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# RELATIONSHIP BETWEEN PER CAPITA INCOME AND MORTALITY, IN THE CITIES OF 100,000 OR MORE POPULATION ${ }^{1}$ 

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## INTRODUCTION

The great variation in health status from one individual and from one population group to another constitutes a continuous challenge to all those concerned with improving the health and well-being of the population. If an understanding of the causes of this variation could be achieved, a more rational basis for action to raise the general level of health would be available.

The causes of variation are generally classified into two main groups, hereditary and environmental. Many published studies point to the influence of one or the other of the two groups. Since environmental factors are more amenable to modification, major emphasis is placed upon investigations of the association between disease and income, nutrition, education, occupation and other conditions susceptible to improvement.

It has been shown from studies in this and other countries that variations in infant mortality are related to economic conditions and all that these imply in terms of hygiene, nutrition, etc. (1, 2, 8, 4, 5). For mortality in general, a study based on deaths among $1,300,000$ life insurance policyholders shows that there is an association of relatively higher mortality with low occupational class (6).

When the relationship between sickness and environment is studied, similar results are obtained. Emmet, using the data of the Workmen's Sick and Death Benefit Fund, found a consistent and definite association of illness with low occupational class (7). In family morbidity studies, made by the United States Public Health Service, an inverse relation was found between family income and the prevalence of disease ( $8,9,10$ ).

[^0]In appraising the many studies reported, two facts stand out:

1. Only in the case of infant mortality has there been shown a clear-cut relationship with socio-economic conditions.
2. There is little quantitative information on the relationship between the individual elements of the environment, in terms of socio-economic status, and disease.

There are two exceptions. First, the supplements to the annual reports of the Registrar General of England and Wales, published decennially, contain extensive material on male mortality by occupation (11). Second, Hirshfeld and Strow have used data for the 48 States and the District of Columbia to study the relation between health status and such environmental factors as percent urban, sanitation facilities, medical facilities, health insurance, economic resources and degree of culture (12). Hirshfeld and Strow used as measures of health status infant mortality, mortality from heart disease, tuberculosis and infectious diseases, and draft rejections.

The information furnished in this study is valuable though limited by the size of the unit chosen. States are such large, complex units that great internal variation is often hidden in the averages for a State as a whole. Snow pointed out the necessity for using small units in studies of this kind:
"It is essential * * * that we take our units sufficiently small so that the effects we are investigating may be considered fairly homogeneous in the area" (13).

In view of these considerations, in the present study of the relation between health status and environmental factors, it has been decided to use all the counties in the United States and the cities with 10,000 or more population in 1940 as units. These political divisions more nearly meet the requirement of internal uniformity than do larger units. Mortality rather than morbidity data will be used as the measure of health status because that is all that is available on a national scale. The relation between mortality from selected specific causes, maternal mortality and infant mortality and percent urban, per capita income, medical facilities, occupational class and degree of culture will be systematically investigated. The results will be presented in a series of reports. In this first report, the results based on the 92 cities which had 100,000 or more population in 1940 are presented. The questions asked are-What is the relation between the per capita buying income of the community and mortality from several causes? What is the influence of the color composition of the population on this relationship?

## MATERIAL AND METHOD

In using data on the 92 largest cities in the country, the effects of differences in degree of urbanization, size of community, and avail-
ability of medical facilities and resources upon the mortality rates are minimized.

The mortality data for this study were obtained from a report of the Bureau of the Census containing the number of births and deaths of residents of each city and county in the United States for the 2-year period 1939-40 (14). The color composition data and the population figures used in the computation of mortality rates were obtained from the 1940 census (10)). The per capita buying income for 1940 for each city was taken from the Annual Survey of Buying Power published by Sales Management (16).

The average annual death rates per 100,000 persons were calculated for total deaths and for a selected list of broad diagnosis categories, for each city. The median age in the cities varies from 27.3 years in Charlotte, N. C., to 36.7 in San Francisco, Calif. To eliminate the effect of this variation on the mortality rates, all rates were adjusted by the indirect method ${ }^{2}$ to the age distribution of the total United States population in 1940.

## RESULTS

## RELATION BETWEEN INCOME AND MORTALITY

The 92 cities were divided into 3 approximately equal groups on the basis of per capita income, and an unweighted average for each mortality rate was computed for each group of cities. Table 1 shows the results for total deaths and for infant and maternal mortality. The table also includes the average per capita income for each of the three groups of cities.

Table 1.-Relationship between per capita buying income and total mortality, infant mortality and maternal mortality, 1939 and 1940

| Income group of cities | Number of of cities | A verage per capita buying income | Total deaths per 100,000 population (age adjusted) | Infant deaths per 1,000 live births | Maternal deaths per 1,000 live births |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Total cities, 100,000 or more. | 92 | \$792 | 1,131.1 | 42.2 | 3.f |
| Lowest. | 31 | 668 | 1,211.5 | 47.9 | 4.3 |
| Middle | 30 | 789 | 1,097. 4 | 41.1 | 3.1 |
| Highest | 31 | 918 | 1,092. 2 | 37.5 | 3.2 |

The average total death rate decreases sharply between the group of cities with an average income of $\$ 668$ and the group with an average income of $\$ 789$. There is a slight additional decrease between this middle group. and the group with average income of $\$ 918$. The infant mortality rate shows the same pattern of association with income. The trend in the maternal mortality rate is similar except that the rate in the highest income group is slightly higher than that in the middle income group. There is considerable variation in the

[^1]mortality rates from city to city in each income group. An analysis of variance test was applied to determine which of the differences in the average rates among the income groups are statistically significant. ${ }^{3}$

Table 2.-Relationship between per capita income and mortality from a selected list of broad diagnosis groups, 1939 and 1940
[Deaths per 100,000 population (age adjusted)]


[^2]Certain of the diagnoses included in the basic data were combined into broad groups and the average mortality rates computed for each of the three income groups of cities (table 2). The diagnosis titles and International List numbers included in each category are shown in the footnotes to the table. It will be seen that some of the average rates decrease with increased income, some increase and others seem to show little or no association with income.

The following facts are shown in the table:

1. The average mortality rates for syphilis, chronic diseases, influenza and pneumonia, appendicitis and hernia decrease consistently from the lowest to the highest income group. As was true for the total death rate, the decrease between the lowest and middle groups is much greater than that between the middle and highest groups.

[^3]2. For the infectious diseases, for tuberculosis, pellagra, diseases of the ear, nose and throat and "other" accidents the average rates decrease between the lowest and middle groups but show a slight increase between the middle and highest groups.
3. The rates for exophthalmic goiter and motor vehicle accidents increase slightly with increased income.
4. The rates for cancer, cirrhosis of the liver and diseases of the gall-bladder increase irregularly with increased income.
5. There seems to be no association with income for diabetes and ulcer of the stomach.

The results shown in table 2 may be compared with those of the study of the Registrar General of England and Wales mentioned above (11). In this study, mortality data were classified by a detailed list of occupations. These occupations were then allocated to five broad social classes. Such a classification is not strictly comparable with a classification by income. Another point that should be kept in mind in comparing the two sets of data is that the English experience is for males only.

The rates for syphilis, influenza, pneumonia, tuberculosis and hernia decreased from the lowest to the highest social class. In the present study the rates for these diagnoses tend to decrease from the lowest income group to the highest. The trends for cancer, appendicitis and ulcer of the stomach are quite different for the two sets of data. In the present study the rates for cancer increase irregularly with increased income; in the English experience the rates decreased markedly from the lowest to the highest social class. For appendicitis, the present study found a consistent decrease with increased income; for England and Wales, the opposite trend was found. In the present study no association was found between income and mortality rates for ulcer of the stomach; in the English experience there was a consistent decrease from the lowest to the highest social class. For the other diagnosis groups included in the present study, either there was no comparable group in the English data or the differences in the results were not marked.

The differences found between the data for England and Wales and those of the present study are interesting. Further study would probably reveal some explanation for the disagreement. Both studies show that there is a marked inverse association between social or economic class and mortality from certain groups of causes. For other causes the inverse association is less marked. There is a slight positive association for some causes, and for a few causes there seems to be no association with social or economic class.

## RELATION BETWEEN COLOR COMPOSITION AND MORTALITY

The income level of the communities in the United States is roughly related to geographic area and this in turn requires consideration of the color composition of the population. The 92 cities differ in color composition from 58.5 percent white for Memphis, Tenn., to 99.9
percent for Lowell, Mass. Since nonwhites experience higher total mortality, infant mortality and maternal mortality than white persons, it is to be expected that cities with lower proportions of white persons will have higher mortality rates than cities with high proportions of white persons.

