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## EDITORIAL

### CREATING UNIFORM PROCEDURES

On occasion, official agencies are criticized for enunciating policies and principles, regulations and standards, in a fashion that would imply omniscience and finality. Unquestionably, such criticism is often valid. Although it is the proper function of government to guide and aid the thought and action of the people, it should never become the practice to deal in arbitrary assertions. To be sure, for the sake of order and efficient administration, public enterprises, whatever their nature, must have clearly defined plans and procedures. It should never be presumed, however, that such patterns of action are of unchanging character. New evidence, diversity of opinion, the experience of reputable minds, should constantly be sought out. Eventually through change and interchange, through criticism and attack, through the accumulation of data in all fields, interpretations, and ideas, orderly procedures can be developed.

Such is the prestige of official agencies that their pronouncements, even those specified as tentative, are likely to be too readily accepted in certain quarters as final. This can do great harm by impeding initiative and imposing rigidity on thought. It is the responsibility of the Tuberculosis Control Division to preserve freedom of inquiry and to serve as a clearing house of facts and ideas for the whole field of tuberculosis. As an organization of national scope, the Division is a center of information on service and research, and, as such, it perceives, with detailed clarity, that the discrepancy between opinion and fact is greater than is generally assumed. It is the deliberate

This is the fourteenth of a series of special issues of PUBLIC HEALTH REPORTS devoted exclusively to tuberculosis control, which will appear the first week of each month. The series began with the Mar. 1, 1946, issue. The articles in these special issues are reprinted as extracts from the PUBLIC HEALTH REPORTS. Effective with the July 5 issue, these extracts may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for 10 cents a single copy. Subscriptions are obtainable at \$1.00 per year: \$1.25 foreign.

intention of the Division to stimulate study and speculation through its publications so that, out of the forum of free discussion, agreement may be developed and action given organized direction.

Too often in exchanges of information with fellow workers, minority opinion is neglected. In the attempt to arrive at principles and procedures, it is important to publish with appropriate emphasis dissenting opinions and judgments, for it may well be that, in some instances, the direction of the many may take that of the few. In any event, uniform procedures and standards should always be applied cautiously. There is no validity in forcing inflexible uniformity on activities which require, for fruitful endeavor, unlimited freedom in the pursuit of truth. This is particularly true in the field of medical research. However, in order to realize full benefits from available resources, a high degree of uniformity must be achieved in the diagnosis of tuberculosis, the classification of the tuberculous, and the proper disposition of persons with abnormal findings on X-ray films.

There are certain definite steps which policy-making groups should take before nation-wide practices are recommended. All aspects of any given problem should be presented publicly and made freely available for discussion and criticism. Recognized experts, carefully selected and limited in number, should then be brought together to study and evaluate all sides of any question. The agreements, and disagreements as well, of such a group should form the basis of tentative procedures. Continuing review by this group at regular intervals will make for improvement and increase the usefulness of all public health practices.

When these steps have been taken, then it is appropriate to publish recommendations. Finally, the comments and criticisms of the public health workers who will apply such procedures and recommendations should be considered. When the evidence is in, when the minority has had ample opportunity to test its objection, acceptable uniform procedures can be established. In this way, authoritative standards become meaningful.

From time to time, the Tuberculosis Control Division, out of the experience, study, and thought of its professional workers and consultants, will issue guides and aids to public health practice in tuberculosis control. The Division will continue to publish provocative opinions on controversial subjects and will invite criticism and free discussion to clarify our thinking and advance our knowledge.

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## TUBERCULOSIS MORTALITY IN THE UNITED STATES AND IN EACH STATE: 1945<sup>1</sup>

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The course of tuberculosis mortality in the United States during the 4 years of the country's participation in the war was more encouraging than was anticipated at the beginning of the war. Despite unfavorable conditions of work and housing in some areas and the loss of a large number of physicians and nurses to the armed services, the tuberculosis death rate for the country not only continued to decline during the war years, but declined almost as rapidly as in the 4 years preceding the country's entrance into the war.

Generally, economic conditions improved throughout the country during the war, with the expansion of industry and more widespread opportunity for employment. In addition, the threat of war led to intensified efforts for the control of tuberculosis on the part of local, State, and national health agencies, both official and voluntary. For the first time, funds were made available to the United States Public Health Service for an all-out attack on the tuberculosis problem, and, through the combined efforts of the Selective Service System, this agency, and local and State health organizations, case-finding by X-ray was carried out on a scale never before realized in this country.

Tuberculosis, however, is a chronic disease, and continued progress toward its ultimate control depends upon continued effort. Today, there are in this country population groups and geographic areas in which the mortality from tuberculosis exceeds that in other groups and other areas by as large an amount as the tuberculosis death rate at the beginning of the century exceeds the present-day rate.

As in the past, so in the present, mortality statistics are the signposts for the tuberculosis control program, directing efforts to the areas where the greatest problem lies. This paper, the third in a series of annual reports,<sup>2</sup> presents data on the number of deaths and death rates for tuberculosis in the United States and in each State for 1945 with comparable data for the earlier war years, 1942-44, and the prewar period, 1939-41.

<sup>1</sup> From the National Office of Vital Statistics and the Tuberculosis Control Division.

Grateful acknowledgment is made to Nancy J. Brombacher, Tuberculosis Control Division, United States Public Health Service, for her assistance in assembling and analyzing the material used in this paper.

<sup>2</sup> The preceding reports in the series were:

Moriyama, I. M., and Yerushalmy, J.: Tuberculosis Mortality in the United States in 1943. *Vital Statistics—Special Reports*, vol. 21, No. 2 (1945).

Yerushalmy, J., and Moriyama, I. M.: Tuberculosis mortality in the United States and in each State, 1944. *PUBLIC HEALTH REPORTS*, 61 : 487-516 (April 5, 1946). (Tuberculosis Control Issue No. 2)

## TUBERCULOSIS MORTALITY IN THE UNITED STATES

*Tuberculosis mortality in 1945.*—A total of 52,916 deaths from tuberculosis (all forms) was reported in the United States in 1945, which is 3.3 percent less than the number (54,731) recorded in 1944. The death rate for tuberculosis in 1945 was 40.1 per 100,000 population as compared to 41.3 in 1944.

These rates were computed on a *de facto* basis; that is, only the population residing in the continental United States and the deaths occurring in this population were considered. The members of the armed forces overseas and the deaths occurring in this group were not included in the computations. Since the death rate for tuberculosis in the armed forces overseas was relatively low, the procedure of excluding from the computations the overseas population and deaths results in overstating the rates as compared with those in previous years.

Because of the changes which have occurred in the composition of the population in the continental United States, it is not possible at this time to obtain a measure of the risk of death from tuberculosis entirely comparable with that for previous years. However, the *de jure* rate, which includes the deaths and population of the armed forces overseas as well as the deaths and population of the continental United States, serves as a more comparable measure of the risk of mortality from tuberculosis.

Provisional figures indicate that there were 72 deaths<sup>3</sup> from tuberculosis among Army and Navy personnel occurring outside of the continental limits of the United States in 1945, making a total for the year of 52,988 tuberculosis deaths in the population of the United States, both at home and overseas. The *de jure* tuberculosis death rate based on these figures was 38.0 per 100,000 population, as compared with the *de facto* rate of 40.1.

The *de jure* rates for 1943 and 1944 were 41.8 and 39.6. The corresponding *de facto* rates were 42.6 and 41.3. From inspection of the *de jure* rates, it is apparent that the mortality from tuberculosis in the entire population of the United States declined more rapidly than the *de facto* rates would indicate. On a *de jure* basis the tuberculosis death rate for the United States decreased 5.3 percent from 1943 to 1944 and 4.0 percent from 1944 to 1945. The corresponding decreases in the *de facto* rates were 3.1 and 2.9 percent, respectively.

Although, for purposes of comparison, *de jure* rates would be preferable to *de facto* rates, only the latter type, except where otherwise noted, will be discussed. This procedure is followed because mortality and population statistics, classified by age, race, and particularly State

<sup>3</sup>The figures were made available by courtesy of the Surgeons General of the War and Navy Departments.

of residence, are not available in the same detail for the armed forces overseas as they are for the population in the continental United States.

*Trend of tuberculosis mortality: 1910-1945.*—Since the beginning of the century when mortality statistics were first collected on an annual basis for the death-registration States, the tuberculosis death rate has declined to a fraction of its former value. In 1900 the rate for the death-registration States was 194.4 per 100,000 population. By 1945 it had declined to one-fifth of this figure (40.1).

Table 1 and figure 1 give the death rates for tuberculosis (all forms) by race and sex for the death-registration States for the years 1910 (the first year that data for the two race groups are available for the death-registration States) to 1945. The rates have been plotted on a semilogarithmic rather than on an arithmetic scale to afford a better visualization of the relative rates of decline in the death rates for the several race-sex groups.

TABLE 1.—*Death rates for tuberculosis (all forms), by race and sex: death-registration States, 1910-45*

[Rates per 100,000 population]

Year	Total	White			Nonwhite		
		Total	Male	Female	Total	Male	Female
1945.....	40.1	32.7	45.1	21.7	102.1	119.7	86.5
1944.....	41.3	33.7	45.0	23.3	106.2	122.7	91.3
1943.....	42.6	34.3	44.4	24.7	112.9	126.4	100.0
1942.....	43.1	34.4	43.3	25.6	118.4	131.4	106.0
1941.....	44.5	35.4	43.3	27.4	124.2	134.3	114.5
1940.....	45.8	36.5	44.7	28.2	127.6	138.7	116.9
1939.....	47.1	37.7	44.7	30.6	129.1	137.3	121.1
1938.....	49.1	39.1	46.2	31.9	136.8	144.0	129.8
1937.....	53.8	43.4	50.9	35.8	145.0	155.0	135.2
1936.....	55.9	45.0	52.2	37.6	151.6	163.9	139.6
1935.....	55.1	44.9	51.7	37.8	145.1	155.4	135.0
1934.....	56.7	46.2	52.7	39.6	148.8	156.9	140.8
1933.....	59.6	48.5	54.3	42.6	157.7	165.6	149.9
1932.....	62.5	50.2	55.9	44.4	173.5	179.5	157.5
1931.....	67.8	54.2	60.1	48.2	191.1	197.4	184.9
1930.....	71.1	57.7	63.4	51.9	192.0	194.3	189.8
1929.....	75.3	62.4	67.1	57.6	192.0	191.5	192.6
1928.....	78.3	64.9	69.7	59.9	199.5	199.4	199.6
1927.....	79.6	66.5	70.7	62.2	208.7	205.4	212.1
1926.....	85.5	72.0	76.4	67.5	223.8	221.5	226.1
1925.....	84.8	71.6	75.8	67.2	221.3	215.8	226.7
1924.....	87.9	74.9	79.3	70.4	218.6	215.0	222.3
1923.....	91.7	79.5	84.4	74.5	213.1	206.3	220.0
1922.....	95.3	82.6	87.5	77.4	218.9	216.6	221.2
1921.....	97.6	84.7	89.1	80.2	239.3	233.7	245.1
1920.....	113.1	99.5	104.1	94.8	262.4	255.4	269.6
1919.....	125.6	110.9	121.1	100.4	284.0	275.5	292.7
1918.....	149.8	134.3	153.2	115.4	346.0	351.0	340.9
1917.....	143.5	129.6	141.3	109.5	332.6	322.7	323.0
1916.....	138.4	125.7	141.3	109.5	322.7	322.3	323.0
1915.....	140.1	128.5	144.0	112.2	401.1	420.2	380.5
1914.....	141.7	130.3	146.9	112.9	396.7	417.8	374.0
1913.....	143.5	132.6	147.7	116.7	386.5	401.9	369.9
1912.....	145.4	136.0	149.4	121.8	429.0	459.9	394.5
1911.....	155.1	145.0	157.5	131.9	461.4	484.8	435.2
1910.....	153.8	145.9	158.2	132.8	445.5	479.3	406.8

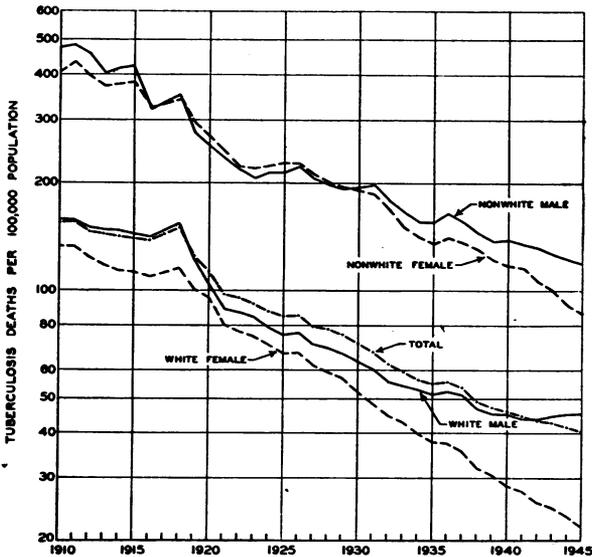


FIGURE 1.—Death rates for tuberculosis (all forms) by race and sex: Death-registration States, 1910-45.

The rates for the total white population declined from 145.9 per 100,000 population in 1910 to 32.7 in 1945. In the same period, the rates for nonwhites declined from 445.5 to 102.1. The percentage decreases for the entire period were approximately the same for the two groups. Since 1922, however, the rates for whites have been declining faster than those for nonwhites.

In both race groups, the rates for females have declined at a faster rate than those for males. The difference is more marked among whites, among whom the rate for females in 1945 was 83.7 percent less than that in 1910, as compared to a decrease of 71.5 percent for males. Among nonwhites the percentage decrease in the rate for females was 78.7 and for males, 75.0.

The decrease in the rate for white males since 1938 has been comparatively small. In fact, a minimum was reached in the years 1941 and 1942, and since then the rate for each year has been higher than in 1938. These increased wartime rates among white males seem to result less from any increase in tuberculosis mortality than from the exclusion of the large healthy population serving in the armed forces overseas. An examination of the *de jure* rates for males of all races lends support to this statement. In 1945 this rate was 47.4 per 100,000 population; 49.0 in 1944; and 50.9 in 1943. The *de facto* rates for these three years were 53.0, 53.1, and 52.9.

*Age-specific death rates.*—The death rates for tuberculosis by age, race, and sex for 1945 are shown in table 2 and figure 2. The rates for males rise from a minimum in childhood to a peak at the young adult

ages, drop slightly, and then increase to a maximum at the older ages (65-74 for white males and 45-54 for nonwhite males). The peak at the young adult ages has been observed throughout the war years and is more pronounced in 1945 than previously. This peak is only apparent and is due to the use of the *de facto* figures mentioned above. The accentuation of the peak in 1945 results from a decrease in the number of men of military age remaining in the country. The *de jure* rate for males aged 20-29 is 34.5, in comparison to the *de facto* rate which is 64.7.

