1923	103,000,000	667,041	8,100	26,886,100	12,276

The cocaine equivalent of coca leaves was computed on the basis that the leaves yield an average of 0.5 per cent of cocaine hydrochloride. The materials designated "cocaine, ecgonine and salts," have been taken as pure cocaine hydrochloride, although some of the cocaine alkaloid imported was impure. The error resulting is very likely counterbalanced by the fact that some of the material was ecgonine, which increases the quantity when converted into cocaine.

The number of addicts which the average annual amount of coca leaves and coca alkaloids entered for consumption would supply if all of it were used for the satisfaction of addiction, is computed on the basis that an addict consumes at least 6 grains of cocaine hydrochloride per day, or 2,190 grains per year.

Table 2 shows a marked decrease in importation of medicinal opium since 1899 in the face of a rapidly increasing population. The reduction since 1915 is no doubt due largely to the fact that the Harrison law became effective in March of that year, and from that time on smuggled opium must be reckoned with. Just how much is smuggled no one knows, but an examination of Table 4, together with the discussion that follows it, indicates that if all the medicinal opium now produced in the world were smuggled into this country it would not supply more than about 566,000 addicts, a number much smaller than many of the estimates which have been made of the number of addicts in this country alone.

It is impossible to secure accurate data on the opium production of the world as, with the exception of India, there are no production statistics available for the opium-producing countries. The figures given in Table 4 were taken from statistics compiled by the Opium Committee of the League of Nations (19). These statistics were compiled chiefly from information obtained in replies to questionnaires and from annual reports. The committee admits that the figures given are only estimates in the majority of cases, and states that, from the evidence obtainable, the world production of opium would appear to be between 2,500 and 3,500 tons a year.

TABLE 4.—*World production of opium.*

Country.	1920	1921	1922
Europe:	*Pounds.*	*Pounds.*	*Pounds.*
Bulgaria	[1] 3,740	[2] 22,000	[2] 22,000
Greece	[1] 7,216	[2] 67,500	[2] 50,000
Kingdom of the Serbs, Croats, and Slovenes	[3] 145,970	[2] 235,752	[2] 235,752
Near East and Egypt:			
Egypt	[1] 4,400	[2] 5,000	[2] 5,000
Turkey	[2] 610,000	[2] 650,000	[2] 650,000
Middle East:			
Persia	[2] 254,510	[2] 454,000	[2] 450,000
East and Far East:			
Afghanistan	[2] 25,900	[2] 25,900	[2] 25,900
Chinese and Russian Turkestan	[2] 44,000	[2] 44,000	[2] 44,000
China	[2] 4,400,000	[2] 4,400,000	[2] 4,400,000
India (including Burma)	[1] 2,501,688	[1] 1,949,671	[1] 1,954,656
Indo-China	[1] 13,200	[2] 10,384	[2] 10,384
Japan (including Formosa and Korea)	[1] 8,184	[2] 11,000	[2] 11,000
Siam	[1] 15,400	[1] 15,400	[1] 15,400
Total production:			
Pounds	8,034,208	7,890,607	[4] 7,877,092
Long tons	3,587	3,523	3,517

[1] Official figures. [2] Approximate only. [3] Official export figures. [4] Original figures.

The opium produced in the countries of the East and Far East is practically all low-grade opium, known as eating and smoking opium, and is consumed in its entirety in the countries of the Far East. If we subtract the quantity (6,461,340 pounds) produced in these countries from the total quantity (7,877,092 pounds) produced in the world in 1922, there remains only 1,415,752 pounds available for medicinal purposes and for the addicts who use opium in the form of its alkaloids and their derivatives, principally morphine and heroin. This quantity (1,415,752 pounds) is equivalent to 1,238,783,000 grains of morphine sulphate, computed on the basis that opium contains 10 per cent of anhydrous morphine and that 1 part of the latter will make 1.25 parts of morphine sulphate. As before stated, the average addict consumes about 6 grains of morphine sulphate per day, or 2,190 grains per year. At this rate the total annual production of opium, exclusive of that produced in the countries of the Far East, if used entirely for the satisfaction of addiction, would supply only about 566,000 addicts.

It has been shown that at no time have the annual importations of narcotic drugs into this country been greater than would be necessary to supply 264,000 addicts, assuming that they were used in their entirety for the satisfaction of addiction. No one contends that they were so used, but it has been asserted that at least 75 per cent of the quantities imported are used for this purpose. It is believed that a fairly accurate estimate of the amounts used for the satisfaction of addiction subsequent to 1909, when the entry of smoking opium was prohibited, can be obtained by using the import statistics given in Tables 2 and 3.

For the four-year period 1920-1923 the importations of opium amounted to 144,805 pounds annually. For this same period 5,282 ounces of opium alkaloids were imported annually. The narcotic division of the Bureau of Internal Revenue estimates that not over 15 per cent of these quantities gets into illegitimate channels. Making these deductions it may be assumed that 123,084 pounds of opium and 4,490 ounces of opium alkaloids are required annually to supply the legitimate medicinal needs of the country, including the needs of many old and incurable addicts now being supplied by physicians, which number is constantly decreasing. By subtracting these amounts from the amounts imported annually for the decade 1910 to 1919 we obtain 242,971 pounds of opium and 22,653 ounces of opium alkaloids.

These quantities would supply approximately 100,000 addicts for a year. Making similar computations for coca leaves and coca leaf alkaloids, it is found that approximately 9,000 addicts could be supplied with the quantities which were formerly imported in excess of what has been imported in recent years. This would make a total of 109,000 addicts who, prior to 1915, could have obtained their supplies of narcotics from the quantities imported legally. In view of the limited supplies of medicinal opium available in the world and the rigid control of narcotics exercised by this country, it is highly improbable that the combined quantities available to addicts in 1919 and 1920 from smuggled sources and from leakage through legitimate channels were more than sufficient to supply this number (109,000). This is probably too high, in view of the reduction which has been shown, but if we add to this figure the number of aged and incurable addicts who received their supplies through legitimate channels, the total number of addicts in this country for the period stated was probably somewhere between 120,000 and 140,000, which is in keeping with the figures arrived at from the surveys and clinic reports.

That the quantities of narcotics smuggled into this country are in all likehood not as great as is believed by some is shown by the quantities reported as falling into the possession of the Bureau of

Internal Revenue in the enforcement of the narcotic laws For the year ending June 30, 1922, the total quantity (18), including opium and coca leaves, preparations containing opium and coca leaves, the alkaloids of opium and cocaine, and preparations containing these alkaloids, was only 4,447 pounds. In 1923 it was 542 pounds.

All the evidence shows that there has been a still further reduction in the number of addicts since the surveys were made. This assertion is made with full knowledge that the number of addicts in our penal institutions has greatly increased in recent years. There is nothing in this to cause alarm. One of the recently enacted laws has made it a crime for unlicensed persons to have narcotics in their possession. This law is being rigidly enforced, and addicts, who formerly were unmolested, are now being sent to jail.

3. STATEMENTS OF PHYSICIANS INTERVIEWED.

Confirmation of the estimates based on the supplies of narcotics available and on the findings of the various surveys as to the number of addicts and the trend of narcotic addiction in the United States is furnished by the experience of physicians as related to us. We have interviewed physicians from all parts of the United States and it is unusual to find one who has an addict among his patients. Few besides those who have contact with penal institutions and certain hospitals and sanitariums meet any great number. Many physicians still occasionally see a transient addict who drops in and begs for a dose, but this, too, is growing rare. Some of the physicians who have been practicing for years in small towns and rural communities speak of addicts they have cured by the aid of the Harrison law or who have, without outside assistance, cured themselves. Some of them are taking care of one or more old or incurable cases, but from the information they give it seems that new cases of addiction are not arising to take the place of the old ones who die.

The accuracy of our observations is supported by the findings of Dr. Carleton Simon (20), special deputy police commissioner in charge of the narcotic division of the police department of New York City, who sent out a questionnaire to the physicians in New York State. Of the 7,559 physicians who replied, only 5.2 per cent reported that they were treating addicts in 1922.

Trend of Addiction.

It is believed that the trend of addiction in this country for the past six decades has paralleled very closely the quantities of narcotics available, as represented by the average annual importations, in proportion to the population. This being true, it follows that the trend of addiction was upward until about the year 1900, when it took a downward course, which it has maintained up to the present

time. Table 5, showing the possible number of addicts that could be supplied with the opiates imported annually for the past 63 years, if all were used for the satisfaction of addiction only, illustrates this point.

TABLE 5.—*Number of addicts per million population which annual importations of opiates would supply.*

Decade.	Population of the United States.	Number of addicts which opium (over 9 per cent morphine) and opium alkaloids would supply with 6 grains morphine sulphate daily.	Number of opium smokers who could be supplied at 2½ pounds per year.	Total number of addicts who could be supplied.	Number of total addicts per million population.
1860-1869	34,000,000	44,143	8,470	54,613	1,606
1870-1879	44,000,000	77,410	19,219	96,629	2,196
1880-1889	56,000,000	135,221	34,395	169,626	3,029
1890-1899	68,000,000	209,023	36,985	246,008	3,617
1900-1909	83,000,000	195,278	59,267	254,545	3,066
1910-1919	98,000,000	151,671	None.	151,671	1,547
1920-1923	106,000,000	57,856	None.	57,856	546

It is realized that some of the addicts who were deprived of narcotics as a result of the decrease in the quantities of the drugs imported legally turned to the use of smuggled material after 1915, but in our opinion the number that obtained their supplies from this source was at no time large enough to affect the direction of the trend of addiction. That the supplies available from this source are not as great as has been stated is shown by the data which have been given for world production in Table 4.

The factors which have influenced the trend of addiction in this country, some of which are still operative, are many; but it is desired to call attention to only the more important ones in this paper.

Among the factors which have operated to increase addiction may be mentioned the advent of the hypodermic method of administration of drugs, which came into general use about the time of the Civil War, and was at first said to be a method of administering morphine without danger of causing addiction. In so far as addiction is concerned, this discovery proved to be a curse rather than a blessing. In 1884 the local anesthetic properties of cocaine were discovered, and it was not long thereafter until cocaine was widely used, especially in catarrh snuffs and nasal sprays. Many cocaine addicts were created in this way, and no doubt a large proportion of these became secondarily addicted to opium just as they do to-day. In 1898 heroin was put on the market and advertised as an opiate that would not cause addiction. It was soon discovered that this was not the case; but it was nearly 10 years before the medical pro-

fession fully appreciated the dangers of the drug. However, the increase in the number of addicts caused by this mistake was more than offset by influences tending to prevent addiction which began to operate before the end of this period.

The claim has been made that the laws which have been enacted to curb the use of narcotics have increased addiction by making illegal traffic in these drugs profitable. This factor is to be thought of, but that it is not as important as is believed by some is shown by the continuous decrease in the prevalence of addiction. In our own experience we have never met an addict who claimed that peddlers induced him to start on the drug. The drug peddler is the most hunted and despised man in the country to-day. It is therefore unlikely that he would deliberately approach a person with the idea of making a new customer. He is ready to supply persons who are already addicted, but even these sometimes come under suspicion and are refused narcotics. It is not believed, therefore, that the peddler has been an important factor in producing new addicts.

Among the influences which have tended to lessen addiction may be mentioned the enormous advances which have been made in medical science and in medical education during the last 30 years and the specific information that has been gained about narcotic addiction during that time. As a result, there has come about a better understanding of the dangers and therapeutic limitations of opium and cocaine, and these drugs are no longer used in many of the diseases for which they were at one time commonly prescribed. Another factor which has caused addiction to take a downward course is the enforcement of the restrictive laws enacted by the State and Federal Governments.

Practically all antinarcotic legislation in the United States has been enacted since 1897. By 1912 every State, except Delaware, and many large cities, including the city of Wilmington in Delaware, had laws or ordinances designed to regulate in some way the prescribing or selling of the opiates or cocaine, or both of these products (21).

The Federal pure food and drugs act, enacted in 1906, required manufacturers to state on the label the amount of opium, opium alkaloids or derivatives, and cocaine the preparation contained. In addition to other benefits, this provision did away with numerous opium cures that contained opium or opium alkaloids as the chief ingredient and were habit forming in themselves. In 1909 the importation of smoking opium was prohibited. Prior to that time, curiosity about this form of opium indugence started many people on an addiction career. Opium smoking is rare at present in the United States, but former smokers now taking opium or heroin are occasionally met with.

The committee appointed to investigate the extent of the use of habit-forming drugs in Massachusetts (22) reported, in 1917, that 78 of 267 addicts supplied with morphine, or morphine and cocaine, by one physician, had originally been opium smokers. Simon (20) reports 876 opium smokers, mostly Chinese, among 8,174 addicts arrested in New York in three years. The Harrison Act became effective March 1, 1915. Since then other laws designed to regulate still further the traffic in narcotics have been enacted, and at the present time the Federal Government has a check on these drugs at every step in their handling from the time a permit is issued to the manufacturer to import the crude drugs until the finished product reaches the ultimate consumer.

The first result of the Harrison law was to cause large numbers of addicts throughout the country to seek treatment. Many who were relieved of their addiction then have no doubt remained cured. The rigid enforcement of the law continues to impel addicts, even those who started the habit viciously in recent years, to seek relief. It is common for this type to give as a reason for seeking a cure that they are tired of dodging the police, and occasionally an addict comes for treatment because the peddlers have grown suspicious and refuse to supply him with the drug. The superintendent of the Norfolk State Hospital (22) reported in 1917, that over 90 per cent of the addicts who applied for treatment did so because they were having difficulty in securing their supplies of narcotics. Most of such cases relapse, but in the course of time those among them who are fairly normal are permanently cured.

Efficient as these laws have proved to be from a curative standpoint, their greater value lies in their effectiveness as preventive measures. When opium and its alkaloids could be bought anywhere, either in pure form or in proprietary medicines not known by the purchaser to contain narcotics, and when prescriptions for opium could be refilled, self-medication was a very common cause of the drug habit. This, no doubt, explains in part the great prevalence of addiction formerly noted in rural communities. Addiction by self-medication is now almost impossible, as narcotics in concentrated form can be obtained only on a physician's prescription, and exempt preparations contain too small an amount of drug to create the habit unless taken in enormous quantities. For the fiscal year 1923 (18) the quantity of taxable narcotic drugs purchased by manufacturers of nontaxable preparations was equivalent to approximately 3,300 ounces of morphine sulphate, an amount too small to permit of these preparations being used for the satisfaction of addiction to any great extent.

Physicians now make very few addicts unnecessarily. The numerous reports and forms which physicians are required to make out in order to prescribe narcotics in any form tends to keep them alert to the

dangers of these drugs, and mild forms of addiction now caused by a few weeks, or even months, of necessary prescribing quickly clear up after a few days of restlessness on the part of the patient and he is no wiser or worse off because of it. Formerly he could experiment further with his "doctor's prescription" and become strongly addicted without realizing it until too late. To illustrate this point, attention is called to the following facts: The Tennessee survey, made before the Harrison law became effective, showed, according to Brown, that physicians were responsible for about 50 per cent of the cases of addiction. In a recent report Simon states that less than 2 per cent of approximately 10,000 addicts arrested or committed to hospitals in New York City during the past three years owed their addiction to physicians. The latter figures are supported by our own findings. Examinations made by one of us during the past two years have shown that less than 5 per cent of the cases of recent addictions are caused by physicians. Comparison of New York City with the State of Tennessee is not altogether fair, because a certain type of addict tends to congregate in large cities and the class of persons from which the vicious type is recruited is more easily corrupted in these cities, but the percentage is so near that found by us in the examination of addicts from all parts of the country that it is thought that they may be taken as fairly representing conditions as they exist to-day.

A survey which furnishes an excellent illustration in restrospect of the effect that the Harrison law has had in reducing the extent of addiction is one made by Terry (13) in the city of Jacksonville in 1913, two years before the Harrison law became effective. At that time there was a city ordinance which prohibited the dispensing of opium except upon a physician's prescription, and which required all physicians writing prescriptions for any habit-forming narcotics to send a copy of the same together with the name and address of the individual for whom they were intended to the board of health. Indigent habitues were given prescriptions at the office of the board. Apparently no effort was made to discourage addiction or to limit the use of these drugs. The record of duplicate prescriptions and of patients applying at the health department showed 887 habitual users for the year 1913, or 1.31 per cent of the population. It is stated the figures do not represent the number of true residents, but include transients as well, and it appears that Terry personally saw and examined only 250 of the cases. Dr. William W. MacDonell, (23), the city health officer at the present time, reports that in 1914 the number of addicts registered had increased to 1,073. Registration of addicts was then discontinued, but a census taken in 1919 showed 111 addicts. In 1920 there were 55 additional cases registered, but some of the 111 had moved away. Addicts are not being registered at the present time, but Doctor MacDonell reports that during the year ending in April,

1924, there were only 20 addicts under treatment in Jacksonville, with 30 additional securing their supplies from peddlers, and a possible 50 more about whom there was no accurate knowledge.

As previously stated, it was unlawful to sell narcotics except on a physician's prescription, but no attempt was made to prevent the use of these drugs. How this worked out is shown by the fact that among Terry's cases there were 346 to whom cocaine alone was given, and 445 of the total number received this drug. Probably cocaine addiction is better understood now than it was in 1913, but even as late as 1919–20 some of the clinics gave cocaine along with morphine. It is now known that withdrawal of this drug causes little discomfort and no danger, but a physician who would venture to prescribe it to satisfy addiction, as well as the druggist who filled such a prescription, would be liable to prosecution under the Federal laws.

An illustration of the effect produced by the tremendous drive against narcotic addiction which has been going on in recent years is given by the answers to the questionnaire sent out by Simon in 1923 to the physicians of New York State, asking how many addicts they had treated in 1922. The 51.6 per cent who replied treated only 775 cases of addiction; and from the information furnished it seems that these were mostly old people or persons suffering from incurable diseases. In the Treasury Department survey, made in 1918, 37 per cent of physicians in New York State were treating 12,365 addicts.

The increasing difficulties of an addict's career since 1918 has compelled many of them to seek cure, but the difference in the two surveys just discussed is too great to be attributed to this factor alone. Most of it is no doubt due to a change in the viewpoint and practice of physicians. Responding to the temper of court rulings, physicians no longer prescribe narcotics merely to satisfy addiction, and some of them are loath to prescribe for an addict at all, even when his physical condition would seem to require a continuation of addiction, although there is nothing in the law or rulings of the Bureau of Internal Revenue which justifies this attitude. In 1918, physicians probably reported transients and other addicts not regularly treated by them. The changing attitude toward the narcotic problem was sufficient to reverse this by 1923. The total result has been that one survey counted too many addicts and the other too few.

Summary and Conclusions.

The evidence seems to show that a maximum estimate for the number of addicts in the United States at the present time would be 150,000. The estimates based on actual counts and on the available supplies of narcotics, together with the conditions reported by the physicians interviewed, point to about 110,000, which number is believed to be nearly correct.

The number of addicts has decreased steadily since 1900. Before this decrease set in there may have been 264,000 addicts in this country.

The greater number of addicts in prison at present as compared with former years is due to the rigid enforcement of recently enacted laws and not to an increase in the prevalence of addiction.

The average daily addiction dose of the opiates in terms of morphine sulphate or heroin hydrochloride is not less than 6 grains. The dose of cocaine hydrochloride is practically the same.

The quantities of narcotics imported by this country at the present time are believed to be only slightly in excess of the amounts required to supply medicinal needs.

While physicians have been credited with being responsible for the creation of many addicts in the past, it is concluded as a result of our studies and observations that but few cases of recent addiction can be so attributed.

Before the enactment of restrictive laws in this country there was much opium smoking and addiction to gum opium and laudanum. To-day addicts use the alkaloids or their derivatives almost exclusively. Cocaine hydrochloride was used alone by a large number of addicts prior to 1915, but is now used only in conjunction with the opiates except in a few cases.

The proportion of the delinquent type of addict is gradually increasing. This is apparently not due to an increase in the number of this type, but to a gradual elimination of normal types.

From the trend which narcotic addiction in this country has taken in recent years as a result of the attention given the problem by the medical profession and law enforcement officers, it is believed that we may confidently look forward to the time, not many years distant, when the few remaining addicts will be persons taking opium because of an incurable disease and addicts of the psychopathic delinquent type, who spend a good part of their lives in prisons.

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THE SINS OF THE FATHER.

An Abstract.[1]

By TALIAFERRO CLARK, Surgeon, United States Public Health Service; Medical Officer in Charge of Child Hygiene Investigations.

The history of the development of the public-health movement contains numerous examples of the concentration of attention on problems and measures which have their due meed of attention for a while until supplanted by something new, or until a given problem is solved or a given measure becomes a part of more or less permanent practice. In the early years "miasmatic influences" received weighty consideration, abatement of nuisances was considered a major function of the health department, filth *per se* was thought to engender disease, and quarantine and terminal disinfection were relied on to control the communicable diseases. At the present time, with the assistance of a Federal subsidy, the preservation of the health of the child is receiving attention in a number of States to an extent never before known. Bearing in mind the mistakes of other days and the possibility that the popular beliefs of to-day often become the myths of to-morrow, the scientific observer will examine carefully all of the only partially proved or theoretical measures before accepting them as final. The problems relating to the health of the child demand as weighty consideration as do those encountered in any other field of scientific investigations.

Although there has been a remarkable decline in the infantile mortality rate during the last decade, and particularly in the latter half, the antenatal and neonatal death rates remain practically unchanged; and, no doubt, many factors responsible for these deaths are as yet unrecognized or but poorly understood. This is shown on critical examination of infantile mortality statistics. If stillbirths are included in the calculation of the infant mortality rate, it is found that approximately one-third of infant deaths are stillbirths and one-third occur within the first three weeks of life. It is apparent, therefore, that approximately two-thirds of the infant mortality may be considered as due to causes operating at and prior to birth—causes which are as yet but slightly affected by the more general measures routinely employed to protect and promote infant life and health. In view of this circumstance a recent study by the British Medical Research Council on maternal syphilis as a cause of death of the fetus and of the newborn child, showing the relative significance of this disease as a congenital factor in the etiology of fetal and infant death, should be of special interest to workers in the field.

[1] Child Life Investigations: Maternal syphilis as a cause of death of the fœtus and of the new-born child. By John Norman Cruickshank. Medical Research Council, London, 1924.

OBJECT OF THE INVESTIGATION.

This study was undertaken with the object of determining—

1. The incidence of syphilis in women of the "hospital class" in Glasgow.
2. The incidence of congenital syphilis in the infants of these women.
3. The effects of syphilis on the incidence of abortion, premature birth, and stillbirth.
4. The relation between the presence of syphilis in the mother and the mortality in live-born infants.
5. The relation, if any, between syphilis in the mother and the occurrence of antepartum and postpartum hemorrhage.
6. The relation, if any, between syphilis in the mother and the occurrence of eclampsia.

SCOPE OF THE INVESTIGATION.

The study is based upon the examination of the Wassermann reaction of over 3,500 specimens of serum, of which 1,881 were obtained from women during pregnancy or immediately after delivery, 1,350 were taken at birth from the placental end of the cord of the infant, and the remainder were from infants and their mothers at varying periods after birth. The cases were taken in series entirely without reference to the clinical condition of the patients from whom it was removed. However, owing to the incompleteness of some of the records, the more detailed part of the investigation was limited to 1,000 cases of which more complete notes could be obtained.

To what extent the results of the study represent the true incidence of syphilis in the class of patients investigated depends in large measure on the view taken with regard to the value of the Wassermann reaction. On the question of the value of the reaction in the blood of the infant or, still more so, in the placental blood, opinion is somewhat divided. The significance of a negative Wassermann reaction in the adult is less certain than that of a positive reaction, but the general opinion of those who have worked on the subject is that in the great majority of cases a negative Wassermann reaction excludes the presence of syphilis. However, in estimating the prevalence of syphilis by reason of the Wassermann reaction alone it would appear that in any given series of cases the minimum incidence of the disease is obtained, but that the actual incidence in the series is not much greater than that indicated by the number of positive reactions.

INCIDENCE OF SYPHILIS IN MOTHERS.

In a series of 1,881 unselected mothers the blood was found to give a positive reaction in 9 per cent of cases, while in the 1,000 cases of

which a more detailed study was made, a positive reaction was obtained in 9.4 per cent. Of 94 women with a positive reaction, in the series of 1,000 cases, 70 were married and 24 were unmarried, with an incidence rate, as shown by the Wassermann reaction, of 8.9 per cent and 11.1 per cent, respectively.

INCIDENCE OF SYPHILIS IN INFANTS.

The placental blood of 1,350 infants was examined and the Wassermann reaction was found to be positive in 4.2 per cent, negative in 94.8 per cent, and doubtful in 1 per cent. The statement that in the majority of the cases women with a positive reaction do not induce a positive reaction in their infants was not supported by the findings in this study. There was agreement between the reaction of the mother's blood and that of the child at birth in 94.9 per cent of over 400 cases, and in only 3.2 per cent in the whole series was there a positive reaction in the mother and a negative one in the infant at birth.

