PUBLIC HEALTH REPORTS

VOL. 52 DECEMBER 3, 1937 NO. 49

THE INCREASE IN AVERAGE LENGTH OF LIFE *

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Since the dawn of recorded history, man has continually sought a means of increasing his length of life. Such records as are available for the past 150 years indicate that this effort was relatively unsuccessful until fairly recent times. During the past few generations, however, the application of the principles of sanitation, the rise in the general level of the standard of living, and, in certain instances, discoveries in prophylactic and therapeutic medicine have resulted in a rapid increase in the number of years an infant can expect to live. It is important to note that the increase in length of life has been in the average number of years lived and not in the "span of life", which usually refers to the maximum length of life attainable by the species. So far as it is known, there has been no increase in the span of life; persons living to advanced ages do not live a greater number of years now than formerly. The exact length of the span of life is unknown. It is somewhat more than 100 years, but how much more cannot be said. The census of 1930 reported 3,964 persons 100 or more years of age; but this is undoubtedly an overstatement, since 2,467 of them were Negroes, who make up only about 10 percent of the population.

The precise meaning of various life-table functions should be kept clearly in mind during the following discussion. Before constructing a life table from the returns of a population census and the registration of deaths, it is necessary to determine the mortality rate at each year of age. This rate is usually computed from the number of deaths actually registered in a given population. In order to avoid irregularities arising from unusual mortality conditions, such as an epidemic, prevailing in a single calendar year, the mortality rate is frequently based on the average of a period of years. The United States Bureau of the Census has recently prepared a set of life tables based on the deaths occurring in the 10-year period, 1920-29. In many instances a shorter period, such as 3 or 5 years, is chosen.

The set of mortality rates adopted is applied to a hypothetical number (usually 100,000) of newborn live babies thus computing the

* From Statistical Investigations, Division of Public Health Methods, of the National Institute of Health in cooperation with the Division of Sanitary Reports and Statistics, United States Public Health Service

number who would be alive at each age thereafter until all are dead. It is not necessary to assume that all of these infants are born at the same time so long as each is followed until death. The average number of years lived by this group of infants is called the expectation of life at birth. Similarly the average number of years lived thereafter by all who reach 20 years of age is called the expectation of life at age 20. In other words, the expectation of life is the average number of additional years of life which a person reaching any given age may expect to live.

The assumptions of a life table, of course, are unreal. At the present time, at least, mortality rates do not remain constant. The mortality rates to which persons aged 60–64 in 1930 were subjected when they were 0–4 years of age were considerably greater than the rates to which children aged 0–4 in 1930 were subjected. Furthermore, the expectation of life is not applicable to any population which exists in actual experience. The expectation of life at birth, for example, is the average number of years which a newborn live infant could expect to live if born into a hypothetical population called the stationary life-table population.

This stationary population represents the population which would eventually arise if the individuals represented by 100,000 living births occurring uniformly throughout each year were always subject to the assumed mortality rates. If instead of merely one generation of 100,000 living births we think of continuously repeated generations of exactly 100,000 living births, all subject to the same mortality rates at each age of life, a population known as a life-table population would eventually develop.

This population would always be composed of the same number of people, since the number of births is constant and the death rates never change. Consequently the number of births and deaths in any calendar year in such a population would be exactly equal. It is also obvious that it is a population which would arise in the absence of immigration or emigration. This is the kind of population to which the calculated expectation of life is applicable.

Such a population never occurs in everyday life. Actual populations are constantly changing due to changes in mortality and birth rates and to variations in immigration and emigration. However, in spite of this, the various life-table functions are a convenient, even if artificial, method of summarizing the mortality conditions of a particular group of people at a particular period of time.

For convenience, terms like "the expectation of life at birth in 1933 was 61 years" will be used in the following discussion. This will be a brief expression for the statement that in a population undisturbed by immigration or emigration and in which the number of deaths is constant and exactly equal to a given number of live births uniformly

distributed throughout the year and in which deaths always occur according to the mortality rates observed in 1933, the expectation of life at birth would be 61 years.

EXPECTATION OF LIFE PRIOR TO 1800

Information concerning the average length of life prior to the nineteenth century is scanty and inaccurate. The expectation of life at birth apparently was about 20 to 25 years in Rome during the early Christian era, although it may have been nearly twice that in northern Africa (*1*). Life tables constructed prior to 1800 for various European cities indicate that the expectation of life at birth was between 25 and 35 years (*2*) (*3*). These life tables were based upon deaths alone and consequently are only rough approximations at best. The first life table computed from deaths and the population of specific ages exposed to death was published by Milne in 1815, based on the mortality experience of two parishes in Carlisle, England, during the period 1779–87. According to this table the expectation of life at birth for both sexes combined was 38.7 years.

CHANGES IN LIFE EXPECTANCY IN MASSACHUSETTS SINCE 1790

Mortality rates 1868–1930.—Comprehensive mortality records were not available for the entire United States until 1933, when the registration area for deaths was completed by the admission of Texas. Fairly satisfactory data are available for 10 States as far back as 1900; but prior to the beginning of the present century, the only data of which a detailed analysis has been made are for Massachusetts. The changes in mortality rates by age and sex in Massachusetts from 1868–1930 are shown in figures 1A and 1B.

Perhaps the most striking feature of these curves is the rapid decline in mortality rates for the ages of childhood, adolescence, and early adult life and the absence of decline or even slight increase in mortality rates for the ages above 50 years. The decrease in the mortality rates of early life has been more rapid since 1900 than prior to that time. Mortality rates at most ages have declined more rapidly for females than for males. Prior to 1900 the death rates of females from 5 to 50 years of age were generally equal to or greater than the corresponding rates for males; but especially since 1920, relatively fewer females than males have died in each age group except 20–29, an exception due partly to the hazards of childbirth.

Expectation of life 1789–1930.—How have these changes in mortality affected the average number of years which a newborn child in Massachusetts may expect to live? The earliest life table for Massachusetts is one constructed by Edward Wigglesworth from bills of mortality for certain towns in Massachusetts and New Hampshire which were on

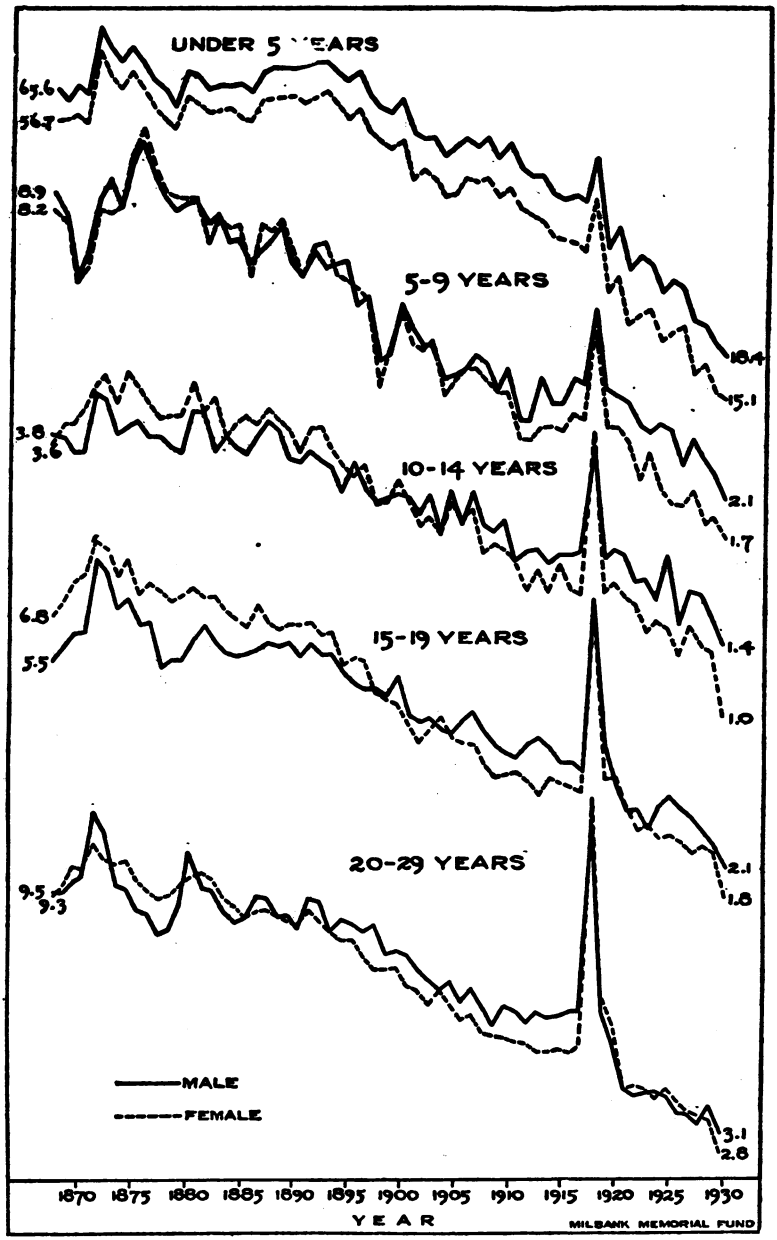

FIGURE 1A.—Trend in the death rate at specific ages, Massachusetts, 1868–1930. (Semi-logarithmic scale. The death rate is the number of deaths per 1,000 population of each sex and is printed on the chart for 1868 and 1930. Reproduced from Sydenstricker (*15*), by permission.)

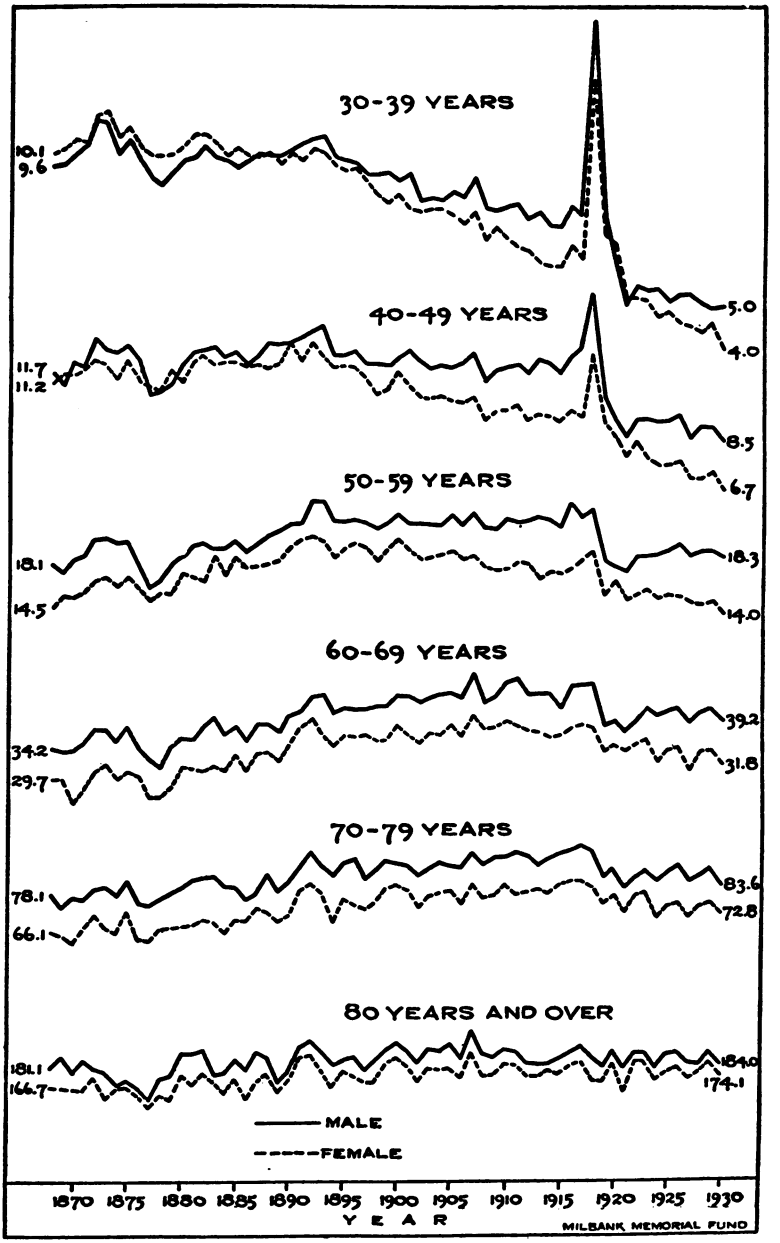

FIGURE 1B.—Trend in the death rate at specific ages (continued from fig. 1A).

file with the American Academy of Arts and Sciences (*4*). These bills were for a number of years prior to 1790. Since this table was constructed from deaths alone, its results should be regarded only as rough approximations. E. B. Elliott apparently constructed the first life table for Massachusetts according to modern principles on the basis of deaths registered in 1855 in 166 of the 331 towns in the State (*5*). Since the death rate was greater than 16 per 1,000 population, death registration was considered reasonably complete. These towns included about two-thirds of the entire population of the State. A number of other tables were computed prior to 1880, but most of them are of historical value only. Following the census of 1880, the United States Bureau of the Census began publishing life tables for various areas. The first tables for the entire United States have only recently been published; a table for the entire population based upon deaths registered in 1933 has been prepared by the Metropolitan Life In-

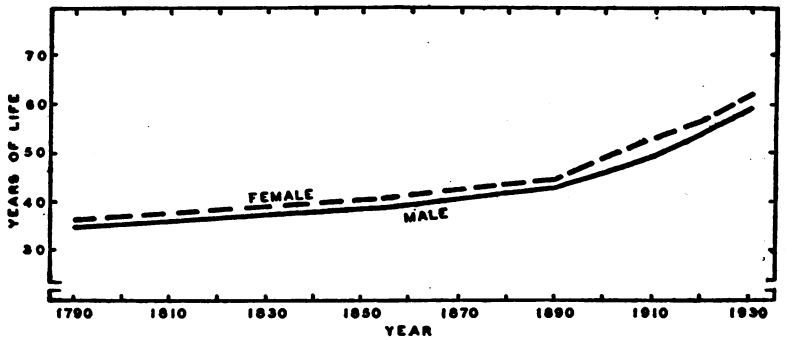

FIGURE 2.—Trend in the expectation of life at birth, males and females, Massachusetts, 1790–1930. (Data from (refs. *4–8, 11*).)

surance Co.; and a set of life tables based upon deaths in 1929–31 for whites and Negroes separately has been prepared by the United States Bureau of the Census (*6–11*). Data for Massachusetts from these various tables are shown in figure 2 and table 1.

In the century and a half since the Revolutionary War the expectation of life at birth in Massachusetts has increased about 26 years for females and 24 years for males. More than two-thirds of this gain, however, has occurred since 1890. The remarkable increase in the average number of years of life remaining at each age becomes less marked in the older age groups, so that at ages 50 and over there apparently has been little or no increase and even slight losses in life expectancy (table 1).

For the older ages the expectation of life declined from 1880 to 1910 but increased between 1910 and 1930. The data in table 1 show an increase until 1878–82, followed by a sharp decrease, especially for the older ages. The exact cause of the change is not clear; it may be due to inaccuracies in the earlier figures or in the census data for 1880.

The life tables for 1890 and subsequent years are based on fairly reliable statistics and were constructed according to modern principles. The life table for 1878–82 was checked by a complete recomputation, but the new values were practically identical with those in table 1. Although these data do not seem reasonable, no plausible explanation of a possible source of error is available. However, the general conclusion can be drawn from the data in table 1 that improvements in health have resulted in keeping a larger proportion of the population alive until late adult life, but that people who reach late adult life can expect to live very little, if any, longer than such persons did a century ago.