TABLE 2.—Death rates and number of deaths for tuberculosis (all forms), by age, race, and sex: United States, 1939-41 average, 1942-44 average, 1944, and 1945<sup>1</sup>

Race, sex, and year	All ages <sup>1</sup>	Age (in years)										
		Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74
Tuberculosis deaths per 100,000 population												
All races, both sexes:												
1945.....	40.1	10.1	2.7	4.5	21.2	49.6	52.7	46.4	49.8	53.1	66.0	73.6
1944.....	41.3	12.3	3.1	4.6	22.1	48.4	50.3	48.6	51.6	59.9	69.4	72.8
1942-44.....	42.2	12.5	3.5	5.5	23.7	46.8	49.9	50.7	53.1	62.4	70.7	73.4
1939-41.....	45.8	15.2	4.4	6.8	27.5	49.2	56.1	56.5	59.0	66.6	74.5	76.7
Male:												
1945.....	53.0	10.3	2.7	3.5	17.4	62.0	67.2	53.2	66.0	89.1	101.5	92.7
1944.....	53.1	12.7	3.0	3.6	17.4	50.6	56.8	53.7	67.9	91.6	105.4	92.9
1942-44.....	52.6	12.9	3.6	4.3	18.5	43.2	50.8	55.8	69.2	93.8	105.3	90.7
1939-41.....	53.5	15.5	4.6	5.2	20.0	40.4	51.0	59.8	74.1	95.8	105.8	88.6
Female:												
1945.....	28.6	10.0	2.7	5.5	24.5	43.7	44.9	40.7	34.7	27.0	29.5	42.8
1944.....	30.5	11.8	3.2	5.6	26.4	47.0	46.0	44.2	36.3	27.9	32.2	49.0
1942-44.....	32.3	12.1	3.4	6.7	28.7	49.6	49.3	46.0	37.7	30.5	34.8	58.4
1939-41.....	38.0	15.0	4.3	8.5	35.0	57.8	61.0	53.4	43.9	35.9	41.6	66.3
White, both sexes:												
1945.....	32.7	7.4	1.8	2.4	11.4	30.8	36.4	33.9	39.3	50.2	61.1	70.6
1944.....	33.7	9.0	2.0	2.4	11.9	29.9	34.7	35.8	40.8	51.8	64.7	74.3
1942-44.....	34.1	9.3	2.3	2.8	12.5	28.5	34.4	36.9	41.8	53.8	65.4	74.7
1939-41.....	36.5	10.9	2.8	3.6	14.8	30.7	38.6	41.4	46.1	57.4	69.3	77.2
Male:												
1945.....	45.1	7.4	1.8	1.9	9.5	40.0	47.8	38.3	53.0	77.8	95.4	101.3
1944.....	45.0	9.1	2.0	1.9	9.0	31.3	39.4	39.1	54.3	80.2	99.3	103.1
1942-44.....	44.1	9.4	2.4	2.4	9.7	26.1	34.6	40.4	55.3	82.2	98.6	101.9
1939-41.....	44.2	11.0	3.0	2.9	10.7	24.2	34.5	43.6	58.7	84.0	99.8	100.7
Female:												
1945.....	21.7	7.4	1.8	2.8	13.1	26.5	30.3	30.2	26.5	22.4	26.1	41.7
1944.....	23.3	8.8	1.9	2.8	14.6	28.9	31.6	32.8	28.0	23.1	29.1	47.0
1942-44.....	24.5	9.2	2.2	3.3	15.3	30.4	34.2	33.8	28.8	24.8	31.2	48.7
1939-41.....	28.7	10.9	2.7	4.3	18.9	37.0	42.5	39.3	33.5	29.3	37.6	54.7
Nonwhite, both sexes:												
1945.....	102.1	29.5	8.7	19.0	91.8	184.3	178.6	150.1	142.7	140.6	129.3	115.8
1944.....	106.2	35.9	10.0	20.4	97.9	188.9	174.5	156.1	147.0	145.4	130.2	118.4
1942-44.....	111.7	34.5	11.3	24.4	108.4	188.2	175.2	167.8	151.9	154.3	137.8	123.7
1939-41.....	127.1	45.5	15.4	30.7	129.1	203.0	201.5	191.0	171.8	167.8	139.0	123.4
Male:												
1945.....	119.7	31.0	8.8	14.4	73.8	193.5	206.8	181.1	185.2	207.2	178.8	168.1
1944.....	122.7	38.5	8.9	15.5	80.2	188.1	195.9	180.2	191.5	212.3	181.1	154.2
1942-44.....	125.7	37.1	11.2	18.3	86.1	171.9	183.5	191.2	194.4	217.2	187.6	162.9
1939-41.....	137.0	47.4	16.2	22.2	96.8	183.6	195.3	208.5	213.2	225.0	178.2	164.7
Female:												
1945.....	86.5	28.0	8.5	23.5	108.0	178.7	162.1	125.4	105.0	75.0	75.4	59.8
1944.....	91.3	33.2	11.0	25.3	114.3	189.5	160.2	136.6	107.5	78.6	74.1	79.9
1942-44.....	98.5	31.8	11.4	30.3	129.7	201.4	168.7	147.5	113.2	90.6	82.5	81.7
1939-41.....	117.5	43.5	14.6	39.1	159.7	219.8	207.0	174.9	132.7	107.5	94.7	78.6

See footnote at end of table.

TABLE 2.—Death rates and number of deaths for tuberculosis (all forms), by age, race, and sex: United States, 1939-41 average, 1942-44 average, 1944, and 1945—Con.

Race, sex, and year	All ages <sup>1</sup>	Age (in years)											
		Un-der 5	5-9	10-14	15-19	20-24	25-29	30-34	35-44	45-54	55-64	65-74	75 and over
		Number of deaths from tuberculosis											
<b>All races, both sexes:</b>													
1945	52,916	1,332	311	476	2,288	4,478	4,759	4,776	9,508	9,521	7,981	5,174	2,266
1944	54,731	1,550	342	496	2,498	4,831	4,884	4,995	9,734	9,707	8,174	5,316	2,161
1942-44	56,475	1,539	384	602	2,786	5,075	5,231	5,267	9,980	10,035	8,121	5,271	2,128
1939-41	60,429	1,613	475	799	3,388	5,719	6,236	5,811	10,846	10,373	7,960	5,104	2,052
<b>Male:</b>													
1945	32,934	688	158	187	880	1,812	2,123	2,494	6,085	7,309	6,220	3,632	1,318
1944	33,717	816	168	197	949	1,960	2,212	2,548	6,207	7,455	6,308	3,591	1,279
1942-44	34,435	808	199	240	1,076	2,061	2,383	2,755	6,365	7,611	6,159	3,522	1,221
1939-41	35,433	831	251	306	1,234	2,306	2,782	3,038	6,803	7,650	5,786	3,308	1,109
<b>Female:</b>													
1945	19,982	644	153	289	1,408	2,666	2,636	2,282	3,423	2,212	1,761	1,542	948
1944	21,014	734	174	299	1,549	2,871	2,672	2,447	3,527	2,252	1,866	1,725	882
1942-44	22,041	731	185	362	1,710	3,014	2,848	2,512	3,614	2,424	1,962	1,750	906
1939-41	24,996	782	224	493	2,154	3,413	3,454	2,773	4,043	2,723	2,174	1,796	943
<b>White, both sexes:</b>													
1945	38,623	856	178	219	1,082	2,434	2,904	3,113	6,743	7,495	6,854	4,644	2,078
1944	39,958	995	193	221	1,185	2,632	2,996	3,287	6,909	7,666	7,066	4,785	1,991
1942-44	40,824	1,002	219	271	1,302	2,736	3,203	3,436	7,057	7,907	6,971	4,725	1,965
1939-41	43,282	1,014	265	372	1,617	3,180	3,828	3,827	7,605	8,183	6,865	4,596	1,904
<b>Male:</b>													
1945	25,055	438	90	90	420	1,002	1,327	1,605	4,401	5,827	5,407	3,234	1,198
1944	25,596	518	101	93	431	1,065	1,364	1,665	4,476	5,966	5,500	3,233	1,163
1942-44	25,886	519	117	116	499	1,099	1,446	1,789	4,583	6,104	5,335	3,149	1,109
1939-41	26,350	520	141	152	589	1,239	1,690	2,000	4,848	6,143	5,042	2,955	1,013
<b>Female:</b>													
1945	13,568	418	88	129	662	1,432	1,577	1,508	2,342	1,668	1,447	1,410	880
1944	14,362	477	92	128	754	1,567	1,632	1,622	2,433	1,700	1,566	1,552	828
1942-44	14,939	483	102	155	803	1,637	1,757	1,647	2,474	1,803	1,635	1,576	856
1939-41	16,932	494	124	220	1,028	1,941	2,138	1,827	2,757	2,040	1,823	1,641	891
<b>Nonwhite, both sexes:</b>													
1945	14,293	476	133	257	1,206	2,044	1,855	1,663	2,765	2,026	1,127	530	188
1944	14,773	555	149	275	1,313	2,199	1,888	1,708	2,825	2,041	1,108	531	170
1942-44	15,651	537	164	331	1,484	2,359	2,029	1,831	2,922	2,128	1,151	546	163
1939-41	17,147	599	210	427	1,771	2,539	2,408	1,984	3,241	2,190	1,095	508	148
<b>Male:</b>													
1945	7,879	250	68	97	460	810	796	889	1,684	1,482	813	398	120
1944	8,121	298	67	104	518	895	848	883	1,731	1,489	808	358	116
1942-44	8,549	289	82	124	577	962	937	966	1,782	1,507	824	372	113
1939-41	9,083	311	110	154	645	1,067	1,092	1,038	1,955	1,507	744	353	96
<b>Female:</b>													
1945	6,414	226	65	160	746	1,234	1,059	774	1,081	544	314	132	68
1944	6,652	257	82	171	795	1,304	1,040	825	1,094	552	300	173	54
1942-44	7,102	248	83	207	907	1,377	1,092	864	1,140	621	327	174	50
1939-41	8,064	288	100	273	1,126	1,472	1,316	946	1,286	683	351	155	52

<sup>1</sup> Includes ages not stated.

Although this peak in the death rates for males is only apparent, arising from the change in population, the rates for females show a real peak (25-29 for white females and 20-24 for nonwhite females) which has been evident for some years. This peak is more obvious in the rate for nonwhite females than in the rate for white females. The rate for white females follows the same pattern as that for males, although both decline somewhat in the middle years before rising to a maximum at the older ages. On the other hand, the highest rate for nonwhite females is found at the young adult ages, from which point there is a fairly steady decline to the older ages.

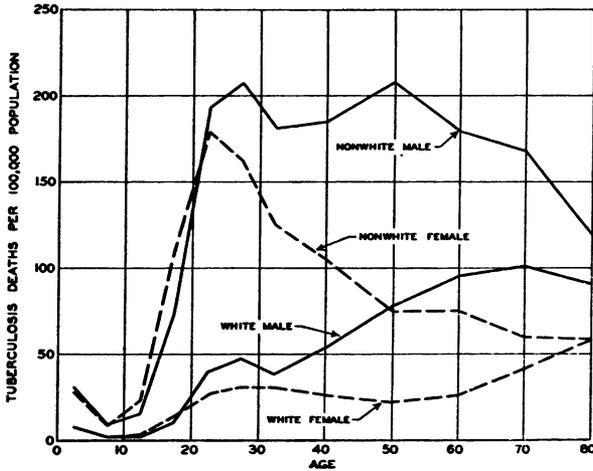


FIGURE 2.—Death rates for tuberculosis (all forms) by age, race, and sex: United States, 1945.

A comparison of this series of rates with the rates for 1944, 1942-44<sup>9</sup> and 1939-41, given in table 2, shows that the distribution of tuberculosis mortality by age, race, and sex in 1945 is very similar to the distribution for previous years.

*Tuberculosis death ratios.*—The tuberculosis death ratio, or the number of deaths from tuberculosis per 100 deaths from all causes, is an index of the relative importance of tuberculosis as a cause of death. For the total population and particularly for the age groups from which the military population is drawn, this measure is less affected than is the tuberculosis death rate by the exclusion of the overseas population, a group with a low general death rate. The tuberculosis death ratios for 1945 by age, race, and sex are shown in figure 3.

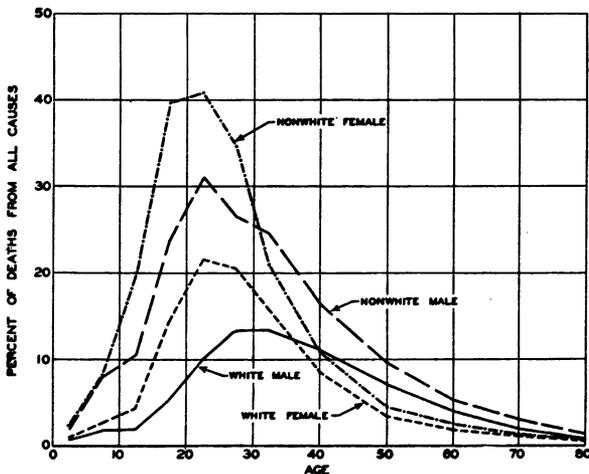


FIGURE 3.—Death from tuberculosis (all forms) as percentage of deaths from all causes by age, race, and sex: United States, 1945.

The curves of the death ratios for the four race-sex groups are typical of those found in previous years. All four curves reach their maximum at the young adult ages and then decline at the middle and older ages. Thus, once again it is demonstrated that tuberculosis as a cause of death is of relatively greater importance among young adults than among older persons, even though the tuberculosis death rates tend to be higher at the older ages (except among the nonwhite females). At the young adult ages, the death ratios for both nonwhite groups are higher than those for whites, and similarly those for each of the two female populations are higher than the corresponding values for males. After age 40, however, the death ratios for females decline rapidly, and from that point the death ratios for both male groups are higher than those for females.

A reading of the maximum points of the four curves indicates that at ages 20-24, tuberculosis accounted for two-fifths of all deaths among nonwhite females, one-third of those among nonwhite males, and one-fifth of those among white females. The peak of the curve for white males is at ages 30-34, in which group tuberculosis accounted for 13.5 percent of all deaths.

*Distribution of tuberculosis deaths by age.*—A study of the percentage distribution of tuberculosis deaths in the various age groups (table 3) gives additional evidence of the importance of tuberculosis at the young adults ages. Although the long term trend has been toward an increasing proportion of deaths at the older ages, in 1945 over two-fifths (44.4 percent) of all tuberculosis deaths still occurred in the 20-44 age group.

TABLE 3.—Percentage distribution of tuberculosis deaths, by age and sex: United States, 1945

Age groups	Total	Male	Female
All ages <sup>1</sup> .....	100.0	62.2	37.8
Under 20 years.....	8.3	3.6	4.7
20-44 years.....	44.4	23.6	20.8
45-64 years.....	33.1	25.6	7.5
65 years and over.....	14.1	9.4	4.7

<sup>1</sup> Includes ages not stated.

Pronounced differences exist between the age distributions of deaths of the two sex groups. Well over half of the tuberculosis deaths among females occur between ages 20-44. In the male population only about 40 percent of the deaths are in this group, with about the same number between ages 45-64.

In figure 4, it may be seen that the proportion of all deaths from tuberculosis which occurs above age 45 has been increasing. The proportions for the age groups 45-64 and "65 and over" increased

from 30.3 and 11.8 percent in 1939-41 to 33.1 and 14.1 in 1945. At the same time proportions for the age groups "under 20" and 20-44 decreased from 10.4 and 47.3 in 1939-41 to 8.3 and 44.4 in 1945. Two factors may be cited in the explanation of these shifts; first, the more rapid decline of the tuberculosis death rate at the younger ages; and second, the aging of the population.