It is not possible to investigate the relationship between color and mortality directly for the 92 cities because the basic data are shown by color only for cities with 10 percent or more nonwhite populations. Therefore the following indirect method was used. The percent of white persons in the population was calculated for each city. The cities were then divided into three groups on the basis of this percent and the average rates computed for each group for total, infant and maternal deaths. It will be seen from table 3 that there is a marked inverse relation between the mortality rates and percent of white persons in the population.

Table 3.-Relationship between the color composition of the population and total mortality, infant mortality and maternal mortality, 1939 and 1940

| Percent of white persons in the population | Number of cities | $\begin{gathered} \text { Total deaths } \\ \text { per 100,000 } \\ \text { population } \\ \text { (age adjusted) } \end{gathered}$ | $\begin{gathered} \text { Infant deaths } \\ \text { per 1,000 } \\ \text { live births } \end{gathered}$ | Maternal deaths per 1,000 live births |
| :---: | :---: | :---: | :---: | :---: |
| Total cities, 100,000 or more.. | 92 | 1134.1 | 42. 2 | 3.6 |
| Less than 90.0 . | 31 | 1260.3 | 48.6 | 4.2 |
| 90.0-96.9. | 33 | 1097.1 | 40.6 | 3.5 |
| 97.0 or more. | 28 | 1038.0 | 36.8 | 2.9 |

For nine of the diagnosis groups of table 2 the mortality rates for the total United States differ considerably for white and nonwhite persons. The average rates for each of these causes were calculated for the cities in the three color composition groups. Table 4 shows that

Table 4.-Relationship between the color composition of the population and mortality from selected causes, 1939 and 1940
[I) eaths per 100,000 population (age adjusted)]

| Diagnosis group ${ }^{1}$ | Percent of white persons in the population |  |  |
| :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Less than } \\ & 90.0 \end{aligned}$ | 90.0-96.9 | 97.0 or more |
| Diagnoses for which nonwhite rates are higher than white rates: |  |  |  |
| Infectious | 6.2 | 4.1 | 3.6 |
| Tuberculosis | 64.6 | 49.3 | 32.6 |
| Syphilis. | 23.1 | 13.3 | 10.8 |
| Pellagra. | 2.2 | 0.4 | 0. 2 |
| Influenza, pneumonia ${ }^{\text {Diagnoses for which nonwhite rates are lower than white rates: }}$ | 93.3 | 68.6 | 56.9 |
|  | 125.8 | 137.7 | 136.9 |
| Diabetes | 27.8 | - $\quad 30.1$ | 30.7 |
| Exophthalmic goiter | 2.9 | 3.0 | 3.2 |
| Diseases of the gall-bladder | 6.2 | 7.0 | 7.8 |

[^4]for the five diagnosis groups for which the nonwhite rates are higher than the white rates for the United States, the mortality, as expected, is higher in the cities with more nonwhite persons than in those with less. The reverse is true for those four diagnosis groups for which the nonwhite rates are considerably lower than the white rates.

## EFFECT OF COLOR COMPOSITION ON THE ASSOCIATION BETWEEN INCOME AND MORTALITY

In order to examine the effect of the observed association between color composition and mortality upon the relationship between income and mortality, each of the three income groups of cities was divided into the three color composition groups. For the nine groups of cities thus formed the average total, infant and maternal mortality rates were calculated. The results are presented graphically in figure 1.


Figure 1.-Relationship between the per capita income and color composition of the population and total, infant and maternal mortality in the 92 cities of 100,000 or more population, 1939 and 1940.

For the total death rate, the average rates decrease with increased income in the cities with the lowest and highest percent white populations. For the infant mortality rate, there is a consistent decrease with increased income in all color composition groups. There are two exceptions to the general trend for the maternal mortality ratesthe minimum rate is in the middle income group for both groups of cities with less than 97 percent white populations.

A careful examination of figure 1 will reveal that, at each income level, the higher the proportion of white persons in the population,
the lower the mortality rates. This might be the result of an association between income and color composition within an income group. However when the average per capita income is computed for the nine groups of cities, no marked association is found between income and color composition within an income group. In the lowest income group, there is a difference of $\$ 38$ between the groups with lowest and highest percent white; in the middle income group, this difference is $\$ 18$; in the highest income group it is only $\$ 7$. These differences are small in comparison with the differences between income groups (table 1). Therefore the association between mortality and color composition shown in figure 1 is apparently not the result of income variation alone.

The average rates for each diagnosis category of table 4 were computed for the nine groups of cities. The results are presented graphically in figure 2. It is now possible to examine what effect the color composition of the population has upon the association between income and mortality from selected causes.

Only nine of the diagnosis groups of table 2 are included in figure 2. The rates for the remaining diagnoses show only a small color differential. For six diagnoses-infectious diseases, tuberculosis, syphilis, influenza, pneumonia, pellagra and cancer-the pattern of association between mortality and income shown in table 2 is also present in two or more of the color composition groups. The exceptions to the general trend are slight. The rates for exophthalmic goiter and diseases of the gall bladder show a more irregular pattern in the color composition groups than in table 2. For diabetes, the pattern of association between income and mortality is different in each color composition group.

Therefore, on the basis of the above analysis it would seem that in the largest cities in the country, economic status as measured by per capita buying income is inversely related to the frequency of death from all causes, of infant and maternal deaths, and of deaths from infectious diseases, tuberculosis, syphilis, pellagra, diseases of the ear, nose and throat, influenza, pneumonia, cbronic diseases, appendicitis, hernia and "other accidents." This association is independent of the age composition of the population and is affected only slightly by variations in color composition.

## SUMMARY

Use has been made of mortality data from a report of the Bureau of the Census to study the relationship between per capita income and mortality in the 92 cities which had 100,000 or more population in 1940. The most important findings are as follows:

1. The average total death rate, infant and maternal mortality rates and the death rates for ten broad diagnosis groups tend to vary inversely with income.
2. The average death rates for five diagnosis groups show some tendency to increase with increased income.
3. The death rates for the remaining two diagnosis groups examined do not seem to show an association with income.


Figure 2.-Relationship between the per capita income and color composition of the population and mortality from selected causes in the 92 cities of $\mathbf{1 0 0 , 0 0 0}$ or more population, 1939 and 1940.
4. With a few exceptions the association between death rates and income is not affected by variations in the color composition of the population.

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(16) Survey of buying power, 1940. Sales Management, 48 (April 10, 1941). (Copyright 1941. Further reproduction not licensed.)

## APPENDIX

The indirect method of age adjustment.-For each mortality rate and for each city the following steps were taken:

1. The age specific death rates for the United States were multiplied by the number of persons in the appropriate age group in the city.
2. These numbers were added to obtain the number of deaths, all ages, that would be expected if the United States rate were operative in the city.
3. The expected death rate was calculated by dividing the expected number of deaths by the population of the city.
4. The ratio of the United States rate to the lexpectedrate was obtained.
5. This adjustment factor was multiplied by the actual rate in the city to obtain the age adjusted rate.

The statistical significance of the differences in the average death rates.-For the all causes death rate it is found that the variance between the income groups of cities is significantly greater than the variance within these groups ( $\mathrm{F}=7.22$ ). For the infant mortality rates a value of 9.65 was found for F and for the maternal mortality rates a value of $\mathbf{1 0 . 5 0}$. The influenza and pneumonia rates yield a value of 7.48 for F . The other diagnosis categories shown in table 2 yield values of 3.72 or less. This is considerably less than the 1 percent level of significance and the differences between the income groups are not statistically significant.

## DEATHS DURING WEEK ENDED NOV. 1, 1947

[From the Weekly Mortality Index, issued by the National Office of Vital Statistics]

|  | Week ended Nov. 1, 1947 | Corresponding week, 1946 |
| :---: | :---: | :---: |
| Data for 93 large cities of the United States: |  |  |
|  | 8,880 | 8,616 |
| Median for 3 prior years ------.... | 8,969 403,352 |  |
| Total deaths, first 44 weeks of year | 403, 352 | 397, 205 |
| Median for 3 prior years. | 671 |  |
| Deaths under 1 year of age, first 44 weeks of year | 32,475 | 28, 928 |
| Data from industrial insurance companies: |  |  |
| Policies in force. | 67, 096, 085 | 67, 324, 567 |
| Number of death claims Death claims per 1,000 policies in force, annual rate | 13,084 10.2 | 11, 8.8 |
| Death claims per 1,000 policies in 1,000 policies, first 44 weeks of year, annual rate | 10.2 9.3 | 8.5 |

## INCIDENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

## October 5-November 1, 1947

The accompanying table summarizes the incidence of nine important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State for each week are published in Public Health Reports under the section "Incidence of Disease." The table gives the number of cases of these diseases for the 4 weeks ended November 1, 1947, the number reported for the corresponding period in 1946, and the median number for the years 1942-46.