An attempt was made to reexamine all the surviving infants in the series of 1,000 cases, but owing to practical difficulties it was possible to reexamine at periods varying from 3 weeks to 22 months after birth only 181 children and their mothers. In 85 cases reexamined between 10 and 20 months after delivery the Wassermann reaction in the blood of both mother and child remained negative; in 44 cases with a stronger positive Wassermann reaction at birth there was a negative reaction on reexamination at periods varying from 3 weeks to 20 months after birth; in 38 cases the mother's reaction remained positive; in 3 it was doubtful; and in 3 it changed from positive to negative. Of 51 cases in which there was a stronger positive reaction in the mother or child, or in both, at the time of delivery, a negative reaction was found in 47 of the children and positive reaction in 4 on reexamination. Of 111 children who gave a negative reaction at birth, not one gave a positive reaction when reexamined, but 2 gave a doubtful reaction.

VALUE OF THE WASSERMANN REACTION.

There is a widespread inclination to accept the results of the Wassermann reaction in the infant as reliable. In this series of cases all the children who at birth gave a negative Wassermann reaction continued to do so from 10 to 20 months afterwards; the great majority of those who at birth gave a positive reaction, gave a clearly negative reaction when reexamined from 3 weeks to 20 months afterwards; a small group of the cases in which the mother's reaction was positive or doubtfully positive at the time of delivery but subsequently became negative or doubtfully negative, the child born with negative or doubtful reaction when reexamined during the first year of life was found to be negative.

"The close agreement between the Wassermann reaction of the mother and child at birth, the persistence of a negative reaction in a case where one was originally present, and the disappearance of a positive reaction in a majority of infants in whose blood such reaction was obtained at birth, all point to the conclusion that the Wassermann reaction in the new born is of little value in proving the presence of congenital syphilis." The indications are that in most cases a positive reaction in the infant's blood at birth is due to the transference to the fœtal blood of reacting substances. The above facts and the results of the clinical examinations of infants included in this series of cases indicate that the incidence of congenital syphilis has been greatly exaggerated by most recent writers, and that the estimates of under 1 per cent made by many authorities is near the truth.

The Wassermann reaction in a child at birth is in close agreement with that of the mother, but the majority of the children born with a positive reaction lose that reaction during the first few weeks of life and not only remain negative but fail to develop clinical signs of syphilis during the first two years of life.

It is concluded therefore that—

(*a*) A positive Wassermann reaction in the blood of a newborn infant is due, at least in the majority of cases, to a transference of reacting substances from the mother.

(*b*) A positive Wassermann reaction in the newborn infant is of no value in diagnosis.

(*c*) The incidence of congenital syphilis is very much less than purely serological data would indicate.

(*d*) The high incidence of syphilis in the adult population of the class under consideration must be due either to acquired syphilis, or, less probably, to late congenital syphilis.

THE EFFECT OF SYPHILIS ON THE INCIDENCE OF ABORTION, PREMATURE BIRTHS, AND STILLBIRTHS.

Abortion.—Of 1,000 pregnancies observed, 128 ended in abortion. In the series, 94 mothers gave a positive reaction and the pregnancy of 6 of these ended in abortion. Of 889 mothers with a negative reaction the pregnancy of 122 ended in abortion.

The incidence of abortion for the negative group in this series was 13.6 per cent, and for the positive group, 6.4 per cent; but the number of positive cases in which abortion occurred form too small a series for any importance to be attached to this difference. However, it may at least be said that there was no greater incidence of abortion in the positive group than in the negative group.

Stillbirth.—Of 1,000 pregnancies observed, 114 (11.4 per cent) ended in the birth of a dead viable fetus. Of this number, 15

mothers gave a positive Wassermann reaction, and the reaction in the remaining 99 cases was negative. Excluding the cases which ended in abortion it is seen that the 114 stillbirths occurred in 737 pregnancies, or in 15.5 per cent. The incidence of stillbirth in 83 women of this group with a positive Wassermann reaction was 15, or 18.1 per cent.

Of the 654 women with a negative reaction, the incidence of stillbirth was 99, or 15.2 per cent. It is seen from these figures that stillbirth occurred in the series with slightly greater frequency among syphilitic women than among the nonsyphilitic women.

Prematurity.—Of the 737 viable infants born in the series of 1,000 pregnancies, 580, or 78.7 per cent were born approximately at term, and 157, or 21.3 per cent were born prematurely. In other words, 15.7 per cent of 1,000 pregnancies ended in the birth of a premature but viable child.

Of the 83 viable infants born to mothers with a positive reaction, 56, or 67.5 per cent were born at term, and 27, or 32.5 per cent, were born prematurely. It is thus seen that the incidence of premature birth of viable infants where the mother's Wassermann reaction was negative was only 19.8 per cent, whereas the incidence among mothers with a positive reaction was 32.5 per cent. These figures illustrate in a remarkable way the importance of syphilis as a cause of premature birth. Furthermore, these results confirm the view that syphilis is one of the most important causes of stillbirth and of interruption of pregnancy in its latter months, leading to premature birth, and more particularly to premature birth with the death of the fetus. Syphilis in the mother, however, is not shown to be a factor of predominating importance in causing the interruption of pregnancy in the earlier months.

RELATION BETWEEN SYPHILIS IN THE MOTHER AND THE OCCURRENCE OF ANTEPARTUM AND POSTPARTUM HEMORRHAGE

In the whole series of 1,000 pregnancies there were 66 cases of antepartum and postpartum hemorrhage, in 24 of which number there was accidental hemorrhage, in 23 unavoidable hemorrhage, and in 31 postpartum hemorrhage. Hemorrhage occurred in 6.6 per cent of the whole series of cases, and in 8.9 per cent of the cases in which the pregnancy ended in the birth of a viable fetus. Of these latter, hemorrhage occurred in 3.6 per cent of the group in which the mothers gave a positive Wassermann reaction and in 9.6 per cent in which the mothers' reaction was negative.

Accidental hemorrhage occurred in 2.4 per cent of the positive group and in 3.3 per cent of negative group; unavoidable hemorrhage in 1.3 per cent of the positive group, and 3.4 per cent in the negative group; and postpartum hemorrhage in 3.2 per cent of the negative

group, and in no case in the positive group. It appears, therefore, that, in the cases examined, syphilis was not a common factor in the occurrence of hemorrhage.

RELATION BETWEEN SYPHILIS IN THE MOTHER AND THE OCCURRENCE OF ECLAMPSIA.

Thirty-four of the women in the series of 1,000 cases were eclamptic. Furthermore, there were many cases of a lesser degree of toxemia and allied conditions. Considering only 737 women whose pregnancies ended in the birth of a viable fetus, it was found that eclampsia occurred in 4.61 per cent.

Among the 83 mothers with a positive reaction there were only 3 cases of eclampsia, or 3.6 per cent, and among the 654 negative mothers there were 31 cases, or 4.7 per cent. It appears from these figures that in this series of cases syphilis was not an important actor in the causation of eclampsia.

THE RELATION BETWEEN SYPHILIS IN THE MOTHER AND POSTNATAL MORTALITY IN THE INFANT.

Of 623 infants born alive, 555 were children of mothers whose blood gave a negative Wassermann reaction and 68 were the children of mothers with a positive reaction. "In following up the after history of these infants the constant difficulty was the fact that many of the patients disappeared after dismissal, so that no further information with regard to them could be obtained." However, since the average stay in the hospital of all patients is 11 days, and many of the cases spend a longer period in the wards, it may be taken that accurate figures as to the infant death rate are obtainable for the first 14 days of life. From a clinical and serological study of the infants in the series which survived births, the following conclusions are drawn:

(*a*) During the first fortnight of life the death rate among the infants of syphilitic mothers was 11.7 per cent, whereas in the infants of nonsyphilitic mothers it was 9.5 per cent.

(*b*) During the first month of life the death rates were 9.6 per cent and 8.2 per cent, respectively, in the Wassermann-positive and Wassermann-negative groups.

(*c*) During the second and third months of life the death rates were 3.9 per cent, in the positive, and 2.5 per cent in the negative group.

(*d*) From this point onward the difference in the death rate in the two groups become very marked, the number of deaths in the children of syphilitic mothers being particularly high during the fourth, fifth, and sixth months.

"The results of this study show that congenital syphilis is not by any means so common in the newborn as many published references to the subject would indicate, but they demonstrate that its incidence is sufficiently great to justify every effort being made to deal with it. * * * The basis of any scheme for dealing with this form of syphilis is an official system of prenatal and postnatal supervision. This already exists in the Child Welfare Centers * * * and it should not be difficult to provide for the treatment of pregnant, or recently delivered women at some or all of these clinics. In this way a greater number of syphilitic women would submit to treatment, and a considerable saving of fetal and infant life would be effected."

REPORTS OF THE HEALTH SECTION OF THE LEAGUE OF NATIONS.

The following is a summary of the statistics of disease prevalence published in the April number of the Monthly Epidemiological Report of the Health Section of the League of Nations Secretariat at Geneva, Switzerland:

Plague.—The death rate from plague in the Punjab, India, in February was higher than it has been at the corresponding period of any year since 1918, and it is stated that the mortality was likely to increase week by week until the end of April. The total mortality from plague for British India, however, was only about one-third of the mean January mortality for the period 1898–1922. The plague incidence in the Tananarive Province of Madagascar was five times higher than in the corresponding period of the previous year. Between January 1 and March 1, 121 cases of plague were reported from the Orange Free State, a figure much in excess of the total annual number of cases reported in any of the four previous years from the whole Union of South Africa. A widespread and virulent plague epizootic among the wild rodents had been reported in January in certain sections of the Union.

Cholera.—Of the 5,179 cases of cholera notified during the month of March, all but 12 occurred in British India.

Typhus and relapsing fever.—Sporadic cases of typhus fever are reported from most countries of Eastern Europe and Northern Africa, but the number is everywhere much smaller than during the preceding winter. It is stated that the incidence of typhus has been the lowest of any winter since the epidemic period began during the war.

Relapsing fever is stated to be exceedingly rare in all countries from which reports are available.

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Smallpox.—The prevalence of smallpox in the United States is again referred to. In England and Wales 337 cases of smallpox were reported during the four weeks ending March 22, as compared with 162 cases in the corresponding four weeks of 1923.

The severe smallpox epidemic in Hongkong was still continuing on March 8. During the four weeks ending on that date, 217 deaths were ascribed to this disease, and since November 4, 1923, 1,323 deaths from smallpox have been reported in Hongkong.

Dysentery.—The usually low prevalence of dysentery during the winter months is commented upon. Attention is called to the fact that the dysentery outbreaks of 1923 continued rather late in the year, particularly in Rumania and in Germany.

Enteric fever.—Although the seasonal low prevalence of typhoid and paratyphoid fevers in all countries is noted, it is stated that they remain more prevalent in several of the countries of Central Europe and in Italy than at the beginning of 1923.

Influenza.—The influenza epidemic, states the Monthly Epidemiological Report, appears to have culminated everywhere in the British Isles and in Western Europe after having caused a heavy mortality in a number of localities. An increase in the number of deaths from influenza in Germany became marked in the beginning of March. Increased mortality was praticularly marked in Great Britain, especially in certain of the cities. The epidemic appears to have been of a milder character in the Scandinavian countries. While cases of deaths of influenza appear in the reports of many countries in all parts of the world, no unusual prevalence was indicated except in the countries mentioned.

Lethargic encephalitis.—The prevalence of lethargic encephalitis, as indicated by the notification of cases, showed a decrease during the first months of 1924 in all countries for which reports were available, except England and Wales. In England and Wales the disease centered in Lancashire, where 60 per cent of the 397 cases reported from February 24 to March 22 occurred; the remaining 40 per cent were reported from many localities, but only a very few cases from each. The Monthly Epidemiological Report states that lethargic "encephalitis has coincided neither in time nor in frequency with the influenza outbreaks."

Poliomyelitis.—No significant variation in the prevalence of this disease has appeared in any of the countries for which reports are available during the first quarter of 1924.

Cerebrospinal meningitis.—The only important outbreak of this disease was indicated in the reports for the Northern Province of Nigeria, where 124 cases and 64 deaths were registered in the month of January, as compared with eight cases in December and one case in November. In almost all countries for which current reports of

this disease were available for the first two or three months in 1924, the incidence is lower than in the corresponding period of 1923. In England and Wales, Denmark, and Italy, the prevalence is somewhat higher than in the preceding year.

Scarlet Fever.—No unusual variations in the incidence of scarlet fever are commented upon except for Poland, the Kingdom of the Serbs, Croats, and Slovenes, and in Russia (Moscow and Leningrad). In the last three named countries the incidence of scarlet fever is somewhat higher and is accompanied by a considerable mortality.

Diphtheria.—The number of deaths due to diphtheria has been somewhat higher than that due to scarlet fever in Western and Central Europe and the United States, while the contrary has been the case in Eastern Europe. No unusual development in the prevalence of the disease is noted.

Measles.—A high incidence of measles for some months in past several countries, particularly the British Isles, is reported. A considerable increase in the mortality from measles is noted in London and Glasgow and, to a less extent, in the German cities and New York City. A relatively large number of deaths from this disease was recorded in January and February in Moscow and Leningrad. In Iraq (principally in Bagdad) 96 deaths were recorded in February.

Trachoma.—A special table on the prevalence of trachoma is published in the Monthly Epidemiological Report, with the statement that endeavors are being made to obtain reports on trachoma for every country from which such data are available. The following is the first preliminary table published:

Country.	Number of cases in period indicated.				
	1921	1922	1923	1924	
				Number.	Period covered.
Austria	219	320	377	64	Dec. 30-Mar. 8.
Czechoslovakia	3,110	2,796	3,337	542	January-February.
Danzig	38	11	15	2	Dec. 30-Feb. 2.
Esthonia	492	467	525	87	January-February.
Germany	------	1,522	1,192	148	Dec. 30-Mar. 1.
Latvia	0	0	2	0	January.
Poland	------	2,694	4,046	69	Dec 30-Jan. 19.
Switzerland	3	5	8	3	Dec. 30-Mar. 15.
New Zealand	12	7	5	4	Dec. 30-Feb. 23.
Panama (Canal Zone)	1	1	3	0	January.
Tunis	------	------	14	5	January-February.

Malaria in Russia.—The incidence of malaria among employees and their dependents on the Russian railway and waterway systems is published in some detail in the Monthly Epidemiological Report and indicates, it is stated, fairly accurately the true incidence of the disease in these population samples. The number of cases per 100 persons for whom records were available was as high as 81 in Central

Asia, and from 20 to 50 in certain other sections. On the waterway system the incidence of 102 per 100 exposed was reported on the Caspian system, of 73 in Turkestan, and 54 in the Volga region. These figures are for the period January to November, 1923.

Mortality reports.—Current weekly rates for all causes (annual basis) are given for more than 260 cities. The effect of the influenza epidemic is clearly shown in the figures for the British cities. The death rate for the 46 large German cities was 14.5 for the week ending March 8, as compared with 13.7 for the preceding week, and with 16 for the corresponding week of 1923. The infant mortality rates for a large number of cities in different parts of the world are also published by four-week periods. A considerable increase in the infant mortality rate for the English cities, particularly London, Glasgow, Belfast, and Dublin, is indicated. The infant mortality rate in the German cities also shows some increase over the preceding three months, although it is very much lower than it was for the corresponding period of the previous year. In Cracow the infant mortality rate was 145 for the four-week period ending February 23, but this has declined to 125 for the succeeding four-week period, a rate which was somewhat in excess of that for the preceding year. On the other hand, the number of deaths from influenza in Rio de Janeiro for the four weeks ending January 23 was only 49, as compared with 83 for the same period last year.

Mortality from ceratin causes.—Mortality figures for the principal infectious diseases are shown for a selected number of large cities all over the world, and are of especial interest because of the occurrence of influenza epidemics.

SUMMARY OF PROVISIONAL BIRTH AND MORTALITY FIGURES 1923.

The Department of Commerce announces that birth rates were lower for 1923 than for 1922 in 21 of the 27 States for which figures for the two years are shown in the accompanying summary. The highest 1923 birth rate (34.8 per 1,000 population) is shown for cities of Wyoming, and the lowest (15.6) is for rural districts of Montana.

Death rates were slightly higher for 1923 than for 1922 in 25 of the 36 States shown for both years. Three States, Connecticut, New York, and North Carolina, have the same rates for 1923 as for 1922, and eight States, Colorado, Idaho, Montana, Nebraska, Oregon, South Carolina, Utah, and Washington, have lower rates in 1923. The highest 1923 death rate (20.3 per 1,000 population) is shown for cities of Mississippi, and the lowest (6.5) for the rural districts of Idaho.

Infant mortality rates for 1923 are generally higher than those for 1922, as 17 of the 27 States show higher rates in 1923. The highest 1923 infant mortality rate (117) appears for cities of South Carolina,

and the lowest (51) for the rural districts of Utah and the cities of Washington. Infant mortality rates are shown for both years for 45 cities of 100,000 population or more in 1920. For 25 of these cities the 1923 infant mortality rates are lower than those of the previous year. The highest 1923 rate (110) is for Richmond, and the lowest (48) for Spokane.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923.

[The 1923 figures are provisional. Rates for Michigan and some rates for Massachusetts and Rhode Island have not been computed, as some transcripts have not yet been received from these States. The term "cities" indicates municipalities of 10,000 inhabitants or more in 1920. Small areas with high infant mortality rates which are designated by daggers (†) contain institutions for the care of children. Minor areas designated by asterisks (*) contain State insane asylums, State hospitals, etc.]

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Birth registration area (exclusive of Massachusetts, Michigan, and Rhode Island) for both years	22.2	22.5	12.3	11.9	77	76
Cities	22.1	22.0	13.0	12.5	78	80
Rural	22.4	22.9	11.7	11.2	76	73
Registration States.						
California	20.9	19.8	14.3	14.1	73	71
Cities	21.2	19.8	14.3	14.2	66	64
Rural	20.4	19.8	14.1	13.9	84	81
Connecticut	20.8	21.5	12.0	12.0	77	77
Cities	22.3	23.1	12.0	12.0	77	77
Rural	15.9	16.6	12.1	12.2	76	77
Delaware	19.7	20.6	14.0	13.2	104	100
Cities	19.8	21.5	13.2	12.1	99	100
Rural	19.6	19.8	14.9	14.3	110	101
Illinois	19.4	20.0	12.0	11.3	82	76
Cities	19.9	20.5	12.3	11.6	85	81
Rural	18.7	19.3	11.7	10.9	77	68
Indiana	21.7	21.4	12.9	11.9	71	67
Cities	22.3	21.3	13.1	11.9	79	76
Rural	21.3	21.5	12.7	12.0	65	61
Kansas	21.7	21.6	11.0	10.6	63	65
Cities	23.4	22.5	14.0	13.2	78	79
Rural	21.1	21.4	10.0	9.7	58	60
Kentucky	25.4	25.4	11.6	10.8	72	69
Cities	22.4	20.2	16.4	14.9	90	83
Rural	26.2	26.6	10.5	9.8	69	67
Maine	22.4	22.6	15.0	14.7	89	86
Cities	24.3	23.7	16.5	15.9	89	97
Rural	21.6	22.2	14.4	14.3	90	82
Maryland	23.0	23.2	14.7	13.6	95	94
Cities	22.9	22.8	15.1	14.1	87	93
Rural	23.1	23.6	14.1	12.9	105	96
Massachusetts	(1)	22.1	13.0	12.8	(1)	81
Cities	(1)	23.0	12.7	12.7	(1)	82
Rural	(1)	17.8	13.9	13.5	(1)	76
Minnesota	22.5	23.1	10.1	9.5	62	58
Cities	24.3	23.7	12.5	11.7	62	60
Rural	21.5	22.8	8.9	8.4	62	56
Mississippi	23.8	24.3	11.4	10.8	68	68
Cities	23.4	25.1	20.3	21.8	88	87
Rural	23.9	24.2	10.6	9.9	67	66
Montana	17.1	18.3	7.9	8.6	71	70
Cities	22.7	22.0	12.7	13.2	73	78
Rural	15.6	17.4	6.7	7.4	70	68
Nebraska	22.0	23.5	9.3	9.4	56	57
Cities	23.7	22.8	13.0	13.0	67	71
Rural	21.6	23.6	8.2	8.3	52	53
New Hampshire	20.8	21.9	15.0	14.6	93	80
Cities	24.3	25.0	14.4	14.1	101	90
Rural	17.9	19.3	15.5	15.1	84	69
New Jersey	22.1	22.5	12.3	12.2	72	79
Cities	23.8	24.1	12.0	11.9	71	79
Rural	19.0	19.4	12.9	12.7	74	77

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration States—Continued.						
New York	21.2	21.6	13.0	13.0	72	77
Cities	21.8	22.2	12.4	12.4	71	78
Rural	19.0	19.6	15.4	15.0	76	72
North Carolina	30.0	30.9	11.6	11.6	82	80
Cities	28.0	28.2	16.1	16.0	110	96
Rural	30.3	31.3	10.9	11.0	78	77
Ohio	21.0	20.4	12.3	11.3	75	72
Cities	21.6	20.6	12.0	11.1	75	76
Rural	20.2	20.2	12.6	11.6	75	65
Oregon	18.1	18.4	10.9	11.5	57	58
Cities	18.6	19.5	12.6	13.4	53	59
Rural	17.9	17.8	9.8	10.4	59	58
Pennsylvania	23.9	23.8	13.2	12.3	90	88
Cities	23.3	23.1	13.9	13.0	87	89
Rural	24.5	24.6	12.5	11.5	94	87
Rhode Island	(1)	23.1	13.8	13.1	(1)	85
Cities	(1)	23.5	13.9	13.2	(1)	86
Rural	(1)	20.9	13.1	12.8	(1)	79
South Carolina	25.4	26.9	11.8	12.0	96	93
Cities	26.3	28.9	20.1	21.6	117	105
Rural	25.3	26.7	10.9	10.9	94	91
Utah	28.6	31.6	9.4	10.4	58	73
Cities	22.8	29.2	12.4	12.5	74	69
Rural	31.9	33.0	7.7	9.2	51	75
Vermont	20.8	21.3	15.2	14.7	76	73
Cities	24.5	24.4	16.5	15.8	90	98
Rural	20.2	20.9	15.0	14.5	73	68
Virginia	26.7	27.3	12.8	12.1	84	77
Cities	22.4	23.2	13.7	13.8	99	94
Rural	28.2	28.6	12.5	11.5	80	72
Washington	17.5	18.0	9.6	10.1	57	62
Cities	18.8	18.8	10.2	10.6	51	58
Rural	16.3	17.3	9.0	9.6	62	65
Wisconsin	21.3	21.4	10.7	10.1	71	71
Cities	23.2	22.2	11.8	10.8	77	78
Rural	20.1	21.0	10.0	9.7	66	67
Wyoming	23.2	25.1	10.3	9.3	80	79
Cities	34.8	34.4	16.1	14.2	102	104
Rural	21.3	23.6	9.3	8.5	74	73
Registration cities.						
Aberdeen, Wash	24.5	19.2	11.3	10.2	36	70
Adamstown, Mass	(1)	25.4	8.1	9.9	(1)	79
Akron, Ohio	23.6	21.2	8.2	7.5	66	70
Alameda, Calif	16.2	16.7	10.2	11.3	40	42
Albany, N. Y	19.5	20.5	16.2	15.7	90	80
Alexandria, Va	27.2	26.7	15.9	15.1	114	109
Allentown, Pa	21.2	21.0	14.2	14.9	95	106
Alliance, Ohio	22.7	20.2	11.2	10.0	69	77
Alton, Ill	25.1	23.8	14.1	12.0	84	59
Altoona, Pa	24.8	23.4	12.5	10.9	72	78
Ambridge, Pa	26.4	29.1	7.5	7.2	64	91
Amesbury town, Mass	(1)	13.9	13.1	11.4	(1)	136
Amsterdam, N. Y	25.9	24.7	11.4	12.9	62	77
Anaconda, Mont	18.4	19.1	11.5	10.4	89	113
Anderson, Ind	20.0	18.2	11.6	11.1	83	73
Anderson, S. C	42.4	45.0	24.8	27.1	97	95
Annapolis, Md	21.5	21.7	15.1	14.2	130	105
Ansonia, Conn	18.3	21.8	9.5	10.2	97	75
Appleton, Wis	24.3	23.0	13.5	12.7	50	71
Arkansas City, Kans	25.9	21.5	14.5	12.2	58	80
Arlington town, Mass	(1)	19.2	10.8	11.4	(1)	53
Asbury Park, N. J	15.9	17.1	13.8	12.3	86	77
Asheville, N. C.*	26.2	29.0	25.1	21.6	134	95
Ashland, Ky	29.8	26.3	15.5	12.0	111	81
Ashland, Wis	24.8	25.3	16.6	15.5	68	101
Ashtabula, Ohio	24.7	21.8	12.1	9.8	68	71
Astoria, Oreg	16.8	20.6	11.1	10.8	69	29