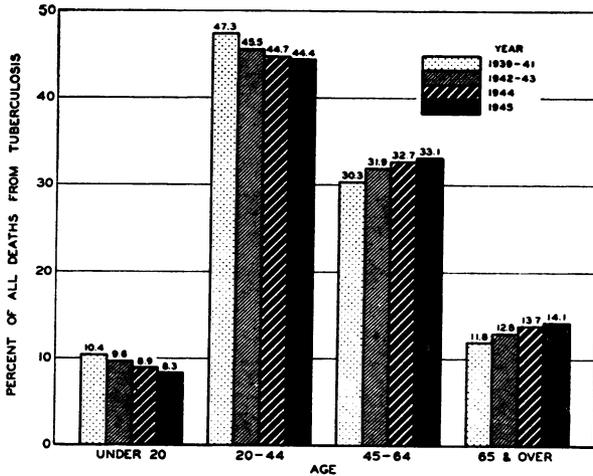


FIGURE 4.—Percentage distribution of deaths from tuberculosis (all forms) by age: United States, 1939-41 average, 1942-44 average, 1944, and 1945.

*Tuberculosis mortality among war veterans.*—In 1945, there were 4,437 deaths from tuberculosis among veterans of all wars. Of these, 62.8 percent were among veterans of World War I and 31.4 percent among veterans of World War II. These figures include deaths among military personnel on active duty with the armed forces within the continental limits of the United States as well as deaths among those who have been discharged from the services. Although veteran status may not always be reported on the death certificate, it is probable that these figures understate somewhat the actual number of deaths among veterans.

The number of deaths from tuberculosis among veterans of World War II increased from 974 in 1944 to 1,394 in 1945. Because veterans of World War II represent a physically selected group in which

TABLE 4.—Number of deaths from tuberculosis (all forms) among war veterans: United States, 1944 and 1945

Year	Total	World War I	World War II	World Wars I and II	Other wars
1945.....	4,437	2,785	1,394	26	232
1944.....	4,370	3,009	974	7	380

mortality from tuberculosis is far lower than in the general population of the same age and sex, and because every effort was made to screen the tuberculous by preinduction X-ray examination, this increase may be of particular significance. In this connection, the mortality figures cited in a recent report <sup>4</sup> for members of the Army of the United States are of interest. A combined rate for present and past members of the Army who have served since December 8, 1941, is reported to have increased from 3 per 100,000 in 1942 to approximately 12 in 1945. As pointed out in the report, the increase in the rate "gives an indication of the extent and rapidity with which tuberculosis may develop in a screened population."

Tuberculosis deaths among World War II veterans constituted 31.4 percent of the tuberculosis deaths among all veterans in 1945, as compared with 22.3 in 1944. This increase in the proportion is due to a decrease in the number of deaths among World War I veterans as well as to the increase in the number of deaths among veterans of World War II, mentioned above. It is to be expected that the proportion will continue to increase as advancing age takes its toll among veterans of World War I and as veterans of World War II reach the age at which the mortality from tuberculosis is highest.

*Tuberculosis mortality among nonwhite race groups.*—Table 5 presents the number of deaths and death rates for tuberculosis (all forms) from 1940 to 1945 for the nonwhite population and the principal nonwhite race groups. The total number of deaths among nonwhites in 1945 was 14,293. Of these, 91.8 percent occurred among Negroes, 5.4

TABLE 5.—Number of deaths and death rates for tuberculosis (all forms) for nonwhites, by specified race: United States, 1940-45

Race and year	Number of deaths	Rate per 100,000 population	Race and year	Number of deaths	Rate per 100,000 population
<b>Nonwhite total:</b>			<b>Chinese:</b>		
1945.....	14,293	102.1	1945.....	210	276.1
1944.....	14,773	106.2	1944.....	229	311.4
1943.....	15,796	112.9	1943.....	224	290.6
1942.....	16,384	118.4	1942.....	199	256.8
1941.....	16,968	124.2	1941.....	203	262.8
1940.....	17,217	127.6	1940.....	208	268.1
<b>Negro:</b>			<b>Japanese:</b>		
1945.....	13,114	98.0	1945.....	116	101.5
1944.....	13,538	101.8	1944.....	128	106.1
1943.....	14,513	108.4	1943.....	138	112.5
1942.....	15,107	114.2	1942.....	142	116.9
1941.....	15,702	120.2	1941.....	137	112.3
1940.....	15,883	123.1	1940.....	144	113.7
<b>Indian:</b>			<b>Other:</b>		
1945.....	777	211.9	1945.....	76	134.4
1944.....	798	221.4	1944.....	80	148.7
1943.....	823	230.0	1943.....	98	185.7
1942.....	836	239.0	1942.....	100	194.7
1941.....	836	242.7	1941.....	90	179.1
1940.....	867	258.0	1940.....	115	227.9

<sup>4</sup> Long, Esmond R.: Tuberculosis in a screened population. American Review of Tuberculosis, vol. 54, No. 3 (1946).

percent among Indians, and the remaining 2.8 percent among Chinese, Japanese, and other racial groups.

The tuberculosis death rate for all nonwhites in 1945 was 102.1 per 100,000 population. The rates for the several nonwhite racial groups ranged from 98.0 and 101.5 for Negroes and Japanese to 211.9 and 276.1 for Indians and Chinese, respectively. The rate for the Chinese was almost 3 times as high as the rate for Negroes and almost 9 times as high as the rate for the white population.

In interpreting the differences in the rates for the several nonwhite race groups, a number of factors should be taken into consideration. Important among these are the age-sex composition of the populations of the nonwhite race groups and the completeness with which deaths are registered.

For example, of the nonwhite populations, the distribution of the Chinese by sex and age differs most from that of the general population. Among the Chinese in the United States, males greatly outnumber females, and the population is characterized by a high proportion of persons at the older ages. Thus the population of this race group is heavily weighted by those in the age-sex groups in which tuberculosis death rates are highest.

Quantitative data on the completeness with which deaths are registered are almost completely lacking. However, the indications afforded by extraordinarily low death rates recorded for some areas, information on the proportion of deaths occurring outside of hospitals or institutions, and the results of a test of completeness of birth registration made in 1940,<sup>5</sup> are that deaths of nonwhites are less completely registered than those of whites. Consequently, the recorded rates may be interpreted as a minimum statement of the seriousness of the tuberculosis problem among the nonwhite races.

Throughout the 6-year period, 1940-45, the tuberculosis death rates for Negroes and for Indians have presented a pattern of steady decrease, similar to that for whites. A marked trend in the series of rates for Japanese and Chinese is less easily distinguished. Although the rate for the Japanese appears to have declined and that for Chinese to have remained high, the rates are based on very small numbers and the changes which may be observed are not beyond the bounds of chance fluctuation.

#### TUBERCULOSIS MORTALITY BY STATES

The tuberculosis death rates for residents of the 48 States and the District of Columbia ranged in 1945 from 10.9 per 100,000 population for residents of Wyoming to 72.1 and 123.1 for residents of New Mexico

<sup>5</sup> Studies in Completeness of Birth Registration, Part I, Vital Statistics—Special Reports, vol. 17, No. 18, pp. 223-296 (1943).

and Arizona, respectively. The rate for Wyoming was the lowest ever recorded for any State. For one-fourth of the States, the rates were less than 28.2, and for one-half of the States the rates were less than 37.3. The rates for the top one-fourth of the States were greater than 43.6.

The geographic distribution of the tuberculosis death rates in 1945 is shown in figure 5. Two clearly defined areas, one of relatively low

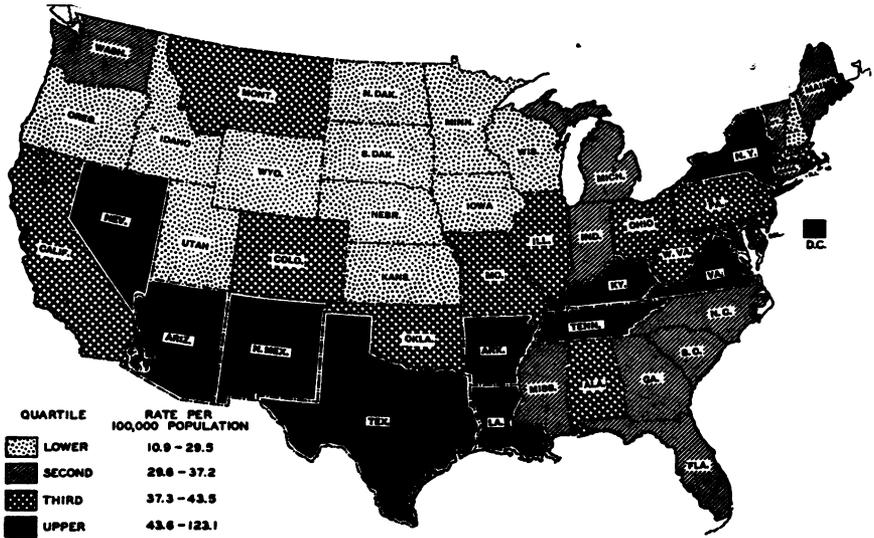


FIGURE 5.—Geographic distribution of the mortality from tuberculosis (all forms) in the United States: 1945.

and the other of relatively high mortality, may be distinguished. The area of low mortality extends from the Pacific northwest to the Great Lakes. New Hampshire is the only State in the lower quartile outside this area. The area of relatively high mortality has the form of a curving band and extends from the southwestern part of the country to the Atlantic coast. Included in this area are all the States in the upper quartile with the exception of New York. The distribution described for 1945 is very similar to that observed in previous years.

The geographic differences in tuberculosis mortality are not easily explainable. Not all of the variations in these rates reflect real differences in the force of tuberculosis mortality as influenced by environmental and other conditions, by programs for the control of the disease, and by facilities available for the care of the tuberculous. Nor does the fact that the rates for two States are identical indicate necessarily that the two areas are alike with respect to the underlying force of tuberculosis mortality. Part of the difference or agreement in the rates may be only apparent and result from variations in the accuracy of diagnosis and in the completeness with which tuberculosis

deaths are reported. Again, the population of a State may be affected by in-migration of the tuberculous attracted by the climate or by the facilities for their care. In addition, the crude death rate is greatly influenced by the age-race-sex composition of the population. Detailed population data, required for an evaluation of this factor, are not available. The usual methods of estimating the population by age, race, and sex for the individual States were not valid for the war years, because of the unprecedented migration of the population and the complication that relatively large proportions of the population of the different States were in the armed forces and were stationed in other parts of the country or were overseas.

*Differences in tuberculosis mortality, by States: 1944 to 1945.*—Table 6 gives the number of deaths from tuberculosis (all forms) and the tuberculosis death rate for each State and the District of Columbia for 1944 and 1945, and the average annual number of deaths and corresponding death rates for the prewar period 1939–41 and the first three years of the war, 1942–44. The table also gives the percentage differences between the rates for 1944 and 1945 and the percentage differences between the average annual rates for 1939–41 and 1942–44.

It will be seen that the majority of the States contributed in 1945 to the decrease which occurred in the tuberculosis death rate for the United States. Thirty-six States reported lower tuberculosis death rates for 1945 than for 1944. On the other hand, the rates for 11 States were higher than in 1944, and those for 2 States remained the same.

The percentage differences between the rates for the 2 years varied over a wide range from  $-20.6$  percent to  $+38.0$  percent. The differences in the rates for the majority of the States were smaller than the 2 extremes would indicate. For the 25 States in the middle range, the differences varied between  $-0.5$  and  $-7.4$  percent.

Some fluctuation is to be expected in the tuberculosis death rate for a State from year to year, especially in the rate for a State that has a small population. In addition, the crude rates for some States were affected during the war by sudden changes in the age-race-sex composition of their populations, changes which were not reflected in the estimated populations on which the rates are based. For example, the opening or closing of a large military establishment in a State had the effect of augmenting or decreasing the population by a selected group of healthy males of an age group for which mortality was low.

Although the percentage differences in the rates for some States are large, only those for four States are statistically significant. The four States are Florida, New Jersey, and Ohio with decreases of 10.7,

TABLE 6.—Number of deaths from tuberculosis (all forms), death rates and percentage changes in rates, by State: United States, 1939-41 average, 1942-44 average, 1944, and 1945

[By place of residence]

Area	Number of deaths				Rate per 100,000 population				Percentage change in rates	
	1945	1944	1942-44 average	1939-41 average	1945	1944	1942-44 average <sup>1</sup>	1939-41 average <sup>2</sup>	1944 to 1945	1939-41 to 1942-44
United States..	52,916	54,731	56,475	60,429	40.1	41.3	42.3	45.8	-2.9	-7.7
Alabama.....	1,218	1,269	1,285	1,518	43.3	45.0	44.6	53.4	-3.8	-16.5
Arizona.....	776	784	716	724	123.1	122.9	113.7	144.3	+2	-21.2
Arkansas.....	817	826	931	1,009	45.9	46.5	49.7	51.7	-1.3	-3.9
California.....	3,827	3,826	3,858	3,838	43.4	43.7	46.5	55.1	-7	-15.6
Colorado.....	426	419	462	503	38.0	36.5	40.5	44.7	+4.1	-9.4
Connecticut.....	664	661	638	616	37.2	37.2	35.9	35.9	0	0
Delaware.....	109	123	127	152	38.0	43.3	45.0	56.9	-12.3	-20.9
District of Columbia..	541	547	544	548	57.6	58.6	60.7	80.0	-1.7	-24.1
Florida.....	739	823	849	944	31.0	34.7	37.0	49.4	-10.7	-25.1
Georgia.....	1,108	1,141	1,256	1,510	34.7	35.4	39.0	48.2	-2.0	-19.1
Idaho.....	81	109	96	99	16.2	20.4	19.1	18.8	-20.6	+1.6
Illinois.....	3,184	3,218	3,302	3,663	41.2	41.6	42.3	46.3	-1.0	-8.6
Indiana.....	1,133	1,221	1,250	1,398	33.0	35.7	36.4	40.7	-7.6	-10.6
Iowa.....	355	341	388	450	15.7	15.0	16.6	17.7	+4.7	-6.2
Kansas.....	339	357	380	423	19.5	20.1	21.5	23.6	-3.0	-8.9
Kentucky.....	1,605	1,726	1,784	1,961	62.3	65.7	65.7	68.7	-5.2	-4.4
Louisiana.....	1,092	1,158	1,220	1,347	44.5	45.7	47.9	56.8	-2.6	-15.7
Maine.....	244	279	271	268	31.0	35.2	33.3	31.7	-11.9	+5.0
Maryland.....	1,267	1,326	1,305	1,268	50.6	62.3	63.0	69.4	-4.3	-9.2
Massachusetts.....	1,643	1,698	1,716	1,623	39.3	40.8	40.3	37.6	-3.7	+7.2
Michigan.....	1,816	1,814	1,858	1,828	33.2	33.4	34.0	34.7	-6	-2.0
Minnesota.....	621	693	702	758	24.9	27.6	27.2	27.1	-9.8	+0.4
Mississippi.....	720	631	952	1,074	34.6	38.2	43.0	49.0	-9.4	-12.3
Missouri.....	1,424	1,487	1,573	1,783	40.0	41.4	42.4	47.1	-3.4	-10.0
Montana.....	171	175	194	235	37.4	37.6	39.7	42.0	-5	-5.5
Nebraska.....	185	211	200	225	15.4	17.4	16.3	17.1	-11.5	-4.7
Nevada.....	89	76	82	70	55.7	48.6	56.2	63.7	+14.6	-11.8
New Hampshire.....	99	105	114	133	21.9	23.0	24.5	27.0	-4.8	-9.3
New Jersey.....	1,737	1,856	1,890	1,852	41.3	44.5	44.7	44.4	-7.2	+7
New Mexico.....	386	345	334	357	72.1	64.9	62.8	66.8	+11.1	-6.0
New York.....	6,032	6,055	6,154	6,244	47.9	47.9	48.0	46.3	0	+3.7
North Carolina.....	1,262	1,239	1,355	1,598	36.0	35.1	37.9	44.6	+2.6	-15.0
North Dakota.....	117	86	110	127	22.5	16.3	19.9	19.8	+38.0	+5
Ohio.....	2,631	2,787	2,809	2,913	38.3	40.8	40.8	42.1	-2.7	-3.1
Oklahoma.....	830	880	931	1,104	40.8	42.6	43.4	47.3	-4.2	-8.3
Oregon.....	308	307	292	307	25.5	25.3	24.7	28.1	+8	-12.1
Pennsylvania.....	3,832	4,020	4,095	4,231	41.7	43.5	43.2	42.7	-4.1	+1.2
Rhode Island.....	252	300	292	265	33.2	38.4	38.5	37.1	-13.6	+3.8
South Carolina.....	663	660	718	876	34.8	34.4	36.6	45.9	+1.2	-20.3
South Dakota.....	156	178	180	197	28.1	31.9	31.3	30.7	-11.9	+2.0
Tennessee.....	1,776	1,881	1,981	2,298	61.7	65.6	67.8	78.6	-6.0	-13.8
Texas.....	2,966	3,126	3,358	3,814	43.7	45.4	49.0	59.4	-3.8	-17.5
Utah.....	79	73	75	86	12.8	12.0	12.4	15.5	+6.7	-20.0
Vermont.....	110	124	118	144	35.4	39.9	36.2	40.1	-11.3	-9.7
Virginia.....	1,366	1,344	1,475	1,628	44.4	42.0	47.6	60.5	+5.7	-21.3
Washington.....	706	702	669	689	33.8	34.1	35.1	39.6	-9	-11.4
West Virginia.....	719	764	766	880	41.7	44.6	43.3	46.1	-6.5	-6.1
Wisconsin.....	668	726	754	806	22.6	24.4	24.8	25.6	-7.4	-3.1
Wyoming.....	27	34	36	45	10.9	13.2	14.2	18.0	-17.4	-21.1