TABLE 1.—*Average number of years of life remaining at selected ages, by sex, Massachusetts, 1790–1930*

Year	Age								
	0	10	20	30	40	50	60	70	80
	Male								
1789 [1]	34.7	43.1	33.9	29.9	25.4	20.5	14.8	9.6	5.6
1855 [1]	38.9	47.0	39.6	33.6	27.2	20.6	14.4	9.0	4.8
1878–82	41.7	49.9	42.2	35.7	28.9	22.0	15.6	10.3	6.9
1890	42.5	48.5	40.7	34.1	27.4	20.7	14.7	9.4	5.4
1900–02	46.1	50.2	41.8	34.5	27.2	20.2	13.9	8.9	5.1
1909–11	49.3	51.1	42.5	34.6	27.0	19.8	13.4	8.6	5.1
1919–20 [2]	54.1	53.3	44.6	36.6	28.8	21.2	14.4	8.9	5.0
1929–31 [2]	59.3	55.2	46.1	37.4	29.0	21.1	14.3	8.9	5.0
Change 1855–1930	20.4	8.2	6.5	3.8	1.8	0.5	−0.1	−0.1	0.2
	Female								
1789 [1]	36.1	43.3	34.4	30.6	26.6	21.8	16.0	10.5	6.1
1855 [1]	40.5	47.2	40.2	34.5	28.6	21.9	15.6	9.8	5.3
1878–82	43.5	50.0	42.8	36.7	30.3	23.5	16.9	11.3	7.4
1890	44.5	49.6	42.0	35.4	28.8	22.1	15.7	10.2	5.8
1900–02	49.4	52.1	43.7	36.2	28.8	21.6	15.1	9.6	5.6
1909–11	53.1	53.6	44.9	36.8	29.0	21.6	14.8	9.5	5.5
1919–20 [2]	56.6	54.3	45.5	37.8	30.0	22.3	15.3	9.6	5.2
1929–31 [2]	62.6	57.7	48.5	39.8	31.2	23.1	15.8	9.9	5.7
Change 1855–1930	22.1	10.5	8.3	5.3	2.6	1.2	0.2	0.1	0.4

[1] Estimated from data for both sexes combined.
[2] White population only.

These data probably cannot be considered representative of the trend in expectation of life for the entire United States except in a very general way. In addition to being a highly industrialized State, Massachusetts is unrepresentative of the entire Nation in the composition of its population. Moreover, the composition of the population has varied considerably during the past century.

According to table 2 the proportion of foreign-born whites in the population 45 years of age and over is not only much larger in Massachusetts than in the whole country but this proportion also increased much more rapidly in Massachusetts from 1880 to 1930 than in the entire United States. Since the mortality of the foreign-born is

higher than that of the native population, part, if not all, of the apparent increase in mortality during late adult life may arise from this change in the composition of the population.

TABLE 2.—*Percentage of foreign-born white persons in the total population at selected age groups, United States and Massachusetts, 1880 and 1930*

Age	1930		1880	
	United States	Massachusetts	United States	Massachusetts
45–54	21.9	46.9	30.1	40.8
55–64	25.0	46.0	28.8	32.5
65–74	26.5	43.1	24.2	24.3
75 and over	27.2	37.2	21.0	19.2

EXPECTATION OF LIFE IN NEW YORK CITY

In this connection it is interesting to contrast the trend in expectation of life in New York City with that in Massachusetts (fig. 3). During the past century and a quarter the expectation of life increased at every decade of life from 10 to 80 years, inclusive. No reliance can be placed in the apparently greater expectation of life at age 90 in 1805–8, owing to the small number of deaths involved. The comparison is limited to persons 10 years of age and over because the earlier census did not report separate ages under 10. It is interesting that the relative increases are nearly as great at the advanced ages as during middle adult life. The increases in average length of life shown in figure 3 are an understatement, since an appreciable proportion of the deaths undoubtedly were unrecorded in 1805–8.

CHANGES IN MORTALITY IN THE ORIGINAL REGISTRATION STATES, 1900–1930

Beginning with 1900, mortality statistics are available for about one-quarter of the population of the Nation residing in the six New England States, New York, New Jersey, Indiana, Michigan, and the District of Columbia. A large proportion of the population of these States lives in urban areas and is foreign-born or of foreign-born parentage. The trend in expectation of life of the white persons living in this area undoubtedly represents fairly accurately the trend for the urban white population of the United States but may be quite unlike that for the rural population, which is largely native born.

Since 1900, death rates at the younger age groups have decreased, but at the older ages the rates have changed very little (fig. 4). Except at ages 20–34, when the hazards of childbearing are greatest, this improvement in health has been relatively greater for women than for men. For both sexes the greatest gains have been in the groups under 45 years of age.

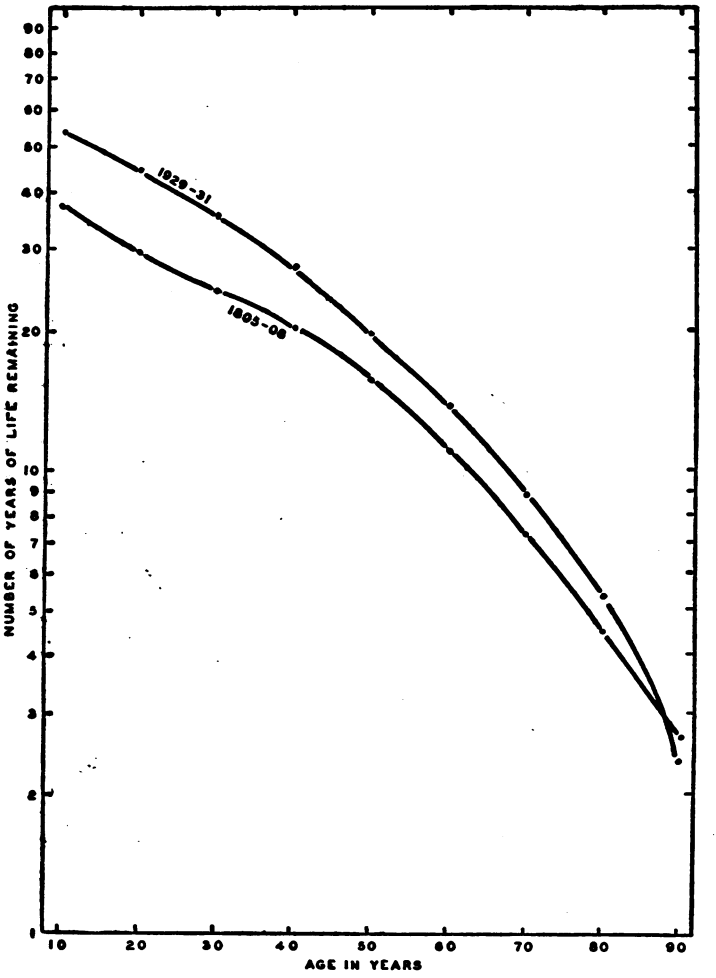

FIGURE 3.—Expectation of life at selected ages, total population, New York City, 1805–08 and 1929–31. (Semi-logarithmic scale. Data from Dalton (*15*).)

The effect of these changes in the mortality of white persons has been to increase the number of years an infant may expect to live by about 21 percent (fig. 5). This increase results primarily from the

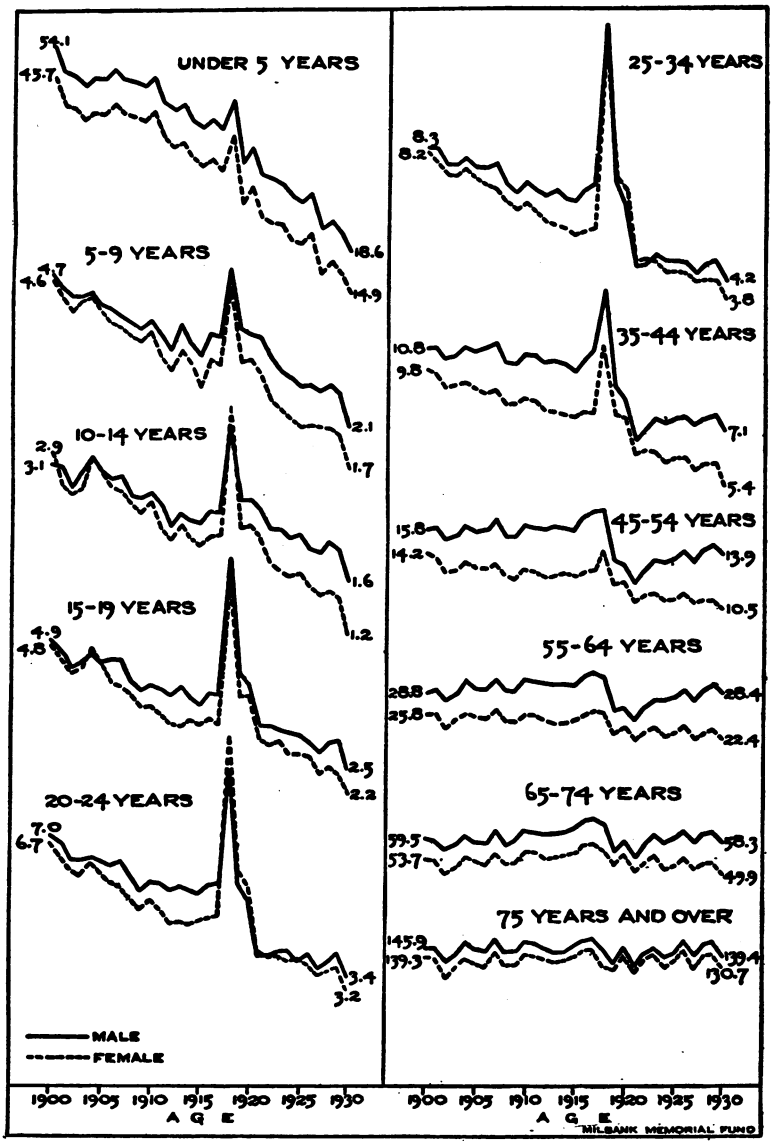

FIGURE 4.—Trend in the death rate at specified ages, original registration States, 1900–1930. (Semi-logarithmic scale. The death rate is the number of deaths per 1,000 population of each sex and is printed on the chart for the years 1900 and 1930. Reproduced from Sydenstricker (*15*), by permission.)

saving of life during childhood and adolescence. After age 50 there has been very little change in expectation of life, and indeed a slight, but insignificant loss for males 55–74 years of age.

EXPECTATION OF LIFE IN THE DEATH REGISTRATION STATES OF 1920

The change in mortality in the group of Northeastern States that were in the registration area in 1900 has been more favorable than

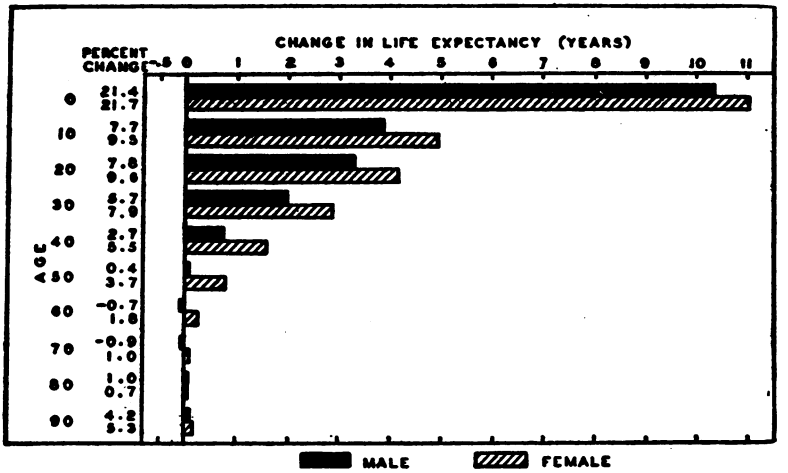

FIGURE 5.—Amount and percentage change in the expectation of life at selected ages, white males and females, original registration States, 1900-1902 to 1929-31.

that in the entire country. During the past decade, in the registration States of 1920, which include more than three-fourths of the entire population, the gains in expectation of life were confined to

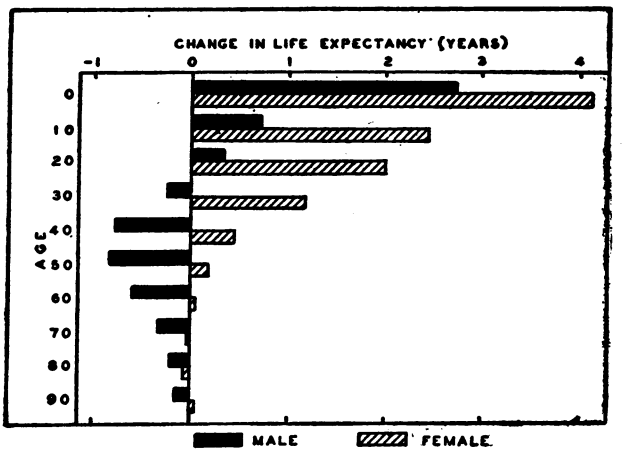

FIGURE 6.—Number of years gain or loss in expectation of life at selected ages, white males and females, death registration States of 1920, from 1919-21 to 1929-31.

males under 30 and to females under 70. Except at birth, the gains for males were insignificant; after age 30, the gains for females were only 2 percent or less (fig. 6).

This may be an understatement of the loss or, conversely, an overstatement of the gain in the expectation of life between 1920 and 1930. The crude death rate in 1921 was the lowest on record prior to 1930 with the exception of 1927. However, Collins has estimated that there were approximately 100,000 excess deaths from influenza and pneumonia in 1920 in addition to those occurring in 1919 from the pandemic of 1918–19 (*17*). In spite of these epidemics, the crude rate for 1919–21 was about 10 percent less than the average of the 5 years 1913–17 and only about 5 percent greater than the average of the 8 years 1922–29. It is safe to say that the losses in expectation of life shown in figure 6 are not overstated and there is some probability that the real losses actually are somewhat greater.

MORTALITY AMONG NEGROES

The improvement in health which is indicated by the increase in average length of life unfortunately has not been enjoyed equally by all classes of the population. Since 1920 the Negro males between 20 and 50 years of age have suffered a loss in expectation of life of more than 3 years at every age (fig. 7). This represents a loss of about 10 percent. Somewhat smaller losses occurred at every other age.

Only at birth did the expectation of life for Negro females show an appreciable increase. At all other ages the increases were insignificant or replaced by losses.

The expectation of life at any particular age, as computed in the life table, is influenced not only by the mortality for that specific age but also by the mortality for all older ages; changes in life expectancy, therefore, do not clearly indicate the changes that have occurred in mortality at specific ages. For this purpose mortality rates are preferable. Although these present a more encouraging picture, especially during childhood and adolescence, they also reveal a discouraging set-back in mortality at all ages over 30 for males and from 40 to 80 years of age for females (fig. 8). Mortality rates increased more than one-third among Negro males from 50 to 65 years of age. Although no direct evidence is available, part of the apparent increase in mortality rates may have resulted from more complete registration of deaths.

This situation in the Negro population presents a real challenge to public health workers. Of course part of this health handicap is a direct result of inferior education and adverse economic circumstances. At the present time the mortality among Negroes is higher than it was in the white population of the Northeast at the beginning of the century. A white baby may expect to live about 12 years

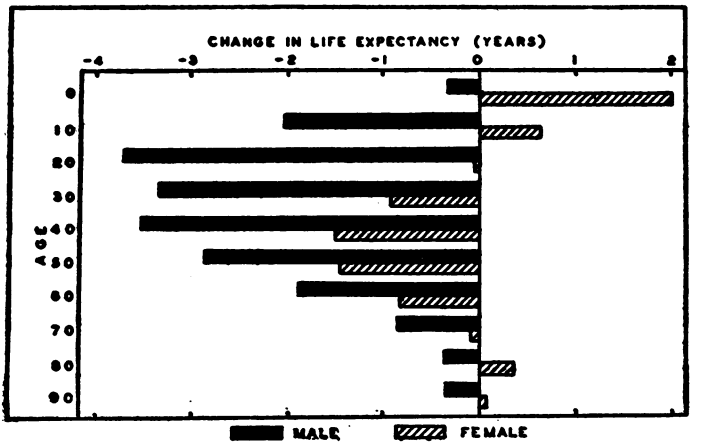

FIGURE 7.—Change in the expectation of life at selected ages, Negro males and females, death registration States of 1920, from 1919–21 to 1929–31.