## DISEASES ABOVE MEDIAN INCIDENCE

Influenza.-For the 4 weeks ended November 1 there were 6,658 cases of influenza reported, an increase of approximately 3,000 cases over the preceding 4 weeks. Of the total cases, Texas reported 2,595, Virginia 1,434, and South Carolina 1,373 -more than 80 percent of the total cases occurred in those 3 States. While a large number of cases was reported from Texas in the West South Central section, the incidence for that section as a whole was below the 1942-46 median. In the South Atlantic section the number of cases was 1.8 times the 1942-46 median, due largely to the high incidence in the two States in that section mentioned above. The numbers of cases in the North Central sections were small but they represented increases over the normal seasonal expectancy; in all other sections the incidence was relatively low.
Whooping cough.-The number of cases of whooping cough dropped from approximately 12,000 during the preceding 4 weeks to 9,378 during the current 4 -week period. However, the number was 1.5 times the 1946 incidence for the same weeks and 1.2 times the 1942-46 median. Each section of the country except the Pacific contributed to the relatively high incidence of this disease, the excesses over the 1942-46 median ranging from less than 5 percent in the Middle Atlantic section to about 90 percent in the West South Central section. For the country as a whole the current incidence was the highest reported since 1942 when approximately 11,000 cases occurred during the corresponding 4 weeks.

## DISEASES BELOW MEDIAN INCIDENCE

Diphtheria.-For the 4 weeks ended November 1 there were 1,292 cases of diphtheria reported as compared with 1,463 for the corresponding weeks in 1946 and a 1942-46 median of 1,937 cases. The incidence was below the normal seasonal level in all sections of the country except the New England. After reaching a peak in 1945,
when 2,800 cases were reported for these same 4 weeks, this disease has declined and the current incidence is the lowest for the entire country since that year. If the incidence follows the pattern of preceding years the number of cases for the year will be as low, if not lower, than the 1943 incidence which is the lowest on record for this disease.

Measles.-The number of cases of measles $(4,147)$ was slightly higher than in 1946, but it was less than 90 percent of the 1942-46 median. Four of the nine geographic sections reported an excess over the median for the preceding 5 years, the greatest excesses occurring in the North Central sections. In five sections the incidence was below the seasonal expectancy, the greatest declines occurring in the New England and Pacific sections.

Meningococcus meningitis.-During the current 4-week period there were 201 cases of meningococcus meningitis reported. The number was less than 80 percent of the 1946 incidence and less than 65 percent of the 1942-46 median. The incidence was relatively low in all sections of the country and the total was the lowest for the entire country since 1941 when 117 cases were reported for these same weeks.

Poliomyelitis.-The number of cases of poliomyelitis dropped from 3,243 during the preceding 4 weeks to 1,638 during the 4 weeks ended November 1. States reporting the highest incidence were: Ohio 278, New York 203, Idaho 98, Illinois 94, Pennsylvania 92, Michigan 91, California 69, and Massachusetts 60 -more than 60 percent of the total cases occurring in those 8 States. A comparison of geographic areas shows an excess over the normal seasonal median in the East North Central, South Atlantic, and Mountain sections, but in all other sections the incidence was relatively low.

Scarlet fever.-The number of cases $(4,324)$ of scarlet fever reported for the current 4 -week period was 75 percent of the 1946 incidence for the corresponding 4 weeks and less than 50 percent of the median for the preceding 5 years. In each section of the country the current incidence was below the seasonal expectancy. For the country as a whole the number of cases was the lowest reported during these 4 weeks in the 19 years for which data are available.

Smallpox.-Only three cases of smallpox were reported during the 4 weeks ended November 1, one each in Missouri, Kansas, and Arkansas. The incidence was the lowest on record for this period, the number of cases being only 20 percent of the previous record low figure in 1946 ( 15 cases) and less than 20 percent of the 1942-46 median (19 cases).

Typhoid and paratyphoid fever.-The number of cases of these diseases (325) was slightly higher than in 1946, but it was only about 80 percent of the 1942-46 median for the corresponding 4 weeks. The incidence was above the normal seasonal expectancy in the West

North Central section, but in other sections the number of cases closely approximated the median for the preceding 5 years or fell below it. These diseases have been on a steady decline since 1939, but it may be significant that for the past two 4 -week periods the number of cases has been higher than during the corresponding periods in 1946.

## MORTALI'TY, ALL CAUSES

For the 4 weeks ended November 1 there were 35,522 deaths from all causes reported to the National Office of Vital Statistics by 93 large cities as compared with a $1944-46$ median of 35,194 deaths. The increase was due to an excess of deaths during the first week of the 4 -week period ( 9.5 percent more deaths than the median for the preceding 3 years). In the remaining 3 weeks the number of deaths was relatively low.

Number of reported cases of 9 communicable diseases in the United States during the 4-week period Oct. 5-Nov. 1, 1947, the number for the corresponding period in 1946, and the median number of cases reported for the corresponding period, 1942-46

| Division | $\begin{aligned} & \text { Current } \\ & \text { period } \end{aligned}$ | 1946 | 5-year median | $\left\lvert\, \begin{gathered} \text { Current } \\ \text { period } \end{gathered}\right.$ | 1946 | 5 -ycar median median | $\left\|\begin{array}{c} \text { Current } \\ \text { period } \end{array}\right\|$ | 1946 | 5-year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Diphtheria |  |  | Influenza ${ }^{\text {1 }}$ |  |  | Measles |  |  |
| United States | 1,292 | 1,463 | 1,937 | 6,658 | 5,759 | 5, 629 | 4,147 | 4,052 | 4,682 |
| New England | 30 |  |  |  | 10 |  | 153 | 1.154 |  |
| Middle Atlantic.-. | ${ }^{93}$ | 149 | ${ }_{230}^{101}$ | ${ }_{122}^{22}$ | ${ }_{96}^{35}$ |  | , 586 | 1,022 | ${ }_{9}^{926}$ |
| West North Central. | 85 | 138 | 137 | ${ }_{76}$ | 51 | 33 | -548 | 65 | 137 |
| South Atlantic. | 426 | 299 | 476 | 2,961 | 1,150 | 1,638 | 382 | 334 | 235 |
| East South Central | 220 | 274 | 334 | 196 | 143 |  | 64 | 44 | 80 |
| West South Central. | 189 | 208 | 432 | 2,897 | 3,850 | 3, 294 | 310 | ${ }^{216}$ | 186 |
| Mountain...------...------- | 50 | 42 |  | ${ }_{346}$ | ${ }^{381}$ | ${ }^{3} 381$ | 274 | 280 | 413 |
|  | 71 | 113 | 160 | 30 | 49 | 94 | 367 | 355 | 861 |
|  | $\underset{\text { meningitis }}{\substack{\text { Meningococcus } \\ \text { men }}}$ |  |  | Poliomyelitis |  |  | Scarlet fever |  |  |
| United States <br> New England <br> Middle atlantic. <br> East North Central <br> South A tlantic <br> East South Central <br> West South Central <br> Mountain <br> Pacific. | 20111523413311121721 | $\begin{array}{r}265 \\ 14 \\ 49 \\ 46 \\ 46 \\ 30 \\ 29 \\ 23 \\ 36 \\ 11 \\ 27 \\ \hline\end{array}$ | $\begin{array}{r} 331 \\ 31 \\ 85 \\ 74 \\ 74 \\ 33 \\ 39 \\ 23 \\ 36 \\ 10 \\ 37 \end{array}$ | $\begin{array}{r} 1,638 \\ 91 \\ 332 \\ 537 \\ 122 \\ 212 \\ 64 \\ 64 \\ 28 \\ 130 \\ 122 \end{array}$ | $\begin{array}{r} 3,298 \\ 232 \\ 343 \\ 974 \\ 900 \\ 136 \\ 66 \\ 177 \\ 133 \\ 337 \end{array}$ | $\begin{array}{r} 2,045 \\ 136 \\ 343 \\ 429 \\ 218 \\ 136 \\ 66 \\ 120 \\ 90 \\ 198 \end{array}$ | 4,3243597451,106405512362184184232419 |  | 8,970 |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 2,133 |
|  |  |  |  |  |  |  |  |  | 899 |
|  |  |  |  |  |  |  |  |  | 1,504 |
|  |  |  |  |  |  |  |  |  | 601 |
|  |  |  |  |  |  |  |  |  | 355 |
|  |  |  |  |  |  |  |  |  | ${ }_{866}^{345}$ |
|  |  |  |  |  |  |  |  |  | 866 |
|  | Smallpox |  |  | Typhoid and paratyphoid fever |  |  | Whooping cough |  |  |
| United States. New Encland Middle Atlantic East North Central South Atlantic East South Central Mest South Central Pacific |  |  |  |  |  |  | 9,378 | 6,333 |  |
|  | 0 |  | 0 | ${ }_{52}^{21}$ | 14 | ${ }_{2}^{23}$ | 1,012 | 759 | , 7788 |
|  | 0 | 0 <br> 3 | 0 4 4 | 52 30 | 46 5 5 | 65 51 | +1,982 | 2,023 | 2,023 |
|  | 2 | 2 | 5 | 3 | 27 | 22 | ${ }^{2} 714$ | ${ }^{1} 165$ | 416 |
|  | 0 | 1 | 1 | $6{ }^{6}$ | 35 | 83 | 1,265 | 643 | 913 |
|  | ${ }^{6}$ | 2 | 2 | 23 | 28 | 42 | , 345 | 152 | 257 |
|  | 1 | 1 |  | 48 | 56 | 74 | 1,017 | 565 | 529 |
|  | 0 | 6 | 2 | ${ }^{23}$ | 12 | 27 | 416 | 170 | ${ }_{646} 25$ |
|  | 0 | 0 | 0 | 29 | 31 | 27 | 495 | 326 | 646 |