<sup>1</sup> Based on average 1942-44 population.

<sup>2</sup> Based on 1940 population.

7.2, and 6.1 percent, respectively, and North Dakota with an increase of 38.0 percent.<sup>6</sup>

During the four war years, 1942-45, the tuberculosis death rates for 41 States and the District of Columbia were generally lower than during the previous period 1939-41. For seven States, however, the average annual tuberculosis death rate for the war period was higher than the prewar average. These States were Connecticut, Maine, Massachusetts, New York, North Dakota, Pennsylvania, and Rhode Island. With the exception of North Dakota, these are States in the northeastern part of the country.

From the standpoint of public health administration and the provision of facilities for the diagnosis and care of the tuberculous, information on the number of tuberculosis deaths occurring in a population is as important as information on the tuberculosis death rate. It may therefore be well to consider the changes in the number of tuberculosis deaths among residents of the individual States. Of the 7 States in which the tuberculosis death rate was higher in the war years than in the prewar period, three also reported a larger average annual number of deaths from tuberculosis. These States were Connecticut (with an average of 664 deaths for 1942-45 as compared with 616 for 1939-41), Massachusetts (1,698 as compared with 1,623), and Rhode Island (282 as compared with 265). The remaining 4 States (Maine, New York, North Dakota, and Pennsylvania) reported a smaller average number of deaths. Several of the States in which the tuberculosis death rates declined during the war years reported a larger average annual number of tuberculosis deaths for the war years than for the prewar period. These States were Arizona, California, Maryland, Michigan, Nevada, and Washington. The civilian populations of all of these States increased during the war, and it is possible that part of the increase in the number of tuberculosis deaths in these States is a result of an increased population.

From data available on a national level and because of the absence of detailed information on the populations of the States, it is difficult to evaluate the changes in the total tuberculosis figures for the individual States. Knowledge of local conditions often will aid understanding of the changes which may be taking place in tuberculosis mortality. However, there are also available, both on a local and a national level, data on the distribution of tuberculosis deaths by age, race, and sex. This additional information may be of considerable

<sup>6</sup> The apparent increase in the rate for North Dakota follows a sharp decrease of approximately the same magnitude which occurred in 1944. The reported rates for 1939-41, 1942, and 1943 were: 19.8, 20.7, and 22.7 per 100,000 population. The rate then dropped to 16.3 in 1944, and in 1945 returned to its earlier level, the rate for the year being 22.5. (The corresponding numbers of deaths were 127, 121, 123, 86, and 117.) In relation to the figures for other years the rate for 1944 is seemingly aberrant and little or no significance can be attached to the apparent increase in the rate for 1945.

value in interpretation, especially when viewed in relation to comparable information for past years and in relation to the corresponding distributions of deaths from all causes. Since tuberculosis is a preventable disease and there is a considerable body of knowledge concerning its prevention, it is not unreasonable to expect a decrease in the number of deaths from tuberculosis over a period of time and under normal conditions. For the same reasons, the mortality from tuberculosis may be expected to decline more rapidly than the total mortality, a situation indicated by a decrease in the ratio of deaths from tuberculosis to deaths from all causes. A study, then, of the changes in the numbers of deaths from tuberculosis and the tuberculosis death ratios for the several age-race-sex groups may assist in determining in what segments of the population the changes in tuberculosis mortality are taking place and where further study should be directed.

The presentation of detailed mortality data for all States is beyond the scope of this report. However, it may be desirable to illustrate this general method of approach for at least one State, selecting the State showing the largest significant percentage decrease in its tuberculosis death rate in 1945. This State is Florida, in which the tuberculosis death rate decreased from 34.7 per 100,000 population in 1944 to 31.0 in 1945. Table 7 gives the numbers of deaths from tuberculosis and from all causes by age, race, and sex for residents of Florida for the years 1941-45 and the corresponding ratios of deaths from tuberculosis to deaths from all causes.

A total of 739 deaths from tuberculosis were reported for residents of Florida in 1945, 10 percent less than the number reported for 1944. On examining this decrease, three main observations may be drawn from the data shown in table 7. First, the entire decrease is due to a decrease in the number of tuberculosis deaths occurring among females. Whereas the number of deaths among males in 1945 was almost exactly the same as the number in 1944, the number among white females dropped from 121 in 1944 to 92 in 1945, and the number among nonwhite females, from 203 to 149. Second, the decrease in the number of tuberculosis deaths among both white and nonwhite females was greater than would be expected from the changes that occurred in the years immediately preceding. The number of deaths among nonwhite females declined gradually from 1941-44, and the number of deaths of white females remained rather constant from one year to the next. Third, the decrease in the tuberculosis death ratios for both white and nonwhite females in 1945 was likewise greater than would have been expected on the basis of changes occurring in the previous years. Since the decreases in the number of tuberculosis deaths and in the tuberculosis death ratios for females deviate

markedly from the past trend and are counter to the experience for males, further investigation would seem called for. Pending such investigation, it would seem desirable to reserve judgment on the significance of the reported decrease in the total tuberculosis mortality for the State.

TABLE 7.—Number of deaths from tuberculosis (all forms) and from all causes and deaths from tuberculosis as percentages of deaths from all causes, by age, race, and sex: Florida, 1941–45

[By place of residence]

Race and year	Male					Female				
	All ages <sup>1</sup>	Under 15 years	15–44 years	45–64 years	65 years and over	All ages <sup>1</sup>	Under 15 years	15–44 years	45–64 years	65 years and over
Tuberculosis deaths per 100 deaths from all causes										
White:										
1945.....	2.6	0.4	4.4	4.2	1.6	1.5	0.7	6.1	1.6	0.6
1944.....	2.5	.4	3.8	4.2	1.3	2.0	.1	7.5	2.8	.7
1943.....	2.5	.1	3.4	4.3	1.4	2.0	1.1	7.0	1.9	1.0
1942.....	3.0	.3	5.3	4.6	1.5	2.1	.9	6.9	2.1	1.2
1941.....	2.9	.7	6.1	4.3	1.4	2.2	.4	8.3	2.2	.8
Nonwhite:										
1945.....	6.2	.3	13.5	5.5	1.1	4.9	.9	11.7	2.1	.5
1944.....	6.3	.9	14.9	4.2	1.6	6.5	1.0	15.7	2.7	.4
1943.....	6.4	1.1	14.6	4.3	1.3	7.0	1.6	15.5	4.1	.4
1942.....	6.5	1.7	13.4	4.8	1.6	7.5	1.0	17.0	3.1	.9
1941.....	7.1	1.6	14.3	6.0	.8	7.8	1.2	17.7	2.8	.2
Number of deaths from tuberculosis (all forms)										
White:										
1945.....	257	4	72	113	68	92	5	45	23	19
1944.....	258	4	80	118	56	121	1	58	39	23
1943.....	253	1	82	115	55	120	8	54	27	31
1942.....	250	3	81	114	52	118	6	51	28	33
1941.....	244	7	75	108	54	125	3	71	30	21
Nonwhite:										
1945.....	241	2	155	75	8	149	4	119	22	3
1944.....	241	6	167	57	11	203	5	168	28	2
1943.....	253	7	177	58	10	229	8	173	45	2
1942.....	262	11	173	67	11	240	5	200	30	5
1941.....	308	10	207	84	7	255	6	218	30	1
Number of deaths from all causes										
White:										
1945.....	9,776	1,005	1,654	2,722	4,379	6,071	738	733	1,431	3,163
1944.....	10,378	1,088	2,130	2,839	4,307	6,187	808	770	1,404	3,201
1943.....	10,241	1,074	2,391	2,652	4,068	5,946	742	773	1,414	3,012
1942.....	8,464	886	1,532	2,461	3,567	5,498	680	734	1,304	2,777
1941.....	8,414	940	1,223	2,506	3,738	5,609	705	859	1,390	2,652
Nonwhite:										
1945.....	3,857	611	1,152	1,375	708	3,072	453	1,019	1,046	548
1944.....	3,815	643	1,123	1,348	688	3,120	498	1,067	1,047	501
1943.....	3,984	634	1,212	1,353	768	3,291	513	1,116	1,107	549
1942.....	4,060	659	1,292	1,400	699	3,185	486	1,179	983	528
1941.....	4,336	635	1,448	1,411	826	3,273	487	1,233	1,073	475

<sup>1</sup> Includes ages not stated.

Attention also may be directed to the series of tuberculosis death ratios for white males 15–44 years of age for Florida, shown in table 7. The ratio for this group decreased rapidly from 6.1 per 100 deaths from all causes in 1941 to 3.4 in 1943 and then rose to 4.4 in 1945. These

changes will be found related, not to changes in the number of deaths from tuberculosis, but to changes in the number of deaths from all causes. The number of deaths from all causes in this group increased from 1,223 in 1941 to 2,391 in 1943 (nearly double the 1941 figure) and then decreased to 1,654 in 1945. So large a change in total mortality would suggest a change in the population of white males of this age, a change in the mortality risk to which this group was exposed, or to both. Very probably, the changes are, in part, a result both of the changes in the military population at camps and training centers in the State and of changes in the hazards of military training.

DEATHS FROM RESPIRATORY AND NONRESPIRATORY FORMS OF TUBERCULOSIS

Of the 52,916 deaths from tuberculosis in 1945, 48,879 or 92.4 percent were from tuberculosis of the respiratory system and 4,037 or 7.6 percent were from other forms of tuberculosis. The death rate for respiratory tuberculosis was 37.0 per 100,000 population and that for nonrespiratory tuberculosis, 3.1. In 1944 the corresponding rates were 38.3 and 3.0, respectively, and the nonrespiratory forms constituted 7.3 percent of all deaths from tuberculosis.

In table 8 are given the numbers of deaths and the corresponding death rates for the nonrespiratory forms of tuberculosis for the United States in 1945. Approximately one-quarter of the nonrespiratory deaths were from tuberculosis of the meninges and central nervous system and one quarter from disseminated tuberculosis. Tuberculosis of the intestines and peritoneum and tuberculosis of the vertebral column accounted for another quarter; tuberculosis of the genitourinary system, of the bones and joints, and of other organs, for the remainder.

TABLE 8.—Number of deaths and death rates for tuberculosis by specified form: United States, 1945

	Number of deaths	Rate per 100,000 population		Number of deaths	Rate per 100,000 population
All forms .....	52,916	40.1	Tuberculosis of the skin and subcutaneous cellular tissue.	30	0
Tuberculosis of respiratory system .....	48,879	37.0	Tuberculosis of the lymphatic system (except bronchial, mediastinal, mesenteric, and retroperitoneal lymph nodes) .....	89	0.1
Tuberculosis (other forms) .....	4,037	3.1	Tuberculosis of the genitourinary system .....	342	.3
Tuberculosis of the meninges and central nervous system.	1,193	.9	Tuberculosis of other organs ..	87	.1
Tuberculosis of the intestines and peritoneum .....	657	.5	Disseminated tuberculosis .....	1,002	.8
Tuberculosis of the vertebral column .....	478	.4			
Tuberculosis of the bones and joints (except vertebral column) .....	159	.1			

*Mortality trends from respiratory and nonrespiratory tuberculosis by race: 1910-1945.*—Table 9 and figure 6 give the death rates for respiratory and for nonrespiratory tuberculosis by race for the death-registration States, 1910-45. In the 36 years since 1910, the total death rate for tuberculosis of the respiratory system has dropped from a maximum of 134.2 per 100,000 population in 1911 to a minimum of 37.0 in 1945; in the same period the rate for the nonrespiratory forms has declined from a maximum of 20.9 in 1911 to a minimum of 3.0 in 1944. The percentage decrease in the death rate for the nonrespiratory forms (86 percent) has been greater than the corresponding decrease in the rate for the respiratory forms (72 percent). As may be seen from the chart, the death rate for the nonrespiratory forms has declined more rapidly than has the rate for respiratory tuberculosis. The difference is more marked in the death rates for the white population than in those for the nonwhite.