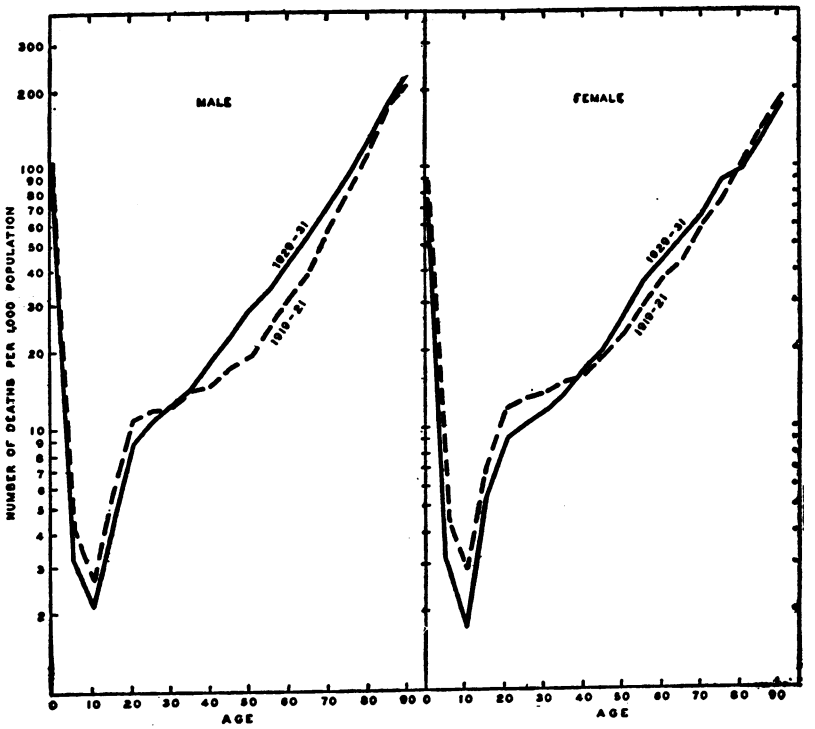

FIGURE 8.—Number of deaths per 1,000 population by age and sex for Negroes in the death registration States of 1920, in 1919–21 and 1929–31.

longer than a Negro baby. Even at age 20 a white person may expect to live nearly one-third longer than a Negro (fig. 9).

It is very doubtful that Negroes of advanced ages live longer than white persons of the same age as shown in figure 9. Owing to the tendency for elderly Negroes to overstate their age, the number in the older age groups as enumerated by the census is undoubtedly much too large. Consequently the mortality rates are too low and the expectation of life too high. The theory has been advanced that the greater expectation of life at advanced ages of Negroes is due to their higher mortality rates in earlier life. Theoretically, the weaklings die young and leave only a few hardy individuals who live much longer than white persons, who have not been subjected to so rigorous a

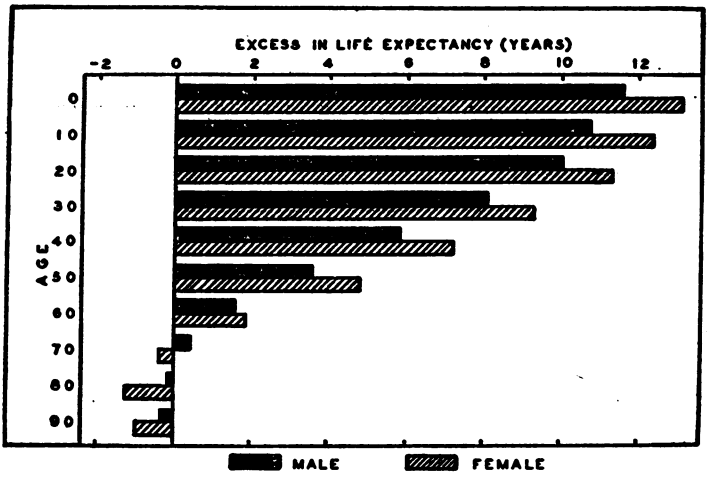

FIGURE 9.—Excess in expectation of life of white persons over Negroes of selected ages, by sex, United States, 1929–31.

selective process. This explanation, however, seems rather artificial in view of the well-known inaccuracy of age statistics of the Negro population.

On first thought, the increase in mortality among Negroes might be attributed to changes in residence and occupational status. During the decade of the twenties a large number of Negroes migrated from the South, where they had been engaged primarily in agriculture, to large Northern cities, where they sought employment mainly in domestic and personal service, semiskilled and unskilled occupations. Low wages, long periods of unemployment, insanitary living quarters, and the almost totally different environment may have had unfavorable effects upon health. However, the greatest set-back in health

seems to have been in the South. A comparison of figures 7 and 10 shows that the losses in expectation of life at different ages were from 2 to 5 times as great in the death-registration States of 1920 as in the original death-registration States. The original area included Negroes living in New England, New York, New Jersey, Michigan, Indiana, and the District of Columbia; the 1920 area included all of the Southern States except Georgia, Alabama, Texas, Arkansas, and Oklahoma in addition to the Northern States.

MORTALITY IN RURAL AND URBAN AREAS

The increase in expectation of life at birth since 1900 has been about 60 percent greater among persons living in urban than among persons

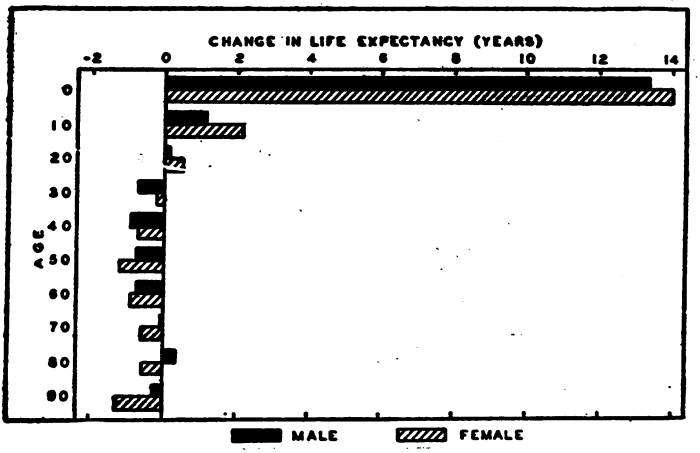

FIGURE 10.—Change in expectation of life at selected ages, by sex, among Negroes living in the original registration States, from 1900–1902 to 1929–31. (Data for 1929–31 include other colored in addition to Negroes and are from Dublin and Lotka (*11*).)

living in rural communities [1] (fig. 11). This comparison is not exact since the data for 1900 are for the original registration States while those for 1930 are for the entire United States, exclusive of Texas. The expectation of life for the white population in 1930 was about one-half year greater at all ages under 70 in the entire country than in the original registration States. This does not necessarily mean that the trend in mortality in the two areas has been exactly similar, but it does indicate that the error involved in the comparison of the two areas is not large.

[1] In 1930 all places of 10,000 or more inhabitants were classed as urban. In 1900–1902, all places of 8,000 or more inhabitants were classed as urban.

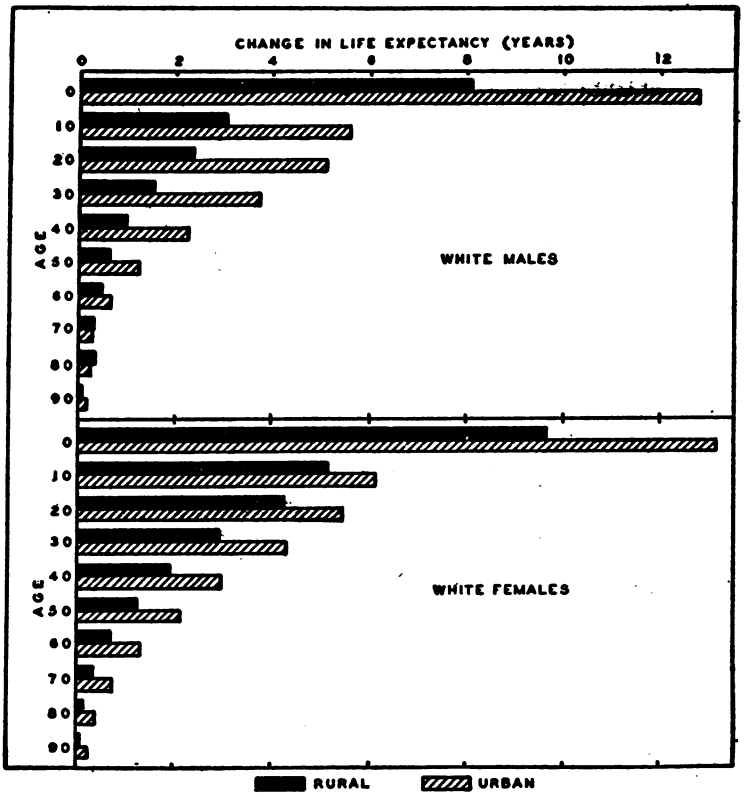

FIGURE 11.—Change in expectation of life at selected ages, by sex, among white persons in rural and urban communities, 1900–1902 to 1930. (Data for 1930 are from Dublin and Lotka (*11*).)

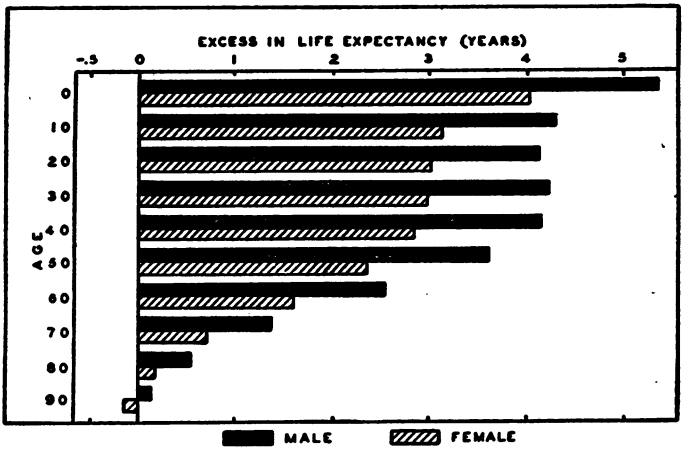

FIGURE 12.—Excess in expectation of life of rural over urban inhabitants of selected ages, white population, male and female, United States, 1930. (Data are from Dublin and Lotka (*11*).)

The expectation of life increased more rapidly for urban males than for urban females, but in rural communities the reverse was true. The greater occupational risks of urban males, however, are revealed by the fact that in 1930 the advantage in expectation of life of rural as compared with urban residents is from one-third to one-half greater for males than for females (fig. 12). In spite of the more rapid decline in mortality in urban communities since 1900, rural males in 1900–1902 had a greater expectancy of life at all ages over 1 year than did urban males 30 years later. In other words, the remarkable gains in healthfulness during the past 30 years have merely advanced the urban population to the level attained by the rural population at the beginning of the century. The difference between females is less than that between males; but even so, white women between 30 and 80 years of age living in urban communities in 1930 could not expect to live as many years as rural women of the same ages in 1900. This is a slight overstatement of the actual differences, since deaths of rural residents occurring in urban hospitals were not allocated to the usual place of residence.[2]

GEOGRAPHIC VARIATIONS IN EXPECTATION OF LIFE AT BIRTH

Extreme differences in mortality rates exist throughout the Nation. The expectation of life at birth in 1929–31 for the white population, including Mexicans, was 14 years greater in South Dakota than in Arizona. It is quite possible that a small proportion of the deaths are unregistered in South Dakota, thus raising the expectation of life, and that the expectation of life in Arizona is lowered by the inclusion of Mexicans and invalid persons, especially persons with tuberculosis who have migrated to the State because of ill health. The difference between Kansas, which ranks second, and South Carolina, which ranks forty-fourth, is 5 years.

The areas of highest mortality or lowest expectation of life are in the Southwest, which is partially explained by the inclusion of Mexicans, Indians, and invalid persons,[3] and along the Atlantic coast from Maine to Florida (fig. 13). The areas are much the same for both males and females, except that the expectation of life at birth is also relatively low among females living in Michigan, Indiana, and Kentucky.

The greatest expectation of life for both males and females is in the tier of eastern Great Plains States from North Dakota to Okla-

[2] Preliminary tabulations of the Division of Vital Statistics of the Bureau of the Census for 17 States and the District of Columbia indicate that the recorded rural death rate may be from 10 to 15 percent lower than the resident rate with the urban recorded death rates correspondingly higher than the resident rates (*19*). The possibility of less complete registration of deaths in rural than in urban areas is another source of error that must not be forgotten in urban-rural comparisons.

[3] Migration of laborers to and from Mexico may also be a source of error in the census count of the population.

homa. The residents of the Northwest States also have an expectation of life greater than the Nation as a whole.

During the decade of the twenties the greatest relative increases in expectation of life at birth were in the Northeast (New England and Middle Atlantic regions) and the smallest relative increases were in the

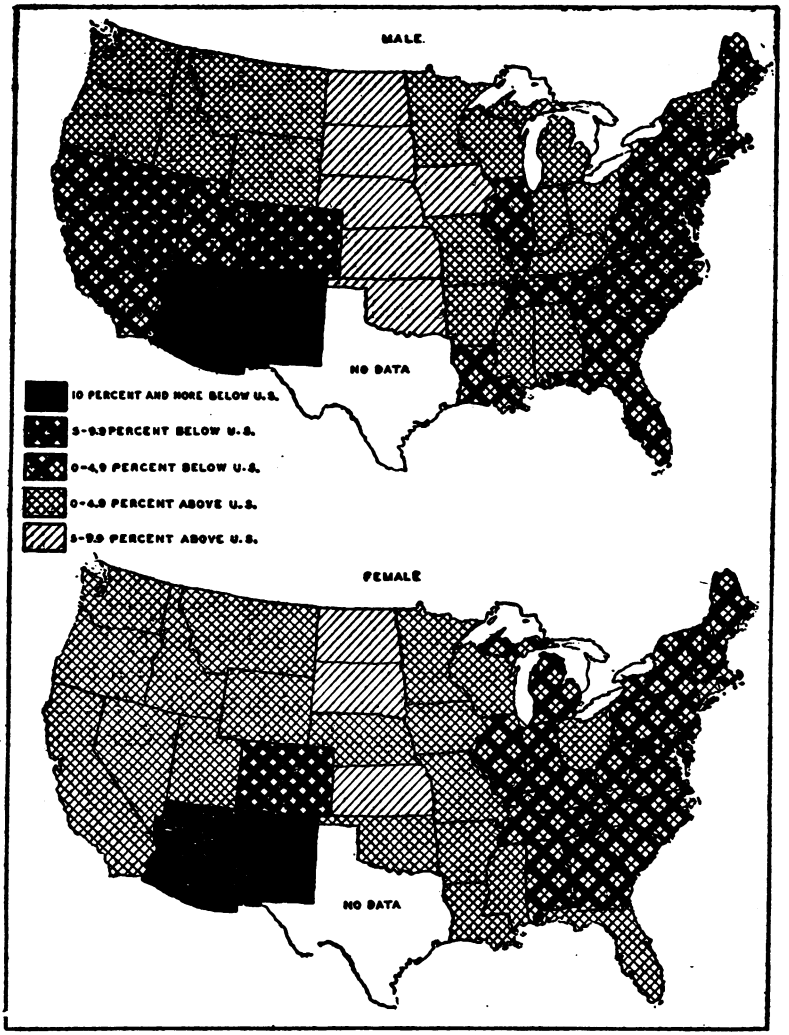

FIGURE 13.—Expectation of life at birth as a percentage above or below that for the United States, white population, by States, 1929-31. (Data are from Dublin and Lotka (*11*).)

