A HALF CENTURY'S PROGRESS AGAINST TUBERCULOSIS IN NEW YORK CITY 1900-1950

By
GODIAS J. DROLET
and
ANTHONY M. LOWELL

NEW YORK TUBERCULOSIS
AND HEALTH ASSOCIATION
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A review of historical developments in the campaign against tuberculosis in New York City, including selected information dealing with health conditions beginning in 1804 and covering the era prior to the consolidation in 1898 of the five boroughs into the City of Greater New York. Secondly, a summary of the statistics relating to the prevalence of tuberculosis between 1900 and 1950 with reference section of the annual records of registration of tuberculosis cases and deaths.

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NEW YORK TUBERCULOSIS
AND HEALTH ASSOCIATION

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TO

Physicians, nurses, social workers,
public and private officials who labor
daily in the vineyard succoring the sick,
and relieving the anxiety of the needy,
this compendium which attempts
to measure their life-saving
work is humbly offered.

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F O R E W O R D

THE Statistical Division of the New York Tuberculosis and Health Association receives throughout the year numerous calls for statistics dealing with tuberculosis and other health conditions in New York City. These enquiries come from physicians, health and social workers, educators, representatives of the press, students, as well as from the general public. It is obvious that in a large community like New York sources of information of this type are scattered and not always known to many. The detailed data in the present monograph have therefore been assembled to assist all interested in precise information on the subject.

This reference handbook has been prepared to make readily available the important record of tuberculosis in New York City during the first half of the present century. There have been added selected reports dealing briefly with general health conditions now and prior to the Twentieth Century, also a few recent statistics concerning the United States, the larger cities and the various states. These comparative data we hope will help the reader to appreciate better the significance and the relative importance of New York City's health conditions between 1900 and 1950.

The authors wish to express their sincere thanks first of all for the cordial and helpful assistance given them by the Department of Health of the City of New York, particularly the officials of the Bureau of Tuberculosis and of the Bureau of Records and Statistics, likewise the Population Division of the United States Bureau of the Census in making available basic reports.

Within the Association we are indebted to Mr. Thomas H. Darling and Mr. Julius F. Koch for their skillful assistance in the preparation of charts and maps included in this handbook, likewise to Mrs. Claire Turtz for the expert care taken in the difficult reproduction of the many statistical tables. The authors have also had the benefit of the long experience in social and health work of Mrs. K. Z. Whipple, who reviewed the entire mamuscript.

The constant encouragement and support of Dr. Herbert R. Edwards, former Director of the Bureau of Tuberculosis of the Department of Health of the City of New York and now the Executive Director of the New York Tuberculosis and Health Association, has contributed greatly to the completion of this task.