[^5]
## INCIDENCE 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

## REPORTS FROM STATES FOR WEEK ENDED NOVEMBER 8, 1947

## Summary

A total of 269 cases of poliomyelitis was reported, as compared with 351 last week, 333 for the next earlier week, 490 for the corresponding week last year, and a 5 -year (1942-46) median of 314 . The 8 States reporting currently more than 10 cases are as follows (last week's figures in parentheses): Massachusetts 12 (6), New York 27 (47), Pennsylvania 14 (15), Ohio 50 (62), Illinois 12 (13), Michigan 15 (16), Idaho 23 (25), California 11 (18). The total since March 15 (average date of seasonal low incidence), is 9,203 , as compared with 22,964 for the same period last year and a 5 -year median of 12,275 .

A slight increase occurred in the reported incidence of influenza, but only 4 States reported more than 80 cases each. These States, accounting for 1,353 cases, or 80 percent of the total, 1,683 cases (last week 79 percent), are as follows (last week's figures in parentheses): Virginia 184 (250), South Carolina 314 (328), Alabama 124 (44), Texas 731 (510). The total to date since July 26 (average seasonal low date), is 14,916 ( 12,358 in the States named), as compared with 14,461 for the same period last year and a 5 -year median of 14,136 .

One case of smallpox occurred during the week (in Kansas), one case of anthrax (in Pennsylvania), and 3 cases of Rocky Mountain spotted fever ( 1 each in New York, North Carolina, and Arkansas). A total of 16 cases of infectious encephalitis was reported (last week 19,5 -year median 12). The total for the year to date is 576 (same period last year 568 , 5 -year median 574). Cumulative figures are also above the respective median expectancies for the dysenteries (combined), tularemia, undulant fever, and whooping cough.

A total of 8,638 deaths was recorded during the week in 93 large cities of the United States, as compared with 8,880 last week, 8,663 and 8,974 , respectively, for the corresponding weeks of 1946 and 1945, and a 3 -year (1944-46) median of 8,663 . The total for the year to date is 411,990 , as compared with 405,868 for the corresponding period last year. Infant deaths during the week in the same citics totaled 688, as compared with 689 last week and 3 -year median of 600. The cumulative figure is 33,163 , as compared with 29,699 for the same period last year.

Telegraphic morbidity reports from State health officers for the week ended Nov. 8, 1947, and comparison with corresponding week of 1946 and 5-year median
In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.


[^6]3 Period ended earlier than Saturday.
${ }^{4}$ Dates between which the approximate low week ends. The specific date will vary from year to year.

Telegraphic morbidity reports from State health officers for the week ended Nov. 8, 1947, and comparison with corresponding week of 1946 and 5-year median-Con.