Southeast for both males and females. The changes were larger and less variable for females than for males. The relative increases among males were about four times as great in the Northeast as in the Southeast; among females the relative increases were about twice as great in the Northeast as in the Southeast.

EXPECTATION OF LIFE FOR THE TOTAL POPULATION

It is interesting to compare the first life table for the entire population of the United States based on deaths in 1933 with a similar table for the total population of the original registration States for the period 1900–1902 (table 3). It should be remembered that the crude death rate in 1933 was the lowest recorded. But even though it is slightly below the average since 1930 it does represent a level of health which is attainable. A child born in the United States in 1933 could expect to live 12 years longer than his parents could have expected to live at their birth. Another way of measuring the change in longevity that has occurred during the past generation is to compare the ages at which any given percentage of a population would have died if subjected throughout its lifetime to the mortality prevailing at the beginning and end of this period (table 4).

TABLE 3.—*Expectation of life at selected ages for the total population of the original registration States, 1900–1902, and the total population of the United States, 1933* [1]

Age	Original registration States, 1900–1902	United States, 1933	Years increase	
			Number	Percent
0	49.24	61.26	12.02	24.4
1	55.20	63.67	8.47	15.3
2	56.10	63.21	7.11	12.7
3	55.98	62.47	6.49	11.6
4	55.55	61.65	6.10	11.0
5	54.98	60.80	5.82	10.6
10	51.14	56.25	5.14	10.0
15	46.81	51.61	4.80	10.3
20	42.79	47.16	4.37	10.2
25	39.12	42.88	3.76	9.6
30	35.51	38.64	3.13	8.8
35	31.92	34.45	2.53	7.9
40	28.34	30.34	2.00	7.1
45	24.77	26.34	1.57	6.3
50	21.26	22.52	1.26	5.9
55	17.88	18.89	1.01	5.6
60	14.76	15.50	.74	5.0
65	11.86	12.46	.60	5.1
70	9.30	9.75	.45	4.8
75	7.08	7.49	.41	5.8
80	5.30	5.59	.29	5.5
85	3.96	4.13	.17	4.3
90	2.95	3.09	.14	4.7

[1] Data for 1933 are from reference 10.

TABLE 4.—*Age at which a specified proportion of the population would be dead*

Percentage dead	Age (in years)	
	1901	1933
25	24	52
50	58	66
75	74	78

One-fourth of a group of children subject to the mortality conditions prevailing in 1901 would have died before their twenty-fifth birthday; under the mortality conditions of 1933, the corresponding age would be 52. This remarkable increase reflects the extraordinary achievements in preventive medicine, sanitation, and public health, together with a rising standard of living.

For the convenience of readers, the expectation of life at selected ages for the white and Negro populations is summarized in tables 5 and 6.

TABLE 5.—*Expectation of life at selected ages by sex for the white population of certain areas of the United States, 1900–1930* [1]

Year	0		20		40		60		80	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	Original death registration States									
1900–02	48.2	51.1	42.2	43.8	27.7	29.2	14.4	15.2	5.1	5.5
1909–11	50.2	53.6	42.7	44.9	27.4	29.3	14.0	14.9	5.1	5.4
1919–20	54.1	56.4	44.3	45.2	28.9	30.0	14.6	15.3	5.2	5.6
1929–31	58.8	62.1	45.5	48.0	28.5	30.8	14.3	15.5	5.2	5.5
	Death registration States of 1920									
1919–21	56.3	58.5	45.6	46.5	29.9	30.9	15.3	15.9	5.5	5.7
1929–31	59.1	62.7	45.9	48.5	29.1	31.4	14.6	16.0	5.3	5.6
	Total United States									
1929–31	59.1	62.7	46.0	48.5	29.2	31.5	14.7	16.1	5.3	5.6
1933	60.9	64.4	46.8	49.5	29.7	32.1	14.9	16.3	5.3	5.7

[1] Data are from references 7 to 11, inclusive.

TABLE 6.—*Expectation of life at selected ages by sex for the Negro population of certain areas of the United States, 1900–1930*

Year	0		20		40		60		80	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
	Original death registration States									
1900–02	32.5	35.0	35.1	36.9	23.1	24.4	12.6	13.6	5.1	6.5
1909–11	34.1	37.7	33.5	36.1	21.6	23.3	11.7	12.8	5.5	6.1
1919–20	40.5	42.4	35.7	36.4	23.6	23.7	12.3	12.9	4.7	5.8
1929–31 [1]	45.9	49.1	35.2	37.4	22.2	23.7	11.9	12.7	5.5	5.9
	Death registration States of 1920									
1919–21	47.1	46.9	38.4	37.2	26.5	25.6	14.7	14.7	5 8	6.6
1929–31	46.8	48.9	35.7	37.1	23.0	24.1	12.9	13.9	5.5	6.9
	Total United States									
1929–31	47.6	49.5	36.0	37.2	23.4	24.3	13.2	14.2	5.4	6.9

[1] Data relate to colored population, of whom 95 percent were Negroes.

THE ULTIMATE EXPECTATION OF LIFE

What of the future? Can these gains be repeated during the next generation? It seems impossible that such will be the case unless mortality in adult life and old age is remarkably reduced. This means that the death rates from cancer, diabetes, heart diseases, nephritis, and cerebral hemorrhage must be lowered.

To achieve the same increase in expectation of life at birth during the next generation that took place during the past generation, every newborn infant would have to live until about age 55 unless there is a sharp decrease in mortality at the older ages (table 7). Although the figures in table 7 are quite unreal, they do indicate that the remarkable progress of the past cannot be repeated until methods of controlling the diseases of adult life are discovered.

TABLE 7.—*Expectation of life at birth if everyone lived until certain specified ages and then died according to mortality conditions in 1933*

Age at which the first death occurs	Expectation of life at birth
10	66.25
20	67.16
30	68.64
40	70.34
50	72.52
60	75.50

Some indication of the possible future increase in expectation of life can be obtained from a comparison of the United States with various other countries.

TABLE 8.—*Expectation of life at birth by sex in various countries*

Country	Year	Male	Female
New Zealand	1931	65.0	67.9
United States, white	1933	60.9	64.4
Holland	1921–30	61.9	63.5
Denmark	1926–30	60.9	62.6
Germany	1933	59.8	62.6
Canada	1930–32	59.0	60.7
England	1933	58.7	62.6
Scotland	1930–32	56.0	59.5
Austria	1930–33	54.5	58.5
Italy	1930–32	53.8	56.0
India	1931	26.9	26.6

Although the position of the United States is very gratifying in comparison with that of most European nations, we still are not as favorably situated as New Zealand.

The estimated future expectation of life.—On the basis of past experience in this country and in New Zealand, Dublin and Lotka have

prepared a hypothetical life table representing a prediction of the ultimate longevity attainable with present knowledge (table 9 and fig. 14). According to this table the expectation of life at birth may eventually be increased to about 70 years, or 21 years greater than that existing in 1900. In order to achieve this, however, very substantial reductions in mortality during adult life will be necessary. Opinions may differ as to the possibility of these reductions, but at least it indicates

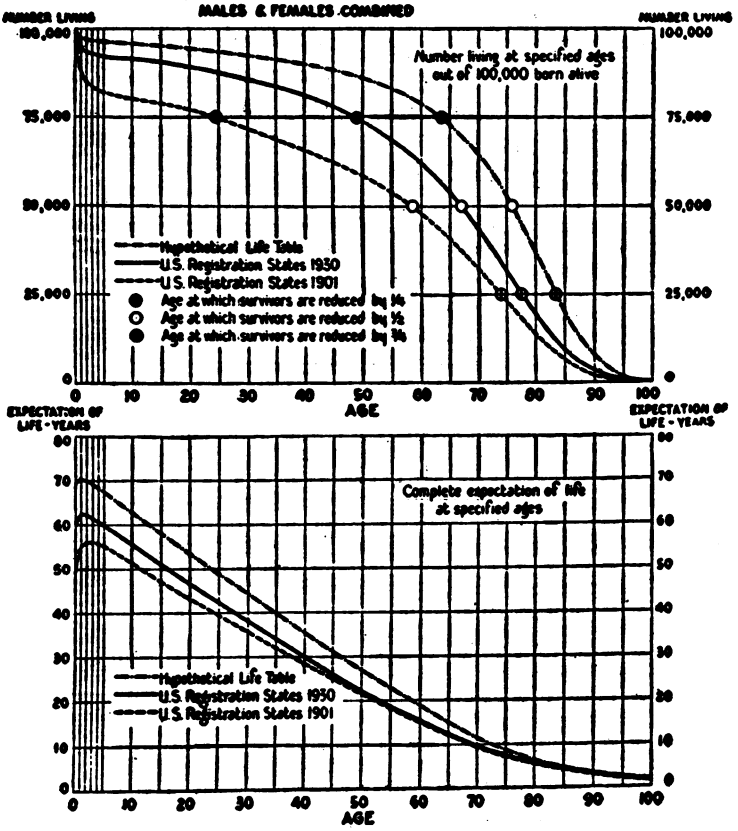

FIGURE 14.—Number of survivors out of 100,000 births and expectation of life by age, total population, 1901 and 1930 compared with hypothetical values attainable with present knowledge. (Reproduced from Dublin and Lotka (*16*), by permission.)

the diseases which preventive medicine must conquer if any appreciable improvement in mortality is to be achieved.

The increase in the aged.—One feature of particular interest is the change in the age distribution of the population which would result from the attainment of the life expectancies of table 9 in the absence of immigration or emigration. Under the mortality conditions prevailing in 1933, 75 out of every 100 persons would still be alive at age 52. In the ultimate life table this age is advanced to 63. Fifty

out of every 100 persons would still be alive at age 76, as compared with age 68 in 1933. Of course this aging of the population would not occur rapidly but would be a gradual process extending over approximately a century after the expectation of life indicated in table 9 had been achieved and would be altered by changes in the birth rate. However gradually these improvements in mortality occur, they inevitably presage an increase in the number, and almost certainly in the proportion also, of elderly persons in our population, unless they are accompanied by an increase in the birth rate, which seems improbable. The problem of caring for the aged, many of whom cannot be self-supporting, will increase rather than diminish. These problems will become especially pressing in the field of mental health and hygiene, since the present tendency is to decrease the length of the period of employability. The proportion of the population 45 years of age and over which is gainfully employed has been declining for several years. As the proportion of the population in these age groups increases, more attention will probably be given to the obvious solution of providing useful employment for persons past middle life.

TABLE 9.—*Hypothetical life table representing the ultimate longevity attainable with present knowledge* [1]

Age x	Number attaining age x out of 100,000 born alive l_x	Mortality rate 1000_{q_x}	Percent reduction in mortality from that prevailing in 1933	Expectation of life [2] $\mathring{e}_x$
0	100,000	25.00	53	69.93
1	97,500	3.34	61	70.71
2	97,174	1.97	52	69.95
3	96,983	1.82	38	69.09
4	96,803	1.73	25	68.22
5	96,639	1.50	22	67.34
10	96,144	.56	53	62.67
15	95,843	.99	45	57.85
20	95,221	1.61	44	53.21
25	94,369	2.18	39	48.66
30	93,216	2.80	32	44.23
35	91,858	3.09	39	39.83
40	90,438	3.15	50	35.41
45	88,875	4.31	49	30.98
50	86,698	5.80	50	26.69
55	83,876	8.32	48	22.50
60	79,645	13.83	42	18.55
65	73,240	21.05	39	14.94
70	64,508	32.69	38	11.60
75	52,327	56.65	27	8.69
80	36,391	91.15	22	6.38
85	19,914	152.56	12	4.60
90	7,546	212.96	14	3.44

[1] From Length of Life (p. 194), by Dublin and Lotka.
[2] The expectation of life given in this column is based on the assumed mortality rates in column 2.

SUMMARY

In 1930 the expectation of life at birth was 59 years for white males and 63 years for white females. The corresponding expectations for Negroes were 48 and 50 years, respectively.

About 150 years ago, at the close of the Revolutionary War, the expectation of life at birth in the United States was approximately 30 to 35 years. By 1930, in Massachusetts, it had increased about 26 years for females and 24 years for males.

The decline in mortality rates has been most rapid for the ages of childhood, adolescence, and early adult life. For the ages above 50 years, mortality rates, have remained practically unchanged.

The increase in expectation of life since 1900 is equal to the increase in the previous 100 years.

Changes in mortality rates in the original registration States have been generally similar to those in Massachusetts. In the death registration States of 1920 the gains in expectation of life in the white population during the twenties were confined to males under 30 and to females under 70 years of age.

Since 1920, Negro males between 20 and 50 years of age have suffered a loss in expectation of life of more than 3 years at every age. Only at birth did the expectation of life for Negro females show an appreciable increase. At every other age the increases were insignificant or replaced by losses.

The increase in the expectation of life at birth since 1900 in the white population has been about 60 percent greater among persons living in urban than among persons living in rural communities. In spite of this, rural males in 1900–1902 had a greater expectation of life at all ages over 1 year than did urban males of corresponding ages 30 years later. A white woman between 30 and 80 years of age living in an urban community in 1930 could not expect to live as many additional years as a white woman of the same age living in a rural community in 1900.

The areas of highest mortality in the white population are in the Southwest, which is partially due to the inclusion of Mexicans and invalid persons, and along the Atlantic coast from Maine to Florida. The greatest expectation of life for both males and females is found among persons living in the Northwest, especially in the eastern tier of Great Plains States from North Dakota to Oklahoma.

The remarkable increase in expectation of life at birth which has occurred since 1900 cannot be repeated in the next generation unless methods are developed for preventing and controlling the diseases of middle life and old age. It has been estimated that the ultimate longevity attainable with present knowledge is about 70 years, or about 10 years greater than in 1930.