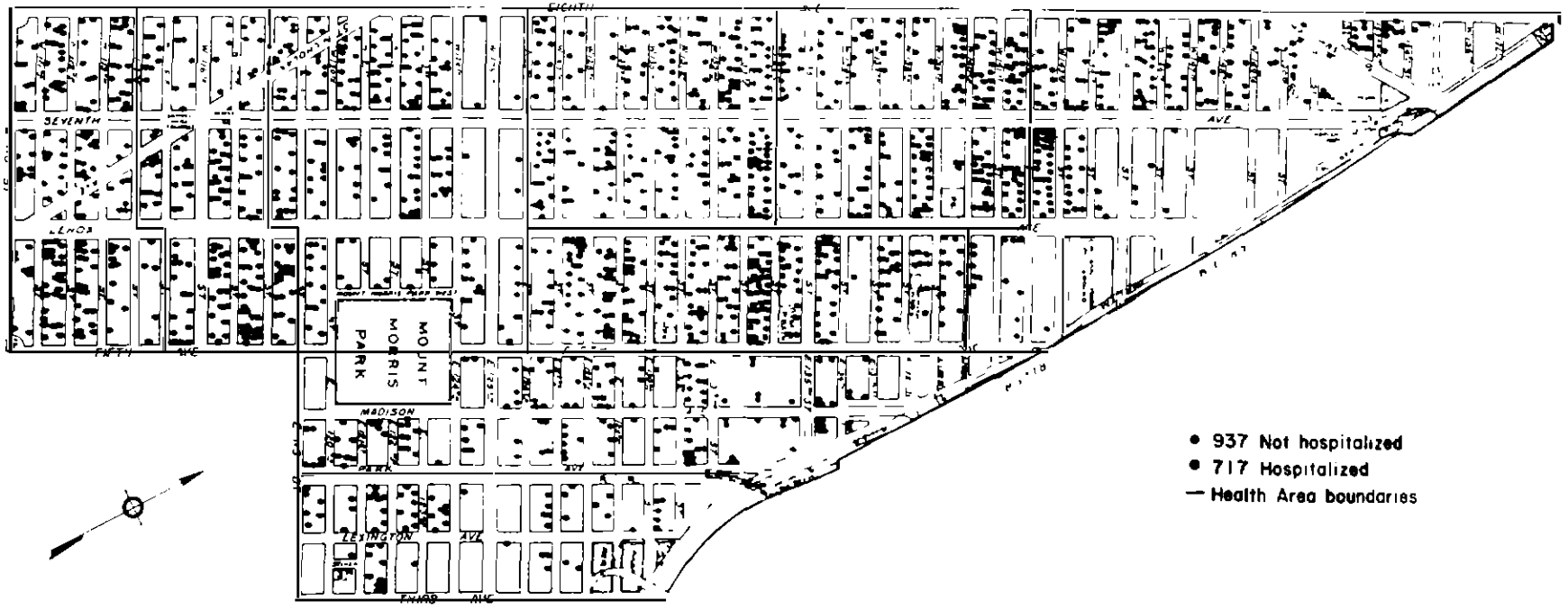
GODIAS J. DROLET

November, 1952

ANTHONY M. LOWELL

There are still "LUNG BLOCKS" riddled with tuberculosis in New York City.

TUBERCULOSIS CASES* - CENTRAL HARLEM



*1654 Known cases of tuberculosis registered with the Department of Health on June 1, 1951

"OLD NEW YORK", 1800-1900

OLD New York, it must be remembered, prior to 1898 included only the territory now described as the boroughs of Manhattan and of the Bronx. At the beginning of the previous century, namely in 1800, it had barely sixty-two thousand inhabitants. As a matter of fact, even in 1810 the population totalled 96,373 only; but by 1830 it had doubled, being then 202,589. Twenty years later, in 1850, the population was two and a half times as great, being well over a half a million (515,394).

From 1850 to 1870 New York's population multiplied again two and a half times; the city had then a million and a third (1,340,704) inhabitants. The next twenty years saw another million added; the Federal Census of 1890 accounted for 2,368,671 inhabitants.

Finally, at the close of the nineteenth century, New York City could boast of a population of three million and a half. But at that time there had been added onto the original territory the spacious boroughs of Brooklyn, Queens and Richmond.

A brief review of health conditions during the nineteenth century is needed if we are to appreciate the remarkably favorable conditions prevailing subsequently. As against a general death rate in New York of only 10 per thousand population nowadays, death rates two and three times as much were the rule formerly; during certain epidemics they rose almost to 50, particularly when cholera struck.

Sanitary knowledge in those days was exceedingly indefinite. Such diseases of childhood as diphtheria and scarlet fever were thought to be due "to climatic conditions, to fear, or to the will of God". Superstitious beliefs were prevalent, the germ theory of disease was unknown or those who did believe in germs held to the doctrine of spontaneous generation. While vaccination for smallpox was known, its popularity was hampered by defective and often contaminated application. Furthermore, the extremely rapid growth of population, especially in Manhattan, led to extreme over-crowding and an excessive spread of communicable diseases.

As quoted by Armstrong(1), from Stephen Smith's book, "The City that Was", it was said of conditions about 1860 that "New York gradually became the natural home of every variety of contagious disease, and the favorite resort of foreign pestilences. Smallpox, scarlet fever, measles, diphtheria were domestic pestilences with which the people were so familiar that they regarded them as necessary features of childhood. Malarial fevers...were regularly announced in the autumnal months as having appeared with their 'usual severity'. The 'White Plague' or consumption was the common inheritance of the poor and the rich alike.