| Division and State | Poliomyelitis |  |  | Scarlet fever |  |  | Smallpox |  |  | Typhoid and para typhoid fever |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Week ended- |  | $\begin{gathered} \mathrm{Me}- \\ \text { dian } \\ 1942- \\ \mathbf{4 6} \end{gathered}$ | Week ended- |  | $\begin{gathered} \text { Me- } \\ \text { dian } \\ 1942- \\ 46 \end{gathered}$ | Week ended- |  | $\begin{gathered} \text { Me- } \\ \text { dian } \\ 1942- \\ 46 \end{gathered}$ | Week ended- |  | $\begin{gathered} \text { Me- } \\ \text { dian } \\ 1942- \\ 46 \end{gathered}$ |
|  | Nov. Nov. <br> 88 9, <br> 1947 1946 |  |  | $\begin{gathered} \text { Nov. } \\ 8, \\ 1947 \end{gathered}$ | $\begin{gathered} \text { Nov. } \\ 9, \\ 1946 \end{gathered}$ |  | $\begin{gathered} \hline \text { Nov. } \\ 8, \\ 1947 \end{gathered}$ | $\begin{gathered} \hline \text { Nov. } \\ 9, \\ 1946 \\ \hline \end{gathered}$ |  | Nov. 8. 1947 s | $\left\{\begin{array}{c} \text { Nov. } \\ 9 . \\ 1946 \end{array}\right.$ |  |
| NEW ENGLAND <br> Maine | 4 | 0 | 0 | 15 | 37 | 15 | 0 | 0 | 0 | 0 | 2 | 1 |
| New Hampshire.-. | 2 | 4 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vermont........ | 3 | 2 | 0 | 3 | 1 | 9 | 0 | 0 | 0 | 0 | 0 | 0 |
| Massachusetts. | 12 | 14 | 10 | 48 | 48 | 142 | 0 | 0 | 0 | 0 | 4 | 1 |
| Rhode Island.-.- | 0 | 2 | 0 | 3 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| Connecticut......... | 1 | 5 | 5 | 13 | 17 | 23 | 0 | 0 | 0 | 3 | 1 | 1 |
| Middle ATLANTIC |  |  |  |  |  |  |  |  |  |  |  |  |
| New York-.-.-.-.....- | 27 | 31 | 31 | 104 | 159 | 224 | 0 | 0 | 0 | 4 | 4 | 7 |
| New Jersey | 9 | 4 | 9 | 33 | 46 | 53 | 0 | 0 | 0 | 1 | $\stackrel{2}{2}$ | 1 |
| Pennsylvania.----..... | 14 | 12 | 12 | 94 | 91 | 153 | 0 | 0 | 0 | 2 | 0 | 5 |
| east north central |  |  |  |  |  |  |  |  |  |  |  |  |
| Ohio-...- | 50 | 15 | 7 | 130 | 205 | 223 | 0 | 0 | 0 | 2 | 3 | 3 |
| Indiana | 3 | 20 | 2 | 38 | 68 | $\begin{array}{r}57 \\ \hline 139\end{array}$ | 0 | 1 | 0 | 0 | 4 | ${ }^{0}$ |
| Illinois.-- | 12 | $\stackrel{49}{2}$ | 26 | 63 | 98 | 139 | 0 | 0 | 0 |  | 1 | 2 |
| Michigan ${ }^{3}$ | 15 | 27 | 8 | 64 | 108 | 108 | 0 | 1 | 0 |  | 0 | 2 |
| W isconsin -. | 10 | 31 | 7 | 28 | 51 | 68 | 0 | 0 | 0 |  | 0 | 0 |
| west north central |  |  |  |  |  |  |  |  |  |  |  |  |
| Minnesota | 4 | 27 | 10 | 57 | 28 | 44 | 0 | 0 | 0 | 0 | 0 | 1 |
| Iowa.... | 1 | 29 | 2 | 29 | 30 | 43 | 0 | 0 | 0 | 0 | 0 | 0 |
| Missouri. | 3 | 31 | 5 | 11 | 30 | 39 | 0 | 0 | 0 | 4 |  | 2 |
| North Dakota | 0 | 11 | 0 | 8 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| South Dakota | 0 | 7 14 | 0 6 | 2 9 | 2 | 9 <br> 15 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | 0 | 15 | , | 14 | 32 | 72 | 1 | 0 | 0 | 0 | 2 | 0 |
| SOUTH ATLANTIC |  |  |  |  |  |  |  |  |  |  |  |  |
| Delaware | 0 | 0 | 0 | 3 | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| Maryland ${ }^{\text {3 }}$-....-. | 3 | 4 | 0 | 10 | 15 | 48 | 0 | 0 | 0 | 0 | 0 | 1 |
| District of Columbia.-- | 1 | 2 | 0 | 10 | 0 | 15 | 0 | 0 | 0 | 0 | 2 | 0 |
| Virginia--.---.......- | 2 | 1 | 2 | 34 | 30 | 76 | 0 | 0 | , | 6 | 1 | 1 |
| West Virginia-..-.....-- | 5 | 1 | 1 | 31 | 37 | 84 | 0 | 0 | 0 | 1 | 1 | 1 |
| North Carolina.......--- | 10 | ${ }_{4}^{4}$ | 2 | $\stackrel{27}{5}$ | 24 3 | 92 | 0 | 0 | 0 | 1 | 0 | 2 |
| Georgia-...--- | 3 | 4 | 1 | 27 | 18 | 31 | 0 | 0 | 0 | 4 | 1 | 1 |
| Florida.-.---..... | 1 | 4 | 2 | 4 | 6 | 6 | 0 | 0 | 0 | 1 | 1 | 1 |
| East south central |  |  |  |  |  |  |  |  |  |  |  |  |
| Kentucky-.---.....----- | 7 | 2 | 2 | 28 | 56 | 56 | 0 |  | 0 | 1 | 1 | 2 |
| Tennessee--.----------- | 5 | 5 | 2 | 35 | 30 | 55 | 0 | 2 | 0 | 2 | 4 | 3 |
|  | 2 | 2 <br> 4 | $\stackrel{2}{2}$ | 11 | 15 | 32 20 | 0 | 0 | 0 | 0 | 0 | 2 |
| WEST SOUTH CENTRAL |  |  |  |  |  |  |  |  |  |  |  |  |
| Arkansas.............-- | 2 | 6 | 2 | 1 | 7 | 13 | 0 | 0 |  | 1 | 2 |  |
| Louisiana... | 3 | 4 | 1 | 0 | 3 | 12 | 0 | 0 | 0 | 10 | 4 |  |
| Oklahoma. | 0 | 13 | , | 10 | 10 | 23 | 0 | 0 | 0 | 0 | 1 | 1 |
| Texas.-.-. | 1 | 26 | 9 | 19 | 33 | 55 | 0 | 3 | 0 | 13 | 10 | 10 |
| mountain |  |  |  |  |  |  |  |  |  |  |  |  |
| Montana.- | 0 | 1 | 1 | 11 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 |
| Idaho-- | ${ }_{23}^{03}$ | 3 | 0 | 8 | 18 | 11 | 0 | 0 | 0 | 0 | $\stackrel{2}{0}$ | 0 |
| Colorado | 0 | 1 | 5 |  | 2 | 2 |  | 0 | 0 | 3 | 0 | 0 |
| New Mexico. | 0 | 1 | 1 | 1 | 4 | 10 | 0 | 0 | 0 | 0 | 0 | 1 |
| Arizona | 1 | 0 | 0 | 7 | 5 | 6 | 0 | 0 | 0 | 1 | 3 | 1 |
| Utah ${ }^{\text {2 }}$-. | 1 | 2 | 2 | 0 | 16 | 16 | 0 | 0 | 0 | 0 | 1 | 0 |
| Nevada-- | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Washington | 6 | 9 | 8 | 10 | 36 | 41 | 0 | 0 | 0 | 0 | 2 | 1 |
| Oregon.-- | 5 | 2 | 2 | 12 | 19 | 22 | 0 | 0 | 0 | 0 | , | 1 |
| Oalifornia | 11 | 34 | 34 | 62 | 99 | 152 |  | 0 | 0 | 5 | 6 | 3 |
| Total | 269 | 490 | 314 | 1,165 | 1,584 | 2,609 | 1 | 7 | 7 | 69 | 76 | 80 |
| 45 weeks. | 9,815 | 3, 431 | 2,672 | 71,388 | 99, 257 | 18,943 | 153 | 317 | 344 | 3,484 | 3, 678 | $\overline{4,955}$ |
| Seasonal low week 4--.- | (11th) | Mar. | 5-21 | (32d) | Aug. 9 |  | (35th) | $\begin{gathered} \text { Aug. } \\ \text { pt. } 5 \end{gathered}$ |  | (11th) | Mar. | 15-21 |
| Total since low | 9. 20312 | 2, 964 | 2, 275 | 9,285 | 12,962 | 19,393 | 6 | 38 | 38 | 2,999 | 3, 203 | 4,139 |

[^7] fornia 3.

Telegraphic morbidity reports from State health officers for the week ended Nov. 8, 1947, and comparison with corresponding week of 1946 and 5 -year median-Con.