TABLE 9.—*Death rates for tuberculosis of the respiratory system and for other forms by race: death-registration States, 1910-45*

[Rates per 100,000 population]

Year	Tuberculosis (all forms)			Tuberculosis of the respiratory system			Tuberculosis (other forms)		
	All races	White	Non-white	All races	White	Non-white	All races	White	Non-white
1945.....	40.1	32.7	102.1	37.0	30.5	92.3	3.1	2.3	9.8
1944.....	41.3	33.7	106.2	38.3	31.4	96.7	3.0	2.3	9.5
1943.....	42.6	34.3	112.9	39.1	31.8	102.0	3.4	2.6	10.9
1942.....	43.1	34.4	118.4	39.6	31.8	107.5	3.5	2.7	11.0
1941.....	44.5	35.4	124.2	40.9	32.7	112.4	3.7	2.7	11.8
1940.....	45.8	36.5	127.6	42.1	33.7	116.3	3.7	2.8	11.3
1939.....	47.1	37.7	129.1	43.1	34.7	117.0	4.0	3.1	12.1
1938.....	49.1	39.1	136.8	44.7	35.7	123.5	4.4	3.4	13.3
1937.....	53.8	43.4	145.0	49.2	39.8	131.6	4.7	3.7	13.5
1936.....	55.9	45.0	151.6	50.8	41.0	137.1	5.1	4.0	14.5
1935.....	55.1	44.9	145.1	49.9	40.8	130.5	5.2	4.1	14.7
1934.....	56.7	46.2	148.8	51.2	41.8	133.9	5.5	4.4	14.8
1933.....	59.6	48.5	157.7	53.7	43.7	142.0	5.9	4.8	15.7
1932.....	62.5	50.2	173.5	56.1	45.0	156.7	6.4	5.2	16.8
1931.....	67.8	54.2	191.1	60.4	48.2	170.9	7.4	6.0	20.2
1930.....	71.1	57.7	192.0	63.0	51.1	170.3	8.1	6.6	21.7
1929.....	75.3	62.4	192.0	67.0	55.5	171.3	8.3	6.9	20.8
1928.....	78.3	64.9	199.5	69.3	57.2	178.6	9.0	7.7	20.9
1927.....	79.6	66.5	208.7	70.1	58.5	184.8	9.5	8.0	24.0
1926.....	85.5	72.0	223.8	74.9	63.0	198.3	10.5	9.1	25.5
1925.....	84.8	71.6	221.3	74.1	62.2	196.7	10.7	9.3	24.6
1924.....	87.9	74.9	218.6	76.5	64.9	193.0	11.4	10.0	25.6
1923.....	91.7	79.5	213.1	80.4	69.3	190.6	11.4	10.3	22.5
1922.....	95.3	82.6	218.9	83.3	71.6	196.2	12.0	10.9	22.7
1921.....	97.6	84.7	239.3	84.5	72.7	213.1	13.2	12.0	26.2
1920.....	113.1	99.5	262.4	99.8	87.1	238.0	13.4	12.4	24.4
1919.....	125.6	110.9	284.0	111.3	97.5	258.9	14.4	13.4	25.2
1918.....	149.8	134.3	346.0	132.9	118.5	315.5	16.9	15.8	30.4
1917.....	143.5	129.6	332.6	126.2	113.5	298.8	17.3	16.1	33.8
1916.....	138.4	125.7	322.7	121.0	109.2	292.0	17.4	16.5	30.6
1915.....	140.1	128.5	401.1	122.6	112.0	360.7	17.5	16.5	40.4
1914.....	141.7	130.3	396.7	123.0	112.7	352.6	18.7	17.6	44.1
1913.....	143.5	132.6	386.5	123.7	113.9	343.7	19.7	18.7	42.8
1912.....	145.4	136.0	429.0	125.9	117.4	380.4	19.5	18.5	48.7
1911.....	155.1	145.0	461.4	134.2	125.1	410.3	20.9	19.9	51.0
1910.....	153.8	145.9	445.5	133.3	126.2	393.7	20.6	19.7	51.8

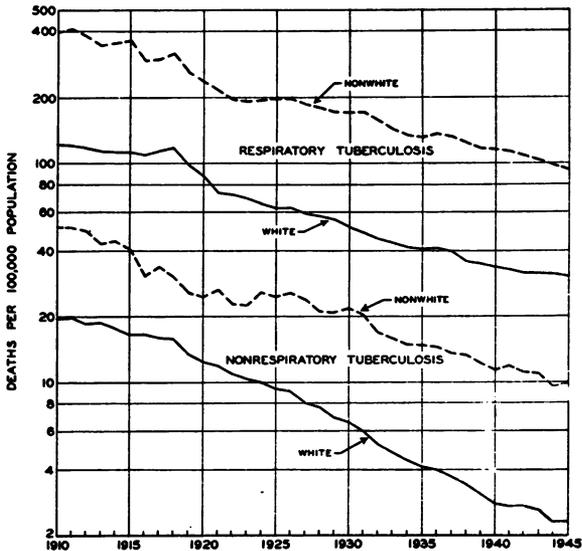


FIGURE 6.—Death rates for tuberculosis of the respiratory system and for other forms, by race: Death-registration States, 1910-45.

The respiratory tuberculosis death rate for the white population has declined from 126.2 per 100,000 population in 1910 to 30.5 in 1945. In the same period, the rate for nonwhites dropped from a maximum of 410.3 in 1911 to 92.3 in 1945. The rates of decline for the two racial groups have been very similar.

In the case of the nonrespiratory forms of tuberculosis, however, the death rate for whites has declined more rapidly than has the rate for nonwhites. In the 36-year period for which data are shown, the nonrespiratory tuberculosis death rate for whites has dropped 88 percent from a maximum of 19.9 per 100,000 population in 1911 to 2.3 in 1945. In the same period, the corresponding rate for nonwhites has declined 81.7 percent from 51.8 in 1910 to its minimum of 9.5 in 1944.

In 1910, the nonrespiratory forms of tuberculosis constituted 13.5 percent of all tuberculosis deaths among whites and 11.6 of those among nonwhites. Since that time the situation has been reversed. In 1945 the larger proportion was found for nonwhites, 9.6 percent, as compared with 7.0 for whites.

*Deaths from respiratory and nonrespiratory tuberculosis by age, race, and sex.*—In table 10 are given the numbers of deaths and corresponding death rates for respiratory and nonrespiratory tuberculosis by age, race, and sex for the United States in 1945. In general, the variations with age, race, and sex in the death rate for respiratory tuberculosis parallel rather closely those for tuberculosis (all forms) shown in figure 2.

TABLE 10.—Death rates and number of deaths for tuberculosis of the respiratory system and for other forms, by age, race, and sex: United States, 1945

Race and sex	All ages <sup>1</sup>	Under 5 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75 yrs. and over
Deaths from respiratory tuberculosis per 100,000 population													
All races, both sexes	37.0	4.0	1.3	3.3	19.0	46.1	49.6	43.6	47.0	55.2	62.7	69.8	69.2
Male	49.4	4.0	1.3	2.2	15.3	57.1	62.6	50.0	62.4	85.6	97.3	101.0	87.5
Female	26.0	4.0	1.2	4.4	22.3	40.8	42.5	38.3	32.6	24.6	27.3	40.1	53.4
White, both sexes	30.5	2.6	.7	1.6	10.3	28.8	34.4	32.1	37.5	47.8	58.2	67.1	68.2
Male	42.4	2.5	.8	1.1	8.3	37.2	45.4	36.2	5.5	75.1	91.5	96.8	85.4
Female	19.9	2.6	.7	2.2	12.1	24.9	28.6	28.7	20.2	20.4	24.1	39.2	53.3
Nonwhite, both sexes	92.3	14.3	4.6	14.7	82.0	169.5	165.7	139.0	131.8	131.5	120.8	108.4	82.0
Male	108.5	14.9	4.7	10.1	64.9	176.1	187.0	168.2	171.5	196.0	168.7	158.4	114.5
Female	77.9	13.8	4.5	19.3	97.4	165.5	153.2	115.7	96.7	67.9	68.6	54.8	54.2
Deaths from nonrespiratory tuberculosis per 100,000 population													
All races, both sexes	3.1	6.1	1.5	1.2	2.1	3.6	3.2	2.8	2.8	3.0	3.3	3.7	4.5
Male	3.6	6.3	1.5	1.3	2.1	4.9	4.6	3.2	3.6	3.5	4.3	4.9	5.2
Female	2.6	6.0	1.5	1.1	2.2	2.9	2.4	2.4	2.0	2.4	2.3	2.7	3.9
White, both sexes	2.3	4.9	1.1	.8	1.1	2.0	1.9	1.8	1.9	2.4	2.9	3.5	4.5
Male	2.7	4.9	1.0	.8	1.2	2.8	2.5	2.1	2.4	2.8	3.8	4.5	5.2
Female	1.9	4.8	1.1	.7	1.0	1.6	1.6	1.5	1.3	2.0	1.9	2.5	3.9
Nonwhite, both sexes	9.8	15.2	4.1	4.3	9.8	14.8	12.9	11.1	10.9	9.2	8.5	7.4	4.1
Male	11.2	16.1	4.2	4.3	9.0	17.4	19.7	12.8	13.7	11.2	10.1	9.7	5.0
Female	8.6	14.3	4.1	4.3	10.6	13.2	8.9	9.7	8.4	7.2	6.7	5.0	3.4
Number of deaths from respiratory tuberculosis													
All races, both sexes	48,879	527	143	348	2,056	4,157	4,472	4,492	8,979	9,037	7,583	4,911	2,128
Male	30,697	268	74	118	772	1,668	1,979	2,343	5,757	7,023	5,958	3,465	1,244
Female	18,182	259	69	230	1,284	2,489	2,493	2,149	3,222	2,014	1,625	1,446	884
White, both sexes	35,962	296	73	149	979	2,277	2,751	2,952	6,425	7,143	6,530	4,415	1,949
Male	23,556	148	38	50	368	931	1,259	1,517	4,198	5,621	5,191	3,090	1,129
Female	12,406	148	35	99	611	1,346	1,492	1,435	2,227	1,522	1,339	1,325	820
Nonwhite, both sexes	12,917	231	70	199	1,077	1,880	1,721	1,540	2,554	1,894	1,055	496	179
Male	7,141	120	36	68	404	737	720	826	1,559	1,402	767	375	115
Female	5,776	111	34	131	673	1,143	1,001	714	995	492	286	121	64
Number of deaths from nonrespiratory tuberculosis													
All races, both sexes	4,037	805	168	128	232	321	287	284	529	484	396	263	138
Male	2,237	420	84	69	108	144	144	151	328	286	262	167	74
Female	1,800	385	84	59	124	177	143	133	201	198	136	96	64
White, both sexes	2,661	560	105	70	103	157	153	161	318	352	324	229	129
Male	1,499	290	52	40	52	71	68	88	203	206	216	144	69
Female	1,162	270	53	30	51	86	85	73	115	146	108	85	60
Nonwhite, both sexes	1,376	245	63	58	129	164	134	123	211	132	74	34	9
Male	738	130	32	29	56	73	76	63	125	80	46	23	5
Female	638	115	31	29	73	91	58	60	86	52	28	11	4

<sup>1</sup> Includes ages not stated.

In contrast with the death rate for respiratory tuberculosis which has its peak at ages over 20, the highest mortality from the non-respiratory forms tends to occur in early childhood. For the total population under 5 years in 1945, the nonrespiratory tuberculosis death rate was 6.1 per 100,000 population, which is higher than that in any succeeding age group. From this maximum, the rate dropped to 1.2 in the age group 10-14, rose to a minor peak of 3.6 in the age group

20-24, and, after a slight decline, increased with advancing age to 4.5 in the age group 75 years and over. The variations upon this general pattern, which are found in the rates for white and nonwhite males and females, will be observed in figure 7.

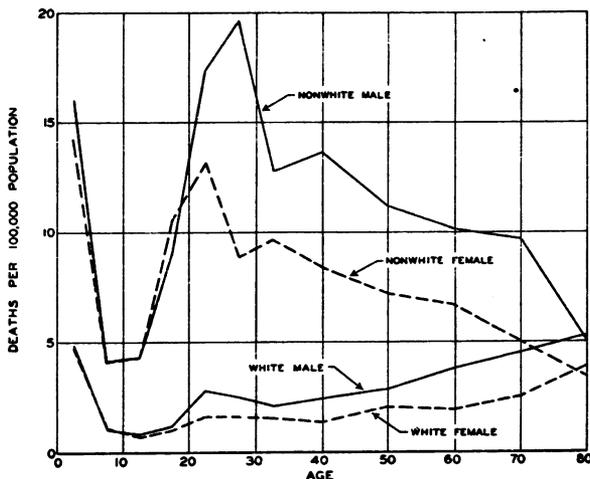


FIGURE 7.—Death rates for nonrespiratory tuberculosis by age, race, and sex: United States, 1945.

The nonrespiratory forms of tuberculosis play the major role in the total mortality from tuberculosis in early childhood. In 1945, in the age group under 5 years, the nonrespiratory forms constituted approximately two-thirds of the tuberculosis deaths among whites and approximately one-half of those among nonwhites.

*Deaths from respiratory and nonrespiratory tuberculosis by States.*—The respiratory tuberculosis death rates for the 48 States and the District of Columbia ranged in 1945 from 10.1 per 100,000 population for residents of Wyoming to 63.7 and 115.0 for residents of New Mexico and Arizona, respectively (table 11). The distribution of the respiratory tuberculosis death rates by States is very similar to that for tuberculosis (all forms) shown in figure 5.

The death rates for the nonrespiratory forms of tuberculosis varied from 0.8 per 100,000 population for residents of Wyoming to 8.4 for residents of New Mexico. The death rates for one-fourth of the States were less than 2.2 and for one-fourth were greater than 3.5.

The areas of high and low mortality from nonrespiratory tuberculosis are less clearly defined than those for tuberculosis of the respiratory system. In general, two areas of high mortality may be distinguished

TABLE 11.—Number of deaths and death rates for tuberculosis of the respiratory system and for other forms by State: United States, 1945

[By place of residence]

Area	Tuberculosis (all forms)	Tuberculosis of respiratory system	Tuberculosis (other forms)		Rate per 100,000 population	
			Number	Percent	Tuberculosis of respiratory system	Tuberculosis (other forms)
United States.....	52,916	48,879	4,037	7.6	37.0	3.1
Alabama.....	1,218	1,121	97	8.0	39.9	3.4
Arizona.....	776	725	51	6.6	115.0	8.1
Arkansas.....	817	770	47	5.8	43.3	2.6
California.....	3,827	3,526	301	7.9	40.0	3.4
Colorado.....	426	386	40	9.4	34.4	3.6
Connecticut.....	664	612	52	7.8	34.3	2.9
Delaware.....	109	93	16	14.7	32.4	5.6
District of Columbia.....	541	485	56	10.4	51.7	6.0
Florida.....	739	700	39	5.3	29.3	1.6
Georgia.....	1,108	1,008	100	9.0	31.6	3.1
Idaho.....	81	72	9	11.1	14.4	1.8
Illinois.....	3,184	2,916	268	8.4	37.8	3.5
Indiana.....	1,133	1,013	120	10.6	29.5	3.5
Iowa.....	355	328	27	7.6	14.5	1.2
Kansas.....	339	314	25	7.4	18.0	1.4
Kentucky.....	1,605	1,472	133	8.3	57.1	5.2
Louisiana.....	1,092	1,030	62	5.7	41.9	2.5
Maine.....	244	225	19	7.8	28.6	2.4
Maryland.....	1,267	1,168	99	7.8	55.0	4.7
Massachusetts.....	1,643	1,551	92	5.6	37.1	2.2
Michigan.....	1,816	1,652	164	9.0	30.2	3.0
Minnesota.....	621	563	58	9.3	22.5	2.3
Mississippi.....	720	682	38	5.3	32.8	1.8
Missouri.....	1,424	1,342	82	5.8	37.7	2.3
Montana.....	171	156	15	8.8	34.1	3.3
Nebraska.....	185	163	22	11.9	13.6	1.8
Nevada.....	89	80	9	10.1	50.1	5.6
New Hampshire.....	99	91	8	8.1	20.1	1.8
New Jersey.....	1,737	1,649	88	5.1	39.3	2.1
New Mexico.....	396	341	45	11.7	63.7	8.4
New York.....	6,032	5,593	439	7.3	44.4	3.5
North Carolina.....	1,262	1,159	103	8.2	33.1	2.9
North Dakota.....	117	108	9	7.7	20.7	1.7
Ohio.....	2,631	2,394	237	9.0	34.8	3.4
Oklahoma.....	830	781	49	5.9	38.4	2.4
Oregon.....	308	272	36	11.7	22.5	3.0
Pennsylvania.....	3,832	3,577	255	6.7	38.9	2.8
Rhode Island.....	252	235	17	6.7	31.0	2.2
South Carolina.....	663	616	47	7.1	32.3	2.5
South Dakota.....	156	138	18	11.5	24.8	3.2
Tennessee.....	1,776	1,652	124	7.0	57.4	4.3
Texas.....	2,966	2,789	177	6.0	41.1	2.6
Utah.....	79	69	10	12.7	11.2	1.6
Vermont.....	110	102	8	7.3	32.9	2.6
Virginia.....	1,366	1,235	131	9.6	40.1	4.3
Washington.....	706	618	88	12.5	29.6	4.2
West Virginia.....	719	663	56	7.8	38.4	3.2
Wisconsin.....	668	619	49	7.3	21.0	1.7
Wyoming.....	27	25	2	7.4	10.1	.8

(fig. 8). One is in the southwestern part of the country and in 1945 was composed of Nevada, Arizona, New Mexico, and Colorado; the other is east of the Mississippi and, in 1945, was composed of Kentucky, Tennessee, Virginia, Maryland, the District of Columbia, and Delaware.