[1] See headnote.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration cities—Continued.						
Atchison, Kans	23.0	19.4	14.0	15.0	69	73
Atlantic City, N. J	24.0	23.3	19.7	19.0	85	85
Attleboro, Mass	(1)	22.4	12.5	10.7	(1)	61
Auburn, Me	15.6	15.4	12.2	11.4	105	119
Auburn, N. Y	20.5	20.6	13.2	12.9	68	64
Augusta, Me.*	26.3	25.3	23.5	18.1	55	52
Aurora, Ill	23.8	23.5	13.3	13.9	61	72
Austin, Minn	25.9	22.6	11.8	9.2	75	81
Bakersfield, Calif	32.6	30.7	18.0	18.0	86	66
Baltimore, Md	22.6	22.6	15.0	14.2	86	86
Bangor, Me.*	18.8	19.9	20.2	19.6	77	94
Barberton, Ohio	20.6	22.8	9.5	9.5	94	95
Barre, Vt	19.3	19.0	16.9	14.3	62	74
Batavia, N. Y	28.8	27.0	18.3	15.3	101	80
Bath, Me	12.0	12.7	9.8	8.9	85	93
Bayonne, N. J	26.1	26.5	8.3	9.0	62	79
Beacon, N. Y.*	17.9	18.2	19.2	18.8	56	65
Beaver Falls, Pa	24.5	23.8	14.6	15.0	82	129
Bellaire, Ohio	23.9	25.6	12.6	10.6	106	100
Belleville, Ill	19.2	19.2	14.3	12.3	92	40
Belleville, N. J.*	19.7	20.5	10.9	19.3	57	102
Bellingham, Wash	22.6	23.1	13.5	10.9	70	42
Belmont town, Mass	(1)	11.1	8.6	10.8	(1)	97
Beloit, Wis	22.7	20.2	12.3	9.9	60	48
Berkeley, Calif	15.4	15.5	9.0	8.8	41	37
Berlin, N. H	30.6	30.9	9.7	9.8	94	83
Berwick, Pa	25.0	24.4	11.7	10.6	84	103
Berwyn, Ill	14.2	15.8	7.6	7.3	94	74
Bethlehem, Pa	23.8	21.7	8.7	8.3	68	82
Beverly, Mass	(1)	18.5	12.0	9.8	(1)	37
Biddeford, Me	35.2	35.7	17.0	15.3	116	89
Billings, Mont	26.8	25.2	12.8	11.6	84	68
Biloxi, Miss	22.1	31.2	12.9	12.8	102	88
Binghampton, N. Y.*	20.7	21.1	15.9	14.7	73	74
Bloomfield, N. J	11.8	11.8	7.0	7.3	38	79
Bloomington, Ill	19.5	18.2	13.6	14.0	69	82
Bloomington, Ind	33.8	28.3	14.3	12.4	70	59
Blue Island, Ill	23.9	21.7	16.4	14.9	106	91
Boston, Mass	(1)	24.4	14.9	14.9	(1)	92
Braddock, Pa	34.6	32.8	17.1	14.2	86	92
Bradford, Pa	25.2	23.3	15.4	14.8	63	36
Braintree town, Mass	(1)	19.0	13.1	11.2	(1)	19
Bridgeport, Conn	22.8	23.8	11.4	11.1	80	64
Bridgeton, N. J	23.6	24.8	18.9	17.8	62	90
Bristol, Conn	23.9	25.7	10.4	10.4	77	78
Bristol, Pa	27.5	29.5	11.4	13.7	72	103
Bristol town, R. I	(1)	19.4	11.4	15.3	(1)	204
Brockton, Mass	(1)	21.8	10.6	10.7	(1)	70
Brookline town, Mass	(1)	7.6	10.8	11.4	(1)	75
Bucyrus, Ohio	18.6	17.4	11.7	12.3	67	73
Buffalo, N. Y	23.0	23.0	13.5	13.4	90	103
Burlington, Vt	28.5	29.0	15.9	16.6	104	91
Butler, Pa	25.4	24.4	10.6	10.5	56	74
Butte, Mont	15.0	13.5	12.8	13.0	75	68
Cairo, Ill	14.2	16.1	17.0	17.0	155	137
Cambridge, Mass	(1)	27.1	13.7	13.2	(1)	76
Cambridge, Ohio	27.4	24.9	14.8	13.4	53	74
Camden, N. J	25.6	25.9	14.5	13.7	89	88
Canonsburg, Pa	23.7	25.8	9.0	10.3	71	81
Canton, Ill	20.8	19.5	17.4	14.2	109	61
Canton, Ohio	24.1	22.9	10.4	10.2	62	86
Carbondale, Pa	25.0	23.1	15.4	13.5	110	100
Carlisle, Pa	23.7	23.7	16.7	13.7	95	76
Carnegie, Pa	26.7	26.5	8.8	9.2	93	92
Carrick, Pa	18.8	19.9	8.3	7.0	48	52
Carteret, N. J	25.2	25.2	6.2	6.1	95	96
Casper, Wyo	40.9	38.5	18.9	15.0	100	95
Central Falls, R. I	(1)	25.3	9.8	10.6	(1)	113

[1] See headnote.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration cities—Continued.						
Centralia, Ill	23.0	25.4	15.3	12.8	132	78
Chambersburg, Pa	20.3	24.5	15.1	15.2	97	69
Champaign, Ill	20.3	19.1	11.5	13.2	59	73
Chanute, Kans	22.8	21.3	16.1	13.5	66	120
Charleroi, Pa	21.1	23.0	8.1	8.9	66	105
Charleston, S. C	24.3	25.4	20.3	19.8	150	129
Charlotte, N. C	28.7	28.6	15.0	14.3	104	85
Charlottesville, Va	27.7	30.1	16.5	12.2	75	67
Chelsea, Mass	(1)	28.5	11.5	12.6	(1)	53
Chester, Pa	23.6	22.2	12.8	11.8	98	124
Cheyenne, Wyo	28.3	30.2	13.1	13.4	106	115
Chicago, Ill	19.4	20.5	11.7	11.2	87	84
Chicago Heights, Ill	23.0	23.8	12.7	8.6	127	73
Chicopee, Mass	(1)	21.4	9.1	8.6	(1)	106
Chillicothe, Ohio	25.7	25.0	14.8	12.5	98	40
Cicero, Ill	12.4	12.9	5.3	6.2	91	100
Cincinnati, Ohio	20.5	19.5	16.1	14.9	80	74
Cleveland, Ohio	23.2	21.9	10.8	10.3	67	78
Cleveland Heights, Ohio	4.4	3.6	9.0	7.6	103	76
Clifton, N. J	17.1	18.4	7.0	5.6	66	65
Clinton, Ind	18.2	22.3	6.9	7.5	91	66
Clinton town, Mass	(1)	29.4	13.4	12.8	(1)	68
Coatesville, Pa	17.5	17.4	8.5	6.1	87	86
Coffeyville, Kans	28.9	27.8	14.1	12.0	78	79
Cohoes, N. Y	21.4	20.8	13.7	13.3	101	96
Columbia, Pa	23.6	23.3	14.8	14.3	59	103
Columbia, S. C.*	25.8	33.9	25.0	32.4	105	100
Columbus, Miss	16.7	19.4	10.4	11.8	82	33
Columbus, Ohio	21.1	19.8	15.3	13.2	76	84
Concord, N. H.*	17.7	19.8	21.5	21.0	81	74
Connellsville, Pa	22.1	21.3	12.9	10.0	109	74
Corning, N. Y	23.1	24.1	15.1	11.1	86	56
Cortland, N. Y	24.1	22.5	18.1	15.1	74	74
Coshocton, Ohio	19.7	19.7	14.8	12.4	45	86
Covington, Ky	22.9	20.8	14.8	14.2	71	78
Cranston, R. I.*	(1)	18.0	19.8	18.0	(1)	81
Crawfordsville, Ind	17.8	20.5	15.1	14.3	70	75
Cumberland, Md	27.6	26.6	16.2	13.9	106	89
Cumberland town, R. I	(1)	23.1	12.6	11.0	(1)	73
Cuyahoga Falls, Ohio	20.2	22.2	9.3	9.6	76	73
Danbury town, Conn	23.6	24.8	19.2	14.0	97	71
Danvers town, Mass.*	(1)	9.6	28.1	31.5	(1)	126
Danville, Ill	23.9	23.0	17.0	14.1	81	77
Danville, Va	29.0	28.8	16.0	16.1	94	111
Dayton, Ohio	18.9	18.9	11.8	11.0	80	71
Decatur, Ill	22.0	22.0	13.4	12.5	84	74
Dedham town, Mass	(1)	19.6	10.4	8.4	(1)	37
Derby, Conn	36.3	37.6	16.6	16.4	89	77
Dickson City, Pa	28.5	31.4	7.0	7.3	81	97
Donora, Pa	28.5	28.1	7.1	7.0	95	108
Dover, N. H	23.8	23.6	15.7	16.1	77	65
Dubois, Pa	26.0	29.7	12.4	12.0	115	99
Duluth, Minn	22.6	21.4	10.1	9.5	73	74
Dunkirk, N. Y	25.2	24.1	13.9	13.2	87	75
Dunmore, Pa	25.5	27.0	11.8	13.5	152	175
Duquesne, Pa	25.2	28.2	8.7	7.7	116	104
Durham, N. C	26.6	23.5	15.8	14.3	136	104
East Chicago, Ind	24.5	24.0	10.4	7.7	124	103
East Cleveland, Ohio	5.0	4.9	6.6	7.0	82	95
Easthampton town, Mass	(1)	26.3	9.6	9.1	(1)	76
East Hartford town, Conn	10.5	13.9	7.7	9.0	66	103
East Liverpool, Ohio	26.2	23.9	15.0	15.1	91	97
Easton, Pa	21.6	20.8	17.2	14.9	97	82
East Orange, N. J	6.2	7.6	8.1	6.9	57	53
East Providence town, R. I	(1)	16.6	10.6	10.8	(1)	93
East St. Louis, Ill	19.5	19.1	13.8	10.8	108	87
East Youngstown, Ohio	30.5	27.7	8.6	8.5	121	139
Eau Claire, Wis.*	31.8	30.0	17.2	14.6	66	57

[1] See headnote.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration cities—Continued.						
Eldorado, Kans	23.6	21.7	9.0	8.8	55	46
Elgin, Ill.*	19.3	19.2	23.3	20.4	48	43
Elizabeth, N. J	23.9	24.9	11.6	11.3	69	66
Elkhart, Ind	23.5	22.3	12.9	11.7	65	58
Elmira, N. Y	22.0	21.0	14.0	13.1	93	71
Elwood, Ind	24.9	25.7	12.8	11.2	85	82
Elyria, Ohio	23.3	23.4	11.0	11.3	45	79
Emporia, Kans	25.1	22.0	16.2	11.9	83	65
Enfield town, Conn	23.8	24.4	9.6	9.8	84	64
Englewood, N. J	41.6	41.2	19.3	17.2	41	95
Erie, Pa	22.3	22.3	12.0	10.9	68	67
Eugene, Oreg	30.7	27.3	15.6	19.9	41	61
Eureka, Calif	28.8	25.5	22.4	18.7	96	74
Evanston, Ill	31.7	30.2	11.5	12.3	46	51
Evansville, Ind	19.3	17.5	11.7	11.7	73	103
Everett, Mass	(1)	19.7	9.0	8.6	(1)	65
Everett, Wash	17.7	17.0	11.4	10.5	73	64
Fairfield town, Conn	15.4	17.4	6.9	8.0	77	84
Fall River, Mass	(1)	29.2	13.7	16.0	(1)	127
Faribault, Minn.*	23.0	23.2	18.6	17.7	59	67
Farrell, Pa	23.6	24.8	8.3	6.3	107	84
Findlay, Ohio	19.7	20.8	15.3	12.9	77	58
Fitchburg, Mass	(1)	25.8	11.1	10.9	(1)	80
Florence, S. C	31.5	32.9	24.9	23.6	141	104
Fond du Lac, Wis	27.6	25.6	15.0	14.9	69	70
Forest Park, Ill	7.7	9.9	8.6	8.3	74	111
Fort Scott, Kans	24.7	25.8	18.7	16.3	90	69
Fort Wayne, Ind	22.7	20.7	12.9	11.0	62	66
Framingham town, Mass	(1)	35.4	14.9	13.8	(1)	41
Frankfort, Ind	18.4	22.2	13.3	12.0	78	77
Frederick, Md	27.6	28.4	25.0	18.1	80	100
Freeport, Ill	22.3	21.0	16.2	15.0	66	78
Fremont, Ohio	17.6	15.3	10.5	10.5	68	60
Fresno, Calif.†	25.7	27.1	11.9	11.8	90	83
Fulton, N. Y	24.6	25.1	14.0	12.0	99	87
Galesburg, Ill	23.9	19.1	16.9	15.3	82	101
Gardner town, Mass	(1)	21.9	12.7	13.6	(1)	75
Garfield, N. J	27.9	29.3	6.7	6.6	71	58
Gary, Ind	24.5	24.3	12.5	9.8	99	82
Gastonia, N. C	41.8	43.2	16.3	15.6	101	85
Geneva, N. Y	23.3	24.9	14.5	11.8	92	71
Glendale, Calif.*	36.7	26.9	23.6	23.9	42	53
Glens Falls, N. Y	23.6	20.7	15.6	17.3	74	54
Gloucester, Mass	(1)	22.6	12.9	13.5	(1)	71
Gloucester, N. J	18.1	17.5	10.7	10.2	109	98
Gloversville, N. Y	19.7	17.6	14.7	13.7	59	78
Goldsboro, N. C	28.8	29.3	18.8	17.0	161	86
Grand Island, Nebr	23.1	22.0	16.3	12.8	89	71
Granite City, Ill	26.5	24.1	13.7	10.5	79	86
Great Falls, Mont	27.6	26.2	9.4	12.0	44	83
Green Bay, Wis	28.4	30.0	17.9	16.8	95	98
Greenfield town, Mass	(1)	18.6	9.6	8.2	(1)	32
Greensboro, N. C	25.3	23.7	11.9	15.6	77	77
Greensburg, Pa	27.0	30.5	18.5	18.5	101	61
Greenville, Miss	21.0	26.4	22.9	27.1	97	53
Greenville, S. C	25.0	25.5	14.9	13.0	96	67
Greenwich town, Conn	18.1	20.8	12.1	11.7	62	63
Hackensack, N. J	39.7	37.2	20.6	19.1	60	74
Hagerstown, Md	22.5	22.4	13.9	11.7	89	98
Hamilton, Ohio	26.1	24.8	13.5	11.3	75	64
Hammond, Ind	23.7	22.5	10.9	9.3	108	79
Harrisburg, Pa	19.8	18.9	15.1	12.6	86	68
Harrison, N. J	23.3	21.7	8.1	8.3	64	98
Hartford, Conn	25.4	27.3	13.1	14.0	79	88
Hastings, Nebr	24.8	24.7	15.7	16.6	81	89
Hattiesburg, Miss	18.6	31.5	9.4	11.6	43	56
Haverhill, Mass	(1)	20.1	10.9	11.8	(1)	71
Hazelton, Pa	26.9	28.8	12.3	14.0	93	111

[1] See headnote.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration cities—Continued.						
Helena, Mont	22.8	25.0	15.3	14.9	73	73
Henderson, Ky	23.9	21.3	16.2	14.4	104	99
Herkimer, N. Y	26.7	24.1	15.6	11.2	75	89
Herrin, Ill	29.0	29.1	10.9	12.5	110	103
Hibbing, Minn	30.7	31.7	8.7	6.6	71	55
High Point, N. C	32.0	32.3	10.7	13.2	69	61
Hoboken, N. J	21.7	22.7	13.0	14.0	74	89
Holyoke, Mass.†	(1)	23.2	13.8	14.2	(1)	119
Homestead, Pa	23.3	22.4	9.6	7.7	83	94
Hoquiam, Wash	21.8	21.1	9.9	10.4	60	54
Hornell, N. Y	20.0	20.6	14.0	12.3	80	60
Hudson, N. Y	31.3	27.7	18.3	17.2	62	70
Huntington, Ind	21.6	23.3	12.3	11.4	30	63
Hutchinson, Kans	20.9	21.8	10.9	11.6	54	86
Ilion, N. Y	14.8	16.9	12.5	11.5	94	59
Independence, Kans	20.1	22.9	10.9	13.2	52	96
Indianapolis, Ind	20.7	19.9	14.4	13.2	86	77
Ironton, Ohio †	28.9	25.3	16.9	13.1	104	78
Irvington, N. J	12.8	14.4	8.4	8.2	62	65
Ithaca, N. Y	24.1	25.0	17.5	16.3	72	71
Jackson, Miss.*	25.8	24.1	27.2	32.2	115	118
Jacksonville, Ill.*	19.4	20.6	31.8	32.2	78	80
Jamestown, N. Y	22.1	21.2	12.9	10.9	69	58
Janesville, Wis	18.9	17.1	11.3	10.7	53	63
Jeannette, Pa	29.8	31.3	10.1	7.3	107	75
Jeffersonville, Ind	19.8	21.5	15.1	14.1	55	83
Jersey City, N. J	23.7	23.8	12.0	11.9	76	86
Johnstown, N. Y	11.9	13.0	13.3	11.9	136	84
Johnstown, Pa	29.0	27.2	15.1	15.2	90	118
Joliet, Ill	20.2	18.2	12.6	11.4	102	107
Kankakee, Ill	24.8	21.4	13.5	14.2	74	74
Kansas City, Kans	23.4	21.3	14.9	13.1	97	90
Kearny, N. J	18.8	18.4	10.7	11.0	54	76
Keene, N. H	21.9	22.3	16.4	15.8	47	82
Kenmore, Ohio	23.5	22.6	5.0	4.9	57	64
Kenosha, Wis	19.7	21.6	8.7	7.9	91	71
Kewanee, Ill	19.1	19.3	12.9	11.5	85	83
Kingston, N. Y	21.4	20.6	19.6	19.0	99	88
Kokomo, Ind	22.9	21.1	11.6	10.3	72	77
Lackawanna, N. Y.*	44.3	43.2	20.5	19.4	162	218
Laconia, N. H	28.5	23.6	19.0	17.0	110	153
La Crosse, Wis	28.9	28.3	16.5	15.4	72	53
Lafayette, Ind	30.9	28.5	20.7	19.4	50	67
Lakewood, Ohio	14.5	13.3	8.4	7.2	77	70
Lancaster, Ohio	22.8	24.1	14.6	13.5	66	91
Lancaster, Pa	27.0	25.0	17.0	15.0	81	71
La Porte, Ind	21.8	22.8	13.8	13.0	69	75
La Salle, Ill	23.5	22.5	12.7	12.2	81	70
Laurel, Miss	35.7	30.2	18.7	19.0	50	51
Lawrence, Kans	19.9	18.8	14.1	16.0	52	60
Lawrence, Mass	(1)	24.4	11.7	11.6	(1)	87
Leavenworth, Kans	18.2	18.6	17.6	16.4	91	70
Lebanon, Pa	25.0	24.9	16.0	13.6	107	90
Leominster, Mass	(1)	23.3	11.3	11.8	(1)	91
Lewiston, Me	32.8	29.1	19.3	18.6	108	137
Lexington, Ky.*	21.8	19.0	23.3	22.8	96	97
Lima, Ohio	23.7	21.6	13.6	12.2	66	73
Lincoln, Ill.*	18.5	15.7	24.9	19.4	137	52
Lincoln, Nebr	23.7	22.5	11.9	12.6	54	62
Little Falls, N. Y	21.8	24.4	11.3	13.3	72	99
Lockport, N. Y	21.5	19.5	14.4	13.9	92	87
Logansport, Ind	19.8	17.6	12.7	12.1	47	59
Long Beach, Calif	27.0	19.3	15.6	14.3	41	38
Long Branch, N. J	47.2	42.6	29.4	25.5	93	78
Lorain, Ohio	24.8	22.8	11.1	8.2	95	90
Los Angeles, Calif	24.8	22.0	15.9	15.2	72	73
Louisville, Ky	21.6	19.4	16.2	14.1	91	76
Lowell, Mass	(1)	25.5	14.6	13.4	(1)	99
Lynchburg, Va	29.0	29.2	15.5	14.1	72	85

[1] See headnote.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration cities—Continued.						
Lynn, Mass	(1)	20.2	11.7	11.8	(1)	73
McKeesport, Pa	28.0	25.6	14.4	12.7	78	97
McKees Rocks, Pa	26.3	27.2	11.1	8.6	124	96
Madison, Wis	24.3	23.5	13.3	11.6	96	66
Mahanoy City, Pa	21.7	23.1	11.7	10.4	124	111
Malden, Mass	(1)	21.6	11.7	11.6	(1)	55
Manchester, N. H	24.9	25.2	12.8	12.7	117	97
Manchester town, Conn	20.4	22.9	9.5	8.7	71	69
Manitowoc, Wis	21.8	21.3	12.4	12.7	107	123
Mankato, Minn	29.3	28.2	15.7	15.1	57	54
Mansfield, Ohio	19.8	19.1	12.7	11.5	73	62
Marietta, Ohio	19.8	21.5	14.5	13.4	53	61
Marinette, Wis	20.2	20.6	13.8	13.7	47	85
Marion, Ind	21.7	22.1	14.8	14.0	83	60
Marion, Ohio	19.9	20.8	13.4	11.5	98	70
Marlborough, Mass	(1)	24.8	12.8	13.8	(1)	59
Martins Ferry, Ohio	22.7	21.7	15.6	12.4	102	64
Massillon, Ohio	23.6	21.1	12.7	10.4	66	70
Mattoon, Ill	25.9	22.5	14.3	12.5	73	85
Maywood, Ill	11.7	12.9	7.0	6.7	64	54
Meadville, Pa	22.7	23.0	15.8	17.2	72	61
Medford, Mass	(1)	17.5	9.6	8.0	(1)	50
Melrose, Mass	(1)	18.7	12.1	12.3	(1)	45
Meriden town, Conn	21.4	21.8	12.1	12.9	69	71
Meridian, Miss.*	22.4	21.1	17.4	17.2	84	80
Methuen, Mass	(1)	22.9	12.4	12.6	(1)	92
Michigan City, Ind	28.4	27.0	14.5	13.1	79	68
Middletown, N. Y.*	16.5	18.2	21.6	21.7	75	60
Middletown, Ohio	29.4	29.1	10.4	9.9	81	74
Middletown town, Conn.*	26.4	26.9	22.4	20.1	72	74
Milford town, Conn	12.8	13.5	9.5	10.9	45	76
Milford town, Mass	(1)	32.0	13.4	14.2	(1)	60
Millville, N. J	23.3	22.1	16.0	13.0	102	98
Milwaukee, Wis	22.7	21.0	10.8	9.9	79	83
Minneapolis, Minn	23.7	23.8	11.1	10.8	54	54
Mishawaka, Ind	38.6	33.2	14.3	10.5	66	63
Missoula, Mont	35.9	36.4	18.3	19.3	97	76
Moline, Ill	19.1	20.4	10.5	8.7	65	49
Monessen, Pa	28.8	28.3	6.3	7.3	69	94
Montclair, N. J	9.7	8.9	8.0	7.6	95	151
Morristown, N. J.*	43.3	38.2	25.1	22.9	99	75
Mount Carmel, Pa	30.1	32.9	10.4	10.6	105	70
Mount Vernon, N. Y	22.3	21.3	9.5	10.5	50	73
Muncie, Ind	20.2	19.1	13.5	10.7	85	81
Murphysboro, Ill	22.3	19.8	14.5	12.2	61	88
Nanticoke, Pa	29.1	30.0	14.9	12.1	112	110
Nashua, N. H	25.9	28.0	14.8	13.9	109	92
Natchez, Miss	16.4	21.9	17.8	18.5	118	121
Natick town, Mass	(1)	23.4	14.6	13.9	(1)	73
Naugatuck, Conn	11.5	12.9	7.3	6.7	98	64
New Albany, Ind	21.8	21.6	13.8	13.8	42	68
Newark, N. J	25.3	25.5	11.6	11.7	68	75
Newark, Ohio	19.3	20.5	14.2	14.3	69	67
New Bedford, Mass	(1)	26.2	12.2	12.3	(1)	104
New Bern, N. C	21.3	24.4	18.2	19.8	138	171
New Britain, Conn	25.4	25.3	8.7	9.0	79	99
New Brunswick, N. J	27.4	28.0	14.5	13.2	69	75
Newburgh, N. Y	20.4	20.5	15.9	15.9	69	74
Newburyport, Mass	(1)	22.6	16.1	13.0	(1)	50
New Castle, Ind	18.4	20.2	10.2	9.4	78	79
New Castle, Pa	28.4	26.7	11.2	12.1	82	95
New Haven, Conn	22.9	23.2	12.6	13.3	74	75
New Kensington, Pa	34.4	31.7	17.3	14.4	67	92
New London, Conn	27.0	25.0	15.0	13.7	84	76
New Philadelphia, Ohio	23.4	24.3	9.9	11.1	70	95
Newport, Ky	18.0	19.1	10.9	11.5	93	87
Newport, R. I	(1)	17.4	11.3	11.0	(1)	37
Newport News, Va	16.5	18.1	9.5	10.6	81	98
New Rochelle, N. Y	17.9	19.9	8.9	9.6	47	48
Newton, Mass	(1)	16.6	11.4	11.3	(1)	53