| Division and State | Whooping cough |  |  | Week ended November 8, 1947 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Week ended- |  | $\begin{gathered} \text { Me- } \\ \text { dian } \\ 1942- \\ 46 \end{gathered}$ | Dysentery |  |  | En- <br> ceph- <br> alitis, <br> infec- <br> tious | Rocky Mt. spotted fever | $\left\|\begin{array}{l} \text { Tula- } \\ \text { remia } \end{array}\right\|$ | $\begin{array}{\|c\|c} \text { Ty- } & \text { O } \\ \text { phus } & \text { pever, } \\ \text { d } \\ \text { en- } & \text { la } \\ \text { demic } & \text { fe } \end{array}$ | $\begin{aligned} & \text { Un- } \\ & \text { dut } \\ & \text { lant } \\ & \text { faver } \end{aligned}$ |
|  | Nov. $\stackrel{8}{8}$ 1947 | Nov. $\stackrel{9}{1946}$ |  | $\begin{aligned} & \text { Ame- } \\ & \text { bic } \end{aligned}$ | $\left\|\begin{array}{l} \text { Bacil- } \\ \text { lary } \end{array}\right\|$ |  |  |  |  |  |  |
| NEW ENGLAND <br> Maine | 27 | 11 | 15 |  |  |  |  |  |  |  |  |
| New Hampshire. |  |  | 3 |  |  |  |  |  |  |  |  |
| Vermont......... | 40 | 14 | 31 |  |  |  |  |  |  |  | 2 |
| Massachusetts | 152 | 141 | 141 |  | 2 |  |  |  |  |  | 1 |
| Rhode Island. | $\stackrel{27}{7}$ | 38 | 22 |  |  |  |  |  |  |  | 1 |
| Connecticut MIDDLE ATLANTIC | 73 | 26 | 54 |  |  |  |  |  |  |  |  |
| New York | 206 | 211 | 257 | 8 | 2 |  | 1 | 1 |  |  | 3 |
| New Jersey. | 142 | 132 | 132 |  |  |  |  |  |  |  | 1 |
| Pennsylvania $\qquad$ EAST NORTH CENTRAL | 173 | 180 | 180 | 1 |  |  |  |  |  |  | 3 |
| Ohio. | 189 | 80 | 153 | 1 |  |  |  |  |  |  | 1 |
| Indiana | 47 | 37 | 22 |  |  |  |  |  | 1 |  | 1 |
| Illinois. | 61 | 92 | 122 | 8 | 1 |  | 1 |  |  |  | 19 |
| Michigan ${ }^{\text {3 }}$ | 111 | 132 | 132 | 6 | 1 |  |  |  |  |  | 6 |
| Wisconsin west north central | 84 | 184 | 143 |  |  |  | 3 |  |  |  | 12 |
| Minnesota | 76 | 16 | 32 |  |  |  | 1 |  |  |  | 2 |
| Iowa--- | 11 | 18 | 18 |  |  |  |  |  |  |  | 12 |
| Missouri --- | 26 | 8 | 8 |  |  |  |  |  |  |  | 4 |
| South Dakota. | 4 | 2 | 2 |  |  |  |  |  |  |  |  |
| Nebraska....-. | 2 | 3 | 6 | 1 | ----- |  |  |  |  |  |  |
| Kansas south atlantic | 11 | 3 | 15 |  |  |  |  |  |  |  | 2 |
| Delaware | 2 | 8 |  |  |  |  |  |  |  |  |  |
| Maryland ${ }^{\text {a }}$ | 71 | 23 | 51 |  |  | 3 |  |  |  |  |  |
| District of Columbia | 13 | 15 | 12 | 1 |  |  |  |  |  |  |  |
| Virginia ------ | 35 | 43 | 43 |  |  | 14 |  |  |  | 1 | 4 |
| West Virginia. | 9 39 | 14 | 14 |  |  |  |  | 1 |  |  |  |
| 8outh Carolina. | 43 | 30 | 30 |  | 2 |  | 1 |  |  | 1 |  |
| Georgia...... | 17 |  | 11 | , |  |  |  |  | 1 |  | 2 |
| Florida.-. | 25 | 26 | 16 | 1 | 1 |  |  |  | 1 | 1 | 5 |
| gast south central |  |  |  |  |  |  |  |  |  |  |  |
| Kentucky. | 16 | 19 | 47 |  |  |  |  |  |  |  |  |
| Tennessee | 26 | 25 | 25 |  |  |  |  |  |  |  | 1 |
| Alabama.-- | 16 | 2 | 9 |  |  |  |  |  |  | 1 | 2 |
|  | , |  |  | 1 |  |  |  |  | 2 | 2 |  |
| WEst sodth central |  |  |  |  |  |  |  |  |  |  |  |
| Arkansas... | 38 | 21 | 21 | 9 | 7 | 5 |  | 1 |  |  |  |
| Louisiana. | 6 | 1 | 3 | 2 |  |  |  |  |  | 2 | 1 |
| Oliahoma.. | 255 | 140 | 113 |  |  |  |  |  |  |  | 15 |
| Texas <br> MOUNTAN | 255 | 140 | 113 | 14 | 219 | 66 |  |  |  | 8 | 15 |
| Montana. | 21 | 1 | 2 |  |  |  |  |  |  |  |  |
| Idaho...- | 9 | 2 | 3 |  |  |  | 1 |  |  |  |  |
| W yoming | 3 | 3 | 3 |  |  |  | 1 |  |  |  |  |
| Colorado-- | 30 | 7 | 14. |  | 1 |  | ..-- |  |  |  | 2 |
| New Mexico | 11 | 8 | 4 | 2 |  | 1 |  |  |  |  |  |
| Arizona | 22 | 17 | 14 |  | 2 | 19 |  |  |  |  |  |
| Utah ${ }^{3}$ $\qquad$ | 9 | 7 | 11 | 1 |  |  | 2 |  | 1 |  | 4 |
| Plcinc |  |  |  |  |  |  |  |  |  |  |  |
| Washington. | 29 | 25 | 25 |  |  |  |  |  |  |  | 1 |
| Oreson-- | 10 | ${ }^{6}$ |  |  |  |  | 4 |  |  |  |  |
| California. | 60 | 53 | 96 | 7 | 15 | --- | 1 |  |  |  | 2 |
| Total | 2,299 | 1,863 | 2,359 | 69 | 260 | 109 | 16 | 3 | 7 | 25 | 110 |
| Same week: 1946 | 1,863 |  |  | 44 | 301 | 68 | 12 | 3 | 29 | 51 | 125 |
| Median, 1942-46. | 2,359 |  |  | 44 | 319 | 95 | 12 | 3 | 10 | 102 | ${ }^{6} 103$ |
| 45 weeks: 1947 | 36,012 |  |  | 2, 574 | 3,903 | 8, 669 | 576 | 541 | 1,227 | 1,756 | 5,432 |
| 1946 | 85, 663 |  |  | 2,095 1 | 4, 303 | 5,670 | 568 | 555 | 813 | 3, 054 | 4,593 |
| Median, 1942-46... | 09, 239 . |  |  | 1,7141 | 4,628 | 6,910 | 574 | 450 | 708 | $3,820{ }^{\circ}$ | 4,366 |

${ }^{3}$ Period ended earlier than Saturday.
© 2-year average, 1945-46.
Anthrax: Pennsylvania 1 case.
Alaska: Week ended November 1, 1947 -chickenpox 2, German measles 2, impetigo 1, influenza 3, pneumonia 1, septic sore throat 1 ; week ended November 8 -mumps 1,whooping cough 3, scabies 1 , chickenpox 1.
Territory of Hawaii, week ended November 8, 1947: Bacillary dysentery 1, leprosy 1, whooping cough 10.

## WEEKLY REPORTS FROM CITIES *

City reports for week ended Nov. 1, 1947
This table lists the reports from 90 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.


* In some instances the figures include nonresident cases.

City reports for week ended Nov. 1, 1947-Continued


City reports for week ended Nov. 1, 1947-Continued

| Division, State, and City |  |  | Influenza |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{aligned} & \ddot{\otimes} \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \stackrel{n}{\mathbf{\omega}} \\ & \stackrel{0}{0} \\ & \end{aligned}$ |  |  |  |  |  |  |  |  |
| Pacticic |  |  |  |  |  |  |  |  |  |  |  |  |
| Washington:       <br> Seattle 0 0 $\ldots$ 0 5 0 |  |  |  |  |  |  |  |  |  |  |  |  |
| Spokane..............-. | 0 | 0 |  | 0 | 5 | 0 | 0 | 1 | 3 | 0 | 0 |  |
| Tacom8.-.-...........--- | 0 | 0 |  | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 0 |  |
| California: |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total. |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 76 | 6 | 29 | 7 | 321 | 18 | 284 | 86 | 315 | 0 | 15 | 780 |
| Corresponding week, $1946{ }^{1}$ | 73 |  | 42 |  |  | ---- | , 263 | .... | 408 | 0 | 15 | 520 |
| A verage 1942-46 ${ }^{1}$-..-.----- | 89 |  | 61 | ${ }^{2} 14$ | ${ }^{3} 402$ |  | 2306 |  | 607 | 0 | 17 | 672 |

${ }^{1}$ Exclusive of Oklahoma City.
${ }^{2}$ 3-year average, 1944-46.
${ }^{3} 5$-year median, 1942-46.
Dysentery, amebic.-Cases: New York 9; Chicago 1; Atlanta 1; New Orleans 3.
Dysentery, bacillary.-Cases: Baltimore 1; Charleston, S. C. 2; Los Angeles 1.
Dysentery, unspecified.-Cases: Baltimore 6; San Antonio 1.
Leprosy.-Cases: New York 1.
Tularemia.-Cases: St. Louis 1.
Typhus fever, endemic.-Cases: New York 1; Atlanta 1; Tampa 1; New Orleans 1; Shreveport 1; Dallas 1.
Rates (annual basis) per 100,000 population, by geographic groups, for the 90 cities in the preceding table (latest available estimated population, $34,558,600$ )

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New England | 23.5 | 0.0 | 0.0 | 0.0 | 63 | 2.6 | 68.0 | 18.3 | 105 | 0.0 | 2.6 | 293 |
| Middle Atlantic | 9.7 | 0.0 | 2.3 | 0.9 | 31 | 3.7 | 39.8 | 9.7 | 33 | 0.0 | 1.4 | 97 |
| East North Central | 10.4 | 1.2 | 0.0 | 0.6 | 39 | 3.1 | 40.5 | 18.4 | 52 | 0.0 | 1.8 | 118 |
| West North Central | 2.0 | 0.0 | 11.9 | 0.0 | 185 | 0.0 | 67.6 | 8.0 | 44 | 0.0 | 6.0 | 147 |
| South Atlantic... | 19.6 | 1.6 | 13.1 | 1.6 | 13 | 3.3 | 37.6 | 6. 5 | 64 | 0.0 | 3.3 | 208 |
| East South Central | 11.8 | 11.8 | 5.9 | 0.0 | 24 | 0.0 | 106.2 | 5.9 | 71 | 0.0 | 0.0 | 89 |
| West South Central | 20.3 | 0.0 | 12.7 | 5.1 | 0 | 0.0 | 45.7 | 7.6 | 13 | 0.0 | 5.1 | 20 |
| Mountain.- | 15.9 | 0.0 | 23.8 | 0.0 | 175 | 0.0 | 63.5 | 55.6 | 127 | 0.0 | 0.0 | 191 |
| Pacific | 6.3 | 1.6 | 1.6 | 1.6 | 60 | 3.2 | 7.9 | 14.2 | 40 | 0.0 | 1.6 | 28 |
| Total | 11.5 | 0.9 | 4.4 | 1.1 | 49 | 2.7 | 43.0 | 13.0 | 48 | 0.0 | 2.3 | 118 |