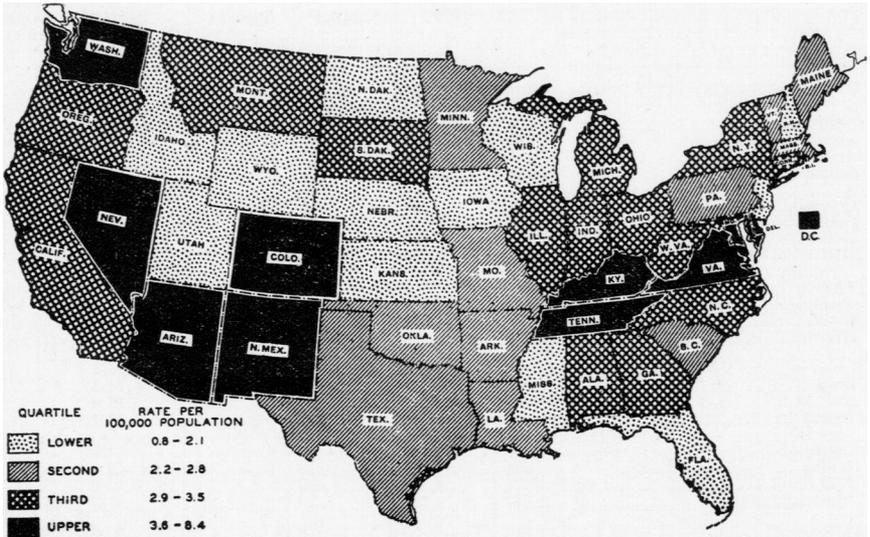


FIGURE 8.—Geographic distribution of the mortality from nonrespiratory forms of tuberculosis in the United States: 1945.

Without further detailed study, it is difficult to evaluate the significance of State-to-State variation of the death rate for nonrespiratory tuberculosis. A comparison of the map (fig. 8) with the map of death rates for tuberculosis (all forms) (fig. 5) shows that although there may be some correlation between the rates for tuberculosis of the respiratory system and those for other forms of tuberculosis, there are a number of striking differences. In fact, of the 11 States in which more than 10 percent of the tuberculosis deaths were from the nonrespiratory forms of the disease, 5 will be found to have relatively low rates (lower quartile) and 4 to have relatively high rates (upper quartile) for tuberculosis of the respiratory system.

SUMMARY

This report presents data on the numbers of deaths and the death rates for tuberculosis in the United States and in each State for 1945 with corresponding data for the war years, 1942-44, and for the pre-war period, 1939-41.

There were 52,916 deaths from tuberculosis (all forms) in the United States in 1945. The death rate for tuberculosis was 40.1 per 100,000 population as compared with 41.3 for 1944. The death rates for white females and for nonwhites of both sexes continued to decline, whereas the rate for white males showed little change. The rate for nonwhites was higher than the rate for whites, and in both race groups the rates for males were higher than those for females. For all 4 race-sex groups, the tuberculosis death rates were found to increase with age from a minimum in childhood to a maximum at the adult age.

There were 4,437 deaths from tuberculosis among war veterans in 1945, 62.8 percent being among veterans of World War I and 31.4 percent, among veterans of World War II. The number of deaths among World War II veterans increased from 974 in 1944 to 1,394 in 1945.

The rates for the principal nonwhite racial groups in the United States ranged from 98.0 and 101.5 for Negroes and Japanese to 211.9 and 276.1 for Indians and Chinese.

The death rates for tuberculosis (all forms) for the 48 States and the District of Columbia ranged in 1945 from 10.9 per 100,000 population for residents of Wyoming to 72.1 and 123.1 for residents of New Mexico and Arizona, respectively. The rates for 11 States were higher in 1945 than in 1944 and those for 2 States were the same. The average annual rates for 7 States for the war years 1942-45 were higher than the corresponding average rates for the prewar period, 1939-41.

Approximately 92 percent of all tuberculosis deaths in 1945 were from tuberculosis of the respiratory system and nearly 8 percent were from the nonrespiratory forms of the disease. The proportion of nonrespiratory tuberculosis varied from 5.1 percent for residents of New Jersey to 14.7 percent for residents of Delaware. The death rates for nonrespiratory tuberculosis for the individual States ranged from 0.8 per 100,000 population for residents of Wyoming to 8.4 for residents of New Mexico.

Because of the changes which have occurred in the population during the war, it is difficult to evaluate the tuberculosis mortality problem for recent years. This is especially true of data for the individual States. However, for the country as a whole reference is made wherever possible to *de jure* death rates for tuberculosis. Including as they do data for the country's population serving in the armed forces overseas as well as data for the population in the continental United States, they are more comparable to rates for the prewar years.

## ADAPTER FOR PROCESSING 70-MM. ROLL FILM IN OPEN TANKS

By A. J. MOEN, *X-Ray Engineer, Tuberculosis Control Section, Washington State Department of Health*

Originally, 70-mm. film was of the green-sensitive type, necessitating development in total darkness. The present blue-sensitive film can be processed under the standard X-ray darkroom safelight. The miniature film tank for processing 70-mm., 100-foot roll film was designed for a total-darkness developing procedure, carried out in daylight after the film is placed on the developing spools in the darkroom. As such, the developing assembly made by the Fairchild Camera and Instrument Corporation is adequate for field work and occasional use; but with a large volume of work, an adaption by which the roll may be developed in the regular 10-gallon open tank has proved to be a time saver.

The device consists simply of a rack to hold the Fairchild film-developing spools and is made to fit over the standard 10-gallon tank. This rack can be fabricated of wood, but because of the danger of contaminating the developing solution by material absorbed by the wood, it should preferably be made from an alkaline- and acid-resistant stainless steel, or a plastic, such as acrylic resin (the common Lucite or Plexiglass). We preferred plastic because it is more easily worked.

The finished rack will have the appearance of a two-legged stool with a large hole in the top, as shown in the photograph (figure 1) and in part "A" of figure 2. The legs serve a double purpose:

1. To support the rolls on table or bench while winding the film from the camera spool to the developing spools.
2. To keep film rolls wound while transferring them from one tank to another.

To make the rack from Lucite or Plexiglass, cut the material to size with a band saw or jig saw and cement the pieces together with acrylic cement or glacial acetic acid. No pressure is required on the joints while cementing. Care should be exercised, however, in using the cementing medium, as it may dissolve the plastic. The plastic edges to be joined should be fairly smooth and straight to assure good bonding. The pieces should be placed together and the cementing liquid applied with an eyedropper, only enough cementing liquid being used to fill completely the space between the pieces. The cement will require a few minutes to set. The rack should not be used for twenty-four hours, thus making sure that the joints are firm.

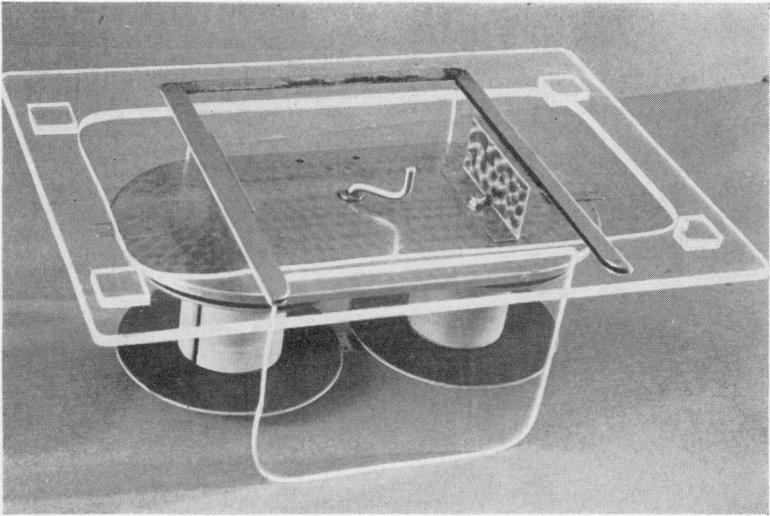


FIGURE 1.—Plastic adapter for processing 70-mm. roll film in open tanks, showing spool assembly with metal supporter.

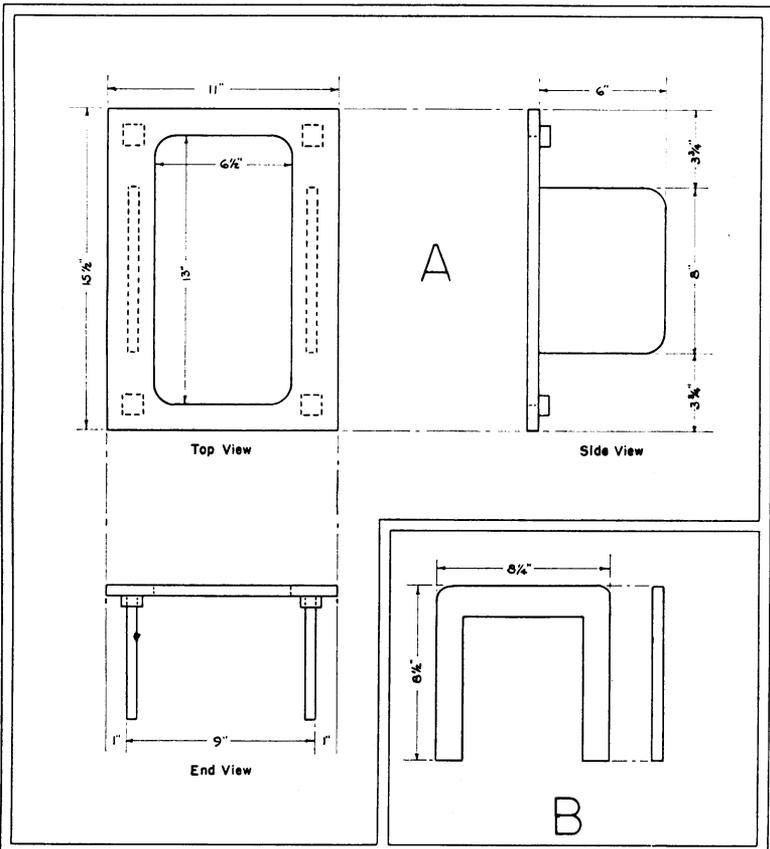


FIGURE 2. —(A) Adapter for processing 70-mm. roll film in open tanks. (B) Supporter for spool assembly.

A horseshoe-shaped piece of plastic (see figure 2, "B") to fit under the handles of the miniature developer tank will keep the spool assembly from falling through the hole in the rack. Two longer strips may be used under the rack to support it over the wash tank if the rack is larger than the 10-gallon tank.

## A REVIEW<sup>1</sup> OF REHABILITATION AND THE OPEN CASE<sup>2</sup>

The purpose of this article is to compare the results of two studies on rehabilitation of the tuberculous. The first study was reported by O. Düggele under the title "The Fate of the Open Case: Investigations on Patients of the Thurgauisch-Schaffhausenschen Heilstätte [Sanatorium] in Davos during the Years 1922-1937."<sup>3</sup> The second was reported by L. E. Siltzbach—"Clinical Evaluation of the Rehabilitation of the Tuberculous"<sup>4</sup>—and concerns the fate of people discharged from the Altro Workshop in New York during the years 1915-1939.

Both authors base their conclusions on a comparison, by successive periods, of the life expectancy and the relapse rate of ex-patients. Both use sputum history as the main criterion and classify cases in similar categories of clinical status. Both arrive at almost identical conclusions as to the scope and general policy of rehabilitation. Brieger presents abstracts of the two reports, with all essential figures and several charts, and then compares results of the two surveys.

Düggele and Siltzbach agree (1) that the introduction of collapse therapy has been of great importance in raising the number of potential recoveries; (2) that the majority of patients discharged as sputum-converted and arrested cases, and even some of the "good" chronic cases, require only temporary, part-time vocational therapy; and (3) that facilities for gainful employment of chronic infectious cases are practically nonexistent though urgently needed. Both reports recommend a clear-cut separation of recovering patients from those whose disease is progressive. The problem of rehabilitation is thus reduced to a simple formula: Reintroduction of the fit into normal industry and isolation of the unfit in "village settlements."

Brieger, after further analysis of the material, protests that there

<sup>1</sup> From the Office of the Chief, Tuberculosis Control Division, Bureau of State Services, United States Public Health Service.

<sup>2</sup> By E. Brieger, Research Department at Papworth Village Settlement, England. *Tubercle*, **XXVI** (7-8): 115-126 (July-August 1945).

<sup>3</sup> *Contra la Tuberculose*, Annexe au Bulletin du service federal de l'hygiène publique. Nr. 1 (12 Février 1944).

<sup>4</sup> National Tuberculosis Association, New York, N. Y. (1944).

is no absolute line between the fit and unfit, at least in the first 4 years after discharge. The differentiation is a matter of time, and to the individual patient the use of this time is of decisive importance. He argues that all attempts to establish separate institutions for patients of different categories have met with failure, and warns against the revival of such a scheme. The alternative, he asserts, would be the creation of a composite unit with sections for treatment, training, and employment.