"With the immigrant came typhus and typhoid fevers which resistlessly swept through the tenement houses decimating the poverty-stricken tenants. At intervals, the great oriental plague, Asiatic cholera, swooped down upon the city with fatal energy and gathered its enormous harvest of dead...Very few tenements had waterclosets in the houses; they had privies in the yard, which as a rule were insufficient for the accommodation of the numbers of people crowded into the houses; many were not connected with the sewers; they were seldom cleaned and often allowed to overflow...rendering the neighborhood offensive..."

Unique reports tabulated by Dowling of the City Inspector's Department for the fifty years from 1804 to 1853, give a precise evaluation of mortality rates at the beginning of the nineteenth century. During the five-year period 1804-1808, when the city's population was slightly over 80,000, the general death rate was nearly 28 per thousand. Almost twenty-five percent of all the deaths was assigned to "consumption". The second leading cause of death in the terms of the day was "convulsions"; this was followed by cholera infantum, marasmus and atrophia. Some deaths were listed as due to odd causes. It is related for instance in 1805 that there had been 11 deaths due to "drinking cold water". In reports of a few years later only, there were listed deaths due "to furor of the womb"; others, as caused by rattlesnake bites; even "fright" was listed as cause of death. In the 1830's, many deaths were charged to "salivation". In those unsanitary days, it is not surprising likewise that many deaths were due to "worms".

An interesting and precise measurement of the mortality at that time was made by Mary Dalton(2), in 1934 from "The Returns of Death in the City of New York for the years, 1804, 1805, 1806, 1807 and 1808." Going carefully over the records she worked out that the expectancy of life at that time for those who had survived to age twenty was 29.8 years. The significance of that figure can be better understood when we see that nowadays the expectancy of life over and above that age for men is close to fifty years and for women exceeds even fifty-four years.

Child life in those days was exposed to extreme dangers; the infant mortality rate often reached from 240 to 250 per thousand births; in other words one child out of every four born was dead by the end of the first year.

Fifty years later, namely during the five-year period 1849-1853, the general death rate averaged even fifty percent higher, namely 39.7 per thousand population. Just at that time an epidemic of cholera along with smallpox and dysentery had smitten the population and caused an extreme loss of life. Even then, "consumption" still headed the death list, striking at a rate of 431 per hundred thousand population. Once more, the second leading cause of death was said to be due to "convulsions", followed this time by "cholera".

For the first time among the leading causes of death in 1850 mention of "heart disease" is made; but above it was "dropsy", whatever may have been its causes. Deaths due to "apoplexy" also exceeded

LEADING CAUSES OF DEATH, OLD NEW YORK (Manhattan, Bronx)

Five-Year Period 1804-1808

Cause of Death	Annual Average Deaths	Rate*
Consumption	438	550
Convulsions	188	236
Cholera infantum	129	162
Marasmus, atrophia	124	156
Inflam. chest, lungs	101	127
Croup	88	110
Dropsy	86	108
Casualties, violence	79	99
Smallpox	74	93
Typhus, typhoid	73	92
Yellow fever	54	68
Dysentery	43	54
Worms	42	53
Whooping cough	36	45
Teething	36	45
Inflam. bowels	34	43
Sprue	26	33
Dropsy in head	23	29
Apoplexy	21	26
Palsy	19	24
Other causes	490	614
All causes	2204	2767

Population 1806 = 79,653.

Five-Year Period 1849-1853

Cause of Death	Annual Average Deaths	Rate*
Consumption	2322	431
Convulsions	1576	292
Cholera	1107	205
Inflam. chest, lungs	1077	200
Marasmus, atrophia	1029	191
Dysentery	956	177
Cholera infantum	839	156
Dropsy in head	801	149
Diarrhea	651	121
Apoplexy	552	102
Croup	476	88
Inflam. bowels, stomach	470	87
Smallpox	454	84
Scarlet fever	454	84
Debility	432	80
Inflam. brain	405	75
Dropsy	321	60
Heart disease	258	48
Measles	230	43
Congest. lungs	219	41
Other causes	6787	1258
All causes	21416	3972

Population 1851 = 539,107.