REFERENCES

(1) MacDonell, W. R.: On the expectation of life in ancient Rome and in the provinces of Hispania and Lusitania, and Africa. Biometrika, 9: 365–80 (1913).
(2) Elston, James S.: Sources and characteristics of the principal mortality tables. Actuarial Studies No. 1, the Actuarial Society of America, 1932.
(3) A historical retrospect of expectation of life. Stat. Bull., Metropolitan Life Insurance Co., vol. 10, No. 11, (1927), vol. 11, No. 8, (1928).
(4) Wigglesworth, Edward: A table showing the probability of the duration, the durement, and the expectation of life in the States of Massachusetts and New Hampshire, formed from sixty-two bills of mortality on the files of the American Academy of Arts and Sciences in the year 1789. Memoires of the American Academy of Arts and Sciences, vol. 2, part 1, pp. 131–35 (1793).
(5) Proceedings of the American Association for the Advancement of Science, 1857; also Sixteenth Report to the Legislature of Massachusetts relating to the Registry and Return of Births, Marriages, and Deaths in the Commonwealth for the year ending Dec. 31, 1857.
(6) Billings, John S.: Report on the mortality and vital statistics of the United States as returned at the tenth census (June 1, 1880), Part II.
(7) United States Life Tables, 1890, 1901, 1910, and 1901–10. Bureau of the Census, Department of Commerce, Govt. Printing Office, Washington, D. C.
(8) United States Abridged Life Tables, 1919–20. Bureau of the Census, Department of Commerce, Govt. Printing Office, Washington, D. C.
(9) United States Life Tables, 1930. Bureau of the Census, Department of Commerce, Govt. Printing Office, Washington, D. C.
(10) Metropolitan Life Insurance Company, Statistical Bulletin, vol. 17, March 1936.
(11) Dublin, Louis I., and Lotka, Alfred J.: Length of Life. The Ronald Press, New York, N. Y., 1936.
(12) Wiehl, Dorothy G.: Trends in mortality and life expectancy. The Milbank Memorial Fund, Quarterly Bulletin, vol. 11, January 1933.
(13) Sydenstricker, Edgar: Health and environment. McGraw-Hill Book Co. 1933.
(14) Britten, Rollo H.: Some tendencies indicated by the new life tables. Pub. Health Rep., 39: 737–749 (1924). (Reprint No. 912.)
(15) Dalton, Mary: Mortality in New York City a century and a quarter ago. Human Biology, 6: 87–97 (1934).
(16) Dublin, Louis I., and Lotka, Alfred J.: The history of longevity in the United States. Human Biology, 6: 43–96 (1934).
(17) Collins, Selwyn D.: Influenza-pneumonia mortality in a group of about 95 cities in the United States, 1920–29. Pub. Health Rep., 45: 361–406 (1930). (Reprint 1355.)
(18) Collins, Selwyn D., Frost, W. H., Gover, Mary, and Sydenstricker, Edgar: Mortality from influenza and pneumonia in 50 large cities of the United States, 1910–29. Pub. Health Rep., 45: 2277–2328 (1930). (Reprint No. 1415.)
(19) Linder, Forrest E.: The effect of allocation of nonresident deaths in death rates. J. Am. Stat. Assoc., 32: 105 (1937).

AN APPROACH TO A RURAL MENTAL HEALTH PROBLEM

By J. Allen Jackson, M. D., *Superintendent of the Danville State Hospital, Danville, Pa.*

The proper approach to the rural mental health problem is one of the most stimulating challenges to psychiatry in this day and generation. Unlike the population of urban communities, wherein are situated teaching centers, psychiatric hospitals, hospitals with psychiatric departments, out-patient clinics, child guidance clinics, psy-

chiatrists, and others well versed in psychiatric problems, adequate medical school inspection, available psychologists and psychiatric social workers, vocational and orthogenic classes, the rural population depends wholly upon the medical profession and the mental hospitals, State and county. The challenge of the rural mental health problem, therefore, must be met by State welfare departments, commissions on mental disease, State health departments, the mental hospitals, and the medical profession. The question of governmental set-up, whether mental hospitals should be under the jurisdiction of a State department of health, welfare department, or commission, is not necessarily pertinent to this discussion. The size of the commonwealth, the stability of its departments, and the efficiency of their functioning must necessarily decide these matters. Regardless of the type of State or governmental administration, the fact still remains that the psychiatric service rendered to a rural community must be provided by the county medical societies and the mental hospitals, school, or institution in that particular community. The time seems far distant when there will be available sufficient psychiatrists to man each county with adequately trained psychiatrists, regardless of how pressing this goal should be.

In the approach to a rural mental health problem, there should be a satisfactory working arrangement with the county medical society, and the State hospital representing the State department in the district in which the hospital is located, to meet the community needs. A pattern is represented by the Danville State Hospital, which functions on such an arrangement. For almost 17 years the Danville State Hospital has been the mental health center of its district, and the working arrangement with the county societies in its district has been most harmonious. This has, no doubt, been due to the fact that the hospital has in no way attempted to usurp the prerogatives of the physicians of the district; but, on the contrary, has tried in every way possible to cooperate with the county societies in the operation of mental clinics, providing programs for the county societies, holding an annual mental hygiene meeting at the hospital for the physicians of the district, examining cases, giving counsel and advice as to humane treatment, care, and supervision, investigating commitments, and making confidential reports of the examination of the committed and voluntary cases, and stimulating an interest in furlough cases as well as in the patient while in the hospital. At no time has there ever arisen the question of State medicine; but, on the contrary, the medical profession has been more appreciative than the service we were able to give them warranted. Such is the harmonious relationship after many years.

In presenting the approach of the medical profession and the Danville State Hospital, the writer is conscious that there may be other patterns followed by State hospitals or by the medical profession. In justice to this hospital and to the medical profession it might be pointed out, however, that it was possibly one of the first patterns of its kind, including a community service department, embracing education and information in mental health matters; the establishment of mental clinics; the cooperation of the medical profession, schools, colleges, and universities in its district; the cooperation of general hospitals; the erection of a special diagnostic clinic for purely voluntary types of patients; the establishment of child guidance clinics; raising the standards of the hospital proper to render the best treatment and care possible; pioneering in the boarding out of mental patients with the cooperation of the overseers of the poor and without cost to the State; building up an adequate social service department with its present set-up; and functioning for almost 17 years. It is felt that the mental health problems of the 15 counties, largely rural, embracing approximately 10,232 square miles with a census of approximately 1,293,400 (this hospital serving 771,421 persons of this approximate census, and county institutions serving the other 521,979) are not without some psychiatric counsel and leadership.

THE PATTERN

Briefly the pattern is as follows: The hospital, administratively, is divided into six divisions; namely, the executive and fiscal division; the division of operations; the division of agriculture; the division of medical service; the division of laboratories; and the division of community service. To the medical service are assigned physicians, nurses, and vocational and technical assistants. To the community service division are assigned persons whose functions relate to public information (through the press, radio addresses, service clubs, colleges, universities, and high schools), mental clinics, and the social-service departments.

PUBLIC EDUCATION

In the matter of public information, the material used has been simple in presentation. A weekly release to the press has centered around two interesting phases—the one an attempt to break down, as it were, the false concepts concerning mental hospitals as to their nature, policies of administration, the care and treatment of patients, diversion, and recreation, and the other a mental health talk dealing with some aspect of community mental health, mental diseases, etc. In a year's time, approximately 4,458 inches of newspaper space has been given to such material.

For service clubs, a film entitled "The Role of the Danville State Hospital in Mental Hygiene", is presented. This, briefly, embraces the entire hospital set-up in all of its divisions. For high schools, colleges, and universities, and for students who visit the hospital, a program is presented consisting of the moving pictures followed by a visit through all the hospital departments. For high-school students we use a little more restricted visitation on account of the age of the students (seniors).

MENTAL CLINICS

The nine mental clinics in the field carry the hospital into the most strategic positions of the district. The function of a mental clinic is so well known that repetition is unnecessary, other than to say that they serve the physicians, the courts, the schools, and the social agencies in the case of those patients who have no family physician (an effort is made that all cases should be first seen by their family physician and a report is always sent to him) in the matter of counsel, diagnosis, recommendations as to home care under the physician, general hospital commitments, and the follow up of furlough cases from the hospital. Let it be understood that the clinics in no way usurp the physician's prerogatives; but, on the contrary, aid him in caring for his psychiatric problems. The clinic hours are arranged for adults, children, and furlough cases.

GENERAL HOSPITALS

It has been a source of gratification to acknowledge the cooperation of the general hospitals, particularly those where the superintendent and his staff are consultants. Many cases have been seen and guided to an adjustment without commitment to a mental hospital.

DIAGNOSTIC CLINIC

Early in the approach it was recognized that there was a large group of cases for whom the general hospital was not suited; nor were they comfortable in the acute-treatment services of the mental hospital. For this group was set up a diagnostic clinic of 44 beds, equipped in all respects for diagnosis and treatment for a short period of the voluntary border-line patient, separate and distinct from the hospital patients, but sufficiently close for administrative purposes. This unit carries its own personnel.

RESULTS

A set-up without a check on function affords little information on achievement. The results very briefly are as follows: During the intervening years, in the matter of public information and contacts with the public press, we have endeavored to reach the greater part

of our population through weekly releases to the press, these releases dealing with different phases of hospital administration, trustees' meetings, and a monthly mental health talk. In addition, we have had active contact with the colleges and universities in our district by a program ranging from a course of lectures on mental hygiene, followed by case demonstrations at the hospital, to our present program, which consists of visits of the students from these colleges and universities to the hospital during their regular academic year and during their summer sessions. Likewise, the senior classes of high school students in our district visit the hospital during their school term. We have had contact with the service clubs and other civic organizations throughout the hospital district with the spoken word, as well as with the visualization method by presenting the hospital activities in motion pictures. Also, there has been published quarterly a Mental Health Bulletin, dealing with various mental health topics, which is mailed to over 1,325 physicians, overseers of poor, colleges, universities, hospitals, libraries, and commissions throughout the United States. With such a program it is impossible to estimate in numbers the contacts made by the hospital, but they run into several hundred thousands.

During the past 17 years the hospital has conducted clinics under the direction of the clinical director, Dr. H. V. Pike, and his associates, consisting of an internist, a social worker, and a psychologist. At the present time we are conducting nine such clinics at strategic points in the hospital district, namely, Bloomsburg, Danville, Hazleton, Kingston, Lock Haven, Mt. Carmel, Shamokin, Sunbury, and Williamsport. Up until 1932 we also conducted such a clinic at Mansfield. It is interesting to note that since this service was organized, we have rendered service to approximately 11,092 new cases, 6,815 return cases, and 15,911 furloughed cases. As stated before, these clinics have been of service to the physicians of the hospital district, the courts, the schools, and the social agencies. It is also interesting to observe that, of the new cases seen in the field, only 15 percent require hospitalization. The social service department has been functioning in full force and carrying an annual case load of approximately 1,566 extramural contacts, 2,800 intramural contacts, and an average correspondence of approximately 5,500 letters and clinic notices.

In addition to the foregoing, members of the medical staff have served as consultants to the general hospitals, have provided lectures for the schools of nursing of general hospitals, and have prepared papers for medical societies and for publication.

As to the hospital proper, until a few months ago, when the hospital was closed to admissions, owing to overcrowded conditions, our admission rate was rather high. During the calendar year 1936,

there were admitted to the hospital 766 patients. During that same year 444 patients were discharged and 227 patients died. We average about 420 patients on furlough. On September 1, 1937, there were 1,919 patients under treatment in the hospital and 403 patients on furlough. Of the 766 patients admitted during 1936, 142 represented the patients admitted to the diagnostic clinic as voluntary patients. It is interesting to note the very free use made of this clinic by the voluntary type of patients. Prior to the opening of the clinic, we averaged only one or two voluntary admissions a month to the hospital proper.

Meeting the challenge of a rural mental health problem is one of psychiatry's most fascinating problems. Many patterns of approach have come and gone, while some remain. Of those that remain, none can yet be said to be perfect; but the principles of those that remain will become the foundation stones of the more nearly perfect pattern that is yet to be evolved.

Challenging, indeed, are the isolated areas in which beliefs in devils, the changing lunar seasons, witchcraft and sorcery, and horrors of the asylum stand between the unfortunates and humane care and treatment. Many are the areas in which a harrowing trip with some loved one over the mountain to the asylum carries with it horrors of abuse and neglect, and lost hopes that are difficult to revive. Challenging, indeed, are many of these asylums which add to this melancholy belief. Likewise, from out of this mental health chaos is a seemingly endless file of children, without supervision and guidance, whose destiny is likely to be a "last ride over the mountains."

It was challenges like these that stimulated the pioneer work at the Danville State Hospital and that have spurred on the workers. Many of those who supported that work and the workers have long since passed on, surely to their just reward. Their names are inseparable from the work that has been done and should be remembered in that yet to be accomplished. Great credit must be given to the venerable board of trustees of the early years, who sensed the responsibility of the mental health of the community and attempted to meet the challenge. With this group, too, must be mentioned the general practitioners—yes, country doctors—who sponsored the physician relationship; the assistant superintendent, the late Dr. George B. M. Free, who cared for intramural matters while some of the others of us were traveling evangelists; the present incumbent, Dr. L. R. Chamberlain; the secretaries of the Department of Welfare and Dr. William C. Sandy, Director of the Bureau of Mental Health; the hospital superintendents; the judges of the court; the educators of the past and present; the public press, and our brilliant press cor-

respondent, the late Mr. Reed McCarty; the welfare agencies and social clubs; the nurses and social workers; and a faithful secretary, Pearl L. Hodge, who kept all the threads together! Special reference must be made to Dr. H. V. Pike, the first clinical director, who retires from the service in November, but leaves behind him an enduring monument in his clinical activities and in deeds well done. I mention these especially to emphasize that no pattern of approach to rural mental health problems can be made to function without such cooperation and support.

HEALTH SUPERVISION BY NURSES IN A BICOUNTY HEALTH DEPARTMENT [1]

Brunswick-Greensville Health Administration Studies No. 9

By ROSALIE I. PETERSON, *Assistant Public Health Nursing Consultant, United States Public Health Service*

Public health nursing activities in county health departments may be grouped according to four categories: (1) Those activities concerned with the acute control of contagion, (2) those functions designed to decrease the spread of tuberculosis and venereal disease, (3) those procedures focused on the supervision of the maternity cycle, and (4) all other nursing services, commonly called health supervision, designed to improve general health. This fourth group includes such activities as advice and information regarding health habits, correction of physical defects, immunization against preventable disease, food habits, and advice regarding specific health problems of the individual.

A general analysis of the total nursing situation and detailed descriptions of the first three types of nursing activities in the Brunswick-Greensville area have already been presented (*1*, *2*, *3*, *4*). It is the purpose of this paper to analyze the health supervision service rendered by nurses in these two counties in regard to its volume, its clientele, and its type.

The basic data for this analysis were furnished through the health department records which described the actual services rendered by two public health nurses during a period of 12 months. Included as a supplement to the health department records is some of the information obtained during the study year from a survey of the health problems and environment of 1,009 representative families in the bicounty area (*5*).

[1] From Division of Public Health Methods, National Institute of Health, in cooperation with Division of Domestic Quarantine. Special thanks are due to Miss Pearl McIver for assistance in the analysis of the data for this paper.

VOLUME OF HEALTH SUPERVISION SERVICE

General health supervision was found to be a major activity of the two nurses in this area. Almost half of the individuals served by the nurses in the two counties were given advice of a health supervisory nature. Proportionately this type of activity was given much greater emphasis in Brunswick than in Greensville County. Of the total individuals served, the percentages given health supervision were 50 and 39 in the two respective counties.

TABLE 1.—*Number and percentage of individuals served by the nurses in the two counties according to type of service rendered*

Type of service	Individuals served by the nurses					
	Number			Percentage		
	Total	Brunswick	Greensville	Total	Brunswick	Greensville
Total	[1] 1,114	[1] 702	[1] 412	[1] 100.0	[1] 100.0	[1] 100.0
Health supervision	511	349	162	45.9	49.7	39.3
Control of contagion	125	75	50	11.2	10.7	12.1
Tuberculosis	288	147	141	25.9	20.9	34.2
Maternity	234	153	81	21.0	19.7	21.8

[1] More than 1 type of service was rendered to some of the individuals during the study year.

Although the health supervisory services were the most extensive of the four types, the degree of intensity, in terms of the number of home visits, was somewhat low. On the average, the total 1,114 individuals given service by the nurses during the study year received 1.8 visits, while the health supervision cases received only 1.4 visits. As shown in table 2, only one home visit was made to two-thirds of those who were given advice regarding hygiene.

The nurse in Greensville County gave a more intensive service to the small group of individuals which she served. An average of 2.0 visits were made to each of her cases as compared with 1.4 visits per case made by the Brunswick County nurse.