## TERRITORIES AND POSSESSIONS

## Panama Canal Zone

Notifiable diseases-September 1947.-During the month of Septem. ber 1947, certain notifiable diseases were reported in the Panama Canal Zone and terminal cities as follows:

| Disease | Residence ${ }^{1}$ |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Panama City |  | Colon |  | Canal Zone |  | Outside the Zone and terminal cities |  | Total |  |
|  | Cases | Deaths | Cases | Deaths | Cases | Deaths | Cases | Deaths | Cases | Deaths |
| Chickenpox-.. | 3122 |  | 1 |  | 3 |  | 2 |  | 913 |  |
| Diphtheria-- |  |  |  |  |  |  |  |  |  |  |
| Dysentery: |  |  | 1 |  |  |  | 9 |  | 12 |  |
| Bacillary |  |  |  |  | 17 |  | 12 |  | 15 |  |
| Malaria ${ }^{2}$-. | 13 |  |  |  |  | ---------- 381 |  | -----6 | 4122 | 6 |
| Measles |  |  |  |  |  |  |  |  |  | .-.... |
| Paratyphoid fever- |  |  |  |  | 18 |  |  | 3 | 18 |  |
| Poliomelitis. | 2 | 8 |  |  | 1 | 1 |  | 3 | 18 3 | 1 |
| Tuberculosis. | $\begin{gathered} 1 \\ 1 \end{gathered}$ | - 17 |  | 3 |  | 1 |  | 7 |  | 28 |
| Typhoid fever |  |  |  |  | 1 |  | 2 |  | 4 |  |
| Typhus fever...... |  | ----.-.-- |  |  |  |  |  |  | 1 | -----..- |

[^8]
## FOREIGN REPORTS

## CANADA

Provinces-Communicable diseases-Week ended October 18, 1947.During the week ended October 18, 1947, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

| Disease | Prince <br> Edward <br> Island | Nova Scotia | New <br> Bruns- <br> wick | Quebec | Ontario | $\underset{\text { toba }}{\text { Mani- }}$ | Sas-katchewan | $\underset{\text { berta }}{\text { A1- }}$ | British Columbia | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Chickenpox |  | 2 |  | 107 | 148 | 22 | 47 | 54 | 40 | 420 |
| Diphtheria |  | 4 |  | 25 | 1 |  | 2 | 3 | 1 | 36 |
| Dysentery: |  |  |  |  | 3 |  |  |  |  | 3 |
| Bacillary |  |  |  | $1-$ |  |  |  |  | 15 | 16 |
| Encephalitis, infectious.- |  |  |  |  |  | 1 | 3 |  |  | 4 |
| German measles......... |  |  |  |  | 5 |  |  | 3 | 4 | 12 |
| Influenza |  | 11 |  |  | 3 |  |  |  | 1 | 15 |
| Measles.. |  |  |  | 95 | 45 | 4 | 13 | 3 | 5 | 165 |
| Meningitis, meningococcus. |  |  |  |  | 2 |  |  |  |  | 2 |
| Mumps.- |  | 23 |  | 25 | 115 | 12 | 9 | 15 | 23 | 222 |
| Poliomyelitis |  |  |  | 3 | 19 | 4 | 1 | 3 | 2 | 32 |
| Scarlet fever--.- | 2 | 5 | 19 | 73 | 53 | 3 | 2 | 5 | 2 | 164 |
| Tuberculosis (all forms).- |  | 2 | 4 | 145 | 14 | 119 | 15 | 6 | 47 | 352 |
| Typhoid and paratyphoid fever. |  | 1 |  | 13 | 5 |  | 2 | 1 |  | 22 |
| Undulant fever.- |  |  |  | 2 |  |  |  |  |  | 2 |
| Venereal diseases: |  |  |  |  |  |  |  |  |  |  |
| Gonorrhea.- | 3 1 | 19 | 20 8 | 157 54 | 105 52 | 42 6 | 23 8 | 32 11 | 103 36 | 504 |
| Other forms. |  |  |  | 2 |  |  |  |  | 1 | 3 |
| Whooping cough. |  | 9 | 1 | 46 | 106 | 10 | 11 | 44 | 19 | 246 |

## NORWAY

Notifiable diseases-July 1947.—During the month of July 1947, cases of certain notifiable diseases were reported in Norway as follows:

| Disease | Cases | Disease | Cases |
| :---: | :---: | :---: | :---: |
| Cerebrospinal meningitis | 13 | Mumps | 369 |
| Diphtheria | 59 | Paratyphoid fever- | 21 |
| Dysentery | 4 | Pneumonia | 942 |
| Encephalitis, epidemic | 6 | Poliomyelitis ... | 98 |
| Erysipelas--- | 402 | Rheumatic fever | 130 |
| Gastroenteritis. | 6, 357 | Scabies | 1,901 |
| Gonorrhea. | 699 | Scarlet fever | 257 |
| Hepatitis, epidemic | 160 | Syphilis | 118 |
| Impetigo contagiosa | 2, 622 | Tuberculosis | 373 |
| Influenza | 1.014 | Typhoid fever | 3 |
| Measles | 28 | Whooping cough | 471 |

# WORLD DISTRIBUTION OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER 

From consular reports, international health organizations, medical officers of the Public Health Service and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

## CHOLERA

## [C indicates cases]

Note.-Since many of the figures in the following tables are from weekly reports, the accumulated totals are for approximate dates.


[^9]
## PLAGUE

[C indicates cases; D, deaths]


[^10]SMALLPOX
[C indicates cases; $P$, present]


See footnotes at end of table.

| Place |  | $\begin{aligned} & \text { January- } \\ & \text { August } \\ & 1947 \end{aligned}$ | Sep-tember 1947 | October 1947-week ended- |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 4 |  | 11 | 18 | 25 |
|  | SOUTH AMERICA |  |  |  |  |  |  |  |
| Argentina |  | ${ }^{26}$ |  |  |  |  |  |
| Colombia- |  | 2,924 | 265 |  |  |  |  |
| Ecuador.- |  | 1666 | 432 |  |  |  |  |
| Paraguay . |  | ${ }^{1} 211$ | 114 | - |  |  |  |
| Peru-.---- |  | 243 |  |  |  |  |  |
| Uruguay |  | 1259 13189 |  |  |  |  |  |
| Venezuela |  | ${ }^{1} 3,189$ | 1254 | ${ }^{1} 123$ | ${ }^{181}$ | ${ }^{1} 57$ | ${ }^{1} 27$ |

${ }^{1}$ Includes alastrim.
${ }_{2}$ Imported.

## TYPHUS FEVER *

[C indicates cases; $P$, present]