# 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 MARCH 15, 1947

#### Summary

Of the total of 42,997 cases of influenza reported for the week (as compared with 21,991 last week and a 5-year median of 4,054), 41,406 cases, or 96 percent occurred in the West Central, South Atlantic, and Mountain areas. Of the net increase (21,006 cases), 62 percent occurred in the West South Central area (38 percent in Texas), 18 percent in the West North Central, and 16 percent in the South Atlantic. The 15 States reporting currently more than 200 cases (and aggregating 41,546 cases) are as follows (last week's figures in parentheses): *Increases*—Iowa 970 (205), Kansas 6,260 (3,395), Virginia 1,151 (520), West Virginia 2,099 (304), South Carolina 1,518 (504), Tennessee 341 (70), Alabama 328 (233), Arkansas 5,306 (952), Oklahoma 1,083 (272), Texas 19,527 (11,624), Arizona 394 (86); *decreases*—Indiana 275 (526), Missouri 208 (239), Georgia 482 (650), Colorado 1,604 (1,720). Although only 29 cases were officially reported in Kentucky during the current week, special surveys made in the State show 74,046 cases of upper respiratory infection in the past 2 weeks. A total of 105,579 influenza cases has been reported to date this year, as compared with 169,936 for the corresponding period last year and a 5-year median of 54,065.

The total of 33 cases of poliomyelitis for the current week, which is the average date of seasonal low incidence, is more than reported for any corresponding week of record (since 1927). The total for the 52 weeks ended with the current week is 25,400, as compared with 19,406 in the 1944-45 period, which was the largest of the corresponding figures of the past 5 years.

The total of 4,013 cases of typhoid fever reported for the 52-week period since the average date of the seasonal low week for that disease is lower than for the corresponding 52 weeks of any of the past 5 years.

Deaths recorded for the week in 93 large cities in the United States totaled 10,310, as compared with 10,206 last week, 9,267 and 9,622 for the corresponding weeks, respectively, of 1946 and 1945, and a 3-year (1944-46) median of 9,532. The cumulative total is 110,460, as compared with 113,546 for the corresponding period last year.

*Telegraphic morbidity reports from State health officers for the week ended March 15, 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.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46
	Mar. 15, 1947	Mar. 16, 1946		Mar. 15, 1947	Mar. 16, 1946		Mar. 15, 1947	Mar. 16, 1946		Mar. 15, 1947	Mar. 16, 1946	
<b>NEW ENGLAND</b>												
Maine.....	0	3	2		3		186	61	61	1	1	2
New Hampshire.....	0	0	0	5			32	11	10	3	1	0
Vermont.....	0	0	0		9	1	283	13	15	0	0	0
Massachusetts.....	26	9	5				417	613	708	0	2	3
Rhode Island.....	1	0	0		1		196	9	14	0	2	2
Connecticut.....	0	0	0		3	3	566	164	407	0	5	5
<b>MIDDLE ATLANTIC</b>												
New York.....	10	9	21	19	14	16	319	3,437	2,321	8	19	36
New Jersey.....	7	4	3	6	7	13	558	2,090	1,366	0	4	7
Pennsylvania.....	13	10	10	3	5	3	367	3,035	1,258	6	8	16
<b>EAST NORTH CENTRAL</b>												
Ohio.....	7	28	7	91	16	20	731	412	412	2	8	8
Indiana.....	13	6	7	275	14	9	39	993	266	0	3	3
Illinois.....	6	34	8	55	22	22	44	1,925	963	5	12	18
Michigan <sup>2</sup> .....	8	13	8	26	7	6	74	3,318	555	4	12	7
Wisconsin.....	3	11	1	154	46	40	247	1,046	1,046	0	4	4
<b>WEST NORTH CENTRAL</b>												
Minnesota.....	6	10	4		3	2	65	49	94	7	4	3
Iowa.....	0	5	3	970			65	242	242	0	2	0
Missouri.....	13	7	6	208	1	3	15	516	375	4	2	7
North Dakota.....	5	0	1	95	4	1	6	20	64	0	0	1
South Dakota.....	1	0	0	18			15	29	29	0	0	0
Nebraska.....	2	4	3	178	24	11	5	256	249	1	0	0
Kansas.....	8	9	5	6,260	5	5	9	931	513	0	1	1
<b>SOUTH ATLANTIC</b>												
Delaware.....	1	0	1				1	24	17	0	0	0
Maryland <sup>2</sup> .....	7	10	10	3	12	5	19	373	373	2	8	9
District of Columbia.....	0	0	0	4		1	24	179	100	0	5	1
Virginia.....	3	16	7	1,151	300	382	332	463	463	2	12	12
West Virginia.....	1	3	3	2,099	4	40	80	61	66	1	3	3
North Carolina.....	8	15	8			14	400	389	389	3	6	6
South Carolina.....	2	4	4	1,518	376	449	79	316	257	1	1	1
Georgia.....	1	6	4	482	7	24	264	117	187	1	4	4
Florida.....	9	4	3	73	3	3	15	92	92	3	1	7
<b>EAST SOUTH CENTRAL</b>												
Kentucky.....	4	4	5	29	52	6	10	583	91	1	2	4
Tennessee.....	4	9	6	341	60	71	127	301	301	4	4	8
Alabama.....	8	3	6	328	168	168	88	216	226	5	5	5
Mississippi <sup>2</sup> .....	6	5	8				18			1	5	5
<b>WEST SOUTH CENTRAL</b>												
Arkansas.....	3	5	5	5,306	109	109	383	196	196	3	1	3
Louisiana.....	13	7	6	6	405	13	56	337	188	6	6	6
Oklahoma.....	3	3	6	1,083	88	190	7	156	88	1	1	2
Texas.....	25	41	41	19,527	1,949	1,228	309	1,310	1,310	9	13	13
<b>MOUNTAIN</b>												
Montana.....	2	1	2	193	26	26	147	23	87	1	1	0
Idaho.....	0	0	0	144	20		6	69	72	0	0	0
Wyoming.....	1	0	0	20	2	6	21	42	95	0	0	0
Colorado.....	5	6	6	1,604	39	39	46	445	350	2	0	0
New Mexico.....	1	0	1	3	1	1	45	7	20	0	1	1
Arizona.....	6	6	4	394	184	125	47	75	75	0	0	1
Utah <sup>2</sup> .....	0	0	0	67	7	7	22	635	155	0	0	1
Nevada.....	0	0	0			3	1	25	5	0	0	0
<b>PACIFIC</b>												
Washington.....	4	5	3	111			55	1,049	322	3	2	6
Oregon.....	1	0	4	125	17	25	33	288	167	1	1	2
California.....	15	24	23	33	51	59	217	2,871	2,094	8	14	27
<b>Total</b> .....	<b>262</b>	<b>345</b>	<b>281</b>	<b>42,997</b>	<b>4,054</b>	<b>4,054</b>	<b>7,091</b>	<b>29,812</b>	<b>23,150</b>	<b>99</b>	<b>186</b>	<b>243</b>
11 weeks.....	43,233	4,243	3,441	105,579	169,936	54,065	56,072	152,241	158,612	933	2,233	2,791
Seasonal low week <sup>2</sup> .....	(27th) July 5-11			(30th) July 26-Aug. 1			(35th) Aug. 30-Sept. 5			(37th) Sept. 13-19		
<b>Total since low</b> .....	<b>10,799</b>	<b>15,887</b>	<b>12,263</b>	<b>138,554</b>	<b>532,184</b>	<b>89,927</b>	<b>78,959</b>	<b>178,365</b>	<b>197,606</b>	<b>1,905</b>	<b>3,737</b>	<b>5,243</b>

<sup>1</sup> New York City only.

<sup>2</sup> Period ended earlier than Saturday.

<sup>3</sup> Dates between which the approximate low week ends. The specific date will vary from year to year.

<sup>4</sup> Correction: Diphtheria, Ohio, week ended January 25, 16 cases (instead of 17).

Telegraphic morbidity reports from State health officers for the week ended March 15, 1947, and comparison with corresponding week of 1946 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever <sup>1</sup>		
	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46	Week ended—		Median 1942-46
	Mar. 15, 1947	Mar. 16, 1947		Mar. 15, 1947	Mar. 16, 1947		Mar. 15, 1947	Mar. 16, 1947		Mar. 15, 1947	Mar. 16, 1947	
<b>NEW ENGLAND</b>												
Maine.....	0	0	0	24	36	22	0	0	0	0	0	0
New Hampshire.....	0	0	0	17	11	11	0	0	0	0	0	0
Vermont.....	1	1	0	0	4	11	0	0	0	0	1	0
Massachusetts.....	2	0	0	134	230	403	0	0	0	5	1	1
Rhode Island.....	0	0	0	12	9	14	0	0	0	0	0	0
Connecticut.....	1	2	0	38	68	69	0	0	0	0	2	0
<b>MIDDLE ATLANTIC</b>												
New York.....	1	1	1	387	680	655	0	0	0	2	1	3
New Jersey.....	0	0	0	166	117	183	0	0	0	0	0	0
Pennsylvania.....	1	2	0	228	447	572	0	0	0	4	1	4
<b>EAST NORTH CENTRAL</b>												
Ohio.....	0	1	0	430	430	430	2	0	0	0	2	2
Indiana.....	0	0	0	158	82	153	1	1	1	3	1	1
Illinois.....	1	0	1	171	211	269	1	0	1	0	3	2
Michigan <sup>2</sup> .....	0	2	0	214	168	259	0	0	0	2	2	1
Wisconsin.....	1	0	1	110	160	245	0	0	0	0	0	0
<b>WEST NORTH CENTRAL</b>												
Minnesota.....	2	0	0	49	64	93	0	0	0	1	0	0
Iowa.....	0	0	0	35	64	64	0	0	0	0	0	0
Missouri.....	0	1	1	23	44	134	0	1	1	1	0	1
North Dakota.....	1	0	0	23	16	32	0	0	0	0	0	0
South Dakota.....	0	0	0	7	21	21	0	0	0	0	0	0
Nebraska.....	0	0	0	31	49	50	0	0	0	0	0	0
Kansas.....	0	0	0	48	109	109	0	1	1	0	0	0
<b>SOUTH ATLANTIC</b>												
Delaware.....	0	0	0	21	6	16	0	0	0	0	0	0
Maryland <sup>1</sup> .....	1	0	0	38	106	112	0	0	0	1	1	1
District of Columbia.....	0	0	0	16	30	30	0	0	0	0	1	0
Virginia.....	0	2	0	49	141	93	0	0	0	0	1	2
West Virginia.....	0	0	0	26	38	41	0	0	0	4	1	2
North Carolina.....	0	0	0	29	54	45	0	1	0	0	1	1
South Carolina.....	0	0	0	17	8	8	0	0	0	1	1	1
Georgia.....	0	0	0	27	10	17	0	0	0	0	3	3
Florida.....	1	2	0	17	4	7	0	0	0	2	1	3
<b>EAST SOUTH CENTRAL</b>												
Kentucky.....	0	0	0	34	33	55	0	0	0	2	0	2
Tennessee.....	0	0	0	58	50	61	0	0	0	2	0	0
Alabama.....	1	0	0	20	52	22	0	0	0	1	2	1
Mississippi <sup>2</sup> .....	0	1	1	14	7	7	0	5	0	2	2	1
<b>WEST SOUTH CENTRAL</b>												
Arkansas.....	0	0	0	1	15	12	0	0	0	1	4	2
Louisiana.....	6	1	0	12	18	15	0	0	0	4	3	1
Oklahoma.....	0	0	0	21	17	21	0	0	0	0	0	1
Texas.....	1	0	1	53	71	71	0	4	4	2	7	6
<b>MOUNTAIN</b>												
Montana.....	0	2	0	4	11	23	0	0	0	0	0	0
Idaho.....	1	0	0	9	4	12	0	0	0	2	0	0
Wyoming.....	0	0	0	13	8	14	0	0	0	0	0	0
Colorado.....	0	0	0	64	23	71	1	0	0	0	4	0
New Mexico.....	1	0	0	8	14	14	0	0	0	0	0	0
Arizona.....	1	0	0	8	15	16	0	0	0	2	2	1
Utah <sup>1</sup> .....	0	0	0	17	12	41	0	0	0	0	0	0
Nevada.....	0	0	0	8	0	0	0	0	0	0	0	0
<b>PACIFIC</b>												
Washington.....	0	0	0	33	36	46	0	0	0	1	1	1
Oregon.....	0	1	0	40	16	16	0	0	0	0	0	0
California.....	9	4	4	167	205	205	0	0	0	3	3	4
Total.....	33	23	23	3,129	4,024	4,426	5	13	20	48	52	63
11 weeks.....	625	466	302	29,874	36,525	44,084	45	85	144	485	475	624
Seasonal low week <sup>2</sup> .....	(11th) Mar. 15-21			(32d) Aug. 9-15			(35th) Aug. 30-Sept. 5			(11th) Mar. 15-21		
Total since low.....	25,400	13,803	12,362	56,560	75,096	83,180	99	161	261	4,013	4,726	5,777

<sup>1</sup> Period ended earlier than Saturday.

<sup>2</sup> Dates between which the approximate low week ends. The specific date will vary from year to year.

<sup>3</sup> Including paratyphoid fever reported separately, as follows: Massachusetts 4 (salmonella infection); New York 1; Florida 1; Louisiana 1; California 1.

Telegraphic morbidity reports from State health officers for the week ended March 15, 1947, and comparison with corresponding week of 1946 and 5-year median—Con.

Division and State	Whooping cough			Week ended Mar. 15, 1947							
	Week ended—		Median 1942-46	Dysentery			Encephalitis, infectious	Rocky Mt. spotted fever	Tularemia	Typhus fever, endemic	Undulant fever
	Mar. 15, 1947	Mar. 16, 1946		Ambic	Bacillary	Unspecified					
<b>NEW ENGLAND</b>											
Maine.....	22	26	36								
New Hampshire.....	5		1								1
Vermont.....	6	18	23								2
Massachusetts.....	198	169	169	1	4		1				4
Rhode Island.....	10	30	34								
Connecticut.....	48	73	73								1
<b>MIDDLE ATLANTIC</b>											
New York.....	165	152	270	6	3		1				3
New Jersey.....	132	178	178	2							
Pennsylvania.....	242	72	205								4
<b>EAST NORTH CENTRAL</b>											
Ohio.....	147	65	116		1						4
Indiana.....	29	22	22				2		1		1
Illinois.....	73	88	88	6			1				6
Michigan †	281	97	120	2							12
Wisconsin.....	152	55	63						1		5
<b>WEST NORTH CENTRAL</b>											
Minnesota.....	8	10	25								4
Iowa.....	21	8	15	1							27
Missouri.....	9	3	10								1
North Dakota.....			1								
South Dakota.....	5	3	1			1					
Nebraska.....	2	3	10								
Kansas.....	21	20	37								2
<b>SOUTH ATLANTIC</b>											
Delaware.....	2	4	1								
Maryland †	90	23	42			1					1
District of Columbia.....	6	2	3								
Virginia.....	129	15	38			162					1
West Virginia.....	31	14	41								
North Carolina.....	64	64	127					1			
South Carolina.....	37	19	57	3	3				1		4
Georgia.....	10	12	16	1	1				4		4
Florida.....	28	10	27	1							5
<b>EAST SOUTH CENTRAL</b>											
Kentucky.....	30	38	38								
Tennessee.....	24	13	21						3		1
Alabama.....	34	15	23								4
Mississippi †	16			1		1			3		5
<b>WEST SOUTH CENTRAL</b>											
Arkansas.....	19	1	10		1	52			1		2
Louisiana.....	2	5	5	6					4		4
Oklahoma.....	16	14	15	1		1					
Texas.....	481	167	211	19	264	84					19
<b>MOUNTAIN</b>											
Montana.....	4	1	10				1				1
Idaho.....	2	5	3								1
Wyoming.....			2								
Colorado.....	8	3	27								
New Mexico.....	12	9	9	1							2
Arizona.....	12	34	31			15					
Utah †	17	9	20						1		1
Nevada.....											
<b>PACIFIC</b>											
Washington.....	51	32	32		1						1
Oregon.....	7	14	23								1
California.....	183	93	286	4	1		1		1		2
<b>Total.....</b>	<b>2,891</b>	<b>1,708</b>	<b>2,709</b>	<b>55</b>	<b>279</b>	<b>317</b>	<b>7</b>	<b>1</b>	<b>21</b>	<b>48</b>	<b>105</b>
Same week 1946.....	1,708			22	275	113	9	0	14	33	86
Median, 1942-46.....	2,709			27	152	52	9	0	13	34	78
11 weeks; 1947.....	27,919			504	3,740	2,536	74	10	438	508	1,112
1946.....	19,980			422	3,195	1,212	94	4	227	533	725
Median, 1942-46.....	26,139			292	2,268	700	94	4	218	533	824

† Period ended earlier than Saturday.