TABLE 2.—*Number of individuals given health supervision service in the home according to number of home visits each received*

Number of home visits	Individuals given health supervision service in the home					
	Number			Percentage		
	Total	Brunswick	Greensville	Total	Brunswick	Greensville
Total	479	341	138	100.0	100.0	100.0
1	325	257	68	67.9	75.4	49.3
2	84	53	31	17.5	15.5	22.5
3	48	26	22	10.0	7.6	15.9
4 or more	22	5	17	4.6	1.5	12.3

In addition to the service rendered in the homes, 88 individuals made a total of 174 visits to the offices of the nurses, where they were given instruction on health problems.

The lack of continuity, as portrayed by these data, in a type of service that depends on continuous follow-up for best results, limits the value of this activity. However, it must be pointed out in connection with such considerations that each of these nurses was rendering service to approximately 17,000 individuals scattered in a rural area, thereby making a continuous intensive service to such a large group almost impossible.

RECIPIENTS OF THE HEALTH SUPERVISORY SERVICES

Since the records of the nurse supplied information as to race, economic status, and age, it was possible to compare, on the basis of these characteristics, the health supervision cases with the total number of individuals receiving nursing service and also with the aggregate population of the two counties.

The race distribution of the total of 1,114 individuals served by the nurses corresponded closely to the proportions of whites and Negroes in the general population. Fifty-eight percent of the population and 59 percent of those given any type of service were Negro. However, among the 511 clients who were given health supervision, the proportion of whites was slightly larger than that of Negroes. The proportions were 52 and 48, respectively. From these data it is apparent that there was a tendency for the nurses to give to the whites more educational advice and to the Negroes services of a specific nature (communicable disease, tuberculosis, or maternity service). Such a tendency may indicate that the Negroes have a greater need for specific services than for education. However, it is more likely that it indicates an attitude on the part of the nurses concerning the readiness with which the two groups respond to general health instruction.

So far as economic status was concerned, the individuals receiving health supervision were similar to all other recipients of health-department service. They were chiefly selected from the lower economic groups.

TABLE 3.—*Percentage distribution of the total population,[1] of all individuals served by the nurses, and of those served for health supervision according to economic status*

Economic status	Percentage of individuals		
	Total population [1]	Served by nurses for any purpose	Served for health supervision
Total	100.0	100.0	100.0
Comfortable	8.0	6.4	5.3
Moderately comfortable	42.0	21.9	19.8
Poor	37.9	39.6	37.3
Very poor	12.1	32.1	37.6

[1] According to random sample.

The health supervision cases were centered in the infant and adult age groups (table 4). Approximately one-third of the cases were infants and another third were adults; the remaining third were divided between the preschool and school groups. The large proportion of cases in the adult group is chiefly due to the fact that the health supervision cases consisted not only of well persons who received health education and advice but also of persons who were sick at the time of the nurses' first visit. Since 90 percent of the illness attended by the nurses was chronic, the service rendered consisted of securing medical care for the patients and in instructing them in health and food habits. When the ill cases were separated from those having no sickness at the time of the nurse's first contact, the age distribution of the two groups showed a markedly contrasting picture. More infants received the strictly supervisory service of well persons, while the adults constituted the largest group who received service initiated because of an illness. This age distribution corresponds with the division usually found in the health supervisory service, for the care of the well baby is one of the major activities of a nursing program.

TABLE 4.—*Number and percentage of individuals given health supervision service according to age group and condition at time of first contact*

Age groups	Condition at time of first contact					
	Number of individuals			Percentage of individuals		
	Total	Individuals who were well	Individuals who were ill	Total	Individuals who were well	Individuals who were ill
Total	511	321	190	100.0	100.0	100.0
Infant	165	156	9	32.3	48.6	4.7
Preschool	112	98	14	21.9	30.5	7.4
School	55	45	10	10.8	14.0	5.3
Adult	179	22	157	35.0	6.9	82.6

In addition to a description of the clientele to whom the nursing staff rendered health supervision, the records also permitted an analysis of the channels through which the cases first came to the attention of the nurses. As would be expected, voluntary requests either from the patient himself or from a friend or relative were the primary source of the nurses' knowledge concerning clients who were ill (table 5). On the other hand, over half of the well clients were given service when the nurse made a visit to some other member of the family. This was especially true of the infant group. Out of the total of 156 well infants given health supervision, 109 were found as a result of visits to other members of the family. Approximately one-third of the well individuals who were served by the nurses had either re-

quested the service themselves or through the efforts of their friends or relatives had sought nursing service. It is a tribute to the nurses that these members of the community recognized the value of the nurses' advice even when there was no immediate health problem.

TABLE 5.—*Number and percentage of individuals rendered health supervision service according to source of first information and condition at time of first contact*

Source of first information	Condition at time of first contact					
	Number of individuals			Percentage of individuals		
	Total	Individuals who were well	Individuals who were ill	Total	Individuals who were well	Individuals who were ill
Total	[1] 510	321	[1] 189	100.0	100.0	100.0
Relative or neighbor	146	83	63	28.6	25.8	33.3
Patient	66	18	48	13.0	5.6	25.4
Visit to other member of family	201	171	30	39.4	53.3	15.9
Physician	21	8	13	4.1	2.5	6.9
Midwife or practical nurse	15	7	8	2.9	2.2	4.2
Health officer	7	7	----	1.4	2.2	----
Other public official	54	27	27	10.6	8.4	14.3

[1] Source of information unknown for 1 individual.

TYPES OF HEALTH SUPERVISION SERVICE

Since health needs vary for each age group, the actual services rendered by the nurses would be expected to differ for each age classification. Accordingly, a description of the service rendered by the nurses is given for each of four age groups—infants, preschool children, school children, and adults.

Service to infants.—The nursing activities for infant health supervision consisted of (*a*) instruction in infant care through mothers' clubs and home nursing classes, (*b*) individual conferences with mothers and their babies at the office, and (*c*) visits made to the home by the nurses. In one or more of these ways the nurses reached 165, or approximately 10 percent, of the infants in the two counties.[2] Although this was a small proportion of the total number of infants, it represented the largest proportion of any single age group that was served by the nurses.

Probably in terms of the nurse's time, the most economical method for giving health supervision to children is through the organization of groups into mothers' clubs. This procedure was used to a limited degree in the two counties. Seven clubs were organized during the year with an average attendance of 24. Usually these clubs were conducted by a local leader with lessons prepared and furnished by the State department of health. It was therefore unnecessary for

[2] It is estimated that the infant population at the beginning of the study plus the live births occurring during the remainder of the year approximated 1,700 for the 2 counties.

the nurses to attend every meeting. However, they did attend 21 such gatherings. Following these meetings, the nurses held many individual conferences with mothers concerning their infants. No record was kept of these conferences, although they were often as valuable as a home visit and took less of the nurses' time.

A second method of giving health supervision that conserves the time of the nurse is a visit to her office by the mother. However, very few contacts were made in this way. Only 13 mothers saw the nurses in their offices, and only 4 of these visited the nurse more than once. The total number of contacts through this method was 24. From such limited use of the office visit, it would seem that the nurses did not encourage this type of contact.

TABLE 6.—*Number and percentage of infants rendered health supervision service and the number and percentage of visits according to place of service*

Number of times served	Infants served				Number of visits	
	Number		Percent			
	Home	Office	Home	Office	Home	Office
Total	[1] 164	13	100.0	100.0	251	24
1	111	9	67.7	69.2	111	9
2	29	2	17.7	15.4	58	4
3	17	1	10.4	7.7	51	3
4 or more	7	1	4.2	7.7	31	8

[1] Number of visits unknown for 1 infant.

The most usual method followed by nurses in advising mothers about the health of their babies was through home visits. In this way 164 infants were seen, and a total of 251 visits was made to these cases for health supervision. Although there was an average of 1.5 visits per infant, less than one-third of the infants received more than one visit (table 6), and only 4 percent received as many as 4 visits, the standard advanced by the Committee of Administrative Practice of the American Public Health Association.[3] Thus, it is apparent that the health supervision of infants in these counties was not a continuous service. Advice was given on one occasion with little or no follow-up to determine the effectiveness of the first instruction. On the other hand, a commendable service was rendered in regard to the early visitation of the infant. Twenty-three percent were visited during their first week of life, and 53 percent were visited during their first month of life. This high percentage of early visitation was in accord with good practice since infant mortality is greatest during the earliest period of a baby's life.

[3] The Appraisal Form for Rural Health Work, American Public Health Association, p. 65.

The supervision activities of the nurses relative to infants were largely confined to advice on infant feeding given the mother, inquiry regarding the birth registration of the child, and the distribution of literature on infant care and feeding (table 7). That there was need for advice on feeding is indicated by the material gathered during the survey of the 1,009 representative families. In that sample only 32 percent of the infants 3 months of age and older were receiving orange or tomato juice regularly, and practically all of these were in the better economic status groups which were very infrequently served by the nurses. Besides furnishing an inadequate supply of vitamins, the diet of the infants still left much to be desired. Only 43 percent of the babies received cereal regularly. Some of the 3-month old babies were given "biscuits and grease" and little "tastes" of the mother's food.

TABLE 7.—*Number and percentage of infants rendered health supervision service according to type of advice or service given*

Type of advice or service given	Infants given health supervision service	
	Number	Percentage
Total	[1] 165	[1] 100.0
Advice regarding feeding	161	97.6
Advice regarding birth registration	146	88.5
Distribution of health literature	97	58.8
Advice regarding hygiene	30	18.2
Advice regarding medical examination	26	15.8
Advice regarding diphtheria immunization	17	10.3
Advice regarding correction of defects	17	10.3
Demonstration of preparation of feeding formula	6	3.6
Administration of diphtheria immunization	4	2.4

[1] More than 1 type of service was rendered to some of the infants during the study year.

The small number of mothers who were advised regarding the necessity for diphtheria immunization and the fact that smallpox vaccinations for infants never were recommended indicate that, in this very young age group, little emphasis was placed on preventive measures for these two diseases.

Services to preschool children.—Health supervision of the preschool child was very limited during the study year in that only 98, or about 2 percent, of the 4,500 children were given any service of this nature. A visit to the home was the most usual method of reaching the preschool children, although 27 were also seen at preschool clinics. The clinics were conducted by the local physicians, in their offices, with the assistance of the nurses. The actual contacts with the children were extremely infrequent, in fact only one-fourth of the cases were seen more than once by the nurses.

TABLE 8.—*Number and percentage of preschool children rendered health supervision service according to type of advice or service given*

Type of advice or service given	Preschool children served		Type of advice or service given	Preschool children served	
	Number	Percentage		Number	Percentage
Total	[1] 112	[1] 100.0	Diphtheria immunization given	16	14.3
Correction of defects urged	52	46.4	Typhoid immunization given	6	5.4
Medical examination advised	49	43.7	Hospitalization arranged	3	2.7
Diphtheria immunization advised	30	26.8	Birth registration discussed	2	1.8
Correction of diet advised	29	25.9	Dental examination advised	1	.9
Establishment of health habits urged	33	29.5	Typhoid immunization advised	1	.9
			Smallpox vaccination advised	1	.9

[1] More than 1 type of service was rendered to some of the preschool children during the study year.

The services rendered to the preschool children were much more diverse than those given the infants (table 8). Urging the use of medical service either for the correction of defects or for the examination of the children was the most frequent service rendered. Prevention of diphtheria through immunizations was stressed more for this age group than for the infants, but the protection of these children from typhoid fever and smallpox was given very scant attention.

Services to school children.—Health supervision of the school child is the combined responsibility of the teacher, the private physician, and the health department in Virginia counties. Under authority of the West Law, the teachers annually inspect all pupils for physical defects and send a report of their findings to the parents. If medical treatment is necessary they are urged to visit their family physician. The teachers frequently refer to the health officer or to the public health nurse those pupils for whom they desire help or advice.

The nurses' health supervision program for school children consisted of school and home visits. School visits were made for the purposes of taking care of the special health problems found through the teachers' inspections, assisting the health officer in medical examinations and immunizations and helping in the control of communicable disease. In all, 79 such visits were made to the schools. During these visits 1,800 or about one-fifth of the 9,400 school children were inspected. In addition 200 pupils were examined by the health officer, assisted by the nurse. Whether the children inspected by the nurse and examined by the physician were chosen in a routine way or were previously selected by the teacher for additional attention was not indicated on the records.

In view of the service rendered to children of school age, in the school, very few home visits were made. Actually only 45 children were visited. The urging of some type of medical aid was the primary service rendered at the time of these visits (table 9). If the nurses' records present an accurate picture of the service rendered, it would

seem that the content of the visits was extremely limited in scope, for only a quarter of the cases were advised concerning hygienic habits.

TABLE 9.—*Number and percentage of school children rendered health supervision service according to the type of advice or service given*

Type of advice or service given	School children given health supervision		Type of advice or service given	School children given health supervision	
	Number	Percentage		Number	Percentage
Total	[1] 55	[1] 100.0	Correction of diet advised	12	21.8
			Diphtheria immunization given	3	5.4
Correction of defects urged	42	76.4	Diphtheria immunization advised	2	3.6
Medical examination advised	38	69.1	Smallpox vaccination given	1	1.8
Establishment of health habits urged	14	25.4	Smallpox vaccination advised	1	1.8
			Typhoid immunization advised	1	1.8

[1] More than 1 type of service was rendered to some of the school children during the study year.

Service to adults.—As previously mentioned, most of the health supervision of adults was initiated because of an illness, and the nurse visited the home to give advice regarding care of the patient. This very probably accounts for the fact that, of the four age groups, the most intensive service was given to adults. Each of the adult cases received an average of 2.0 visits, which was considerably higher than was the average for any other group.

Since about 90 percent of the adult health supervision cases were first seen because of chronic illness, it is to be expected that the service most frequently rendered was to advise a medical examination. Likewise, advice and occasional demonstrations on the care of the patient were necessarily included in this modified type of morbidity service (table 10). However, in giving such advice, the nurse did not overlook the opportunity to teach personal hygiene, as shown by the fact that 65 percent of the cases were given general health instruction. In addition the nurses gave specific dietetic advice to the pellagra patients and explained to them the nature and cause of the disease. Yeast was furnished to those who could not afford to purchase it. The other services rendered were of a miscellaneous character, affecting very few individuals.

TABLE 10.—*Number and percentage of adults rendered health supervision service according to the type of advice or service given*

Type of advice or service given	Adults given health supervision		Type of advice or service given	Adults given health supervision	
	Number	Percentage		Number	Percentage
Total	[1] 190	[1] 100.0	Correction of defects urged	38	20.0
			Health literature given	24	12.6
Medical examination advised	166	87.4	Balanced diet advised	20	10.5
Hygienic habits advised	124	65.3	Hospitalization arranged	14	7.4
Yeast for pellagra given	75	39.5	Dental examination advised	1	0.5
Care of chronic condition demonstrated or advised	55	28.9	Diphtheria immunization advised	1	0.5

[1] More than 1 type of service was rendered to some of the adults during the study year.

SUMMARY

Health supervision, in the form of instruction in routine health habits of diet, rest, sleep, and in urging the use of medical service, was given to approximately 1.5 percent of the total population of the Brunswick-Greensville area during the study year. This represented about one-half of the total clientele visited by the nurses. In addition, about 1,800 school children were given physical inspections either for defects or for communicable disease.

The service might be characterized as primarily a discontinuous service of one visit. Only one-third were visited more than once, and the proportion who were visited as often as quarterly during the study year was less than 5 percent.

The clientele to whom the nurses gave advice on hygiene were principally in the lower economic groups, with the proportion of whites slightly exceeding the percentage of Negroes. One-third of the individuals served were infants and one-third were adults. The remaining third were preschool and school children. Most of the adults were first seen because of chronic illness, and the nurse visited to give advice in regard to medical care.