*Per 100,000. Based upon records of City Inspector's Department.

LEADING CAUSES OF DEATH, NEW YORK CITY
(Manhattan, Bronx, Brooklyn, Queens, Richmond)

Five-Year Period 1900-1904

Cause of Death	Annual Average Deaths	Rate*
Pneumonias	10222	279
Tuberculosis	9396	256
Diarrhea, enteritis	6204	169
Nephritis, Bright's dis.	5634	154
Heart diseases	4664	127
Violence	4312	118
Apoplexy	2521	69
Cancer	2504	68
Diphtheria, croup	2120	58
Bronchitis	1768	48
Senile debility	1029	28
Scarlet fever	830	23
Cirrhosis of liver	787	21
Typhoid fever	705	19
Measles	676	18
Puerperal dis.	673	18
Convulsions	644	18
Influenza	509	14
Cer. spi. mening.	502	14
Alcoholism	474	13
Other causes	14952	411
All causes	71126	1940

Population 1902 = 3,665,825.

Five-Year Period 1945-1949

Cause of Death	Annual Average Deaths†	Rate*
Heart diseases	31034	399
Cancer	14560	187
Accidents	3836	49
Cerebral hemorrhage	3665	47
Dis. early infancy	3402	44
Diabetes	3398	44
Tuberculosis	3130	40
Pneumonias	2889	37
Nephritis	2541	33
Dis. liver, gallbladder	1842	24
Dis. arteries	1213	16
Suicide	910	12
Ulcer, stomach, duodenum	663	9
Syphilis	606	8
Hernia, intest. obst.	571	7
Leukemias, aleukemias	551	7
Disease, prostate	418	5
Nonmalignant tumors	346	4
Homicide	345	4
Alcoholism	288	4
Other causes	3629	47
All causes	79837	1027

Population 1947 = 7,771,792.

*Per 100,000. †Classified according to 5th rev. Inter. List Causes of Death. Based upon reports, Bureau of Records and Statistics, Department of Health, City of New York.

those assigned to "heart disease".

We have to study the comparative mortality figures for the five-year period 1900-1904 to appreciate the changes that had occurred during the nineteenth century. During the five years just mentioned, the general death rate was now below 20, namely 19.4 per thousand population. For the first time we find tuberculosis stepping down to second place, being preceded by the pneumonias which were said to be responsible on an average annually for some 10,000 deaths, the mortality rate of the latter being 279 per hundred thousand population. We still find, however, as third leading cause of death, diarrhea and enteritis; then, nephritis and heart diseases.

Epidemics of a Former Day: Nineteenth Century Plagues

First it should be recalled that between 1800 and 1850 the general death rate, except in epidemic years, ranged usually between twenty and thirty per thousand population. Occasionally, with the lack of control of communicable diseases, the nature or cause of which was unknown in those days, the death rate would suddenly rise to even greater levels. Back in 1832 a cholera epidemic was responsible for 3,513 deaths and the death rate that year rose to 49.9 per thousand -- five times our present rate. Another cholera epidemic in 1849, with 5,071 deaths, sent the death rate again to 48.9 (see Fig. 1).

Between 1850 and 1900 the general death rate usually ranged about the same high level as during the first half of that century. Once more cholera struck heavily in 1854, being responsible for 2,509 deaths, while at the same time an epidemic of smallpox came along causing 611 deaths; consequently the death rate was 47.1 that year. It was not until 1897 that the general death rate in New York City fell below 20; that year it was 19.8.

During the nineteenth century under discussion, the population of New York City was repeatedly scourged by a variety of epidemics, smallpox for instance appearing repeatedly. In 1804, it caused 169 deaths in the comparatively small population of those days; in 1824, 394 deaths; in 1851, 562; then in 1865, 664 more; in 1872, 1,666; in 1875, 1,899; in 1881, 503 and, in 1893, 302. The last epidemic of this type occurred in 1901 and 1902 when altogether 720 deaths occurred. Thereafter smallpox was conquered by vaccination.

Cholera, when it came along dealt heavy blows. As already mentioned, in 1832 there were 3,513 deaths, and again in 1849, 5,071. Within another five years, namely in 1854, it caused 2,509 more deaths; then in 1866, 1,137. Fortunately, in 1892 when nine deaths of cholera occurred this was the last visitation of an epidemic of that type.