‡ 2-year average, 1945-46.

WEEKLY REPORTS FROM CITIES <sup>1</sup>

City reports for week ended March 8, 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.

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
<b>NEW ENGLAND</b>												
Maine:												
Portland.....	0	0		0		0	1	0	3	0	0	4
New Hampshire:												
Concord.....	0	0		0		0	0	0	1	0	0	
Vermont:												
Barre.....	0	0		0	13	0	0	0	0	0	0	1
Massachusetts:												
Boston.....	9	0		0	29	0	9	0	15	0	0	27
Fall River.....	0	0		0	12	0	3	0	1	0	0	
Springfield.....	0	0		0	7	0	1	0	6	0	0	
Worcester.....	0	0		0	1	0	8	0	5	0	0	16
Rhode Island:												
Providence.....	0	0		0	176	0	2	0	6	0	0	12
Connecticut:												
Bridgeport.....	0	0		0	11	0	1	0	1	0	0	
Hartford.....	0	0		0	42	1	2	0	2	0	0	2
New Haven.....	0	0		0	29	0	0	0	4	0	0	4
<b>MIDDLE ATLANTIC</b>												
New York:												
Buffalo.....	0	0		0		0	7	0	4	0	0	2
New York.....	8	1	3	1	112	3	82	2	136	0	0	49
Rochester.....	0	0		0		1	5	0	14	0	0	4
Syracuse.....	1	0		0		1	5	0	10	0	0	15
New Jersey:												
Camden.....	2	0		0		0	0	0	6	0	0	3
Newark.....	0	0	1	0	4	0	5	0	13	0	0	28
Trenton.....	0	0		0	27	0	2	0	10	0	0	1
Pennsylvania:												
Philadelphia.....	4	0	4	2	17	2	28	0	41	0	0	35
Pittsburgh.....	0	0		1	97	2	4	0	22	0	0	7
Reading.....	0	0		0		0	1	0	3	0	1	3
<b>EAST NORTH CENTRAL</b>												
Ohio:												
Cincinnati.....	2	0		0	1	0	6	0	17	0	0	8
Cleveland.....	1	0	6	1	339	1	8	0	39	0	0	16
Columbus.....	0	0		0	9	0	1	0	6	0	0	7
Indiana:												
Fort Wayne.....	0	0		0	12	0	3	0	3	0	0	
Indianapolis.....	1	1		1	4	0	3	0	21	0	0	20
South Bend.....	0	0		0	14	0	0	0	0	0	0	
Terre Haute.....	1	0		0	1	0	2	0	1	0	0	
Illinois:												
Chicago.....	0	0		1	21	2	37	0	58	0	1	35
Springfield.....	0	0		0		0	4	0	9	0	0	
Michigan:												
Detroit.....	1	0	5	1	6	0	7	0	69	0	0	99
Flint.....	0	0		0	1	0	3	0	6	0	0	10
Grand Rapids.....	0	0		0	2	0	1	0	4	0	1	6
Wisconsin:												
Kenosha.....	0	0		0		0	0	0	1	0	0	6
Milwaukee.....	0	0	1	1	18	1	6	0	10	0	0	31
Racine.....	0	0		0		0	1	0	2	0	0	5
Superior.....	0	0		0	1	0	0	0	2	0	0	
<b>WEST NORTH CENTRAL</b>												
Minnesota:												
Duluth.....	0	0		0		0	0	0	2	0	0	3
Minneapolis.....	5	0		0	9	0	4	0	26	0	0	2
St. Paul.....	0	0		0	2	0	6	0	14	0	0	6
Missouri:												
Kansas City.....	0	0	18	2	2	0	14	0	14	0	0	1
St. Joseph.....	0	0		0		0	0	0	0	0	0	4
St. Louis.....	2	0	182	3	5	0	14	0	8	0	1	11

<sup>1</sup> In some instances the figures include nonresident cases.

City reports for week ended March 8, 1947—Continued

Division, State, and City	Diphtheria cases	Enecephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Polliomvelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
<b>WEST NORTH CENTRAL—continued</b>												
Nebraska:												
Omaha.....	0	0		2		0	4	0	0	0	0	
Kansas:												
Topeka.....	0	0		0	2	0	0	0	2	0	0	
Wichita.....	1	0					6	0	1	0	0	3
<b>SOUTH ATLANTIC</b>												
Delaware:												
Wilmington.....	0	0		0		0	1	0	4	0	1	1
Maryland:												
Baltimore.....	2	0	5	0	7	1	6	0	15	0	0	59
Cumberland.....	0	0		0		0	0	0	1	0	0	
Frederick.....	0	0		0	1	0	0	0	1	0	0	
District of Columbia:												
Washington.....	1	0	2	0	18	0	7	0	9	0	0	2
Virginia:												
Lynchburg.....	0	0		0		0	1	0	1	0	0	2
Richmond.....	0	0		0	70	2	0	0	2	0	0	1
Roanoke.....	0	0		0		0	0	0	7	0	0	
West Virginia:												
Charleston.....	0	0		0		0	0	0	1	0	0	
Wheeling.....	0	0		0		0	1	0	0	0	0	
North Carolina:												
Raleigh.....	0	0		0	4	0	0	0	0	0	0	3
Wilmington.....	1	0		0	2	0	0	0	0	0	0	
Winston-Salem.....	0	0		0	17	0	3	1	2	0	0	
South Carolina:												
Charleston.....	0	0	22	0	5	0	0	0	0	0	0	1
Georgia:												
Atlanta.....	0	0	146	2	5	0	4	0	7	0	0	3
Brunswick.....	0	0		0		0	0	0	0	0	0	
Savannah.....	0	0	3	1	61	0	0	0	0	0	0	
Florida:												
Tampa.....	1	0	3	0	1	1	1	0	3	0	0	
<b>EAST SOUTH CENTRAL</b>												
Tennessee:												
Memphis.....	1	0		0	2	0	12	0	5	0	0	3
Nashville.....	0	0		0		0	7	0	7	0	0	2
Alabama:												
Birmingham.....	1	0	18	1	10	0	2	0	3	0	0	3
Mobile.....	2	0	7	1	10	1	2	0	2	0	0	
<b>WEST SOUTH CENTRAL</b>												
Arkansas:												
Little Rock.....	0	0		0		0	1	0	0	0	0	7
Louisiana:												
New Orleans.....	0	0		0	31	0	13	1	3	0	0	
Shreveport.....	0	0		2		0	6	1	2	0	0	
Oklahoma:												
Oklahoma City.....	0	0	18	0		0	5	0	0	0	1	4
Texas:												
Dallas.....	0	0		0	10	0	1	0	4	0	0	11
Galveston.....	0	0		0		0	1	0	6	0	0	
Houston.....	1	0		0		0	14	1	4	0	0	5
San Antonio.....	0	0	22	1	4	1	3	0	1	0	0	
<b>MOUNTAIN</b>												
Montana:												
Billings.....	0	0		0		0	0	0	0	0	0	
Great Falls.....	0	0		0	110	0	2	0	0	0	0	
Helena.....	0	0		0	3	0	0	0	0	0	0	
Missoula.....	0	0		0		0	0	0	0	0	0	4
Idaho:												
Boise.....	0	0	9	0		0	1	0	0	0	0	
Colorado:												
Denver.....	3	0	31	3	25	0	15	0	25	0	0	1
Pueblo.....	0	0		0		0	4	0	7	0	0	
Utah:												
Salt Lake City.....	0	0		0	2	0	1	0	3	0	0	

## City reports for week ended March 8, 1947—Continued

Division, State, and City	Diphtheria cases	Enecephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Pollomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle.....	1	0		0	2	0	6	0	8	0	0	1
Spokane.....	0	0		0	7	1	0	0	8	0	0	
Tacoma.....	0	0		0	1	0	0	0	2	0	0	1
California:												
Los Angeles.....	6	0	3	0	4	1	4	1	18	0	0	23
Sacramento.....	0	0		0	1	0	2	0	1	0	0	2
San Francisco.....	1	0		0	16	2	6	0	12	0	1	
Total.....	59	2	459	27	1,455	24	428	7	786	0	7	628
Corresponding week, 1946*.....	84		93	40	10,876		377		1,134	3	7	533
Average 1942-46*.....	68		169	* 37	*5,701		* 456		1,701	1	10	723

\*3-year average, 1944-46.

\*5-year median, 1942-46.

\* Exclusive of Oklahoma City.

*Dysentery, amebic.*—Cases: Boston 1; New York 4; Newark 2; Chicago 1; Detroit 2; St. Louis 1.*Dysentery, bacillary.*—Cases: Chicago 1; New Orleans 1; Los Angeles 2.*Dysentery, unspecified.*—Cases: Cincinnati 3; San Antonio 8.*Tularemia.*—Cases: Memphis 1; Nashville 1.*Typhus fever, endemic.*—Cases: Richmond 1; Brunswick 1; Memphis 1; Nashville 1.

## Rates (annual basis) per 100,000 population, by geographic groups, for the 90 cities in the preceding table (latest available estimated population, 34,602,700)

	Diphtheria case rates	Enecephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcus, case rates	Pneumonia death rates	Pollomyelitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England.....	23.5	0.0	0.0	0.0	836	2.6	70.6	0.0	115	0.0	0.0	173
Middle Atlantic.....	6.9	0.5	3.7	1.9	119	4.2	64.3	0.9	120	0.0	0.5	68
East North Central.....	3.6	0.6	7.3	3.0	261	2.4	49.9	0.0	151	0.0	1.2	150
West North Central.....	16.1	0.0	301.7	14.1	40	0.0	96.5	0.0	135	0.0	2.0	60
South Atlantic.....	8.2	0.0	295.8	4.9	312	6.5	39.2	1.6	87	0.0	1.6	118
East South Central.....	23.6	0.0	147.5	11.8	130	5.9	135.7	0.0	100	0.0	0.0	47
West South Central.....	2.5	0.0	101.6	7.6	114	2.5	111.8	7.6	36	0.0	2.5	69
Mountain.....	23.2	0.0	317.7	23.8	1,112	0.0	182.7	0.0	278	0.0	0.0	49
Pacific.....	12.7	0.0	4.7	0.0	49	6.3	28.5	1.6	77	0.0	1.6	42
Total.....	8.9	0.3	69.4	4.1	220	3.6	64.7	1.1	110	0.0	1.1	95

**TERRITORIES AND POSSESSIONS**

**Puerto Rico**

*Notifiable diseases—4 weeks ended February 22, 1947.*—During the 4 weeks ended February 22, 1947, cases of certain notifiable diseases were reported in Puerto Rico as follows:

Disease	Cases	Disease	Cases
Chickenpox.....	33	Poliomyelitis.....	17
Diphtheria.....	63	Syphilis.....	108
Dysentery, unspecified.....	7	Tetanus.....	5
Gonorrhoea.....	161	Tuberculosis (all forms).....	829
Influenza.....	148	Typhoid and paratyphoid fever.....	25
Malaria.....	420	Typhus fever (murine).....	4
Measles.....	2	Whooping cough.....	62

\* \* \*

**DEATHS DURING WEEK ENDED MAR. 8, 1947**

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

	Week ended Mar. 8, 1947	Correspond- ing week, 1946
<b>Data for 93 large cities of the United States:</b>		
Total deaths.....	10, 206	9, 885
Median for 3 prior years.....	9, 583	-----
Total deaths, first 10 weeks of year.....	100, 149	104, 279
Deaths under 1 year of age.....	856	601
Median for 3 prior years.....	601	-----
Deaths under 1 year of age, first 10 weeks of year.....	8, 233	6, 081
<b>Data from industrial insurance companies:</b>		
Policies in force.....	67, 329, 750	67, 180, 530
Number of death claims.....	12, 818	14, 660
Death claims per 1,000 policies in force, annual rate.....	9.9	11.4
Death claims per 1,000 policies, first 10 weeks of year, annual rate.....	9.8	11.3

# FOREIGN REPORTS

## CANADA

*Provinces—Communicable diseases—Week ended February 22, 1947.*—During the week ended February 22, 1947, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox.....		45	2	296	460	21	27	79	72	1,002
Diphtheria.....		1		23	6	4	2		2	38
Dysentery:										
Amebic.....					2					2
Bacillary.....						1				1
German measles.....				21	71		5	8	5	110
Influenza.....		98			27				8	133
Measles.....		118	2	56	94	265	106	200	514	1,355
Mumps.....		4		94	533	33	172	7	255	1,098
Poliomyelitis.....				1	2					3
Scarlet fever.....		6	10	90	80	2		4	14	206
Tuberculosis (all forms).....		11	7	83	28	11	19	19	55	233
Typhoid and paratyphoid fever.....				5	2	2				9
Undulant fever.....					2	1			1	4
Veneral diseases:										
Gonorrhoea.....	2	26	29	101	106	41	28	30	75	438
Syphilis.....		19	12	79	83	13	16	2	45	269
Other forms.....										4
Whooping cough.....		8		34	139	11	5	2	28	227

### REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual incidence, only those places are included which had not previously reported any of the above-named diseases, except yellow fever, during recent months. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday of each month.

#### Plague

*China—Fukien Province—Tsinking.*—For the week ended January 4, 1947, 21 cases of plague with 12 deaths were reported in Tsinking, Fukien Province, China.

*India—Cawnpore.*—For the week ended March 1, 1947, 39 cases of plague were reported in Cawnpore, India.

#### Smallpox

*Burma.*—For the week ended February 22, 1947, 187 cases of smallpox with 59 deaths were reported in Burma. For the same period 103 cases of smallpox with 39 deaths were reported in Rangoon, Burma.

*China—Shanghai.*—For the week ended March 1, 1947, 66 cases of smallpox were reported in Shanghai, China.

*France—Paris.*—For the week ended March 8, 1947, 5 cases of smallpox were reported in Paris, France.

**Typhus Fever**

*Panama (Republic).*—For the month of February 1947, 11 cases of typhus fever were reported in the Republic of Panama.