[1] See headnote.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration cities—Continued.						
New York, N. Y	21.7	22.2	11.7	12.0	67	75
Bronx borough	17.7	18.4	9.4	9.2	56	64
Brooklyn borough	22.7	23.0	10.6	11.6	60	72
Manhattan borough	22.7	23.5	13.9	13.5	76	80
Queens borough	19.3	18.9	9.8	10.7	67	75
Richmond borough	22.4	23.0	15.7	13.6	62	78
Niagara Falls, N. Y	26.5	26.7	11.0	11.0	84	94
Niles, Ohio	20.7	21.5	7.1	7.6	93	80
Norfolk, Va	18.3	21.2	11.5	12.1	97	86
Norristown, Pa.*	22.6	23.3	22.6	19.7	108	79
North Adams, Mass	(1)	24.7	12.8	12.4	(1)	83
Northampton, Mass.*	(1)	21.9	19.5	18.9	(1)	71
North Braddock, Pa	26.1	27.1	9.1	8.1	89	89
Northbridge town, Mass	(1)	26.7	10.8	9.2	(1)	39
North Platte, Nebr	19.9	19.1	10.2	10.1	96	84
North Tonawanda, N. Y	21.2	18.7	12.4	10.3	110	111
Norwalk, Conn	20.2	20.2	13.7	14.4	75	74
Norwich town, Conn.*	26.2	24.9	16.6	16.1	66	77
Norwood, Ohio	7.4	8.0	5.7	6.1	63	51
Norwood town, Mass	(1)	29.1	8.4	10.1	(1)	37
Oakland, Calif	17.3	17.3	10.8	11.3	63	64
Oak Park, Ill	37.6	33.1	13.8	12.5	37	55
Ogden, Utah	20.6	33.0	11.0	11.8	88	60
Ogdensburg, N. Y.*	26.1	23.4	33.4	36.5	142	152
Oil City, Pa	24.6	22.5	11.8	9.7	77	58
Old Forge, Pa	30.2	28.9	9.3	10.0	100	106
Olean, N. Y	24.1	25.5	13.7	13.1	92	89
Olyphant, Pa	25.4	23.5	8.1	8.9	76	116
Omaha, Nebr	23.8	23.0	13.1	13.1	67	71
Oneida, N. Y	20.7	22.0	17.5	15.6	102	78
Oneonta, N. Y	22.2	21.7	18.6	15.7	102	68
Orange, N. J	46.2	43.2	16.9	15.6	42	49
Orange town, Conn	20.1	19.9	14.1	14.2	48	64
Oshkosh, Wis	22.0	23.3	14.6	12.3	78	70
Ossining, N. Y	24.8	26.8	16.7	16.5	45	52
Oswego, N. Y	22.6	20.9	15.6	14.1	110	75
Ottawa, Ill	26.0	22.5	17.7	15.3	99	64
Owensboro, Ky	27.6	22.3	17.1	17.7	75	96
Paducah, Ky	23.5	21.8	16.9	15.2	90	107
Parsons, Kans	19.5	19.5	11.1	8.1	62	52
Pasadena, Calif	22.1	18.3	14.7	14.6	37	46
Passaic, N. J	27.2	28.7	10.8	10.1	74	70
Paterson, N. J	22.0	23.1	13.1	12.7	68	75
Pawtucket, R. I	(1)	19.3	12.9	12.5	(1)	109
Peabody, Mass	(1)	25.6	10.9	11.2	(1)	97
Peekskill, N. Y	22.2	19.3	14.5	12.4	79	55
Pekin, Ill	24.9	20.6	10.8	10.3	69	61
Peoria, Ill	17.8	17.2	15.3	13.5	89	88
Perth Amboy, N. J	25.8	27.7	9.4	10.0	74	83
Peru, Ind	22.3	19.8	13.7	13.4	64	85
Petersburg, Va	21.1	23.3	15.4	16.8	103	109
Philadelphia, Pa	21.2	21.2	13.8	13.2	80	83
Phillipsburg, N. J	20.7	20.2	9.5	9.4	80	106
Phoenixville, Pa	31.9	31.0	18.2	13.2	108	62
Piqua, Ohio	20.7	21.2	15.1	13.1	68	52
Pittsburg, Kans	20.3	21.3	9.8	9.1	64	70
Pittsburgh, Pa	24.8	24.2	15.8	14.3	98	96
Pittsfield, Mass	(1)	22.7	12.0	12.5	(1)	66
Pittston, Pa	29.8	33.3	16.4	13.6	129	96
Plainfield, N. J	29.2	31.7	14.7	13.4	69	78
Plattsburg, N. Y	30.0	28.5	21.7	22.1	107	100
Plymouth, Pa	25.2	25.6	8.2	9.8	72	92
Plymouth town, Mass	(1)	22.0	11.7	12.7	(1)	65
Pomona, Calif	24.3	21.2	15.1	14.4	64	69
Port Chester, N. Y	31.9	28.4	14.3	11.2	66	74
Port Jervis, N. Y	22.2	23.3	15.3	17.4	87	62
Portland, Me	22.2	21.8	15.6	16.1	75	87
Portland, Oreg	18.4	19.3	11.2	11.8	53	56
Portsmouth, N. H	19.1	23.5	11.5	11.2	73	51
Portsmouth, Ohio	27.7	24.0	14.2	11.4	103	91
Portsmouth, Va	19.9	20.4	11.2	12.8	99	101
Pottstown, Pa	21.1	22.2	16.9	13.3	105	78

[1] See headnote.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration cities—Continued.						
Pottsville, Pa	24.6	27.4	18.3	16.7	98	80
Poughkeepsie, N. Y	20.3	18.4	14.6	13.9	85	77
Providence, R. I	(1)	26.3	14.8	13.8	(1)	75
Provo, Utah	55.5	35.8	16.8	18.5	35	60
Punxsutawney, Pa	26.3	25.5	18.4	15.8	141	89
Quincy, Ill	20.6	18.8	16.0	14.9	61	77
Quincy, Mass	(1)	18.0	9.5	8.7	(1)	73
Racine, Wis	21.2	19.6	9.6	8.1	78	70
Rahway, N. J	23.7	20.2	11.4	11.3	47	69
Raleigh, N. C.*	28.2	26.4	23.6	20.9	122	94
Reading, Pa	21.4	21.1	13.6	13.5	85	90
Rensselaer, N. Y	10.8	11.6	11.6	11.5	103	111
Revere, Mass	(1)	17.6	6.8	6.3	(1)	47
Richmond, Calif	15.1	14.2	6.0	6.7	61	62
Richmond, Ind	14.9	14.2	11.2	10.0	66	58
Richmond, Va	23.7	23.1	15.6	14.8	110	89
Riverside, Calif	24.1	23.3	17.6	17.4	95	69
Roanoke, Va	32.2	29.5	14.4	14.2	91	106
Rochester, Minn.*	23.0	23.0	57.8	50.9	71	54
Rochester, N. Y	20.7	20.8	11.6	11.8	68	78
Rockford, Ill	19.9	20.6	10.4	9.9	86	73
Rock Island, Ill	11.0	12.5	8.2	9.0	79	51
Rocky Mount, N. C	33.8	31.1	17.5	18.2	106	128
Rome, N. Y.*	23.5	26.3	19.4	19.5	82	92
Rutland, Vt	21.3	20.5	16.9	15.4	79	127
Sacramento, Calif	26.8	26.4	16.9	16.3	66	67
St. Cloud, Minn	32.0	32.0	12.4	11.7	86	62
St. Paul, Minn	25.3	23.8	12.9	11.7	66	65
Salem, Mass	(1)	25.5	13.9	13.8	(1)	85
Salem, Ohio	25.3	25.9	17.5	14.5	62	65
Salem, Oreg.*	15.3	17.3	33.1	34.6	62	128
Salina, Kans	23.5	25.9	11.7	13.2	75	86
Salisbury, N. C	24.6	24.3	10.7	11.4	77	61
Salt Lake City, Utah	20.6	25.8	12.4	12.4	79	73
San Bernardino, Calif.*	35.0	30.4	25.0	23.0	112	117
San Diego, Calif	22.8	22.9	16.7	16.4	59	47
Sandusky, Ohio	21.6	21.9	13.8	13.7	70	66
Sanford town, Me	29.7	30.6	14.2	12.3	110	74
San Francisco, Calif	16.0	16.4	13.5	14.1	58	56
San Jose, Calif	18.1	16.2	10.7	12.5	53	60
Santa Ana, Calif	29.7	25.8	16.9	15.7	80	89
Santa Barbara, Calif	21.0	21.6	13.4	11.6	61	38
Santa Cruz, Calif	20.8	20.8	23.1	20.4	26	57
Santa Monica, Calif	33.7	25.9	21.4	19.9	90	72
Saratoga Springs, N. Y	22.5	21.4	17.9	19.6	61	50
Saugus town, Mass	(1)	15.9	7.7	8.4	(1)	43
Schenectady, N. Y	17.8	17.7	10.4	10.1	69	81
Scranton, Pa	21.1	22.8	13.6	13.6	98	99
Seattle, Wash	16.9	16.7	9.6	9.6	49	50
Shamokin, Pa	21.9	22.6	10.3	9.8	87	126
Sharon, Pa	23.0	22.8	13.7	10.6	77	89
Sheboygan, Wis	22.9	23.6	12.5	11.5	79	65
Shenandoah, Pa	30.3	31.7	11.5	14.2	117	149
Somerville, Mass	(1)	19.7	11.2	10.5	(1)	61
South Bend, Ind	28.2	25.2	11.6	10.3	71	68
Southbridge town, Mass	(1)	25.4	8.6	10.0	(1)	81
Spartanburg, S. C	24.4	25.2	12.7	14.4	60	90
Spokane, Wash	22.5	23.6	11.7	13.5	48	72
Springfield, Ill	21.9	20.1	17.0	16.0	80	89
Springfield, Mass	(1)	22.1	11.4	11.3	(1)	73
Springfield, Ohio	19.7	17.6	13.2	11.4	92	75
Stamford town, Conn	24.2	24.9	11.8	12.5	59	70
Staunton, Va.*	15.3	18.4	29.0	24.1	92	82
Steelton, Pa	24.5	21.8	13.1	8.5	128	99
Steubenville, Ohio	23.0	21.6	15.6	12.3	82	75
Stevens Point, Wis	26.0	25.0	12.9	12.6	78	123
Stockton, Calif.*	20.8	21.1	13.9	14.5	79	66
Stonington town, Conn	15.5	16.8	10.4	12.4	79	85
Stratford town, Conn	14.7	19.1	8.0	8.2	60	71
Streator, Ill	26.3	24.7	14.1	13.0	61	46
Summit, N. J	23.7	26.9	12.8	13.4	53	65
Sunbury, Pa	21.0	20.8	11.9	10.7	81	71
Superior, Wis	21.7	20.6	10.9	9.5	87	75

[1] See headnote.

Birth, death, and infant mortality rates in the birth registration area: 1922 and 1923—Continued.

Area.	Rate per 1,000 population.					
	Births (exclusive of stillbirths).		Deaths (exclusive of stillbirths).		Deaths of infants under 1 year of age per 1,000 births.	
	1923	1922	1923	1922	1923	1922
Registration cities—Continued.						
Swissvale, Pa	14.3	16.1	8.8	7.1	98	89
Syracuse, N. Y	22.7	22.2	13.0	12.7	83	89
Tacoma, Wash	21.3	19.6	10.9	10.8	48	58
Tamaqua, Pa	17.6	21.7	9.8	9.3	102	123
Taunton, Mass.*	(1)	24.2	17.2	16.9	(1)	81
Terre Haute, Ind	21.4	20.2	14.0	13.2	71	74
Tiffin, Ohio	18.2	15.6	15.9	11.9	83	56
Toledo, Ohio	20.6	19.4	12.6	11.7	74	74
Tonawanda, N. Y	20.6	20.4	8.5	9.2	45	56
Topeka, Kans	24.6	23.6	14.4	15.0	80	77
Torrington town, Conn	18.8	20.4	8.3	8.5	62	65
Trenton, N. J	24.6	24.7	14.0	15.6	78	107
Troy, N. Y	19.6	19.0	18.1	18.0	100	116
Union, N. J	20.9	20.1	8.7	10.8	56	58
Uniontown, Pa	35.4	32.1	21.7	19.4	86	54
Urbana, Ill	14.8	11.7	9.9	7.9	56	56
Utica, N. Y.*	23.1	23.2	15.4	14.4	81	82
Vallejo, Calif	10.2	12.7	7.5	8.3	64	60
Vancouver, Wash	18.2	17.1	10.9	11.3	32	43
Venice, Calif	7.8	7.5	7.5	6.3	79	65
Vicksburg, Miss.*	26.2	23.2	34.3	34.4	101	153
Vincennes, Ind	23.3	24.7	14.7	14.9	72	94
Virginia, Minn	19.1	19.9	8.3	6.6	86	81
Wakefield town, Mass	(1)	19.6	10.6	9.8	(1)	49
Walla Walla, Wash	24.1	23.9	12.0	15.6	53	76
Wallingford town, Conn	14.9	14.2	10.8	10.7	33	109
Waltham, Mass	(1)	25.9	13.8	12.6	(1)	56
Warren, Ohio	25.5	23.8	12.2	10.4	70	68
Warren, Pa	26.7	25.9	12.8	13.7	46	66
Warwick town, R. I	(1)	20.1	16.2	15.6	(1)	81
Washington, D. C	18.9	20.7	14.9	14.4	92	85
Washington, Pa	29.8	27.6	17.9	14.2	111	97
Waterbury, Conn	22.8	24.0	11.4	10.7	89	83
Watertown, N. Y	23.9	24.8	16.1	15.0	83	93
Watertown town, Mass	(1)	14.5	6.3	6.7	(1)	79
Waterville, Me	30.1	28.0	15.0	16.0	73	111
Watervliet, N. Y	17.3	17.0	11.4	10.1	84	76
Waukegan, Ill	20.3	22.5	11.3	9.7	119	80
Waukesha, Wis	22.3	17.2	11.4	11.4	51	90
Wausau, Wis	27.9	26.2	13.5	13.7	66	55
Webster town, Mass	(1)	20.5	9.4	9.2	(1)	78
West Allis, Wis	22.9	23.8	8.3	7.1	97	65
West Chester, Pa.*	35.2	33.1	31.9	25.5	138	108
Westfield town, Mass	(1)	24.0	12.2	13.0	(1)	87
West Hoboken, N. J	19.5	19.3	6.4	7.1	50	66
West New York, N. J	17.8	20.2	5.2	5.8	44	55
West Orange, N. J	12.2	12.1	7.6	6.4	43	45
West Springfield town, Mass	(1)	12.9	9.0	8.9	(1)	134
West Warwick town, R. I	(1)	25.2	12.8	12.2	(1)	105
Weymouth town, Mass	(1)	18.7	10.5	11.7	(1)	51
White Plains, N. Y	23.8	22.5	11.3	10 9	36	53
Whiting, Ind	19.3	23.4	8.3	9.0	100	124
Wichita, Kans	24.7	24.7	14.5	13.6	74	74
Wilkes-Barre, Pa	26.8	28.3	15.9	14.5	90	90
Wilkinsburg, Pa	22.4	22.2	15.8	11.6	71	54
Williamsport, Pa	24.6	24.1	15.7	14.5	75	73
Wilmington, Del	19.8	21.5	13.2	12.1	99	100
Wilmington, N. C	27.8	30.3	15.0	16.3	91	95
Wilson, N. C	31.9	33.7	17.1	18.7	107	128
Winchester town, Mass	(1)	32.5	11.6	9.9	(1)	57
Windham town, Conn	25.4	26.6	15.7	15.3	89	90
Winona, Minn	23.1	22.2	13.0	13.3	47	61
Winston-Salem, N. C	25.9	25.2	14.5	12.6	142	109
Winthrop town, Mass	(1)	9.7	8.6	7.7	(1)	85
Woburn, Mass	(1)	21.1	11.9	10.5	(1)	56
Woodlawn, Pa	30.5	28.9	8.7	7.7	99	110
Woonsocket, R. I	(1)	27.2	13.1	11.4	(1)	107
Worcester, Mass	(1)	23.1	13.1	13.0	(1)	80
Yakima, Wash	29.2	33.1	15.1	17.2	60	80
Yonkers, N. Y	22.2	22.6	10.1	10.7	59	83
York, Pa	23.6	22.5	13.9	12.8	77	69
Youngstown, Ohio	25.2	27.2	11.3	11.3	87	77
Zanesville, Ohio	24.3	22.8	16.2	17.4	100	101

[1] See headnote.

Death rates for registration States and cities not included in the birth registration area: 1922 and 1923.

Area.	Death rate per 1,000 population—	
	1923	1922
Registration States.		
Colorado	12.4	13.5
Cities	15.0	16.3
Rural	10.8	11.8
Florida	13.5	12.2
Cities	15.0	14.2
Rural	12.9	11.5
Georgia	11.3	10.4
Cities	18.1	16.6
Rural	9.6	9.0
Idaho	6.9	8.1
Cities	12.1	14.2
Rural	6.5	7.5
Iowa	10.2	(1)
Cities	12.9	(1)
Rural	9.3	(1)
Louisiana	11.8	11.3
Cities	18.1	17.2
Rural	9.3	9.0
Missouri	12.2	11.2
Cities	14.2	13.6
Rural	10.8	9.6
Tennessee	11.8	10.8
Cities	18.6	16.8
Rural	10.0	9.4
Registration cities.		
Albany, Ga	11.6	11.1
Alexandria, La	19.2	18.0
Athens, Ga	16.6	18.9
Atlanta, Ga	18.0	15.7
Augusta, Ga	19.5	18.4
Baton Rouge, La	14.0	11.5
Beaumont, Tex	11.2	11.3
Birmingham, Ala	15.6	13.7
Boise, Idaho	12.6	14.7
Boone, Iowa	13.6	(1)
Boulder, Colo	12.6	15.3
Brunswick, Ga	13.1	13.2
Burlington, Iowa	16.4	(1)
Cape Girardeau, Mo	19.9	19.3
Carthage, Mo	13.1	13.8
Cedar Rapids, Iowa	11.0	(1)
Chattanooga, Tenn	19.9	18.3
Clinton, Iowa	13.7	(1)
Colorado Springs, Colo	21.3	23.4
Columbia, Mo	19.4	18.7
Columbus, Ga	22.4	17.9
Council Bluffs, Iowa	13.2	(1)
Dallas, Tex	11.9	12.6
Davenport, Iowa	12.2	(1)
Denver, Colo	14.7	16.0
Des Moines, Iowa	11.3	(1)
Dubuque, Iowa	14.8	(1)
El Paso, Tex	19.5	20.4
Fargo, N. Dak	11.2	12.7
Fort Dodge, Iowa	14.1	(1)
Fort Madison, Iowa	13.5	(1)
Fort Worth, Tex	8.3	9.9
Galveston, Tex	12.8	14.3
Greeley, Colo	12.6	17.3
Hannibal, Mo	15.9	13.2
Houston, Tex	13.3	13.6
Independence, Mo	15.6	15.1
Iowa City, Iowa	29.0	(1)
Jackson, Tenn	14.8	13.5
Jacksonville, Fla	17.3	15.5
Jefferson City, Mo	13.2	14.0
Johnson City, Tenn	23.1	22.5
Joplin, Mo	16.9	14.6
Kansas City, Mo	14.4	14.6
Keokuk, Iowa	18.7	(1)
Key West, Fla	11.5	12.7
Knoxville, Tenn	15.4	13.9
La Grange, Ga	13.3	11.6
Lake Charles, La	16.5	14.7
Macon, Ga	18.9	18.3
Marshalltown, Iowa	14.2	(1)
Mason City, Iowa	11.5	(1)
Memphis, Tenn	19.9	17.8
Miami, Fla	18.2	16.1
Moberly, Mo	12.3	15.1
Mobile, Ala	16.4	16.5
Monroe, La	23.1	21.3
Montgomery, Ala	18.0	16.5
Muscatine, Iowa	15.2	(1)
Nashville, Tenn	18.6	16.6
New Orleans, La	17.7	16.7
Oklahoma City, Okla	12.8	11.5
Ottumwa, Iowa	18.2	(1)
Pensacola, Fla	13.5	12.1
Pocatello, Idaho	11.4	13.6
Pueblo, Colo	13.2	13.1
Rome, Ga	24.5	22.1
St. Joseph, Mo	16.4	17.4
St. Louis, Mo	13.6	12.5
St. Petersburg, Fla	15.9	13.8
San Antonio, Tex	14.8	15.4
Savannah, Ga	18.9	18.4
Sedalia, Mo	13.7	12.2
Shreveport, La	21.4	23.5
Sioux City, Iowa	10.9	(1)
Sioux Falls, S. Dak	11.1	(1)
Springfield, Mo	15.1	15.2
Tampa, Fla	11.3	12.5
Trinidad, Colo	14.6	16.1
Valdosta, Ga	12.3	12.4
Waterloo, Iowa	9.8	(1)
Waycross, Ga	16.4	12.8
Wheeling, W. Va	17.7	15.6

[1] Not in the registration area in 1922.

DEATH RATES IN A GROUP OF INSURED PERSONS.

COMPARISON OF PRINCIPAL CAUSES OF DEATH, FEBRUARY AND MARCH, 1924, MARCH AND YEAR 1923, AND RATES FOR WHITE AND COLORED FOR THE FIRST QUARTER OF 1922, 1923, AND 1924.

The following information is taken from the Statistical Bulletin of the Metropolitan Life Insurance Co. for April, 1924, and gives the mortality experience of the industrial insurance department of the company for March, 1924, as compared with February, 1924,

and March, 1923, and a comparison of rates for white and colored policyholders for the first quarter of the years 1922, 1923, and 1924. The rates are based on a strength of approximately 15,000,000 insured persons.

HEALTH RECORD FOR MARCH, 1924.

The Bulletin states:

"The death rate in March among the industrial policyholders was but 10.2 per 1,000. This is, far and away, the lowest figure ever recorded for that month in this group of the population. The rate may be compared with 12.2 in March, 1923; 12.3 in 1922, 10.7 in 1921, 15.8 in 1920, and 14.6 in 1919. It should be borne in mind that among our policyholders March generally registers a higher death rate than any other month of the year. Yet only a few years ago we would have considered this year's March figure of 10.2 per 1,000 to be a very acceptable *average* death rate for the whole year. Each of the four years 1914 to 1917, for example, recorded death rates in excess of 11 per 1,000. Less than a decade ago even the relatively low mortaility of late summer and early fall did not bring down the average for the year to as favorable a figure as we are now presenting for the month which usually registers the highest death rate of any.

"The record for each of the principal causes of death is as favorable as that for all causes combined. Pneumonia, although it has displaced heart disease as the leading cause, nevertheless registered the low rate, for March, of 150.3 per 100,000. This is a decline of 9.9 per cent, from the figure for the same month of 1923. For organic heart disease the rate was but 135.8 as compared with 177.4 in March, 1923. Tuberculosis mortality was 11.1 per cent lower than during March of last year; cerebral hemorrhage deaths declined 8.6 per cent; the Bright's disease rate fell 16.2 per cent; and that for cancer, 9.3 per cent.

"In both the February and March Bulletins we called attention to the declines recorded in the mortality from diabetes. Continued improvement was observed for March, the death rate being 16.5 as compared with 22.3 for this month last year.

"The influenza death rate is approximately three-tenths of last year's March figure, and there are no signs of epidemic prevalence of this disease anywhere."

Death rates (annual basis) for principal causes per 100,000 lives exposed, February and March, 1924, and March and year, 1923.

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death.	Death rate per 100,000 lives exposed.[1]			
	March, 1924.	February, 1924.	March, 1923.	Year 1923.[2]
Total, all causes	1,018.9	991.2	1,218.3	923.9
Typhoid fever	2.1	2.5	3.3	5.1
Measles	13.9	9.3	13.8	9.4
Scarlet fever	4.8	6.4	7.1	4.4
Whooping cough	9.0	7.8	7.4	7.4
Diphtheria	15.3	16.8	18.5	15.5
Influenza	29.7	25.3	102.0	30.2
Tuberculosis (all forms)	112.1	105.0	126.1	109.6
Tuberculosis of respiratory system	101.2	94.5	116.6	99.2
Cancer	68.4	68.5	75.4	71.5
Diabetes mellitus	16.5	15.2	22.3	15.9
Cerebral hemorrhage	67.6	66.1	74.0	61.0
Organic diseases of heart	135.8	134.0	177.4	126.7
Pneumonia (all forms)	150.3	132.9	166.8	83.5
Other respiratory diseases	16.4	18.0	24.2	13.9
Diarrhea and enteritis	17.9	17.1	5.3	28.1
Bright's disease (chronic nephritis)	75.1	73.5	89.6	68.5
Puerperal state	17.0	18.9	19.4	17.6
Suicides	6.2	6.1	7.1	7.3
Homicides	6.3	5.6	6.0	7.2
Other external causes (excluding suicides and homicides)	50.2	53.0	55.4	62.7
Traumatism by automobile	8.7	9.2	7.9	15.2
All other causes	204.4	209.3	217.2	178.6

[1] All figures include infants insured under one year of age.
[2] Based on provisional estimate of lives exposed to risk in 1923.