The content of the health supervisory visits was extremely limited. The services rendered during such visits varied according to age of the individual served. For the babies, the primary service was advice to the mothers on infant feeding and inquiry concerning birth registration. For the preschool and school children, the urging of medical service either for an examination or for the correction of physical defects was the major service rendered. Not more than one-third of the children in any age group given health supervision received advice on general hygiene and health habit formation. Likewise an important function of public health, namely disease prevention, was given scant attention on these visits. Fourteen percent was the highest proportion of any child age group advised regarding the prevention of those diseases for which immunization procedures are usually urged.

The service rendered adults was principally a type of morbidity care, though it did not include the usual bedside care. It consisted of an advisory service primarily for chronically ill individuals and included also a few demonstrations in the methods of care for such patients.

DISCUSSION

The extremely small number of individuals given any health supervisory service and the lack of continuity and follow-up visits constitute a serious weakness in this phase of the health program. It is more than likely that other county programs of health super-

vision are similarly restricted in volume and intensity. However, this limitation is not easily remedied, because of the large number of individuals needing advice on problems of hygiene and the relatively small amount of nursing time. Whether it is better to make one contact with a large number of individuals or to render a continuous intensive service to a relatively few persons is an unsolved problem confronting all public health nurses in rural areas. It may be that the practical solution lies in a greater amount of group instruction using the techniques and facilities for adult education rather than extending the individual method of teaching.

REFERENCES

(1) McIver, Pearl: Public health nursing in a bicounty health department. Brunswick-Greensville health administration studies No. 4. Pub. Health Rep., **50**: 469–480 (Apr. 5, 1935). (Reprint No. 1679.)
(2) McIver, Pearl: The maternity nursing service of a bicounty health department. Brunswick-Greensville health administration studies No. 5. Pub. Health Rep., **50**: 1293–1308 (Sept. 20, 1935). (Reprint No. 1703.)
(3) Dean, J. O., and Pennell, Elliott H.: Communicable diseases and activities for their control in the Brunswick-Greensville area. Brunswick-Greensville health administration studies, No. 7. Pub. Health Rep., **51**: 991–1013 (July 24, 1936). (Reprint No. 1761.)
(4) Dean, J. O.: Tuberculosis control by a small county health department. Brunswick-Greensville health administration studies No. 8. Pub. Health Rep., **52**: 597–609 (May 7, 1937). (Reprint No. 1822.)
(5) Pennell, Elliott H.: The family survey as a method of studying rural health problems. Brunswick-Greensville health administration studies No. 3. Pub. Health Rep., **50**: 210–223 (Feb. 15, 1935). (Reprint No. 1671.)

Other reports of the Brunswick-Greensville health administration studies are as follows:

No. 1. Effectiveness and economy of county health department practice. Description of the study. By Joseph W. Mountin. Pub. Health Rep., **49**: 1232–1241 (Oct. 19, 1934). (Reprint No. 1654.)
No. 2. Job analysis of a rural sanitation officer. By J. O. Dean and Joseph W. Mountin. Pub. Health Rep., **49**: 1529–1543 (Dec. 21, 1934). (Reprint No. 1663.)
No. 6. Job analysis of a rural health officer. By J. O. Dean. Pub. Health Rep., **50**: 1751–1762 (Dec. 13, 1935). (Reprint No. 1722.)

DEATHS DURING WEEK ENDED NOVEMBER 13, 1937

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

	Week ended Nov. 13, 1937	Corresponding week, 1936
Data from 86 large cities in the United States:		
Total deaths	8,121	8,134
Average for 3 prior years	8,001	
Total deaths, first 45 weeks of year	386,514	386,672
Deaths under 1 year of age	513	553
Average for 3 prior years	541	
Deaths under 1 year of age, first 45 weeks of year	24,815	25,078
Data from industrial insurance companies:		
Policies in force	69,931,141	68,609,080
Number of death claims	11,069	11,369
Death claims per 1,000 policies in force, annual rate	8.3	8.7
Death claims per 1,000 policies, first 45 weeks of year, annual rate	9.7	9.8

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

In these and the following tables a zero (0) is to be interpreted to mean that no cases or deaths occurred, while leaders (------) indicate that cases or deaths may have occurred although none was reported.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 20, 1937, and Nov. 21, 1936

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936
New England States:								
Maine	1	3	1	--------	28	26	0	0
New Hampshire	2	--------	--------	--------	42	4	0	0
Vermont	2	1	--------	--------	44	3	0	0
Massachusetts	5	6	--------	--------	82	75	3	2
Rhode Island	--------	--------	--------	--------	2	65	0	0
Connecticut	8	6	4	4	5	75	1	0
Middle Atlantic States:								
New York	25	29	[1] 11	[1] 13	111	104	3	8
New Jersey	17	11	7	17	262	28	1	0
Pennsylvania	33	30	--------	--------	1,032	50	2	8
East North Central States:								
Ohio	46	51	6	6	119	6	4	4
Indiana	32	49	23	13	16	7	0	3
Illinois	44	37	10	12	368	7	4	7
Michigan	36	32	1	1	78	31	2	2
Wisconsin	2	7	33	23	56	40	0	1
West North Central States:								
Minnesota	13	24	1	--------	3	17	2	0
Iowa	2	3	--------	3	5	1	2	3
Missouri	55	28	41	46	583	3	1	2
North Dakota	1	1	--------	9	5	4	0	0
South Dakota	2	1	--------	--------	--------	2	0	0
Nebraska	1	2	--------	--------	2	3	2	1
Kansas	14	17	1	1	19	4	0	1
South Atlantic States:								
Delaware	--------	--------	--------	--------	--------	12	0	0
Maryland [2]	41	11	5	7	3	42	0	9
District of Columbia	5	8	--------	--------	5	3	3	0
Virginia	31	92	--------	--------	73	23	3	4
West Virginia	31	22	21	20	47	--------	4	2
North Carolina [2]	80	100	2	9	222	18	2	1
South Carolina [2]	12	19	214	324	10	6	1	0
Georgia [2]	23	55	--------	--------	--------	--------	1	2
Florida [2]	15	7	5	4	55	1	1	0
East South Central States:								
Kentucky	25	27	4	16	62	11	5	6
Tennessee	40	45	47	40	95	1	9	6
Alabama [2]	33	44	116	40	6	2	6	2
Mississippi [2]	13	25	--------	--------	--------	--------	2	1

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 20, 1937, and Nov. 21, 1936—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936
West South Central States:								
Arkansas	21	6	28	23	8	----	0	0
Louisiana [3]	27	27	3	24	----	1	1	1
Oklahoma [4]	34	7	15	61	4	3	1	0
Texas [3]	61	45	237	83	44	9	1	1
Mountain States:								
Montana	2	2	----	1	23	1	1	1
Idaho	4	----	5	5	31	73	0	1
Wyoming	----	----	----	----	----	2	0	0
Colorado	7	1	----	----	24	4	0	2
New Mexico	6	7	2	3	40	24	0	0
Arizona	13	1	41	22	1	18	0	0
Utah [3]	54	1	----	----	17	17	0	3
Pacific States:								
Washington	2	----	----	1	30	10	0	3
Oregon	8	----	27	37	16	5	0	0
California [3]	51	57	34	45	47	34	1	7
Total	980	947	945	913	3,730	875	69	94
First 46 weeks of year	23,718	24,196	282,053	147,002	260,293	273,796	4,930	6,733

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid and paratyphoid fevers		Whooping cough
	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937
New England States:									
Maine	0	1	30	11	0	0	1	1	34
New Hampshire	0	0	12	2	0	0	0	0	7
Vermont	0	1	15	6	0	0	2	1	7
Massachusetts	3	1	126	105	0	0	2	1	130
Rhode Island	1	0	31	23	0	0	1	0	53
Connecticut	0	2	61	35	0	0	2	3	60
Middle Atlantic States:									
New York	7	4	348	334	0	0	8	8	392
New Jersey	2	0	85	51	0	0	4	2	98
Pennsylvania	0	4	340	391	0	0	19	21	----
East North Central States:									
Ohio	0	9	225	242	3	0	3	5	106
Indiana	1	0	139	124	21	2	4	3	22
Illinois	4	9	355	306	6	1	13	11	93
Michigan	5	2	417	291	4	1	4	3	164
Wisconsin	1	0	181	225	2	14	1	1	170
West North Central States:									
Minnesota	2	2	135	145	8	5	2	0	43
Iowa	4	3	175	80	24	2	0	3	30
Missouri	4	4	176	74	4	4	5	13	63
North Dakota	0	1	43	35	32	16	0	0	34
South Dakota	1	2	34	36	2	6	1	0	34
Nebraska	3	2	35	27	1	0	2	0	12
Kansas	2	2	118	231	2	10	1	3	70
South Atlantic States:									
Delaware	0	0	12	5	0	0	2	0	6
Maryland [3]	1	0	90	62	0	0	5	10	100
District of Columbia	0	0	19	12	0	0	0	1	5
Virginia	0	0	45	75	0	0	4	13	66
West Virginia	0	0	102	77	0	0	11	14	40
North Carolina [3]	0	0	66	105	0	0	2	10	152
South Carolina [3]	0	1	12	11	0	0	2	10	28
Georgia [3]	1	6	32	34	0	0	5	12	16
Florida [3]	3	2	----	3	1	0	1	0	8

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Nov. 20, 1937, and Nov. 21, 1936—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid and paratyphoid fevers		Whooping cough
	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937	Week ended Nov. 21, 1936	Week ended Nov. 20, 1937
East South Central States:									
Kentucky	0	5	69	68	5	0	9	14	93
Tennessee	0	6	64	70	6	0	4	11	45
Alabama [2]	3	4	20	28	0	0	5	3	12
Mississippi [2]	7	2	12	23	2	0	4	3	----
West South Central States:									
Arkansas	3	5	20	5	9	0	22	4	18
Louisiana [2]	1	1	21	17	3	0	13	15	6
Oklahoma [4]	1	17	59	21	2	0	10	19	28
Texas [2]	2	1	113	42	2	2	46	20	136
Mountain States:									
Montana	0	0	32	69	17	23	2	0	23
Idaho	0	0	21	31	13	1	2	3	22
Wyoming	0	0	11	9	13	2	0	0	7
Colorado	4	2	32	39	3	3	0	2	7
New Mexico	0	1	30	27	0	1	10	4	74
Arizona	0	1	5	14	0	0	1	3	----
Utah [2]	1	0	65	17	0	0	0	0	16
Pacific States:									
Washington	2	0	39	59	10	2	1	2	81
Oregon	4	0	24	27	17	13	0	4	32
California [3]	12	11	180	255	3	1	6	7	245
Total	85	114	4,276	3,979	215	109	242	263	2,888
First 46 weeks of year	9,187	4,169	195,700	206,377	9,316	6,525	14,121	13,510	----

[1] New York City only.
[2] Week ended earlier than Saturday.
[3] Typhus fever, week ended Nov. 20, 1937, 49 cases, as follows: North Carolina, 2; South Carolina, 4; Georgia, 22; Florida, 1; Alabama, 9; Louisiana, 3; Texas, 5; California, 3.
[4] Figures for 1936 are exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
October 1937										
California	8	129	80	22	122	7	85	611	26	43
Florida	7	98	10	132	23	----	3	21	0	9
Illinois	14	144	38	27	409	1	93	868	7	73
Maine	2	5	3	----	61	----	35	33	0	22
Maryland	9	39	33	1	12	----	6	154	0	25
Massachusetts	6	4	----	1	89	----	20	372	0	11
Minnesota	1	75	4	----	18	----	69	291	10	10
Mississippi	1	73	2,232	4,351	110	242	34	64	----	46
Nebraska	3	12	----	----	9	----	49	35	0	2
Nevada	----	----	4	----	2	----	1	15	0	0
New York	34	86	----	17	394	----	110	728	0	80
Ohio	19	225	40	2	818	----	33	1,025	4	69
Oklahoma	3	145	100	235	14	13	26	231	21	104
Oregon	1	6	68	5	39	----	11	72	18	9
Texas	7	221	772	1,527	81	126	92	276	3	212
Vermont	----	9	----	----	48	----	1	15	0	12
Virginia	12	276	348	20	118	9	6	212	----	42
West Virginia	9	202	50	----	106	1	7	452	1	49

Summary of monthly reports from States—Continued

October 1937

	Cases
Anthrax:	
Texas	1
Beriberi:	
California	1
Botulism:	
California	1
Chicken pox:	
California	685
Florida	12
Illinois	516
Maine	171
Maryland	117
Massachusetts	291
Minnesota	336
Mississippi	177
Nebraska	17
Nevada	19
New York	624
Ohio	681
Oklahoma	18
Oregon	162
Texas	78
Vermont	85
Virginia	86
West Virginia	99
Dengue:	
Texas	12
Diarrhea:	
Maryland	35
Ohio (under 2 years; enteritis included)	34
Dysentery:	
California (amoebic)	11
California (bacillary)	54
Florida	1
Illinois (amoebic)	8
Illinois (bacillary)	86
Illinois (amoebic carriers)	10
Maryland (bacillary)	23
Massachusetts (bacillary)	4
Minnesota (amoebic)	2
Minnesota (bacillary)	1
Mississippi (amoebic)	67
Mississippi (bacillary)	288
New York (amoebic)	7
New York (bacillary)	211
Ohio (amoebic)	1
Ohio (bacillary)	2
Oklahoma	28
Oregon (amoebic)	9
Oregon (bacillary)	2
Texas (amoebic)	4
Texas (bacillary)	206
Virginia (amoebic)	1
Virginia (diarrhea included)	107
Encephalitis, epidemic or lethargic:	
California	10
Illinois	15
Maryland	3
Massachusetts	1
Minnesota	1
Nebraska	5
New York	8
Ohio	1
Oregon	1
Texas	7
West Virginia	1
Food poisoning:	
California	97
German measles:	
California	58
Illinois	34
Maine	6
Maryland	4
Massachusetts	24
New York	57
Ohio	5
Granuloma (coccidioidal):	
California	4
Hookworm:	
California	1
Florida	1,171
Mississippi	564
Impetigo contagiosa:	
Maryland	42
Oklahoma	6
Oregon	166
Jaundice, epidemic:	
California	4
Oregon	12
Lead poisoning:	
Massachusetts	2
Ohio	22
Leprosy:	
California	1
Mumps:	
California	615
Florida	15
Illinois	191
Maine	59
Maryland	24
Massachusetts	154
Mississippi	110
Nevada	8
Ohio	89
Oklahoma	1
Oregon	46
Texas	81
Vermont	269
Virginia	80
West Virginia	12
Ophthalmia neonatorum:	
California	6
Florida	1
Illinois	5
Massachusetts	89
Mississippi	7
New York [1]	4
Ohio	87
Oklahoma	1
Virginia	1
Paratyphoid fever:	
California	2
Florida	3
Illinois	2
Maryland	1
Massachusetts	1
New York	16
Ohio	1
Texas	10
Virginia	2
Puerperal septicemia:	
Mississippi	44
Ohio	2
Rabies in animals:	
California	162
Florida	2
Illinois	18
Massachusetts	18
Mississippi	15
New York [1]	3
West Virginia	6
Rabies in man:	
California	1
Mississippi	1
Relapsing fever:	
California	4
Scabies:	
Oklahoma	3
Oregon	141
Septic sore throat:	
California	7
Illinois	2
Maryland	5
Massachusetts	15
Minnesota	6
New York	54
Ohio	37
Septic sore throat—Contd.	
Oklahoma	53
Oregon	6
Virginia	26
West Virginia	5
Tetanus:	
California	4
Illinois	2
Massachusetts	2
Minnesota	1
New York	6
Oklahoma	1
Trachoma:	
California	35
Florida	1
Illinois	9
Mississippi	5
Oklahoma	29
Trichinosis:	
California	32
Florida	1
Massachusetts	3
New York	15
Ohio	1
Tularaemia:	
California	2
Minnesota	1
Nevada	3
Ohio	1
Oregon	1
Texas	7
Typhus fever:	
California	2
Florida	7
Maryland	1
Mississippi	2
New York	1
Texas	48
Undulant fever:	
California	23
Florida	4
Illinois	14
Maine	5
Maryland	4
Massachusetts	9
Minnesota	3
Mississippi	2
New York	13
Ohio	6
Oklahoma	65
Oregon	3
Texas	43
Vermont	5
Virginia	1
Vincent's infection:	
Florida	59
Maine	27
Maryland	8
New York [1]	70
Oklahoma	10
Oregon	21
Whooping cough:	
California	856
Florida	23
Illinois	380
Maine	80
Maryland	263
Massachusetts	420
Minnesota	209
Mississippi	270
Nebraska	27
Nevada	3
New York	1,199
Ohio	460
Oklahoma	162
Oregon	75
Texas	354
Vermont	67
Virginia	208
West Virginia	145

[1] Exclusive of New York City

PLAGUE INFECTION IN FRESNO COUNTY, CALIF.