Of children's diseases, it is to be noted that in 1836 and 1837, measles were responsible for 443 deaths; scarlet fever, for 579 more. In 1887, diphtheria struck most terribly when it caused 4,509 deaths. Mention

Fig. 1

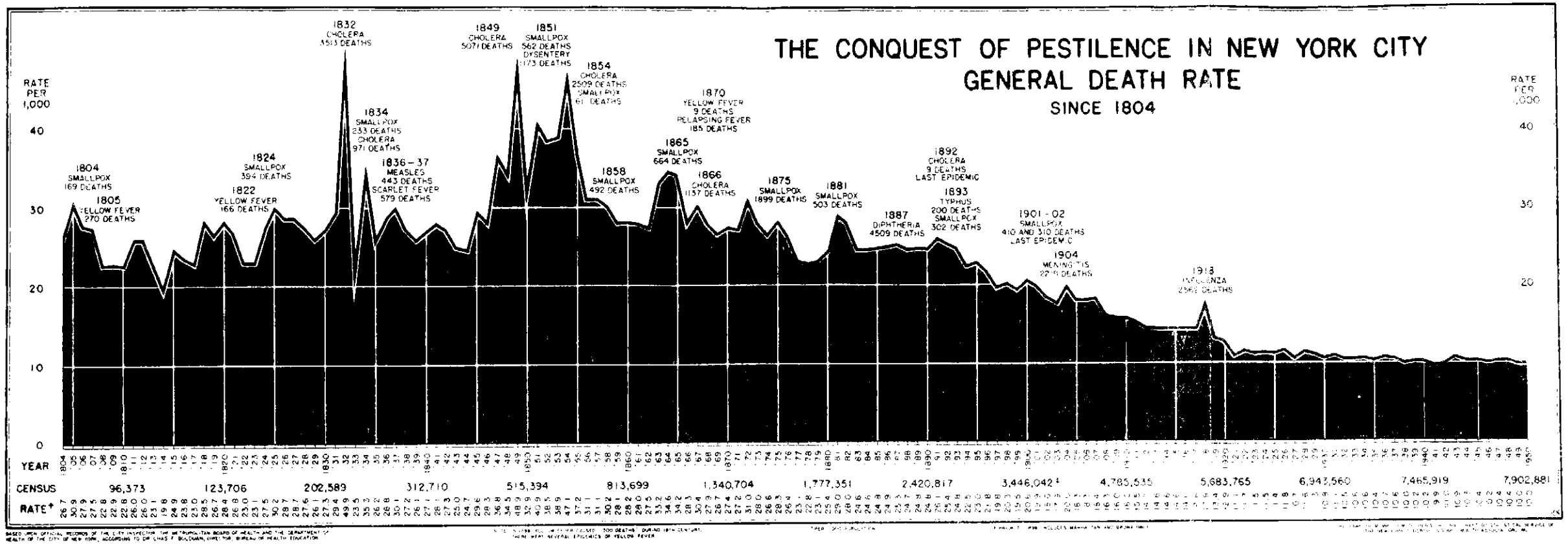
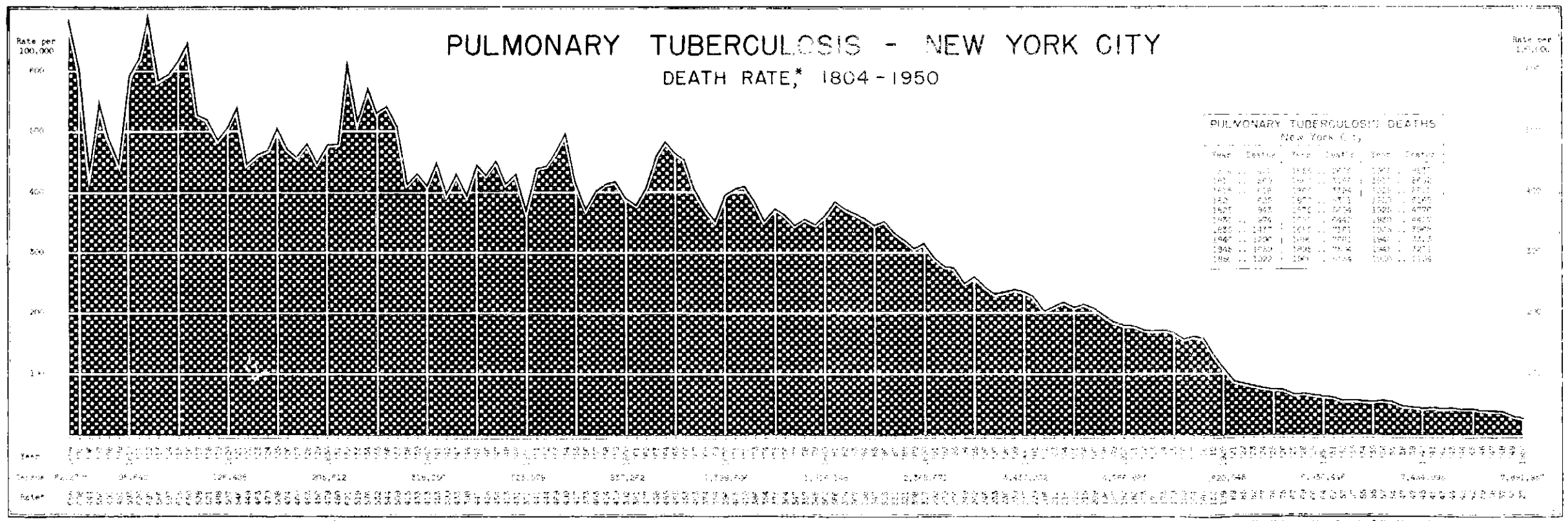