FIRST QUARTER OF 1924.

If the death rate in this group of persons for the first quarter of 1924 is an indication of the health conditions obtaining in the general population of the United States and Canada, it is stated that the general health of the two countries was better during the first three months of this year than ever before during this period. The rate for the industrial policyholders of the company for the first quarter of the present year was 9.8 per 1,000 lives. Eliminating the deaths in children under 1 year of age, not insured in previous years, in order to make the periods comparable, the rate is reduced to 9.2, as compared with 9.7 for the first quarter of 1921, the previous low mortality record for the first quarter of the year.

As compared with previous years, improvement is shown for almost every cause of death. Among the communicable diseases of children, the mortality rates for diphtheria and scarlet fever are lower than they have been for several years. The improvement shown for diphtheria is particularly marked. The higher rates for whooping cough and measles are stated to be entirely due to deaths in infants, and are therefore not comparable with rates for previous years.

Tuberculosis of the respiratory system shows a gratifying decline.

Diabetes mortality as compared with 1923 declined 23 per cent among the white policyholders and 17 per cent among the colored.

Lower rates are shown for all of the "degenerative diseases," especially for organic diseases of the heart.

A drop in mortality from diseases of the puerperal state is shown for the white policyholders; but, in contrast, the mortality from this cause among the colored persons of this group rose decidedly in 1924 as compared with 1923, and was higher than that in 1922.

Death rates (annual basis) per 100,000 persons exposed, first quarters of 1922, 1923, and 1924, compared for white and colored policyholders.

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death.	Death rates per 100,000 persons exposed.					
	White.			Colored.		
	January-March, 1924.	January-March, 1923.	January-March, 1922.	January-March, 1924.	January-March, 1923.	January-March, 1922.
All causes of death	903.7	1,021.4	996.5	1,553.6	1,633.7	1,548.0
Typhoid fever	2.3	2.9	2.8	4.1	6.2	5.6
Measles	13.7	11.5	4.0	5.6	7.6	1.2
Scarlet fever	6.6	6.7	9.2	.4	.7	.5
Whooping cough	7.2	5.7	3.3	11.3	8.1	3.6
Diphtheria and croup	20.0	23.4	26.1	6.1	8.1	10.2
Influenza	21.2	70.4	43.7	59.1	133.8	85.7
Meningococcus meningitis	.8	.7	.9	1.5	1.0	.3
Tuberculosis (all forms)	91.6	104.2	103.9	241.8	242.2	244.1
Tuberculosis of respiratory system	81.8	96.4	95.1	222.0	223.8	228.3
Tuberculosis of the meninges, etc	5.5	3.6	3.9	6.7	5.7	4.3
Other forms of tuberculosis	4.4	4.2	4.9	13.0	12.7	11.4
Cancer	69.3	71.3	76.6	75.4	66.6	74.2
Diabetes	16.5	21.5	[1]	13.9	16.7	[1]
Cerebral hemorrhage; apoplexy	61.5	68.8	71.9	103.6	107.5	105.0
Organic diseases of the heart	123.3	150.8	150.5	207.7	229.8	214.8
Total respiratory diseases	132.3	151.9	144.8	258.5	263.4	228.0
Bronchitis	6.5	8.6	8.8	8.7	11.7	14.0
Bronchopneumonia	55.0	47.5	46.1	86.0	61.4	54.2
Pneumonia (lobar and undefined)	61.4	84.9	80.4	151.4	175.8	145.2
Other diseases of respiratory system	9.3	10.9	9.5	12.4	14.6	14.7
Diarrhea and enteritis	19.0	5.6	7.4	14.8	7.9	12.2
Under 2 years	15.9	2.4	2.9	9.3	1.2	3.1
2 years and over	3.1	3.2	4.5	5.4	6.7	9.2
Acute nephritis	5.3	5.6	6.3	16.5	14.3	16.3
Chronic nephritis	66.1	75.9	76.2	115.3	119.2	124.1
Total puerperal state	17.3	19.7	22.2	28.9	22.0	26.7
Puerperal septicemia	6.9	7.3	8.0	11.7	7.9	11.2
Puerperal albuminuria and convulsions	4.0	4.2	4.9	7.6	6.0	5.3
Other diseases of puerperal state	6.3	8.2	9.3	9.6	8.1	10.2
Total external causes	63.7	63.0	60.5	105.1	101.5	91.3
Suicides	6.4	7.4	7.6	3.5	4.3	5.3
Homicides	2.5	3.2	4.0	32.6	29.1	26.7
Accidental and unspecified violence	54.8	52.4	48.9	69.1	68.1	59.2
Accidental drowning	3.2	2.2	2.4	2.2	1.2	3.1
Automobile accidents	11.5	10.0	9.2	9.3	10.0	5.8
All other and ill-defined causes of death	165.8	162.0	186.4	283.9	277.1	304.3

[1] Not available.

THE AMERICAN PHYSIOTHERAPY ASSOCIATION TO MEET IN JUNE.

The American Physiotherapy Association will hold its third annual convention in Chicago, at the Drake Hotel, June 10 and 11, 1924. The following speakers will address the convention:

Dr. Ray Lyman Wilbur, Stanford University, Calif. (opening address).
Dr. Fred H. Albee, New York City.
Dr. Shepherd Ivory Franz, Washington, D. C.
Miss Edna L. Foley, Chicago. Ill.
Dr. Julian M. Wolfson, San Francisco, Calif.
Dr. Frank B. Granger, Boston, Mass.

DEATHS DURING WEEK ENDED MAY 10, 1924.

Summary of information received by telegraph from industrial insurance companies for week ended May 10, 1924, and corresponding week of 1923. (From the Weekly Health Index, May 13, 1924, issued by the Bureau of the Census, Department of Commerce.)

	Week ended May 10, 1924.	Corresponding week, 1923.
Policies in force	55, 940, 330	53, 501, 494
Number of death claims	11, 488	10, 635
Death claims per 1,000 policies in force, annual rate	10. 7	10. 4

Deaths from all causes in certain large cities of the United States during the week ended May 10, 1924, infant mortality, annual death rate, and comparison with corresponding week of 1923. (From the Weekly Health Index, May 13, 1924, issued by the Bureau of the Census, Department of Commerce.)

City.	Week ended May 10, 1924.		Annual death rate per 1,000, corresponding week, 1923.	Deaths under 1 year.		Infant mortality rate, week ended May 10, 1924 [2]
	Total deaths.	Death rate.[1]		Week ended May 10, 1924.	Corresponding week, 1923.	
Total (65 cities)	6, 904	13. 3	[3] 12. 6	883	[3] 790	
Akron	20			5	4	53
Albany [4]	44	19. 4	18. 2	5	5	110
Atlanta	82	18. 8	16. 8	14	8	
Baltimore [4]	231	15. 3	13. 8	21	31	61
Birmingham	70	18. 2	10. 6	5	5	
Boston	216	14. 5	15. 6	31	21	86
Bridgeport	26			2	3	31
Buffalo	143	13. 7		30		127
Cambridge	29	13. 5	9. 8	1	1	17
Camden	32	13. 2	12. 2	9	5	142
Chicago [4]	677	12. 0	12. 0	83	103	77
Cincinnati	113	14. 4	14. 4	11	9	69
Cleveland	175	10. 0	11. 5	26	24	68
Columbus	68	13. 3	17. 6	5	9	48
Dallas	42	11. 7	11. 2	8	6	
Dayton	37	11. 4	13. 2	3	3	50
Denver	94			10	7	
Des Moines	42	15. 1	11. 8	5	3	
Detroit	319			56	48	104

[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 1923. Cities left blank are not in the registration area for births.
[3] Data for 64 cities.
[4] Deaths for week ended Friday, May 9, 1924.

Deaths from all causes in certain large cities of the United States during the week ended May 10, 1924, infant mortality, annual death rate, and comparison with corresponding week of 1923—Continued.

City.	Week ended May 10, 1924.		Annual death rate per 1,000, corresponding week, 1923.	Deaths under 1 year.		Infant mortality rate, week ended May 10, 1924.
	Total deaths.	Death rate.		Week ended May 10, 1924.	Corresponding week, 1923.	
Duluth	14	6.7	11.3	1	1	21
Erie	24			4	2	82
Fall River [4]	38	16.4	9.5	6	4	84
Flint	13			2	9	35
Forth Worth	21	7.4	6.5	1	1	
Grand Rapids	32	11.2	7.1	8	2	125
Houston	43			4	4	
Indianapolis	115	17.1	14.3	22	8	166
Jacksonville, Fla	41	20.9	13.6	9	1	
Jersey City	78	13.0	11.0	13	17	94
Kansas City, Kans	25	11.1	13.5	2	7	40
Kansas City, Mo	94	13.6	12.4	9	7	
Los Angeles	241			34	40	106
Louisville	88	17.8	16.8	9	8	87
Lowell	32	14.4	12.7	4	5	71
Lynn	21	10.6	10.2	2	4	51
Memphis	46	13.9	19.6	5	9	
Milwaukee	112	11.9	11.2	20	13	91
Minneapolis	99	12.4	9.8	8	4	43
Nashville [4]	26	11.0	10.2	3	4	
New Bedford	27	10.6	10.4	4	5	62
New Haven	43	12.7	13.0	6	6	78
New Orleans	135	17.2	13.5	15	9	
New York	1,563	13.5	11.8	216	183	87
Bronx Borough	161	9.6	10.0	20	17	70
Brooklyn Borough	506	12.0	10.5	56	55	60
Manhattan Borough	699	16.1	14.0	108	94	105
Queens Borough	146	13.7	9.4	23	13	126
Richmond Borough	51	20.3	19.2	9	4	164
Newark, N. J	101	11.8	10.9	16	16	75
Norfolk	34	10.8		5		91
Oakland	60	12.7	11.3	5	5	63
Oklahoma City	18	9.0		3		
Omaha	46	11.5	13.8	8	6	86
Paterson	27	10.0	11.2	4	2	65
Philadelphia	495	13.2	13.9	52	57	66
Pittsburgh	160	13.3	15.3	20	34	68
Portland, Oreg	74	13.9	10.9	3	4	31
Providence	76	16.3	12.7	12	11	98
Richmond	46	13.1	15.0	3	7	35
Rochester	83	13.3		13		102
St. Louis	205	13.2	11.9	11	20	
St. Paul	46	9.8	12.5	9	6	77
Salt Lake City [4]	31	12.6	13.6	5	4	83
San Antonio	65	17.7	15.0	14	6	
San Francisco	132	12.6	11.1	14	14	84
Schenectady	28	14.5	5.8	3	4	85
Seattle	51			8	3	77
Somerville	22	11.4	8.4	2	4	54
Spokane	45			4	3	85
Springfield, Mass	39	13.7	9.8	7	5	118
Syracuse	49	13.6	13.0	4	6	50
Tacoma	22	11.1	8.2	2	2	46
Toledo	67	12.6	11.0	8	7	76
Trenton	45	18.1	17.6	10	5	164
Utica	38	18.8	10.6	2	4	43
Washington, D. C	126	13.5	15.1	9	14	52
Waterbury	27			5	3	112
Wilmington, Del	22	9.6	13.7	3	2	65
Worcester	40	13.1	14.1	5	6	60
Yonkers	19	9.0	13.6	2	3	44
Youngstown	28	9.4	13.5	9	5	130

[4] Deaths for week ended Friday, May 9, 1924

PREVALENCE OF DISEASE.

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

UNITED STATES.

CURRENT WEEKLY STATE REPORTS.

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

Reports for Week Ended May 17, 1924.

ALABAMA.	Cases.
Chicken pox	18
Diphtheria	2
Influenza	81
Malaria	70
Measles	131
Mumps	96
Pellagra	6
Pneumonia	26
Scarlet fever	4
Smallpox	72
Tuberculosis	18
Typhoid fever	5
Whooping cough	78

ARIZONA.	
Chicken pox	6
Diphtheria	8
Measles	155
Mumps	7
Pneumonia	1
Scarlet fever	33
Smallpox	2
Tuberculosis	20
Typhoid fever	4

ARKANSAS.	
Chicken pox	14
Diphtheria	2
Influenza	31
Malaria	49
Measles	114
Mumps	43
Pellagra	8
Scarlet fever	2
Smallpox	15
Trachoma	2
Tuberculosis	4
Typhoid fever	1
Whooping cough	30

CALIFORNIA.	Cases.
Cerebrospinal meningitis—Madera	1
Diphtheria	236
Influenza	19
Leprosy—San Francisco	1
Measles	763
Rabies in man—Imperial County	1
Scarlet fever	199
Smallpox:	
Hermosa Beach	9
Long Beach	23
Los Angeles	136
Los Angeles County	46
Scattering	53
Typhoid fever:	
South Pasadena	16
Scattering	14

COLORADO. (Exclusive of Denver.)	
Chicken pox	7
Diphtheria	17
Influenza	2
Measles	215
Mumps	22
Pneumonia	3
Scarlet fever	20
Tuberculosis	29
Whooping cough	3

CONNECTICUT.	
Chicken pox	30
Diphtheria	25
German measles	12
Influenza	1
Measles	113
Mumps	113
Pneumonia (lobar)	26
Scarlet fever	102
Smallpox	8

CONNECTICUT—continued.	Cases.
Tetanus	1
Tuberculosis (all forms)	37
Typhoid fever	2
Whooping cough	36
DELAWARE.	
Cerebrospinal meningitis	1
Chicken pox	1
Malaria	2
Measles	3
Mumps:	
Dover	50
Scattering	28
Pneumonia	3
Scarlet fever	6
Tuberculosis	3
Typhoid fever	1
Whooping cough	18
DISTRICT OF COLUMBIA.	
Chicken pox	43
Diphtheria	6
Influenza	1
Measles	27
Poliomyelitis	1
Scarlet fever	20
Smallpox	7
Tuberculosis	23
Whooping cough	11
FLORIDA.	
Cerebrospinal meningitis	2
Diphtheria	5
Malaria	10
Pneumonia	2
Scarlet fever	1
Smallpox	9
Typhoid fever	7
GEORGIA.	
Chicken pox	15
Diphtheria	32
Dysentery (amebic)	1
Dysentery (bacillary)	4
Hookworm disease	2
Influenza	1
Malaria	12
Measles	15
Mumps	31
Pneumonia	17
Scarlet fever	8
Septic sore throat	1
Smallpox	32
Trachoma	1
Tuberculosis (pulmonary)	4
Whooping cough	19
ILLINOIS.	
Cerebrospinal meningitis—Williamson County	1
Diphtheria:	
Cook County	73
Scattering	30
Influenza	20
Lethargic encephalitis—Cook County	1
Measles	887

ILLINOIS—continued.	Cases.
Pneumonia	239
Scarlet fever:	
Cook County	145
La Salle County	11
Lake County	9
Scattering	100
Smallpox:	
Cook County	10
Scattering	24
Tuberculosis	241
Typhoid fever	10
Whooping cough	147
INDIANA.	
Chicken pox	56
Diphtheria	26
Influenza:	
Allen County	15
Scattering	3
Measles	483
Pneumonia	4
Scarlet fever:	
Lake County	16
Marion County	8
St. Joseph County	15
Scattering	58
Smallpox:	
Jay County	12
Marion County	49
Scattering	60
Tuberculosis	28
Typhoid fever	3
Whooping cough	72
IOWA.	
Diphtheria	26
Scarlet fever	36
Smallpox	36
KANSAS.	
Cerebrospinal meningitis	2
Chicken pox	62
Diphtheria	38
German measles	14
Influenza	20
Lethargic encephalitis	1
Measles	543
Mumps	182
Pellagra	3
Pneumonia	111
Scarlet fever	50
Smallpox	39
Tuberculosis	78
Typhoid fever	4
Whooping cough	70
LOUISIANA.	
Diphtheria	17
Hookworm disease	167
Malaria	33
Measles	34
Pellagra	27
Pneumonia	33
Scarlet fever	10
Smallpox	24
Tuberculosis	47
Typhoid fever	15

MAINE.	Cases.
Cerebrospinal meningitis	2
Chicken pox	32
Diphtheria	4
German measles	41
Influenza	11
Measles	83
Mumps	73
Pneumonia	18
Scarlet fever	32
Tuberculosis	7
Typhoid fever	3
Vincent's angina	3
Whooping cough	12

MARYLAND.[1]	
Cerebrospinal meningitis	1
Chicken pox	80
Diphtheria	28
German measles	109
Influenza	23
Lethargic encephalitis	1
Malaria	4
Measles	314
Mumps	37
Ophthalmia neonatorum	1
Paratyphoid fever	1
Pellagra	1
Pneumonia (all forms)	84
Poliomyelitis	1
Scarlet fever	85
Smallpox	5
Tuberculosis	67
Typhoid fever	6
Whooping cough	51

MASSACHUSETTS.	
Cerebrospinal meningitis	1
Chicken pox	166
Conjunctivitis (suppurative)	21
Diphtheria	127
German measles	101
Influenza	19
Lethargic encephalitis	4
Measles	710
Mumps	312
Ophthalmia neonatorum	20
Pneumonia (lobar)	126
Poliomyelitis	2
Scarlet fever	383
Septic sore throat	1
Tetanus	1
Trachoma	1
Tuberculosis (all forms)	188
Typhoid fever	9
Whooping cough	117

MICHIGAN.	
Diphtheria	95
Measles	615
Pneumonia	95
Scarlet fever	264
Smallpox	184
Tuberculosis	55
Typhoid fever	9
Whooping cough	52

[1] Week ended Friday.

MINNESOTA.	Cases.
Chicken pox	113
Diphtheria	88
Measles	97
Pneumonia	14
Scarlet fever	196
Smallpox	50
Tuberculosis	75
Typhoid fever	3
Whooping cough	16

MISSISSIPPI.	
Diphtheria	4
Scarlet fever	3
Smallpox	7
Typhoid fever	2

MISSOURI	
Chicken pox	45
Diphtheria	56
Influenza	3
Measles	273
Mumps	133
Pneumonia	10
Scarlet fever	118
Septic sore throat	1
Smallpox	7
Tetanus	1
Trachoma	42
Tuberculosis	55
Typhoid fever	5
Whooping cough	58

MONTANA.	
Diphtheria	7
Rocky Mountain spotted fever:	
Jordan R. F. D	1
Roundup R. F. D	1
Terry R. F. D	2
Scarlet fever	16
Smallpox	37
Typhoid fever	2

NEBRASKA.	
Cerebrospinal meningitis	1
Chicken pox	22
Diphtheria	11
Lethargic encephalitis	1
Measles	43
Mumps	4
Scarlet fever	16
Smallpox	11
Tuberculosis	2
Whooping cough	3

NEW JERSEY.	
Cerebrospinal meningitis	7
Chicken pox	157
Diphtheria	77
Influenza	5
Malaria	2
Measles	718
Paratyphoid fever	1
Pneumonia	103
Poliomyelitis	1
Scarlet fever	158
Smallpox	1
Typhoid fever	2
Whooping cough	130

NEW MEXICO.	Cases.
Chicken pox	16
Conjunctivitis	3
Diphtheria	9
German measles	1
Influenza	1
Malaria	1
Measles	172
Mumps	32
Pneumonia	13
Scarlet fever	16
Smallpox	1
Tuberculosis	7
Typhoid fever	2
Whooping cough	5

NEW YORK. (Exclusive of New York City.)	
Cerebrospinal meningitis	1
Diphtheria	99
Influenza	23
Lethargic encephalitis	1
Measles	1,301
Pneumonia	259
Poliomyelitis	1
Scarlet fever	314
Smallpox	14
Typhoid fever	58
Whooping cough	[1] 257

NORTH CAROLINA.	
Chicken pox	181
Diphtheria	27
German measles	4
Measles	795
Ophthalmia neonatorum	1
Scarlet fever	64
Septic sore throat	1
Smallpox	99
Typhoid fever	8
Whooping cough	277

OREGON.	
Chicken pox	13
Diphtheria	15
Measles	60
Mumps	4
Pneumonia	[2] 6
Scarlet fever	28
Smallpox	21
Tuberculosis	11
Typhoid fever	1
Whooping cough	[2] 1

SOUTH DAKOTA.	
Chicken pox	6
Diphtheria	11
Measles	95
Pneumonia	3
Scarlet fever	42
Smallpox	3
Tuberculosis	3
Typhoid fever	5
Whooping cough	5

TEXAS.	
Chicken pox	61
Diphtheria	28
Influenza	34
Measles	253
Mumps	62
Ophthalmia neonatorum	2
Pellagra	3
Pneumonia	27
Scarlet fever	13
Smallpox	35
Tuberculosis	14
Typhoid fever	1
Whooping cough	53

VERMONT.	
Chicken pox	26
Diphtheria	1
Measles	59
Mumps	7
Scarlet fever	8
Whooping cough	7

VIRGINIA.	
Smallpox—Fairfax County	7

WASHINGTON.	
Chicken pox	72
Diphtheria	21
Measles	67
Mumps	20
Scarlet fever	50
Smallpox	42
Tuberculosis	40
Typhoid fever	4
Whooping cough	21

WEST VIRGINIA.	
Diphtheria	4
Scarlet fever	11
Typhoid fever	3

WISCONSIN.	
Milwaukee:	
Chicken pox	138
Diphtheria	15
Measles	39
Pneumonia	8
Scarlet fever	17
Tuberculosis	38
Whooping cough	26
Scattering:	
Chicken pox	126
Diphtheria	31
German measles	31
Influenza	40
Measles	276
Pneumonia	28
Scarlet fever	163
Smallpox	37
Tuberculosis	52
Typhoid fever	3
Whooping cough	96

WYOMING.	
Chicken pox	18
Diphtheria	1
Impetigo contagiosa	1
Measles	64
Mumps	21
Rocky Mountain spotted fever	5
Scarlet fever	7
Typhoid fever	1
Whooping cough	7

[1] 50 cases outbreak at Albany and Waterborne. [2] Deaths.

Reports for Week Ended May 10, 1924.

DISTRICT OF COLUMBIA.	Cases.
Chicken pox	38
Diphtheria	5
Influenza	1
Measles	29
Scarlet fever	38
Smallpox	16
Tuberculosis	25
Typhoid fever	1
Whooping cough	8

NORTH DAKOTA.	Cases.
Chicken pox	12
Diphtheria	2
Measles	31
Mumps	20
Pneumonia	6
Scarlet fever	37
Smallpox	25
Tuberculosis	8
Typhoid fever	8
Whooping cough	1

SUMMARY OF MONTHLY REPORTS FROM STATES.

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

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Poliomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
February, 1924.										
Tennessee	5	65	1,009	3	1,873	36	1	52	714	23
March, 1924.										
Tennessee	1	39	520	3	1,950	33	1	53	379	15
April, 1924.										
Arkansas	0	12	373	189	1,295	30	0	15	48	22
Delaware		15	5		33			63		
Florida	2	41	35	52	405	11		37	25	40
Michigan		473	23		3,275		2	1,416	680	52
New Mexico	0	51	9	1	1,079	1	0	30	2	11
North Dakota		32			504		1	131	63	3
Vermont		12			335			54	4	2
Wyoming		10	11		451			10	1	2

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES.

Diphtheria.—Thirty-four States reported 1,500 cases of diphtheria for the week ended May 3, 1924. The same States reported 1,558 cases of this disease for the week ended May 5, 1923. One hundred and one cities, situated in all parts of the United States and having an aggregate population of nearly 28,600,000, reported 893 cases for the week this year and 876 cases for the corresponding week last year. The estimated expectancy for these cities was 998 cases. The estimated expectancy was based on the experience of the last nine years excluding epidemics.

Measles.—Thirty States reported 13,204 cases of measles for the week in 1924 and 23,554 cases for the corresponding week in 1923. One hundred and one cities reported for the week 4,775 cases in 1924 and 10,701 cases in 1923.

Scarlet fever.—Thirty-five States reported 3,273 cases of scarlet fever for the week ended May 3, 1924, and 3,127 cases for the week

ended May 5, 1923. The city reports for the week were as follows: This year, 1,599 cases; last year, 1,488 cases; estimated expectancy, 979 cases.

Smallpox.—Epidemics of smallpox in a number of communities have made the figures for this disease unusually high since the first of the year. Thirty-six States reported 1,410 cases this year and 525 cases last year for the week. One hundred and one cities reported 532 cases for the week this year and 108 cases for the corresponding week of last year. The estimated expectancy for these cities was 183 cases.

Influenza and pneumonia.—During April there was a decline in the number of deaths from influenza and pneumonia. For the week ended May 3, 1924, 101 cities reported 929 deaths from these diseases. For the corresponding week of last year, they reported 902 deaths.