| Algeria AFRICA |  | 164 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Basutoland. | C | 15 |  |  |  |  |  |
| Bechuanaland. | C | 1 |  |  |  |  |  |
| Belgian Congo |  | 282 | 25 | 2 | -..... |  |  |
| British East Africa: |  |  |  |  |  |  |  |
| Kenya ${ }^{1}$ | C | 11 | 7 |  |  |  |  |
| Uganda | C | 2 |  |  |  |  |  |
| Egypt-- | C | 99 | 2 | - |  |  |  |
| Eritrea. | C | 493 | 86 |  |  |  |  |
| Ethiopia | C | 154 | 15 |  |  |  |  |
| French West Africa ${ }^{2}$ | C |  |  |  |  |  |  |
| Gold Coast. | C | 5 |  |  |  |  |  |
| T,ibya-... | C | 181 | 2 |  |  | 1 |  |
| Morocco (French) | C | 117 | 2 |  | 2 |  |  |
| Morocco (International Zone) | C | 14 | 13 |  |  |  |  |
| Morocco (Spanish) | C | 88 |  |  |  |  |  |
| Nigeria ${ }^{1}$ - | C | 16 |  |  |  |  |  |
| Rhodesia, Southern. | C | 1 | - |  |  |  |  |
| Senegal. | C | 2 |  |  |  |  |  |
| Sierra Leone | C | 2 |  |  |  |  |  |
| Tunisia ${ }^{1}$ | C | 638 | 8 |  |  |  |  |
| Union of South Africa 1 | C | 292 | P | P | -......- |  |  |
| ASIA |  |  |  |  |  |  |  |
| Arabia ${ }^{\text {a }}$ | C | 1 | 1 |  |  |  |  |
| Burma | C | 3 |  |  |  |  |  |
| China ${ }^{1}$ | C | 81 | 4 |  |  |  |  |
| India | C | 7 |  |  |  |  |  |
| Indochina (French) | C | 46 | 8 |  |  |  |  |
| Iran. | C | 233 | 2 |  |  |  |  |
| Iraq- | C | 261 | 14 | 4 | 5 | 4 | -------- |
| Japan | C | 994 | 12 |  |  |  |  |
| Korea. | C | 1 |  |  |  |  |  |
| Malay States (Federated) | C | 1, 42 |  |  |  |  |  |
| Manchuria...-----.-. | C | 11 | 1 |  |  |  |  |
| Palestine ${ }^{1}$. | C | 137 |  |  |  |  |  |
| iam (Thailand) | C |  | 4 |  |  |  |  |
| traits Settlements | C | 2 |  |  |  |  |  |
| yria. | C | 29 | 2 |  | 1 |  |  |
| Trans-Jordan --.------------1. | C | 19 |  |  | 1 |  |  |
| Turkey (see Turkey in Europe). |  |  |  |  |  |  |  |
| EUROPE |  |  |  |  |  |  |  |
| Austria ${ }^{\text {a }}$ | C | 8 |  |  |  |  |  |
| Bulgaria | C | 772 | 28 | 5 |  |  |  |
| Czechoslovakia | C | 26 | 6 | 1 |  |  |  |
| rance... Germany | C | 14 | 5 | -- |  |  |  |
| Great Britain: Malta and Gozo ${ }^{2}$ | C | 14 | 4 |  |  |  |  |
|  | C | 222 | 71 | 13 | 14 | 10 | 9 |
| Hungary | C | 571 | 10 | 1 | 2 | 1 |  |
| taly | C | 42 | 1 |  |  |  |  |
| Sicily | C | 29 |  |  |  |  |  |
| Netherlands | C | 1 |  |  |  |  |  |
| oland - | C | 415 | 20 |  |  |  |  |
| Portugal | C | 4 |  |  |  |  |  |
| Rumania | C | 18,557 |  |  |  |  |  |
| pain.- | C | 129 | 2 |  |  |  |  |
| witzerland 2 | C | 6 |  |  |  |  |  |
| urkey | C | 461 | 30 | 5 | 8 | 5 | 10 |
| Yogoslavia | C | 167 | 12 | 3 |  |  |  |

See footnotes at end of table.

\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multirow{2}{*}{Place} \& \multirow[t]{2}{*}{$$
\begin{aligned}
& \text { January- } \\
& \text { August } \\
& 1947
\end{aligned}
$$} \& \multirow[t]{2}{*}{Sep-tember 1947} \& \multicolumn{4}{|l|}{October 1947-week ended-} <br>
\hline \& \& \& 4 \& 11 \& 18 \& 25 <br>
\hline Costa Rica 2 NORTH $\triangle$ MERICA \& \& \& \& \& \& <br>
\hline  \& 97 \& 1 \& \& \& \& <br>
\hline  \& 269 \& \& \& \& \& <br>
\hline  \& 35 \& 2 \& \& \& \& <br>
\hline  \& 1,472 \& 149 \& \& \& \& <br>
\hline  \& \& \& 1 \& 1 \& \& <br>
\hline Panama Canal Zone.-.--------------------.--- \& 12 \& 1 \& \& \& \& <br>
\hline  \& 418

49 \& 5 \& 2 \& 1 \& 1 \& <br>
\hline SOUTH AMERICA \& \& \& \& \& \& <br>
\hline  \& 15 \& \& \& \& \& <br>
\hline  \& 14 \& \& \& \& \& <br>
\hline  \& 333 \& \& \& \& \& <br>
\hline  \& 1,552 \& 271 \& \& \& \& <br>
\hline  \& 1 \& \& \& \& \& <br>
\hline  \& 410 \& 67 \& \& \& \& <br>
\hline  \& 641 \& \& \& \& \& <br>
\hline  \& 103 \& \& \& \& \& <br>
\hline oceania \& \& \& \& \& \& <br>
\hline  \& 108 \& 21 \& \& \& \& <br>
\hline  \& 26 \& 1 \& \& \& \& <br>
\hline
\end{tabular}

*Reports from some areas are probably murine type, while others probably include both murine and louse-borne types.
${ }^{1}$ Includes murine type.
${ }_{2}^{2}$ Murine type.
${ }^{3}$ Imported.
4 Includes imported cases.

## YELLOW FEVER

[C indicates cases; D, deaths]

${ }^{1}$ The previously reported suspected case has not been confirmed.
${ }^{2}$ Includes deathe reported as cases.

$$
x
$$


[^0]:    ${ }^{1}$ From the Division of Public Health Methods. Appreciative thanks are due to Dr. Antonio Cioccoo this Division for advice and assistance in the preparation of this report.

[^1]:    ${ }^{2}$ A description of the indirect method of age adjustment is given in the appendix.

[^2]:    ${ }^{1}$ Includes typhoid and paratyphoid fever, meningitis, scarlet fever, whooping cough, diphtheria and poliomyelitis, I. L. Nos. ${ }^{*}$ 1, 2, 6, 8, 9, 10 and 36 .
    ${ }_{2}$ Includes respiratory and nonrespiratory forms, I. L. Nos. 13-22.
    ${ }^{2}$ I. L. No. 30.
    ${ }^{4}$ Includes cancer and other malignant tumors, I. L. Nos. 45-55.
    ${ }^{6}$ I. L. No. 61.
    ${ }^{6}$ I. L. No. 63b.
    ${ }^{7}$ Excludes alcoholic pellagra, I. L. No. 69.
    ${ }^{8}$ Includes intra-cranial lesions of vascular origin, all forms of heart disease, diseases of the coronary arteries and nephritis, I. L. Nos. 83, 90-95, 130-132.
    ${ }^{9}$ Includes diseases of the ear, nose and throat, I. L. Nos. 89, 104 and 115.
    ${ }^{10}$ I. L. Nos. 33, 107-109.
    ${ }^{11}$ I. L. No. 117.
    12 I. L. No. 121.
    ${ }^{13}$ Includes hernia and intestinal obstruction, I. L. No. 122.
    ${ }^{14}$ I. L. No. 124.
    ${ }_{15}$ Includes biliary calculi and other diseases of the gall-bladder, I. L. Nos. 126, 127.
    ${ }^{16}$ I. L. No. 170.
    ${ }^{17}$ I. L. Nos. 169, 171-195.
    *International List Numbers.

[^3]:    ${ }^{3}$ A discussion of the results of these tests will be found in the appendix.

[^4]:    ${ }^{1}$ See the footnotes to table 2 for the diagnosis titles and International List numbers included in each broad diagnosis group.

[^5]:    ${ }^{1}$ New York, North Carolina, and Pennsylvania excluded; New York City and Philadelphia included.

[^6]:    1 New York City only.
    ${ }^{2}$ Philadelphia only.

[^7]:    ${ }^{2}$ Period ended earlier than Saturday.
    ${ }^{4}$ Dates between which the approximate low week ends. The specific date will vary from year to year.
    ${ }^{6}$ Including paratyphoid fever reported separately, as follows: Ohio 1, Virginia 1, North Carolina 1, Cali

[^8]:    ${ }^{1}$ If place of infection is known, cases are so listed instead of by residence.
    ${ }_{2} 16$ recurrent cases.
    ${ }_{3}$ In the Canal Zone only.

[^9]:    ${ }^{1}$ Information dated Nov. 5, 1947, stated that a positive case of cholera had occurred in the Amirate of Dubay, Arabia.
    ${ }^{2}$ Suspected.

[^10]:    ${ }^{1}$ Includes 5 cases of pneumonic plague.
    ${ }^{2}$ Includes 50 cases of pneumonic plague.
    ${ }^{3}$ Includes 2 cases of pneumonic plague.
    ${ }^{4}$ Imported.

    - Pneumonic.

    6 Includes imported cases.
    ${ }^{7}$ Period not specified.
    ${ }^{8}$ During the month of June 1947, an outbreak of plague with high mortality occurred in Königsberg, East Prussia, Germany.
    'For the period July 5 to Sept. 20, 1947, 6 lots of plague infected fleas from squirrels were reported in Alberta and Saskatchewan Provinces, Canada.
    ${ }^{10}$ In addition 82 cases with 65 deaths in A yabaca Province and 58 cases with 48 deaths in Huancabamba Province, all unconfirmed, were reported for the period September 1946 to March 1947.
    11 Plague infection was also reported in Hawaii Territory as follows: On Jan. 9, 1947, in a pool of 31 rats, on Mar. 20, 1947, in a pool of 32 fleas collected from 59 rats.