Under date of November 16, 1937, Dr. W. M. Dickie, Director of Public Health of California, reported that plague infection had been proved by animal inoculation in a lot of 48 golden mantled ground squirrels received at the laboratory on September 29 from the Golden Crest area, Fresno State College property, and Billy Creek Camp area, Huntington Lake, Fresno County, Calif., and in a lot of 6 *beecheyi* squirrels received on the same date from the Huntington Dump and the Huntington Lodge area.

WEEKLY REPORTS FROM CITIES

City reports for week ended Nov. 13, 1937

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	321	210	40	380	534	1,114	7	352	44	887	------
Current week	184	84	44	1,122	501	964	7	287	40	735	------
Maine:											
Portland	0	------	0	0	0	0	0	0	0	13	19
New Hampshire:											
Concord	0	------	0	8	1	0	0	0	0	0	9
Manchester	1	------	0	0	0	2	0	0	0	0	12
Nashua	0	------	0	0	0	1	0	0	0	0	5
Vermont:											
Barre	0	------	0	87	0	0	0	1	0	0	1
Burlington	0	------	0	1	0	0	0	0	0	3	7
Rutland	0	------	0	0	0	0	0	0	0	4	6
Massachusetts:											
Boston	0	------	0	37	9	42	0	10	2	9	196
Fall River	0	------	0	1	2	1	0	1	0	16	21
Springfield	0	------	0	0	1	9	0	1	0	6	37
Worcester	0	------	0	0	3	1	0	2	0	4	48
Rhode Island:											
Pawtucket	0	------	0	0	0	4		0	0	0	14
Providence	1	------	0	0	1	16	0	1	0	7	59
Connecticut:											
Bridgeport	0	------	0	1	0	9	0	1	0	0	33
Hartford	0	------	0	1	1	12	0	0	0	4	40
New Haven	0	------	0	1	0	4	0	1	0	0	22
New York:											
Buffalo	0	------	1	3	6	8	0	6	0	14	131
New York	20	10	5	26	80	70	0	9	7	108	1,315
Rochester	0	1	0	1	5	5	0	1	0	9	53
Syracuse	2	------	0	0	8	26	0	1	0	2	49
New Jersey:											
Camden	1	1	1	0	2	2	0	3	3	2	33
Newark	1	2	1	1	4	10	0	4	1	20	91
Trenton	0	------	0	77	1	1	0	2	0	0	26
Pennsylvania:											
Philadelphia	2	3	2	17	26	55	0	13	10	29	445
Pittsburgh	0	------	0	163	15	30	0	3	0	14	155
Reading	0	------	0	1	1	3	0	0	0	0	23
Scranton	1	------	------	10	------	1	0	------	0	1	------
Ohio:											
Cincinnati	11	------	0	0	14	18	0	2	0	8	129
Cleveland	2	8	0	40	16	47	0	10	0	18	198
Columbus	3	1	1	2	5	6	0	4	0	2	88
Toledo	2	------	0	4	7	8	0	2	0	3	66
Indiana:											
Anderson	0	------	0	0	0	6	0	1	0	0	11
Fort Wayne	1	------	0	0	7	2	0	1	0	0	30
Indianapolis	5	------	1	1	8	16	0	4	0	1	107
Muncie	1	------	0	1	2	4	0	1	0	0	17
South Bend	1	------	0	0	2	0	0	0	0	0	20
Terre Haute	2	------	0	0	0	3	0	0	0	1	25

City reports for week ended Nov. 13, 1937—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Illinois:											
Alton	0	------	0	28	0	5	0	0	0	0	11
Chicago	19	7	0	117	39	102	0	44	1	31	710
Elgin	0	------	0	0	2	0	0	0	0	4	9
Moline	0	1	0	1	3	12	0	0	0	1	22
Springfield	0	------	0	0	4	5	0	0	0	0	21
Michigan:											
Detroit	13	1	0	45	24	100	0	20	0	45	283
Flint	5	------	0	2	3	18	0	0	0	3	15
Grand Rapids	1	------	0	1	2	19	0	0	0	23	34
Wisconsin:											
Kenosha	0	------	0	0	1	2	0	0	0	2	9
Madison	0	------	0	0	1	1	0	1	0	0	18
Milwaukee	1	1	1	35	7	19	0	6	0	26	118
Racine	0	------	0	0	1	10	0	0	0	1	9
Superior	0	------	0	0	1	3	0	0	0	0	6
Minnesota:											
Duluth	0	------	0	0	1	2	0	1	0	19	26
Minneapolis	0	------	1	0	3	14	0	1	0	12	76
St. Paul	0	------	0	3	3	8	0	5	0	4	67
Iowa:											
Cedar Rapids	0	------	--------	0	-------	3	0	-------	0	1	--------
Davenport	1	------	--------	0	-------	2	0	-------	0	0	--------
Des Moines	0	------	--------	0	-------	16	0	-------	2	0	32
Sioux City	0	------	--------	1	-------	2	0	-------	0	2	--------
Waterloo	0	------	--------	0	-------	1	0	-------	0	0	--------
Missouri:											
Kansas City	0	------	1	1	12	9	0	4	0	1	101
St. Joseph	0	------	0	0	3	7	0	0	0	1	16
St. Louis	16	------	0	381	8	48	1	2	0	3	235
North Dakota:											
Fargo	0	------	0	0	1	4	0	0	0	4	5
Grand Forks	0	------	--------	0	-------	11	0	-------	0	0	--------
Minot	0	------	0	0	0	0	0	0	0	4	2
South Dakota:											
Aberdeen	6	------	--------	0	-------	3	0	-------	1	0	--------
Nebraska:											
Omaha	0	------	0	0	6	1	0	3	0	0	70
Kansas:											
Lawrence	0	------	0	0	0	2	0	0	0	0	3
Topeka	0	------	0	1	0	7	0	0	0	10	10
Wichita	0	------	0	2	2	2	0	1	0	2	27
Delaware:											
Wilmington	0	------	0	0	2	5	0	0	0	2	21
Maryland:											
Baltimore	14	2	2	4	15	17	0	14	0	49	187
Cumberland	0	------	0	0	0	2	0	0	0	9	15
Frederick	0	------	0	0	0	0	0	0	0	0	6
Dist. of Col.:											
Washington	6	------	0	1	10	9	0	6	0	4	145
Virginia:											
Lynchburg	0	------	0	0	2	2	0	0	1	0	6
Norfolk	0	------	0	0	3	4	0	1	0	0	21
Richmond	0	------	1	0	4	6	0	2	1	0	54
Roanoke	3	------	0	0	2	1	0	2	0	0	13
West Virginia:											
Charleston	4	1	1	2	2	1	0	0	0	0	27
Huntington	3	------	--------	6	-------	4	0	-------	0	0	--------
Wheeling	0	------	0	1	6	8	0	0	0	21	18
North Carolina:											
Gastonia	0	------	--------	0	-------	1	0	-------	0	1	--------
Raleigh	1	------	0	0	2	0	0	0	0	14	8
Wilmington	0	------	0	0	0	0	0	0	0	13	20
Winston-Salem	3	------	0	0	3	7	0	1	0	4	10
South Carolina:											
Charleston	3	6	0	8	5	0	0	0	1	0	37
Florence	2	------	0	0	2	0	0	0	0	0	21
Greenville	0	------	0	0	1	0	0	0	0	4	16
Georgia:											
Atlanta	0	19	1	14	6	17	0	3	3	8	80
Brunswick	0	------	0	0	0	0	0	0	0	0	0
Savannah	2	------	0	1	3	0	0	3	2	0	33
Florida:											
Miami	0	------	0	3	1	1	0	2	0	3	29
Tampa	1	2	2	0	2	1	0	1	0	1	29

City reports for week ended Nov. 13, 1937—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Kentucky:											
Ashland	1	------	0	0	0	0	0	0	0	0	0
Covington	0	------	0	0	2	2	0	0	0	0	11
Lexington	0	------	0	0	2	0	0	2	0	0	19
Louisville	1	1	0	4	5	23	0	1	0	8	69
Tennessee:											
Knoxville	1	------	0	0	3	0	0	2	0	0	31
Memphis	2	------	1	16	4	7	0	2	2	3	74
Nashville	0	------	2	1	1	0	0	1	0	2	41
Alabama:											
Birmingham	4	4	1	1	5	2	0	4	0	0	57
Mobile	0	------	1	0	0	1	0	0	0	0	23
Montgomery	1	------	--------	0	0	2	0	-------	0	1	--------
Arkansas:											
Fort Smith	3	------	--------	0	------	3	0	-------	0	5	--------
Little Rock	0	------	0	1	3	2	0	0	0	0	7
Louisiana:											
New Orleans	5	5	5	0	11	5	0	13	0	0	172
Shreveport	4	------	0	0	6	4	0	3	1	0	33
Oklahoma:											
Muskogee	0	------	--------	0	------	6	0	-------	0	0	--------
Oklahoma City	2	------	0	0	3	4	0	2	2	0	51
Tulsa	0	------	--------	0	-------	5	1	-------	0	17	--------
Texas:											
Dallas	5	2	2	0	0	13	0	3	0	5	61
Fort Worth	0	------	1	0	0	9	0	2	1	3	31
Galveston	0	------	0	0	2	1	0	2	2	0	12
Houston	1	------	1	0	6	0	0	4	2	0	78
San Antonio	0	------	1	0	3	3	0	7	1	0	51
Montana:											
Billings	0	------	0	1	1	0	0	0	0	0	9
Great Falls	0	------	0	0	0	1	2	0	0	7	7
Helena	0	------	0	0	0	4	0	0	0	3	6
Missoula	0	------	0	0	1	0	0	0	0	0	7
Idaho:											
Boise	0	------	0	0	0	0	1	0	0	0	7
Colorado:											
Colorado Springs	0	------	0	0	3	2	0	1	0	0	13
Denver	7	------	2	6	9	11	0	7	0	2	88
Pueblo	0	------	0	0	0	1	0	0	0	0	3
New Mexico:											
Albuquerque	0	------	0	6	2	1	0	3	0	1	8
Utah:											
Salt Lake City	1	------	3	1	3	19	0	0	0	4	38
Washington:											
Seattle	2	------	0	0	4	4	0	5	0	7	90
Spokane	0	------	0	3	6	4	0	0	0	2	28
Tacoma	0	------	0	0	4	2	3	1	0	9	33
Oregon:											
Portland	3	1	0	0	4	6	0	4	2	2	89
Salem	0	1	--------	0	-------	0	0	-------	0	0	--------
California:											
Los Angeles	7	7	3	2	18	21	0	22	0	32	382
Sacramento	1	------	0	0	2	0	0	3	0	12	28
San Francisco	1	1	0	3	9	7	0	10	0	48	159

City reports for week ended Nov. 13, 1937—Continued

State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths	
Maine:			
Portland	0	0	1
Massachusetts:			
Worcester	1	0	0
New York:			
New York	3	2	2
Pennsylvania:			
Pittsburgh	0	1	0
Ohio:			
Cincinnati	1	1	0
Cleveland	1	0	0
Indiana:			
Indianapolis	0	1	0
Illinois:			
Chicago	2	1	1
Elgin	0	0	1
Michigan:			
Detroit	1	0	0
Wisconsin:			
Milwaukee	0	0	1
Minnesota:			
St. Paul	0	0	1
Missouri:			
Kansas City	2	1	0
St. Joseph	0	1	0
Nebraska:			
Omaha	0	0	1
Maryland:			
Baltimore	3	0	0
Virginia:			
Lynchburg	2	0	0
Richmond	1	0	0
Georgia:			
Atlanta	1	0	0
Florida:			
Tampa	3	0	0
Kentucky:			
Louisville	1	0	0
Louisiana:			
New Orleans	0	0	2
Texas:			
San Antonio	0	0	1
Montana:			
Missoula	0	0	1
Colorado:			
Denver	0	1	0
Pueblo	0	0	1
Washington:			
Seattle	0	0	1
California:			
Los Angeles	0	0	3
Sacramento	2	1	0

Encephalitis, epidemic or lethargic.—Cases: New York, 1; Newark, 1; Minneapolis, 2.
Pellagra.—Cases: Atlanta, 2; Birmingham, 3; Los Angeles, 1.
Typhus fever.—Cases: Norfolk, 2; Savannah, 2.

FOREIGN AND INSULAR

CZECHOSLOVAKIA

Communicable diseases—August 1937.—During the month of August 1937, certain communicable diseases were reported in Czechoslovakia, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	10		Malaria	530	
Cerebrospinal meningitis	14	4	Paratyphoid fever	48	1
Chicken pox	57		Poliomyelitis	30	3
Diphtheria	1,974	86	Puerperal fever	13	4
Dysentery	480	66	Scarlet fever	1,696	17
Influenza	55	1	Trachoma	38	
Lethargic encephalitis	1	1	Typhoid fever	1,106	68

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

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for November 26, 1937, pages 1738–1752. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued December 31, 1937, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

Cholera

India (French)—Pondichery Territory.—Cholera has been reported in Pondichery Territory, French India as follows: Week ended September 18, 1937, 1 case, 1 death; week ended October 23, 1937, 1 case.

Plague

Hawaii Territory—Island of Hawaii—Hamakua District—Paauhau Sector.—A rat found on November 9, 1937, in Paauhau Sector, Hamakua District, Island of Hawaii, Hawaii Territory, has been proved plague-infected.

United States—California.—A report of plague in California appears on page 1798 of this issue of PUBLIC HEALTH REPORTS.

Smallpox

Mexico.—During the month of August 1937, smallpox has been reported in Mexico as follows: Mexico, D. F., 9 cases, 1 death; Michoacan State, Morelia, 4 cases; Queretaro State, Queretaro, 1 case.

Typhus Fever

Mexico.—During the month of August 1937, typhus fever has been reported in Mexico as follows: Mexico, D. F., 27 cases, 3 deaths; Pachuca, Hidalgo State, 3 cases, 1 death; Queretaro, Queretaro State, 2 cases, 1 death; Toluca, Mexico State, 38 cases, 2 deaths.

Straits Settlements—Singapore.—During the week ended September 18, 1937, 1 case of typhus fever was reported in Singapore, Straits Settlements.

Yellow Fever

Gold Coast—Mamidede.—On November 2, 1937, 2 suspected cases of yellow fever were reported in Mamidede, Gold Coast.

Nigeria.—Yellow fever has been reported in Nigeria as follows: October 26, 1937, 1 suspected case in Ibadan; October 16, 1937, 1 case in Makurdi followed by death on October 23, 1937.

Senegal—Sebikotane.—Yellow fever has been reported in Sebikotane, Senegal, as follows: November 2, 1 case, 1 death; November 3, 2 cases.

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