City reports for week ended May 3, 1924.

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence how many cases of the disease under consideration may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years. If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1915 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city.	Chicken pox, cases reported.	Diphtheria.		Influenza.		Measles, cases reported.	Mumps, cases reported.	Pneumonia, deaths reported.	Scarlet fever.	
		Cases, estimated expectancy.	Cases reported.	Cases reported.	Deaths reported.				Cases, estimated expectancy.	Cases reported.
NEW ENGLAND.										
Maine:										
Lewiston	1	1	2	0	0	10	0	1	5	0
Portland	11	2	5	0	0	0	51	3	3	1
New Hampshire:										
Concord	0	1	0	0	0	41	0	2	1	0
Vermont:										
Barre	0	0	0	0	0	0	0	1	1	0
Burlington	0	1	1	0	0	3	0	0	1	0
Massachusetts:										
Boston	31	57	52	2	0	194	18	32	50	96
Fall River	1	3	2	1	1	30	4	3	2	9
Springfield	2	3	4	1	1	37	4	2	5	11
Worcester	7	3	0	0	0	12	15	6	6	0
Rhode Island:										
Pawtucket	3	1	1	0	0	0	1	4	1	3
Providence	0	11	16	0	0	3	0	10	10	54
Connecticut:										
Bridgeport	1	5	8	0	0	0	0	1	5	4
Hartford	----	6	7	0	0	49	----	2	3	54
New Haven	9	4	2	0	0	13	48	3	5	10
MIDDLE ATLANTIC.										
New York:										
Buffalo	0	11	8	0	0	23	0	13	19	14
New York	244	298	226	29	11	1,867	256	226	198	254
Rochester	19	7	0	0	0	24	25	7	12	22
Syracuse	19	8	16	0	0	44	9	8	13	24
New Jersey:										
Camden	----	4	4	0	0	1	----	5	2	10
Newark	49	18	4	3	0	121	126	9	23	38
Trenton	7	4	3	1	1	22	0	6	4	2
Pennsylvania:										
Philadelphia	96	64	67	----	6	159	----	67	70	80
Pittsburgh	46	18	13	----	3	46	108	51	19	26
Reading	0	2	3	0	0	3	69	0	2	3
Scranton	5	2	2	0	0	4	1	4	2	3

City reports for week ended May 3, 1924—Continued.

Division, State, and city.	Chicken pox, cases reported.	Diphtheria.		Influenza.		Measles, cases reported.	Mumps, cases reported.	Pneumonia, deaths reported.	Scarlet fever.	
		Cases, estimated expectancy.	Cases reported.	Cases reported.	Deaths reported.				Cases, estimated expectancy.	Cases reported.
E. NORTH CENTRAL.										
Ohio:										
Cincinnati	14	10	3	0	0	87	12	10	11	18
Cleveland	74	21	18	3	1	121	306	26	25	15
Columbus	10	3	4	0	0	6	2	1	6	18
Toledo	29	4	0	0	0	93	0	8	13	24
Indiana:										
Fort Wayne		2	0	0	0	0		2	2	3
Indianapolis	0	6	4	0	0	30	115	7	19	2
South bend	0	1	1	0	0	7	0	3	2	14
Terre Haute	2	1	0	0	0	3	0	2	2	4
Illinois:										
Chicago	74	113	75	5	3	275	79	80	103	115
Cicero	1	1	0	0	0	1	14	0	1	0
Peoria		1	0	0	0	2		5	3	4
Springfield	15	1	0	2	1	3	1	2	1	2
Michigan:										
Detroit	46	58	38	1	2	114	113	39	70	80
Flint	10	3	8	0	0	9	44	3	5	5
Grand Rapids	7	4	4	0	0	9	43	2	5	9
Wisconsin:										
Madison	14	1	0	0	0	0	7	0	4	1
Milwaukee	97	12	15	0	0	38	35	18	29	27
Racine	12	2	2	0	0	0	0	3	5	9
Superior		1	1	0	0	0		1	2	3
W. NORTH CENTRAL.										
Minnesota:										
Duluth	16	3	0	0	0	3	0	3	3	13
Minneapolis	106	16	12	0	0	38	8	10	26	49
St. Paul		12	14	0	0	28		12	15	44
Iowa:										
Des Moines	0	3	2	0		0	0		13	3
Sioux City	1	1	2	0		1	0		4	1
Waterloo	5	1	0	0		6	12		2	1
Missouri:										
Kansas City	6	8	2	2	2	69	29	12	8	6
St. Joseph	2	1	1	0	0	2	5	7	3	3
St. Louis	29	48	33	1	1	62	71		27	64
North Dakota:										
Fargo	0	0	0	0	0	0	0	3	1	0
Grand Forks	0	1	0	0	0	11	0	0	1	0
South Dakota:										
Aberdeen	2		0	0	0	9	0	0		0
Sioux Falls	5	1	0	0	0	0	0	0	1	5
Nebraska:										
Lincoln		1	2	0	0	6		1	2	3
Omaha	4	5	2	0	0	15	0	4	10	3
Kansas:										
Topeka	10	0	2	0	0	16	2	2	2	4
Wichita	3	1	0	0	0	6	45	0	2	4
SOUTH ATLANTIC.										
Delaware:										
Wilmington		1							3	
Maryland:										
Baltimore	92	18	16	12	2	250	42	29	24	61
Cumberland		1	0	2	0	0		1	1	1
Frederick	0	0	0	0	0	0	0	0	0	11
District of Columbia:										
Washington	60	11	10	2	2	31		16	16	42
Virginia:										
Lynchburg	0	0	0	0	0	0	7	2	1	0
Norfolk	0	1	1	0	0	20	0	2	2	0
Richmond	8	1	4		1	107	2	5	3	5
Roanoke	2	1	1	0	0	1	3	3	1	2
West Virginia:										
Charleston	1	1	0	0	0	5	0	2	2	0
Huntington	0	1	0	0	0	0	0	6	1	0
Wheeling		1	1	0	0	10		1	1	8

City reports for week ended May 3, 1924—Continued.

Division, State, and city.	Chicken pox, cases reported.	Diphtheria.		Influenza.		Measles, cases reported.	Mumps, cases reported.	Pneumonia, deaths reported.	Scarlet fever.	
		Cases, estimated expectancy.	Cases reported.	Cases reported.	Deaths reported.				Cases, estimated expectancy.	Cases reported.
SOUTH ATLANTIC—continued.										
North Carolina:										
Raleigh	15	0	0	0	0	29	0	3	0	1
Wilmington	7	1	0	0	0	12	8	1	1	0
Winston-Salem	15	1	1	0	0	7	2	2	1	26
South Carolina:										
Charleston	0	1	0	0	0	0	1	2	0	0
Columbia	6	0	1	0	0	1	13	3	0	0
Greenville	0	0	0	0	0	0	0	2	0	0
Georgia:										
Atlanta	1	1	1	0	0	5	10	17	3	7
Brunswick	3	0	0	0	0	3	10	0	0	0
Savannah	0	0	1	1	0	2	0	6	1	1
Florida:										
St. Petersburg	3	---	0	0	0	0	0	0	---	1
Tampa	0	2	0	0	0	0	0	0	0	1
E. SOUTH CENTRAL.										
Kentucky:										
Covington	3	1	0	0	0	17	0	2	1	2
Lexington	0	0	0	0	0	5	0	1	1	1
Louisville	3	5	1	6	0	11	11	10	5	3
Tennessee:										
Memphis	21	3	3	---	1	22	50	7	3	10
Nashville	6	1	0	0	0	8	1	6	1	0
Alabama:										
Birmingham	3	2	2	3	2	29	8	17	1	1
Mobile	0	0	0	1	0	9	0	1	0	0
Montgomery	---	0	0	1	0	2	---	1	1	0
W. SOUTH CENTRAL.										
Arkansas:										
Fort Smith	0	1	0	0	---	19	9	---	0	2
Little Rock	3	0	0	0	0	30	2	1	1	0
Louisiana:										
New Orleans	7	7	12	3	1	42	0	8	3	13
Shreveport	1	---	0	0	0	2	0	1	---	1
Oklahoma:										
Oklahoma	0	1	0	0	0	0	0	2	1	0
Tulsa	3	1	0	0	---	20	1	---	1	3
Texas:										
Dallas	18	2	3	---	2	6	31	5	1	4
Galveston	0	1	0	0	0	4	0	1	0	0
Houston	---	3	3	---	1	0	---	4	1	3
San Antonio	0	1	0	0	0	1	0	4	1	0
MOUNTAIN.										
Montana:										
Billings	4	0	1	0	0	0	0	0	1	0
Great Falls	7	1	4	0	0	3	0	0	1	1
Helena	1	---	0	0	0	2	0	1	---	15
Missoula	0	0	0	0	0	0	0	1	0	0
Idaho:										
Boise	---	0	---	---	---	---	---	---	1	---
Colorado:										
Denver	37	10	21	0	0	72	19	13	11	10
Pueblo	0	1	8	0	0	9	1	3	1	1
New Mexico:										
Albuquerque	---	2	0	0	0	22	---	0	1	1
Utah:										
Salt Lake City	28	3	1	0	0	22	7	7	3	0
Nevada:										
Reno	1	0	0	0	0	0	0	2	0	0
PACIFIC.										
Washington:										
Seattle	16	4	14	0	---	9	4	---	7	10
Spokane	19	2	4	0	---	3	0	---	3	21
Tacoma	14	1	0	0	---	10	3	---	3	10
Oregon:										
Portland	5	4	8	0	0	7	4	5	8	7
California										
Los Angeles	100	22	54	3	4	209	5	18	11	60
Sacramento	3	2	3	1	1	13	0	5	1	0
San Francisco	---	20	---	---	---	---	---	---	13	---

City reports for week ended May 3, 1924—Continued.

Division, State, and city.	Population, July 1, 1923, estimated.	Smallpox. Cases, estimated expectancy.	Smallpox. Cases reported.	Smallpox. Deaths reported.	Tuberculosis, deaths reported.	Typhoid fever. Cases, estimated expectancy.	Typhoid fever. Cases reported.	Typhoid fever. Deaths reported.	Whooping cough, cases reported.	Deaths, all causes.
NEW ENGLAND.										
Maine:										
Lewiston	33,790	0	0	0	1	0	0	0	0	15
Portland	73,129	0	0	0	0	0	0	0	4	28
New Hampshire:										
Concord	22,408	0	0	0	2	0	0	0	0	8
Vermont:										
Barre	[1] 10,008	0	0	0	2	0	0	0	0	7
Burlington	23,613	0	0	0	0	0	0	0	0	6
Massachusetts:										
Boston	770,400	0	0	0	15	2	1	2	19	245
Fall River	120,912	0	0	0	7	0	1	0	5	36
Springfield	144,227	0	0	0	0	0	0	0	0	41
Worcester	191,927	0	0	0	1	0	1	0	0	42
Rhode Island:										
Pawtucket	68,799	0	0	0	0	0	0	0	0	20
Providence	242,378	0	0	0	3	0	0	0	0	83
Connecticut:										
Bridgeport	[1] 143,555	0	0	0	1	0	0	0	0	30
Hartford	[1] 138,036	0	0	0	5	0	0	0	----	38
New Haven	172,967	0	0	0	3	0	1	1	0	37
MIDDLE ATLANTIC.										
New York:										
Buffalo	536,718	0	0	0	8	0	0	0	39	159
New York	5,927,625	0	0	0	[2] 117	12	5	2	170	1,440
Rochester	317,867	0	0	0	7	0	0	0	2	85
Syracuse	184,511	0	0	0	3	0	1	0	3	61
New Jersey:										
Camden	124,157	0	0	0	0	1	0	0	----	40
Newark	438,699	0	0	0	13	0	1	0	50	127
Trenton	127,390	0	0	0	4	0	0	0	6	42
Pennsylvania:										
Philadelphia	1,922,788	0	0	0	53	6	3	3	64	541
Pittsburgh	613,442	0	0	0	19	1	0	0	52	220
Reading	110,917	0	0	0	2	0	0	0	4	37
Scranton	140,636	0	0	0	5	0	0	0	0	----
EAST NORTH CENTRAL.										
Ohio:										
Cincinnati	406,312	2	14	0	8	1	0	0	11	109
Cleveland	888,519	2	0	0	21	3	1	0	84	207
Columbus	261,082	1	0	0	9	0	0	0	10	59
Toledo	268,338	5	37	1	8	1	0	0	29	71
Indiana:										
Fort Wayne	93,573	3	15	0	0	0	0	0	----	18
Indianapolis	342,718	6	42	0	9	1	0	0	15	92
South Bend	76,709	1	0	0	1	1	0	0	0	16
Terre Haute	68,939	1	8	0	0	0	0	0	3	23
Illinois:										
Chicago	2,886,121	2	5	0	64	3	6	0	34	721
Cicero	55,968	0	0	0	0	0	0	0	3	5
Peoria	79,675	2	0	0	0	0	0	0	----	17
Springfield	61,833	0	0	0	0	0	0	0	1	22
Michigan:										
Detroit	995,668	8	75	9	29	4	2	1	47	314
Flint	117,968	2	19	0	3	0	0	0	11	26
Grand Rapids	145,947	1	2	0	1	1	2	0	3	25
Wisconsin:										
Madison	42,519	1	0	0	0	0	0	0	13	4
Milwaukee	484,595	4	1	0	9	1	0	0	29	105
Racine	64,393	1	4	0	0	0	0	0	0	14
Superior	[1] 39,671	1	1	0	1	0	0	0	----	7
WEST NORTH CENTRAL.										
Minnesota:										
Duluth	106,289	2	6	1	1	0	0	0	4	23
Minneapolis	409,125	17	6	0	5	1	0	0	6	100
St. Paul	241,891	4	24	0	3	0	0	0	----	77
Iowa:										
Des Moines	140,923	1	3	----	----	0	0	----	0	----
Sioux City	79,662	2	0	----	----	0	0	----	3	----
Waterloo	39,667	0	0	----	----	0	0	----	2	----

[1] Population Jan. 1, 1920.

[2] Pulmonary only.

City reports for week ended May 3, 1924—Continued.

Division, State, and city.	Population, July 1, 1923, estimated.	Smallpox.			Tuberculosis, deaths reported.	Typhoid fever.			Whooping cough, cases reported.	Deaths, all causes.
		Cases, estimated expectancy.	Cases reported.	Deaths reported.		Cases, estimated expectancy.	Cases reported.	Deaths reported.		
WEST NORTH CENTRAL—continued.										
Missouri:										
Kansas City	351,819	6	0	0	10	1	0	0	6	96
St. Joseph	78,232	7	1	0	0	0	0	0	0	34
St. Louis	803,853	9	3	0	9	2	2	1	34	222
North Dakota:										
Fargo	24,841	1	0	0	0	0	0	0	0	7
Grand Forks	14,547	1	0	0	0	0	0	0	0	----
South Dakota:										
Aberdeen	15,829	----	0	0	0	----	0	0	----	----
Sioux Falls	29,206	2	2	0	0	0	0	0	0	4
Nebraska:										
Lincoln	58,761	3	0	0	1	0	0	0	----	12
Omaha	204,382	9	3	0	1	1	0	0	----	49
Kansas:										
Topeka	52,555	1	0	0	0	0	1	0	0	20
Wichita	79,261	6	8	0	0	0	0	0	1	14
SOUTH ATLANTIC.										
Delaware:										
Wilmington	117,728	0	----	----	----	0	----	----	----	----
Maryland:										
Baltimore	773,580	0	0	0	22	4	3	0	31	253
Cumberland	32,361	0	0	0	1	0	0	0	----	9
Frederick	11,301	0	0	0	0	0	0	0	0	5
District of Columbia:										
Washington	[1] 437,571	1	2	0	16	1	2	0	15	149
Virginia:										
Lynchburg	30,277	0	0	0	1	0	0	0	5	18
Norfolk	159,089	0	0	0	1	1	0	0	0	----
Richmond	181,044	1	0	0	5	1	0	0	10	58
Roanoke	55,502	2	0	0	1	0	1	0	1	16
West Virginia:										
Charleston	45,597	1	0	0	2	0	0	1	0	25
Huntington	57,918	0	0	0	4	0	0	0	0	15
Wheeling	[1] 56,208	0	0	0	1	1	2	0	----	16
North Carolina:										
Raleigh	29,171	0	13	0	2	0	0	0	0	14
Wilmington	35,719	0	0	0	0	0	1	0	3	13
Winston-Salem	56,230	4	7	0	4	0	1	0	13	19
South Carolina:										
Charleston	71,245	0	3	0	3	1	0	0	0	25
Columbia	39,688	0	1	0	5	0	1	0	1	26
Greenville	25,789	0	5	0	2	0	0	0	7	8
Georgia:										
Atlanta	222,963	5	37	0	2	0	0	0	----	84
Brunswick	15,937	0	0	0	0	1	0	0	0	1
Savannah	89,448	1	1	0	4	1	0	0	----	36
Florida:										
St. Petersburg	24,403	----	1	0	0	----	0	0	0	6
Tampa	56,050	0	0	0	4	1	0	1	0	12
EAST SOUTH CENTRAL.										
Kentucky:										
Covington	57,877	1	0	0	0	1	0	0	0	20
Lexington	43,673	0	0	0	1	0	0	0	0	14
Louisville	257,671	1	0	0	4	1	0	0	1	67
Tennessee:										
Memphis	170,067	2	0	0	6	1	1	0	2	83
Nashville	121,128	0	0	0	9	1	0	0	4	42
Alabama:										
Birmingham	195,901	0	49	0	8	1	2	2	0	80
Mobile	63,853	0	0	0	1	0	0	0	0	15
Montgomery	45,383	0	0	0	2	0	0	0	----	14
WEST SOUTH CENTRAL.										
Arkansas:										
Fort Smith	30,635	0	0	----	----	0	0	----	4	----
Little Rock	70,916	0	0	0	2	1	0	0	0	----

[1] Population Jan. 1, 1920.

City reports for week ended May 3, 1924—Continued.

Division, State, and city.	Population, July 1, 1923, estimated.	Smallpox.			Tuberculosis, deaths reported.	Typhoid fever.			Whooping cough, cases reported.	Deaths, all causes.
		Cases, estimated expectancy.	Cases reported.	Deaths reported.		Cases, estimated expectancy.	Cases reported.	Deaths reported.		
WEST SOUTH CENTRAL—continued.										
Louisiana:										
New Orleans	404,575	3	0	0	10	3	1	0	4	145
Shreveport	54,590	----	4	0	2	----	0	0	0	24
Oklahoma:										
Oklahoma	101,150	4	0	0	1	0	0	0	0	20
Tulsa	102,018	3	1	----	----	1	0	----	1	----
Texas:										
Dallas	177,274	7	0	0	5	0	0	0	7	57
Galveston	46,877	0	0	0	2	0	2	0	0	13
Houston	154,970	0	0	0	1	0	0	0	----	37
San Antonio	184,727	0	0	0	9	1	0	0	1	68
MOUNTAIN.										
Montana:										
Billings	16,927	1	1	0	0	0	0	0	1	2
Great Falls	27,787	4	0	0	0	0	0	0	1	11
Helena	[1] 12,037	----	0	0	0	----	0	0	0	7
Missoula	[1] 12,668	1	1	0	0	0	0	0	1	4
Idaho:										
Boise	22,806	0	----	----	----	0	----	----	----	----
Colorado:										
Denver	272,031	12	2	0	10	0	0	0	16	90
Pueblo	43,519	0	0	0	0	0	0	0	0	12
New Mexico:										
Albuquerque	16,648	0	0	0	2	0	0	0	----	11
Utah:										
Salt Lake City	126,241	8	0	0	5	0	0	0	10	32
Nevada:										
Reno	12,429	1	0	0	0	0	1	0	0	7
PACIFIC.										
Washington:										
Seattle	[1] 315,685	8	5	----	----	0	0	----	2	----
Spokane	104,573	11	18	----	----	1	0	----	2	----
Tacoma	101,731	1	0	----	----	0	0	----	0	----
Oregon:										
Portland	273,621	3	7	0	4	1	4	1	1	----
California:										
Los Angeles	666,853	2	152	0	31	2	1	0	2	252
Sacramento	69,950	0	0	0	3	0	1	0	2	26
San Francisco	539,038	2	----	----	----	2	----	----	----	----

Division, State, and city.	Cerebrospinal meningitis.		Lethargic encephalitis.		Pellagra.		Poliomyelitis (infantile paralysis).		
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases, est. expectancy.	Cases.	Deaths.
NEW ENGLAND.									
Massachusetts:									
Boston	0	0	1	1	0	0	0	1	0
MIDDLE ATLANTIC.									
New York:									
New York	9	1	21	9	0	0	1	1	0
New Jersey:									
Newark	0	0	1	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	0	0	2	1	0	0	0	0	0
EAST NORTH CENTRAL.									
Ohio:									
Cleveland	1	0	0	1	0	0	0	0	0
Toledo	0	0	0	2	0	0	0	0	0

[1] Population Jan. 1, 1920.

City reports for week ended May 3, 1924—Continued.

Division, State, and city.	Cerebrospinal meningitis.		Lethargic encephalitis.		Pellagra.		Poliomyelitis (infantile paralysis).		
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases, est. expectancy.	Deaths.	Cases.
EAST NORTH CENTRAL—CON.									
Indiana:									
Indianapolis	0	0	0	1	0	0	0	0	0
Illinois:									
Chicago	1	0	0	0	0	0	0	2	0
Michigan:									
Detroit	1	1	0	0	0	0	0	0	0
WEST NORTH CENTRAL.									
Minnesota:									
Duluth	0	0	0	1	0	0	0	0	0
Minneapolis	0	0	2	1	0	0	0	0	0
Iowa:									
Sioux City	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC.									
Maryland:									
Baltimore	0	0	1	1	0	0	0	0	0
North Carolina:									
Raleigh	0	0	0	0	0	2	0	0	0
South Carolina:									
Columbia	0	0	0	0	0	1	0	0	0
Greenville	0	1	0	0	0	0	0	0	0
EAST SOUTH CENTRAL.									
Tennessee:									
Nashville	0	0	0	0	0	1	0	0	0
Alabama:									
Mobile	0	0	1	0	0	1	0	0	0
WEST SOUTH CENTRAL.									
Louisiana:									
New Orleans	0	0	1	0	2	0	0	0	0
MOUNTAIN.									
Colorado:									
Denver	0	0	0	1	0	0	0	0	0
PACIFIC.									
Washington:									
Seattle	2	0	0	0	0	0	0	0	0
Oregon:									
Portland	0	0	0	1	0	0	0	0	0
California:									
Los Angeles	1	0	0	0	0	0	0	0	0

[1] Population Jan. 1, 1920.

The following table gives a summary of the reports from 105 cities for the nine-week period ended May 3, 1924. The cities included in this table are those whose reports have been published for all nine weeks in the Public Health Reports. Eight of these cities did not report deaths. The aggregate population of the cities reporting cases was estimated at nearly 29,000,000 on July 1, 1923, which is the latest date for which estimates are available. The cities reporting deaths had more than 28,000,000 population on that date. The number of cities included in each group and the aggregate population are shown in a separate table below.

Summary of weekly reports from cities, March 2 to May 3, 1924.

DIPHTHERIA CASES.

	1924, week ended—								
	Mar. 8.	Mar. 15.	Mar. 22.	Mar. 29.	Apr. 5.	Apr. 12.	Apr. 19.	Apr. 26.	May 3.
Total	1,028	1,053	1,113	1,038	1,039	1,005	1,009	988	897
New England	86	110	135	103	105	102	99	111	97
Middle Atlantic	351	401	415	391	383	384	374	400	344
East North Central	218	234	229	200	219	210	211	156	173
West North Central	114	77	86	66	74	60	60	71	68
South Atlantic	43	37	61	42	61	52	52	50	[1] 40
East South Central	9	12	17	10	17	8	14	13	6
West South Central	34	18	21	32	23	24	31	33	18
Mountain	24	24	25	31	30	40	52	31	[2] 35
Pacific	149	140	124	163	127	[3] 125	116	[3] 123	[3] 116

MEASLES CASES.

Total	7,110	6,931	7,026	6,590	6,070	6,247	5,147	5,231	4,777
New England	356	460	430	443	374	401	353	354	379
Middle Atlantic	1,971	2,258	2,467	2,354	2,394	2,647	2,347	2,184	2,310
East North Central	541	604	659	674	806	838	675	829	703
West North Central	1,051	1,097	925	766	569	415	359	350	257
South Atlantic	801	579	675	621	572	626	487	518	[1] 484
East South Central	155	196	231	173	126	156	159	173	98
West South Central	693	410	514	590	354	323	188	127	104
Mountain	819	739	634	444	405	241	179	193	[2] 122
Pacific	723	588	491	525	470	[3] 600	400	[3] 503	[3] 320

SCARLET FEVER CASES.

Total	1,934	1,930	1,928	1,966	1,737	1,822	1,658	1,552	1,621
New England	387	413	337	363	312	326	253	271	242
Middle Atlantic	532	520	532	532	517	498	474	467	473
East North Central	347	349	376	370	346	345	334	284	325
West North Central	253	263	270	254	184	230	222	195	197
South Atlantic	209	175	221	202	200	218	189	168	[1] 178
East South Central	28	22	17	30	11	18	16	12	16
West South Central	11	19	13	17	15	26	27	18	23
Mountain	25	27	22	28	16	20	19	23	[2] 27
Pacific	142	142	140	170	136	[3] 141	124	[3] 114	[3] 140

SMALLPOX CASES.

Total	488	523	565	602	544	537	467	568	544
New England	0	0	0	0	0	1	1	0	0
Middle Atlantic	1	2	0	6	1	1	0	0	0
East North Central	160	125	186	162	153	141	164	193	186
West North Central	56	77	77	72	52	61	41	62	53
South Atlantic	117	144	123	171	116	98	93	98	[1] 70
East South Central	35	25	25	38	49	45	26	55	49
West South Central	2	5	6	7	10	4	5	2	4
Mountain	11	3	4	7	8	4	10	6	[2] 5
Pacific	106	142	144	139	155	[3] 182	127	[3] 152	[3] 177

TYPHOID FEVER CASES.

Total	46	57	60	76	51	53	55	59	49
New England	7	3	2	4	1	4	4	7	4
Middle Atlantic	16	20	19	26	9	21	17	11	10
East North Central	8	11	8	7	7	7	7	10	11
West North Central	3	2	5	5	7	2	6	1	3
South Atlantic	3	8	1	11	9	10	4	8	[1] 11
East South Central	1	7	13	10	1	1	4	8	3
West South Central	2	3	2	8	9	2	4	6	3
Mountain	2	0	1	1	2	1	4	0	[2] 1
Pacific	4	3	9	4	6	[3] 5	5	[3] 8	[3] 3

[1] Figures for Wilmington, Del., estimated. Report not received at time of going to press.
[2] Figures for Boise, Idaho, estimated.
[3] Figures for San Francisco, Calif., estimated.

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Summary of weekly reports from cities, March 2 to May 3, 1924—Continued.

INFLUENZA DEATHS.

	1924, week ended—								
	Mar. 8.	Mar. 15.	Mar. 22.	Mar. 29.	Apr. 5.	Apr. 12.	Apr. 19.	Apr. 26.	May 3.
Total	118	107	85	96	97	94	80	73	51
New England	5	10	5	3	6	3	3	3	2
Middle Atlantic	45	37	28	45	44	35	31	30	21
East North Central	19	23	13	11	20	25	14	12	7
West North Central	1	3	3	4	2	8	4	4	3
South Atlantic	15	7	15	10	3	7	6	10	[1] 5
East South Central	15	16	9	8	13	6	11	8	3
West South Central	12	8	8	10	6	3	4	3	4
Mountain	4	1	2	2	1	2	4	2	[2] 0
Pacific	2	2	2	3	2	[3] 5	3	[3] 1	[3] 6

PNEUMONIA DEATHS.

Total	1,218	1,187	1,173	1,204	1,251	1,221	1,101	963	941
New England	71	85	67	58	75	71	61	63	69
Middle Atlantic	516	466	495	525	500	494	474	430	392
East North Central	221	240	226	255	286	258	232	170	199
West North Central	62	59	54	72	71	74	64	49	53
South Atlantic	177	161	152	111	125	158	118	114	[1] 100
East South Central	61	55	69	47	61	53	57	42	44
West South Central	62	61	56	61	67	43	43	35	24
Mountain	14	31	20	37	39	32	25	[2] 26	[2] 27
Pacific	34	29	34	38	27	[3] 38	27	[3] 34	[3] 33

Number of cities included in summary of weekly reports and aggregate population of cities in each group, estimated as of July 1, 1923.

Group of cities.	Number of cities reporting cases.	Number of cities reporting deaths.	Aggregate population of cities reporting cases.	Aggregate population of cities reporting deaths.
Total	105	97	28,898,350	28,140,934
New England	12	12	2,098,746	2,098,746
Middle Atlantic	10	10	10,304,114	10,304,114
East North Central	17	17	7,032,535	7,032,535
West North Central	14	11	2,515,330	2,381,454
South Atlantic	22	22	2,566,901	2,566,901
East South Central	7	7	911,885	911,885
West South Central	8	6	1,124,564	1,023,013
Mountain	9	9	546,445	546,445
Pacific	6	3	1,797,830	1,275,841

[1] Figures for Wilmington, Del., estimated. Report not received at time of going to press.
[2] Figures for Boise, Idaho, estimated.
[3] Figures for San Francisco, Calif., estimated.

FOREIGN AND INSULAR.

BRITISH EAST AFRICA.

Leprosy—Zanzibar—February, 1924.

During the month of February, 1924, 11 cases of leprosy were reported at Zanzibar, Kenya, British East Africa. Of these, six were sent to the Funzi leper settlement.[1]

CHILE.

Mortality—Concepcion—March, 1924.

During the month of March, 1924, 284 deaths, including 11 stillbirths, were reported in Concepcion, Chile. Of these, 140 deaths were among children under 1 year of age. (The number of births was given as 271.) The principal causes of death were stated as follows: Broncho-pneumonia, 9; croup, 2; intestinal catarrh, 22; meningitis, 2; pneumonia, 83; tuberculosis, 26; typhoid fever, 2; typhus fever, 8. (Population, officially estimated, 64,780.)

CUBA.

Communicable Diseases—Habana.

Communicable diseases have been notified at Habana as follows:

Disease.	Apr. 21–30, 1924.		Remaining under treatment Apr. 30, 1924.
	New cases.	Deaths.	
Cerebrospinal meningitis			[1] 1
Chicken pox	33		22
Diphtheria	6		1
Leprosy			14
Malaria	21	1	[2] 12
Measles	27		13
Paratyphoid fever			1
Scarlet fever	1		1
Typhoid fever	21	1	[3] 38

[1] From the interior. [2] From the interior, 5. [3] From the interior, 12.

ECUADOR.

Plague—Smallpox—April 1–15, 1924.

During the period April 1 to 15, 1924, plague and smallpox were reported in Ecuador as follows: *Plague*—Guayaquil two cases, one death; Posorja, five cases, with one death. *Smallpox*—Milagro, one case.

[1] Public Health Reports, May 2, 1924, p. 1042.

Plague-Infected Rats—Guayaquil.

During the same period, 9,529 rats were reported taken at Guayaquil, of which number 70 were found plague infected.

ITALY.

Quarantine Against Colombo, Ceylon, for Plague.

According to information dated April 19, 1924, quarantine measures have been ordered to be enforced at Italian ports against arrivals from Colombo, Ceylon, to prevent importation of plague.

LATVIA.

Further Relative to Typhus Fever—Libau.[1]

Information dated April 16, 1924, relative to the occurrence of three cases of typhus fever at Libau, Latvia, shows that the first case occurred in a teacher who had been in contact with a person lately arrived from Kovno, Lithuania, where typhus fever was reported present. The two following cases developed in pupils belonging to the group in the New Libau school in which the first case originated. The cases occurred during the last week in March.

MALTA.

Communicable Diseases—March, 1924.

Cases of communicable diseases were reported in the island of Malta during the month of March, 1924, as follows: Bronchopneumonia, 14; chicken pox, 6; influenza, 106; lethargic encephalitis, 2; malaria, 1 case;[2] pneumonia, 8 cases; trachoma, 34; undulant fever, 48; whooping cough, 24.

MEXICO.

Antimosquito Measures Discontinued—Tuxpam.

Information dated April 5, 1924, states that mosquito breeding was active at Tuxpam, Mexico, during the month of March, and that swarms of wind-borne mosquitoes were carried from the swamps into the residential parts of the city. No antimosquito measures were taken by the government at Tuxpam during the month of March.

Epidemic Dysentery—Impure Water Supply.

An epidemic of dysentery was reported present in Tuxpam. Lack of rain during the past few months is stated to have obliged the public to make use of wells contaminated from earth privies, which is believed to be the cause of the outbreak.

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[1] Public Health Reports, May 9, 1924, p. 1099. [2] Contracted abroad.

SWITZERLAND.

Influenza.

Under date of March 13, 1924, influenza was reported present in most of the Cantons of Switzerland. The type of the disease was stated to be mild. The number of cases was reported as follows: January 20 to 26, 1924, 330; January 27–February 2, 724; February 3–9, 2,600; February 10–16, 4,545; February 17–23, 5,600. During the year 1923 the total number of cases of influenza reported was 2,150. During the week ended February 16, 1924, 43 deaths from the disease were reported.

Lethargic Encephalitis.

Under the same date the occurrence of several cases of lethargic encephalitis was reported in Switzerland.

UNION OF SOUTH AFRICA.

Plague.

Plague has been reported in the Union of South Africa as follows: During the week ended March 29, 1924, 28 new cases, of which three were in the white population, with 17 deaths, of which two were in the white population. The occurrence was in the Albert district of the Cape Province, in eight districts of the Orange Free State, and in one district of the Transvaal. During the week ended April 5, 1924, 44 new cases (white, 10), with 26 deaths (white, 8), were reported. In the Cape Province the occurrence was confined to the Albert district; in the Orange Free State seven districts were affected, and in the Transvaal the occurrence was again confined to one district (Krugersdorp). The total number of cases reported to April 5, 1924, from the beginning of the outbreak, December 16, 1923, was 246 (white, 41), with 159 deaths (white, 20).

Plague-Infected Rodent.

During the week ended March 29, 1924, one plague-infected rodent was found in the municipality of Thaba 'Ncho, Orange Free State.

Plague Situation—General Conditions.

In a report of health conditions in South Africa, delivered in Parliament April 9, 1924, the Minister of Public Health stated substantially as follows:

That the plague situation in South Africa had become serious. The prevalence of the disease in man had appeared early in December, 1923, and in a restricted area, beginning in the triangular area of country between the Vaal and Zand Rivers and the Bloemfontein-

Johannesburg Railway line. To the end of January, 1924, there had been no occurrence outside the Kroonstad district, Orange Free State. Since that date, cases had occurred in the Cape Province in the Albert and Colesberg districts, and in 10 or more districts of the Orange Free State and the Krugersdorp district, Transvaal. In all these areas evidence of rodent mortality had been found, and in the majority of human cases the infection had been shown to have been due to rodent infection. Mortality had also been observed among rodents in grain stacks at Marseilles and Vinies, and there appeared to be grave danger of spread of infection to large grain areas of the Free State, which have hitherto been free from the disease. The great majority of the cases were stated to have been of the bubonic type, but about 30 cases of pneumonic plague have been reported. While every precaution has been taken to check the spread of the infection, no measures of control and eradication have been found applicable to the enormous tracts of country to be covered.

Smallpox—Typhus Fever—February, 1924.

During the month of February, 1924, 65 cases of smallpox with one death were reported in the colored population of the Union of South Africa and six cases in the white population.

During the same period, 215 cases of typhus fever with 50 deaths were reported. Of these, four cases occurred in the white population. For distribution of occurrence according to locality, see page 1250.

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

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended May 23, 1924.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India				Mar. 9–15, 1924: Cases, 2,120; deaths, 1,293.
Bombay	Mar. 23–29	1	1	
Calcutta	Mar. 30–Apr. 5	54	44	
Madras	Apr. 6–12	2	2	
Rangoon	Mar. 30–Apr. 5	4	3	
Indo-China:				
Saigon	Mar. 16–29	2	2	

PLAGUE.

Ceylon:				
Colombo	Mar. 30–Apr. 5	3		One plague rat.
China:				
Antung	Mar. 31–Apr. 6	1		
Ecuador:				
Guayaquil	Apr. 1–15	2	1	Rats taken, 9,529; found infected, 70.
Posorja	do	5	1	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received During Week Ended May 23, 1924—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
India				Mar. 9–15, 1924: Cases, 12,290; deaths, 9,575.
Bombay	Mar. 23–29	34	27	
Calcutta	Mar. 30–Apr. 5	1		
Karachi	Apr. 6–12	4	3	
Madras Presidency	Mar. 23–29	4	5	
Rangoon	Mar. 30–Apr. 5	22	22	
Iraq:				
Bagdad	Mar. 30–Apr. 1	11	7	
Union of South Africa				Mar. 23–Apr. 5, 1924: Cases, 72 (white, 13); deaths, 43 (white, 10). Total, Dec. 16, 1923–Apr. 5, 1924: Cases, 246 (white, 41); deaths, 159 (white, 20). Occurrence was in Cape Province, Orange Free State, and Transvaal. Total, Dec. 16, 1923–Apr. 5, 1924: Cases, 246 (white, 41); deaths, 159 (white, 20).
Orange Free State—				
Thaba 'Ncho				Mar. 23–29, 1924: One plague rat.

SMALLPOX.

Canada:				
Manitoba—				
Winnipeg	Apr. 27–May 3	1		
New Brunswick—				
Restigouche County	Apr. 20–26	1		
Westmoreland County	do	1		
China:				
Amoy	Mar. 30–Apr. 5		3	
Antung	Mar. 31–Apr. 6	1		
Chungking	Mar. 23–Apr. 5			Widespread.
Foochow	Mar. 23–29			Present.
Hongkong	Mar. 2–8	51	50	
Colombia:				
Buenaventura	Mar. 30–Apr. 12	2		
Ecuador:				
Milagro	Apr. 1–15	1		
Egypt:				
Alexandria	Apr. 9–15	1		
India				Mar. 9–15, 1924: Cases, 5,235; deaths, 819.
Bombay	Mar. 23–29	143	74	
Calcutta	Mar. 30–Apr. 5	6	5	
Karachi	Apr. 6–12	22	13	
Madras	do	23		
Rangoon	Mar. 30–Apr 5	7	1	
Indo-China:				
Saigon	Mar. 16–29	112	73	Including 100 square km. in surrounding country.
Japan:				
Kobe	Apr. 11–17	1	1	
Java:				
East Java—				
Soerabaya	Mar. 2–8	20	7	
Mexico:				
Tampico	Apr. 21–30	10		
Portugal:				
Lisbon	Apr. 7–13		2	
Oporto	Mar. 30–Apr. 26	16	9	
Spain:				
Cadiz	Mar. 1–31		2	
Straits Settlements:				
Singapore	Mar. 23–29	1		
Tunis:				
Tunis	Apr. 15–21	1		
Spain:				
Barcelona	Apr. 10–16		1	
Valencia	Apr. 20–26	12		
Switzerland:				
Berne	Apr. 6–12	2		
Tunis:				
Tunis	Apr. 22–28		1	
Union of South Africa				Feb. 1–29, 1924: Cases, 71 (white, 6); one death.
Orange Free State	Mar. 23–29			Outbreaks.

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

Reports Received During Week Ended May 23, 1924—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Chile:				
Concepcion	Mar. 1-31		8	
Mexico:				
Guadalajara	Apr. 27-May 3		3	
Union of South Africa				Feb. 1-29, 1924: Cases, 215 (white, 4 cases); deaths, 50.
Cape Province				Feb. 1-29, 1924: Cases 75; deaths, 15.
Natal				Feb. 1-29, 1924: Cases, 9; deaths, 3.
Orange Free State				Feb. 1-29, 1924: Cases, 42; deaths, 7.
Do	Mar. 23-Apr. 5			Outbreaks.
Transvaal				Feb. 1-29, 1924: Cases, 85; deaths, 25.

Reports Received from December 29, 1923, to May 16, 1924.[1]

CHOLERA.

China:				
Hongkong	Nov. 18-24	1		
India				Oct. 14-Dec. 22, 1923: Cases, 14,117; deaths, 9,148.
Do				Dec. 30, 1923-Mar. 8, 1924: Cases, 31,065; deaths, 17,476.
Bombay	Dec. 23-29	1	1	
Do	Feb. 3-16	17	17	
Calcutta	Nov 11-Dec 29	85	69	
Do	Dec. 30-Mar 29	436	359	
Madras	Nov. 25-Dec 29	15	5	
Do	Dec. 30-Mar. 22	24	10	
Rangoon	Nov. 11-Dec. 29	8	5	
Do	Feb. 24-Mar. 29	9	8	
Indo-China:				
Saigon	Dec. 31-Mar. 15	2	2	Including 100 square kilometers in surrounding country.
Philippine Islands:				
City—				
Manila	Feb. 3-9	1	1	
Province—				
Cebu	Mar. 2-8	1	1	
Siam:				
Bangkok	Nov. 18-Dec. 8	4	2	
Do	Dec. 31-Mar. 29	11	7	
Turkey:				
Constantinople	Dec. 2-8		1	

PLAGUE.

Azores:				
St. Michael Island	Oct. 20-Nov. 10	9	5	At localities 3 to 9 miles from port of Ponta Delgada.
Bolivia:				
La Paz	Oct. 1-31		3	
Do	Feb. 1-Mar. 31		10	
Brazil:				
Bahia	Nov. 11-Dec. 22	5	3	
Do	Dec. 30-Feb. 16	6	6	
Porto Alegre	Feb. 10-Apr. 5	3	1	
Rio de Janeiro	Jan. 20-26	1		
British East Africa:				
Kenya—				
Kisumu	Feb. 24-Mar 8	1	1	
Mombasa	Oct. 14-20	1	1	Infected rats, 2.
Do	Dec. 30-Jan. 5	1	1	Dec. 9-15, 1923: Cases, 4; deaths, 2; removed from vessel arrived Dec. 11, 1923.
Nairobi	Nov. 1-21	40		In rural districts, several hundred.
Tanganyika				To Nov. 24, 1923: Cases, 39;
Do	Jan. 27-Feb. 9	8	5	deaths, 25.
Uganda	Aug. 1-Oct. 31	734	719	
Entebbe	Oct. 1-Dec. 31	251	239	
Do	Jan. 1-31	36	35	

[1]From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canary Islands:				
Las Palmas	Oct. 15-Nov. 15	14	14	
Santa Cruz de Teneriffe	Feb. 19-Apr. 8	5		
San Juan de la Rambla	Dec. 11	1		Locality 52 km. from Teneriffe.
Celebes Island	Mar. 30			Epidemic.
Macassar	Feb. 20-Mar. 8	11	7	Including Menado.
Ceylon:				
Colombo	Nov. 11-Dec. 29	31	21	Plague rodents, 24.
Do	Dec. 30-Mar. 29	81	80	Plague rodents, 43.
Chile:				
Antofagasta	Mar. 16-Apr. 12	10	1	
China:				
Nanking	Dec. 16-29			Present.
Do	Dec. 30-Apr. 5			Do.
Ecuador:				
Eloy Alfaro	Mar. 16-31	1	1	
Guayaquil	Nov. 16-Dec. 31	45	13	Rats taken, 53,240; found infected, 133.
Do	Jan. 1-Mar. 31	105	32	Rats taken, 109,843; found infected, 492.
Jipijapa	Nov. 16-Dec. 15			Present.
Quevedo	Jan. 1-31	3	2	
Quito	Nov. 1-30	11	1	
Santa Rosa	Feb. 16-29			Do.
Vino del Milagro	Dec. 1-15	1		
Egypt				Jan 1-Dec 31, 1923: Cases, 1,519, deaths, 725. Jan 1-Mar. 27, 1924: Cases, 86; deaths, 55.
City—				
Alexandria	Year 1923	65	33	
Cairo	do	2	2	
Port Said	do	51	29	
Suez	do	46	24	
Do	Jan. 2-Mar. 27	6	3	
Province—				
Assiout	Year 1923	370	211	
Beni Souef	do	63	23	
Charkieh	Jan. 31-Mar. 27	2	2	
Dakhalieh	Year 1923	2	2	
Fayoum	do	34	9	
Do	Feb. 18-Mar. 27	2	2	
Gharbieh	Year 1923	23	9	
Girgeh	do	337	193	
Do	Jan. 17-Mar. 27	7	4	
Gizeh	Year 1923	3	4	
Kalioubiah	do	76	10	
Do	Jan. 6-Mar. 27	1		
Kena	Year 1923	50	34	
Menoufieh	do	290	98	
Do	Jan. 2-Mar. 27	56	34	
Minia	Year 1923	106	44	
Do	Feb. 5-Mar. 27	5	4	
Greece:				
Kalamata	Apr. 18-24			Several deaths.
Patras	do			Do.
Hawaii:				
Honokaa				Jan. 8-Mar. 14, 1924: Four plague-infected rodents.
Paauhau				Dec. 14, 1923: One plague rat. Feb. 14, 1924: One plague rat.
India				Oct. 14-Dec. 29, 1923: Cases, 34,542; deaths, 23,778.
Do				Dec. 30, 1923-Mar. 29, 1924: Cases, 59,774; deaths, 42,408.
Bombay	Oct. 28-Dec. 22	5	5	
Do	Dec. 30-Mar. 22	174	133	
Calcutta	Dec. 23-29	1	1	
Do	Jan. 6-Mar. 29	7	7	
Karachi	Nov. 11-Dec. 29	42	33	
Do	Dec. 30-Apr. 5	41	31	
Madras Presidency	Nov. 4-Dec. 29	1,657	1,021	
Do	Jan. 27-Apr. 5	638	412	
Rangoon	Jan. 27-Feb. 16	20	15	
Do	Dec. 30-Mar. 29	120	110	
Indo-China:				
Saigon	Oct. 28-Dec. 8	19	6	Including 100 square kilometers in surrounding country.
Do	Jan. 27-Mar. 1	2	1	Do.
Iraq:				
Bagdad	Nov. 11-Dec. 29	8	6	
Do	Jan. 6-Mar. 22	35	16	

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Java				Oct. 1-Dec. 31, 1923: Deaths, 2,908. Jan. 1-Feb. 29: Deaths, 1,732.
East Java—				
Djokjakarta	Oct. 1-Dec. 31		146	
Do	Jan. 1-Feb. 29		92	
Kedoe	Oct. 1-Dec. 31		1,287	
Do	Jan. 1-Feb. 29		626	
Pasoeroean	Feb. 1-29		3	
Pekalongan	Oct. 1-Dec. 31		150	
Do	Jan. 1-Feb. 29		107	
Samarang	Oct. 1-Dec. 31		430	
Do	Jan. 1-Feb. 29		183	
Soerabaya	Oct. 1-Dec. 31		9	
Do	Jan. 1-Feb. 29		17	Plague rats, 5.
Soerakarta	Oct. 1-Dec. 31		886	Corrected report.
Do	Jan. 1-Feb. 29		704	
Madagascar:				
Tananarive Province	Oct. 1-Dec. 31	324	272	Bubonic, pneumonic, septicemic. July 1-Dec. 31, 1923—city and Province: Cases, 429; deaths, 367. Jan. 1-Feb. 29, 1924—city and Province: Cases, 525; deaths, 465.
Ambatondrazaka	Feb. 1-15	8		District. Type, pneumonic.
Ambositra	Feb. 1-29	8	1	Do.
Other localities	do	229	214	
Tananarive town	Oct. 1-Dec. 31	74	74	
Do	Jan. 29-Feb. 29	27	26	
Paraguay:				
Asuncion	Dec. 18	6	4	
Peru				Nov. 1-Dec. 31, 1923: Cases, 38; deaths, 24. Jan. 1-Mar. 31, 1924: Cases, 162; deaths, 49.
Locality—				
Ayabaca	Mar. 1-31	4		
Barranco	do	1		
Callao	Jan. 1-Mar. 31	7	2	
Cañete	Nov. 1-30	1	1	
Do	Feb. 1-Mar. 31	14	5	
Casma	Mar. 1-31	2	1	
Chancay	Dec. 1-31	2		
Chepen	Nov. 1-30	1		
Chiclayo	Nov. 1-Dec. 31	2	1	
Chilca	Jan. 1-31	1		
Guadalupe	Feb. 1-Mar 31	3	1	
Huacho	do	5	3	
Huaral	do	11	4	
Huarmey	Jan. 1-Mar. 31	22	4	
Lambayeque	Mar. 1-31	2		
Lima (city)	Nov. 1-Dec. 31	22	15	
Do	Jan. 1-Mar. 31	41	21	
Lima (country)	Nov. 1-Dec. 31	8	7	
Do	Jan. 1-Mar. 31	11	2	
Lurin	do	2		
Mollendo	do	3	2	
Moro	Mar. 1-31	7		
Paita (city)	Jan. 1-Mar. 31	1	1	
Paita (country)	do	8	1	
Reque	do	4		
Salaverry	Mar. 1-31	1		
Sullana	Jan. 1-Mar. 31	2		
Trujillo	do	12	2	Country
Portugal:				
Lisbon	Dec. 13-21	7		
Do	Dec. 31-Jan. 6		1	
Portuguese West Africa:				
Angola—				
Loanda	Oct. 1-Dec. 29	59	29	
Do	Dec. 30-Feb. 2		4	
Russia:				
Bukeeve Province				Oct. 1, 1923-Mar. 10, 1924: Cases, 339; deaths, 315. 66 plague centers; entire southeast section cases, 473; deaths, 435.
Ural Provinces				Oct. 1, 1923-Feb. 4, 1924: Cases, 441. 4 plague centers.
Kalmuk district	Mar. 10	3		
Novy Kazanha	Mar. 1		4	At a locality on the coast, 16 cases, 8 deaths.
Siam:				
Bangkok	Nov. 4-Dec. 8	3	2	
Do	Jan. 13-Mar. 22	5	5	
Siberia:				
Transbaikalia—				
Chita	Jan. 27	2	2	Pneumonic. Occurring in veterinary laboratory workers.

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Spain:				
Malaga	Dec. 1-31	4		
Straits Settlements:				
Penang	Jan. 27-Feb. 2	1	1	
Singapore	Nov. 11-Mar. 15	4	4	
Do	Dec. 30-Mar. 1	14	11	
Syria:				
Beirut	Nov. 1-Dec. 10	3		
Do	Jan. 1-10	1		
Turkey:				
Constantinople	Dec. 2-22	6	3	
Union of South Africa				Mar. 9-22, 39 cases, 12 deaths.
				Dec. 16, 1923-Mar. 22, 1924: Cases, 236; deaths, 128 (European cases, 18; deaths, 5).
Cape Province				Reported Mar. 17, 1924: Cases, 11; deaths, 7.
Uitenhage district	Dec. 9-15			Plague rodent found in vicinity Haarhoff's Kraal farm.
Orange Free State				Jan. 27-Mar. 8, 1924: Cases, 74; deaths, 45. (White cases, 9; colored cases, 41; deaths, 14.)
Hoopstad district	Feb. 3-9	1		Feb. 10: Death of case (white) previously reported.
Kroonstad district	Dec. 16-27	7	3	Cases, 24; deaths, 15; reported since outbreak.
Do	Jan. 6-Feb. 9	43	20	
Winburg district	Feb. 3-9	1		
Wonderfontein farm	Dec. 2-8	4		Vicinity of Hoopstad. At Hoopstad, Dec. 9-15, 1923, one death of case previously reported.
Transvaal—				
Wolmaransstad district	Mar. 2-8	3	1	White, one case.
West Africa				Apr. 2, 1924: Reported present in one locality.
On vessels:				
———	Dec. 11	4	2	At Mombasa, British East Africa.
———	Jan. 24	2		At Varna, Bulgaria, from Syrian port.

SMALLPOX.

Algeria:				
Algiers	Nov. 1-30	1		
Do	Mar. 1-31	1		
Arabia:				
Aden	Dec. 16-22	1		Imported.
Do	Jan. 13-Apr. 5	7		Four imported.
Belgium:				
Brussels	Jan. 13-Mar. 29	10		
Bolivia:				
La Paz	Oct. 1-Dec. 31	45	15	
Do	Jan. 1-Mar. 31	35	19	
Brazil:				
Bahia	Jan. 6-12	2		
Pernambuco	Nov. 4-Dec. 1	15	3	
Do	Jan. 6-Feb. 23		8	
Porto Alegre	Dec. 23-29		1	
Do	Dec. 30-Mar. 8		2	
Rio de Janeiro	Nov. 18-24	3	4	
Do	Jan. 6-Mar. 29	4	2	
Sao Paulo	Sept. 3-9	1		
British East Africa:				
Tanganyika Territory	Sept. 30-Dec. 29	30	7	
Do	Jan. 6-12	2		
Uganda	Sept. 1-30	6	1	
Entebbe	Oct. 1-Dec. 31	5	1	
Zanzibar	Sept. 1-Oct. 31	116	18	Sept. 1-30, 1923: In areas 27 miles from town of Zanzibar. Oct. 1-31, 1923: In vicinity, 1 case, 1 death. In Mikotoni district, 30 cases, 14 deaths reported.
British South Africa:				
Northern Rhodesia				Dec. 4-31, 1923: Cases, 40; deaths, 5.
Do	Feb. 26-Mar. 3	1		Jan. 1-31, 1924: Cases, 50; deaths, 11; reported from Balorale, Kalabo, and Mankoya districts.

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canada:				
Alberta—				
Calgary	Jan. 27-Apr. 26	39		
British Columbia—				
Vancouver	Dec. 22-29	10		
Do	Dec. 30-Feb. 23	54		
Victoria	Feb. 10-Mar. 29	3		
Manitoba—				
Winnipeg	Nov. 25-Dec. 29	21		
Do	Dec. 30-Apr. 26	80		
New Brunswick—				
Fredericton				Feb. 1-29, 1924: Cases, 8.
Gloucester County	Mar. 2-Apr. 5	4		
Madawaska County	Dec. 8-15	1		
Restigouche County				Jan. 1-Mar. 31, 1924: Cases, 5.
Victoria County	Feb. 10-16	2		
Westmoreland County	Feb. 10-Apr. 5	4		
Ontario				Jan. 1-Apr. 30, 1924: Cases, 397; deaths, 31.
Amherstburg	Mar. 1-31	16	8	
Chapleau	do	13	1	
Cochrane	do	15	5	
Essex Border	do	12	6	
Fort William and Port Arthur.	Dec. 16-29	3		Occurring at Fort William.
London	Feb. 3-Apr. 5	9		
North Bay	do	1		
Ottawa	Feb. 17-Apr. 26	9	1	
Perth	Mar. 1-31	14		
Toronto	Jan. 17-Mar. 31	15		
Windsor	Feb. 1-Mar. 15	52	11	
Quebec—				
Montreal	Nov. 30-Feb. 23	7		
Saskatchewan—				
Regina	Dec. 9-15	1		
Do	Dec. 30-Feb. 23	6	1	
Ceylon:				
Colombo	Nov. 11-17	3	1	
Do	Jan. 20-Feb. 23	5	1	
Chile:				
Antofagasta	Jan. 6-Apr. 12	6	1	
Concepcion	Oct. 1-Dec. 31		14	
Talcahuano	Nov. 26-Dec. 2	3		Dec. 22, 1923: Five cases present.
Valparaiso	Dec. 9-15		1	
Do	Jan. 13-Mar. 15		8	
China:				
Amoy	Nov. 18-Dec. 8		11	
Do	Jan. 6-Mar. 29		11	Including Kulangsu, 14 deaths; and in hospital, Feb. 9, 1924, more than 30 cases stated to be present.
Antung	Dec. 31-Feb. 3	2	2	
Canton	Dec. 23-Feb. 23			Present.
Chungking	Nov. 4-Dec. 29			Present and endemic.
Do	Dec. 30-Mar. 8			Stated to be widespread.
Foochow	Nov. 4-Dec. 15			Present.
Do	Dec. 31-Mar. 8			Do.
Hongkong	Oct. 28-Dec. 29	718	630	
Do	Dec. 30-Mar. 1	530	549	
Manchuria—				
Dairen	Dec. 31-Jan. 20	2		
Do	Mar. 3-9	1		
Harbin	Nov. 12-Dec. 22	36		
Do	Jan. 1-Mar. 17	19	5	
Nanking	Dec. 2-15			Do.
Do	Dec. 30-Apr. 5			Do.
Shanghai	Dec. 29			Prevalent.
Do	Jan. 6-Apr. 5	30	73	Cases, foreign; deaths, Chinese, and foreign.
Tientsin	Mar. 23-29	2		Reported by mission and British municipality.
Chosen (Korea):				
Chemulpo	Jan. 1-31	1		
Seoul	Nov. 1-30	1		
Do	Feb. 1-Mar. 31	5		
Colombia:				
Barranquilla	Apr. 6-12		2	
Buenaventura	Nov. 18-Dec. 15	8		
Do	Apr. 3	1		
Costa Rica:				
Port Limon	Feb. 18-Apr. 5	2		

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Czechoslovakia				Oct. 1-Dec. 31, 1923: Cases, 1; deaths, 1; occurring in Slovakia.
Dominican Republic:				
La Romana	Jan. 27-Mar. 22	14		
Ecuador:				
Esmeraldas	Nov. 16-30	4		
Guayaquil	Dec. 1-31	1		
Do	Jan. 1-Feb. 29	3		
Quito	Nov. 1-30	167	26	
Egypt:				
Alexandria	Feb. 27-Apr. 1	3	7	
Cairo	Jan. 1-7	1	1	
Port Said	Nov. 24-Dec. 2	1		
Esthonia				Nov. 1-Dec. 31, 1923: Cases, 38 Jan. 1-Feb. 29, 1924: Cases, 14.
France:				
Cherbourg	Feb. 9-15	1		British seaman.
Gibraltar	Mar. 3-Apr. 13	2		
Great Britain:				
Liverpool	Mar. 2-8	1		In family of seaman recently returned from Oporto, Portugal.
Greece:				
Saloniki	Oct. 22-Dec. 30		11	
Do	Dec. 31-Mar. 23	23	10	
Guadeloupe (West Indies)				Jan. 2-16, 1924: Present.
Abymes	Feb. 16			Present. Vicinity of Point à Pitre.
Basse Terre	Dec. 18			Present.
Do	Jan. 12-Feb. 16			Do.
Marie Galante Island	Dec. 18			Off shore island: Present.
Do	Feb. 16			Present. Estimated 60 cases.
Moule	Jan. 12-Feb. 16			Present.
Point à Pitre	Dec. 18			Present in vicinity.
Haiti:				
Cape Haitien	Feb. 3-9	3		Mar. 9-15, 1924: Two cases in hospital.
Hinche	Feb. 10-16	1		
Port au Prince	Feb. 17-Mar. 1	2	1	Developed at Limbe, Haiti.
India				Oct. 14-Dec. 29, 1923: Cases, 9,720; deaths, 2,241.
Do				Dec. 30, 1923-Feb. 23, 1924: Cases, 24,007; deaths, 5,109.
Bombay	Oct. 28-Dec. 29	55	25	
Do	Dec. 30-Mar. 22	655	318	
Calcutta	Dec. 16-29	4	4	
Do	Dec. 30-Mar. 29	12	11	
Karachi	Dec. 30-Apr. 5	88	24	
Madras	Nov. 4-Dec. 29	23	3	
Do	Dec. 30-Apr. 5	267	21	
Rangoon	Nov. 4-Dec. 29	12	4	
Do	Dec. 30-Mar. 29	46	20	
Indo-China:				
City—				
Saigon	Nov. 4-Dec. 29	133	74	Including 100 square kilometers of surrounding country.
Do	Dec. 31-Mar. 15	575	311	
Iraq:				
Bagdad	Oct. 24-Dec. 29	46	28	
Do	Dec. 30-Feb. 16	44	33	
Italy:				
Trieste	Feb. 17-23	4		
Turin	Feb. 18-24	1		
Jamaica				Nov. 25-Dec. 29, 1923; Cases, 115.
Do				Dec. 30, 1923-Mar. 29, 1924: Cases, 233. Reported as alastrim.
Kingston	Nov. 25-Dec. 29	3		
Do	Dec. 30-Mar. 8	8		
Japan:				
Kobe	Feb. 14-Apr. 7	15	6	
Nagoya	Apr. 6-12	3	1	
Taiwan	Jan. 1-Mar. 31	8		
Tokyo	Jan. 1-Apr. 12	136		
Yokohama	Mar. 30-Apr. 6	1		
Java:				
East Java—				
Soerabaya	Oct. 23-Dec. 29	348	60	
Do	Dec. 30-Feb. 23	150	27	
West Java—				
Batavia	Oct. 27-Dec. 28	65	13	
Do	Dec. 29-Mar. 21	32	6	
Latvia				Oct. 1-Dec. 31, 1923: Cases, 6; Jan. 1-Feb. 29, 1924: Cases, 5.
Malta	Feb. 1-29	1		
Mexico:				
Guadalajara	Jan. 27-Mar. 31	5	7	
Manzanillo	Dec. 4-10	5	1	

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
Mazatlan	Mar. 31-Apr. 13		4	Apr. 21, 1924: Cases from 25-35. In city and vicinity. No mortality reported.
Mexico City	Nov. 25-Dec. 29	32		Including municipalities in Federal District.
Do	Dec. 30-Apr. 5	121	23	Do.
Monterey				Mar. 24, 1924, 11 cases officially announced.
Salina Cruz	Jan. 1-Apr. 12	2	1	Nine cases chicken pox present.
San Luis Potosi	Mar. 16-22		1	
Tampico	Jan. 21-Apr. 20	32	1	
Vera Cruz	Nov. 3-Dec. 30		4	From Irapuato, 9; La Barra, 1.
Do	Jan. 6-Apr. 20	2	7	Jan. 21-Apr. 10, 1924: Cases, 36 (12 in soldiers or soldiers' families); deaths, 5.
Netherlands:				
Rotterdam	Jan. 20-26	3		
Palestine:				
Jaffa	Jan. 15-28	3		
Jerusalem	Feb. 18-25	1		
Persia:				
Teheran	Sept. 24-Dec. 23		4	
Do	Dec. 22-Jan. 31		2	
Poland				Sept. 23-Dec. 31, 1923: Cases, 83; deaths, 20. Jan. 1-Feb. 2, 1924: Cases, 242; deaths, 22.
Portugal:				
Lisbon	Nov. 11-Dec. 29	19	10	Corrected report.
Do	Dec. 31-Apr. 5	98	17	
Oporto	Nov. 25-Dec. 29	39	23	
Do	Dec. 30-Apr. 12	89	48	
Portuguese East Africa:				
Lourenco Marques	Dec. 30-Jan. 5	2		
Portuguese West Africa:				
Angola—				
Loanda	Dec. 2-29		5	
Russia:				
Ukraine				Aug. 1-Sept. 30, 1923: Cases, 143.
Siam:				
Bangkok	Oct. 28-Dec. 8	33	18	Nov. 25-Dec. 1, 1923: Epidemic.
Do	Dec. 30-Mar. 22	9	2	
Siberia:				
Dauria Station	Oct. 21			Present. Locality on Chita Railway, Manchurian frontier.
Sierra Leone:				
Sherbro District—				
Tagbail	Nov. 1-15	3		
Spain:				
Barcelona	Nov. 15-Dec. 26		2	
Do	Jan. 3-Mar. 26		5	
Valencia	Nov. 25-Dec. 29	152	12	
Do	Dec. 30-Apr. 19	415	37	
Straits Settlements:				
Singapore	Dec. 16-29	2	1	
Do	Dec. 30-Mar. 22	4		
Switzerland:				
Basel	Jan. 27-Feb. 9	4		Corrected.
Berne	Nov. 17-Dec. 22	15		
Do	Jan. 6-Apr. 5	37	1	
Lucerne	Nov. 1-Dec. 31	60		
Do	Jan.-Mar. 31	29		
Zurich				
Syria:				
Aleppo	Nov. 25-Dec. 1	1		In vicinity, at Djsr Choughour.
Beirut	Jan. 21-Feb. 20	2		
Damascus	Nov. 16-Dec. 15	7		
Do	Jan. 29-Mar. 25	31		
Tunis:				
Tunis	Oct. 27-Nov. 2	5	1	
Do	Jan. 8-Apr. 7	10	4	
Turkey				Dec. 1-31, 1923: Cases, 1920; deaths, 15.
Constantinople	Nov. 11-Dec. 8	3		
Do	Jan. 6-Apr. 5	4	1	
Union of South Africa				Oct. 1-31, 1923: Colored, cases, 41; deaths, 2; white, cases, 3.
Cape Province	Oct. 28-Dec. 8			Outbreaks.
Do	Jan. 20-Mar. 22			Do.
Natal	Oct. 28-Nov. 3			Do.
Do	Mar. 16-22			Do.
Orange Free State	Oct. 28-Nov. 24			Do.
Do	Jan. 20-Mar. 22			Do.

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Union of South Africa—Con.				
Transvaal	Nov. 18-Dec. 1			Outbreaks.
Do	Mar. 11-17			Do.
Johannesburg	Nov. 25-Dec. 15	3		
Do	Feb. 3-23	2		
Uruguay:				
Montevideo	Oct. 1-31	1		
Venezuela:				
Caracas	Jan. 22			Epidemic.
Margarita Island—				
Punta Piedra	Mar. 21	60		20 miles from mainland.
On vessels:				
Steamship Copponame	Mar. 19	1		At New Orleans from Puerto Barrios, Guatemala.
U. S. Naval Hospital ship Mercy.	Apr. 1	1		At St. Thomas, Virgin Islands, from Culebra, P. I. Patient had been in Jamaica, W. I., two weeks previous. Case reported as alastrim.
S. S. Torres	Jan. 14	1		At New Orleans quarantine station from Tampico, Mexico, via ports. Case in seaman signed on at Galveston, Tex., on outward voyage.
S. S. Tupper	Jan. 20-26	1		At Gonaives, Haiti.
S. S. Vasari	Dec. 31	1		At Trinidad, West Indies, from Buenos Aires, Argentina. Vessel left Buenos Aires, Dec. 15, 1923, for New York, via Santos, Rio de Janiero, Trinidad, Barbados.
Sch. Annie M. Parker	Jan. 23	3		At sea. Vessel abandoned and crew removed to vessel bound for Rotterdam. Patients removed at Liverpool, Feb. 28, bound for Newfoundland.

TYPHUS FEVER.

Algeria:				
Algiers	Nov. 1-Dec. 31	7	3	
Do	Jan. 1-Mar. 31	21	7	
Bolivia:				
La Paz	Oct. 1-Dec. 31	43	5	
Do	Jan. 1-Mar. 31	31	3	
Brazil:				
Porto Alegre	Feb. 24-Mar. 1		1	
Bulgaria:				
Sofia				Nov. 18-Dec. 15, 1923: Paratyphus fever, cases, 17. Jan. 6-Mar. 29, 1924: Paratyphus fever, cases, 9.
Canary Islands:				
Teneriffe	Jan. 14-Feb. 17		2	
Ceylon:				
Colombo	Feb. 24-Mar. 1	1	1	Case from port.
Chile:				
Antofagasta	Dec. 2-8	4		
Do	Apr. 6-12	2		
Concepcion	Oct. 1-Nov. 30		4	Dec. 11-24, 1923: Deaths, 3.
Do	Jan. 8-Feb. 25	2	3	In district, at 12 localities, 92 cases.
Iquique	Jan. 20-26		1	
Talcahuano				Dec. 5, 1923: 3 cases under treatment. Jan. 12, 1924: 1 case under treatment.
Do	Jan. 31-Apr. 6	5	1	
Valparaiso	Nov. 25-Dec. 15		29	Dec. 24, 1923: In hospital, 34 cases.
Do	Dec. 30-Mar. 15		44	Reports from two districts of the Province of Valparaiso.
China:				
Antung	Nov. 12-Dec. 30	5		
Chungking	Nov. 18-24			Present.
Do	Dec. 16-29			Endemic.
Do	Dec. 30-Feb. 16			Do.
Manchuria—				
Harbin	Mar. 18-24		1	
Chosen (Korea):				
Chemulpo	Feb. 1-Mar. 31	5	3	
Seoul	Feb. 1-Mar. 31	86	7	

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Czechoslovakia				Oct.-Dec., 1923: Cases, 21.
Danzig-Polish frontier:				
Mühlbanz	Mar. 6			Present: Origin stated to be focus at Mallinia.
Ecuador:				
Quito	Nov. 1-30	14	1	
Egypt:				
Alexandria	Nov. 19-Dec. 23	3		
Do	Jan. 8-Apr. 1	7		
Cairo	Sept. 10-Dec. 31	39	11	
Do	Jan. 8-22	2	1	
Esthonia				Nov. 1-30, 1923: Paratyphus fever, cases, 8. Dec. 1-31, 1923: Typhus fever, cases, 15; paratyphus, cases, 4. January, 1924: Paratyphus fever, cases, 6.
Finland				Dec. 1-15, 1923: Paratyphus fever, cases, 15. Feb. 15-Mar. 31, 1924: Paratyphus, cases, 12.
Germany:				
Coblentz	Jan. 27-Feb. 2	1		
Greece:				
Athens	Jan. 11-Feb. 20		7	
Saloniki	Nov. 26-Dec. 30	7	3	
Hungary				July 1-Aug. 31, 1923: Cases, 24.
Budapest	Jan. 27-Apr. 5	30	10	
Java:				
East Java—				
Soerbaya	Dec. 9-29	12		
Do	Dec. 30-Jan. 5	2		
Latvia				Oct. 1-Dec. 31, 1923: Cases, 22; paratyphus fever, 12; recurrent typhus, 3. Jan. 1-Feb. 29, 1924: Cases, 48. Paratyphus, A, 1; B, 1. Recurrent, 1 case.
Libau	Apr. 8-15	4		
Lithuania				Year, 1923: Cases, 819; deaths, 86; recurrent typhus, 13 cases Feb. 1-29, 1924: Cases, 51; deaths, 9.
Mexico:				
Durango	Dec. 1-31		2	
Do	Jan. 1-Feb. 29		3	
Guadalajara	Jan. 27-Mar. 31	5	5	Feb. 1-29, 1924: Cases, 2; deaths, 1.
Mexico City	Nov. 25-Dec. 29	86		Including municipalities in Federal District.
Do	Dec. 30-Apr. 5	78	8	Do.
San Luis Potosi	Jan. 17-23		1	
Torreon	Feb. 1-Mar. 31		6	
Netherlands:				
Amsterdam	Mar. 2-8	2		
Norway:				
Stavanger	Dec. 25-31	1		
Palestine:				
Jaffa	Jan. 1-Mar. 31	5		
Jerusalem	Feb. 19-28	2		
Persia:				
Teheran	Sept. 24-Oct. 23		1	
Poland				Sept. 23-Dec. 31, 1923: Cases, 947; deaths, 92; recurrent typhus, cases, 67; deaths, 1. Jan. 1-Feb. 2, 1924: Cases, 978; deaths 78. Recurrent cases, 63. Jan. 6-Feb. 2, 1924: Cases, 341; deaths, 26. Recurrent fever, cases, 18.
Pomerellen	Jan. 8-Mar. 25	17	4	Locality on Danzig-Polish frontier.
Portugal:				
Oporto	Jan. 27-Feb. 2	2		
Rumania:				
Kishineff District	Nov. 1-Dec. 31	15		
Russia:				
Karelian Republic	Mar. 12			Prevalent.
Novo Cherkarsk	do			Do.
Rostov-on-Don	do			Do.
Ukraine				Aug. 1-Sept. 30, 1923: Cases, 768. Recurrent typhus: Aug. 1-Sept. 30, 1923: Cases, 2,307.
Saratov	Mar. 12			Reported present in various sections, Mar. 12, 1924 Do.

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

Reports Received from December 29, 1923, to May 16, 1924—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Siberia:				
Vladivostock	Feb. 19			Present and verging on epidemic prevalence.
Spain:				
Barcelona	Nov. 29-Dec. 12		2	
Do	Jan. 3-Apr. 2		6	
Madrid	Dec. 1-31		7	
Do	Jan. 1-31		2	
Syria:				
Damascus	Jan. 27-Feb. 2	1		
Tunis:				
Tunis	Feb. 5-11	1		
Turkey				Dec. 1-31, 1923: Cases, 41; deaths, 5.
Constantinople	Nov. 11-Dec. 29	15	1	
Do	Dec. 30-Apr. 5	10		
Union of South Africa				Oct. 1-31, 1923: Colored, 287 cases, 58 deaths; white, 2 cases; total, 289 cases, 58 deaths Jan. 1-31, 1924: Cases, 196; deaths, 25 (colored). Among white population. 3 cases. Total cases, 199; deaths, 25.
Cape Province				Oct. 1-31, 1923: Colored, cases, 245; deaths, 47.
Do				Jan. 1-31, 1924: Cases, 93; deaths, 11. Feb. 24-Mar. 17, 1924: Outbreaks.
Natal				Oct. 1-31, 1923: Colored, cases, 4; deaths, 3.
Do				Jan. 1-31, 1924: Cases, 81; deaths, 11. Feb. 24-Mar. 1, 1924: Outbreaks.
Durban	Nov. 24-Dec. 1	73		Cases occurring among native stevedores in the harbor area of the port and confined to one barracks.
Orange Free State				Oct. 1-31, 1923: Colored, cases, 25; deaths, 8. Feb 24-Mar. 1, 1924: Outbreaks.
Do				Jan. 1-31, 1924: Cases, 17; deaths, 3.
Kroonstad District	Jan. 20-26			Outbreaks on two farms.
Transvaal				Oct. 1-31, 1923: Colored, cases 13.
Do				Jan 1-31, 1924: Cases, 5; deaths, 1.
Johannesburg	Oct. 1-Dec 31	3	4	
Do	Jan. 6-Mar. 29	8		
Potschefstrom District	Jan. 20-26			Outbreaks on seven farms.
Venezuela:				
Maracaibo	Dec. 16-22		1	
Do	Feb. 17-Mar. 1		2	
Yugoslavia:				
Croatia—				
Zagreb	Dec. 2-15	3		
Do	Feb 17-23	1		
Serbia—				
Belgrade	Nov. 25-Dec. 1	1		
On vessel:				
S. S. Malta Maru	Mar. 17	1		At Rotterdam, Netherlands, from South America.

YELLOW FEVER.

Brazil:				
Pernambuco City	Nov. 16	3	2	

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