Fig. 2



* Death rates per 100,000 population in expanding area: 1804-1897 (Manhattan, Bronx), 1898-1937 (Manhattan, Bronx, Brooklyn), 1938-1950 (entire corrugated of Greater New York). † Census of 1800.

Compiled from reports of City Inspector, the Metropolitan Board of Health and the Department of Health, City of New York, by C. V. Chapin and A. M. Lowell, New York Tuberculosis and Health Association.

is also made in the records of an epidemic of dysentery in 1851 which was responsible for 1,173 deaths. The mortality records of those days do not single out typhoid as being notably responsible and yet deaths from this cause were taking place continuously.

Tuberculosis

In the case of tuberculosis the most dependable records in those days refer to "consumption". For much of that period the specific cause of what we now label as the non-pulmonary forms of tuberculosis was not known and therefore the reports available do not measure the total mortality due to the tubercle bacillus. Without the control we now enjoy of bovine tuberculosis, it is likely that the mortality from this disease in children was excessive.

However, if one looks over the record for "consumption" or pulmonary tuberculosis from 1804, for instance, until the end of that century, it is seen that its rate up to 1840 often rose to 600 or more per hundred thousand population (see Fig. 2).

In 1804, the death rate from pulmonary tuberculosis in New York City was as high as 688 per hundred thousand; in 1812, it even went to 697. It was not until 1838 that the rate came down below 500 per hundred thousand population. Between that year and 1872, it oscillated around 400, often above it. Then, beginning in 1882, started the continuous decline in mortality which has been taking place since that time. However in 1900 the death rate from pulmonary tuberculosis in New York City was 237, which at least was only one-third of what it had been at the beginning of the nineteenth century.

* * *

THE TWENTIETH CENTURY

New York City Grows, 1900 to 1950

IN 1900 the population of New York City totalled nearly three and a half million inhabitants (Federal Census 3,437,202). Only two years previously the annexation of Brooklyn, the various small communities of Queens and Staten Island had added onto the older central section--Manhattan and the Bronx--one million three hundred thousand additional inhabitants. More than one million of them were residents of the up-to-then separate city of Brooklyn.

In Greater New York at that time more than one-half of the total population was then concentrated in the Borough of Manhattan (1,850,093). The 420,000 residents of Staten Island, Bronx, and Queens comprised only twelve percent of the city's population; Brooklyn contained one-third.

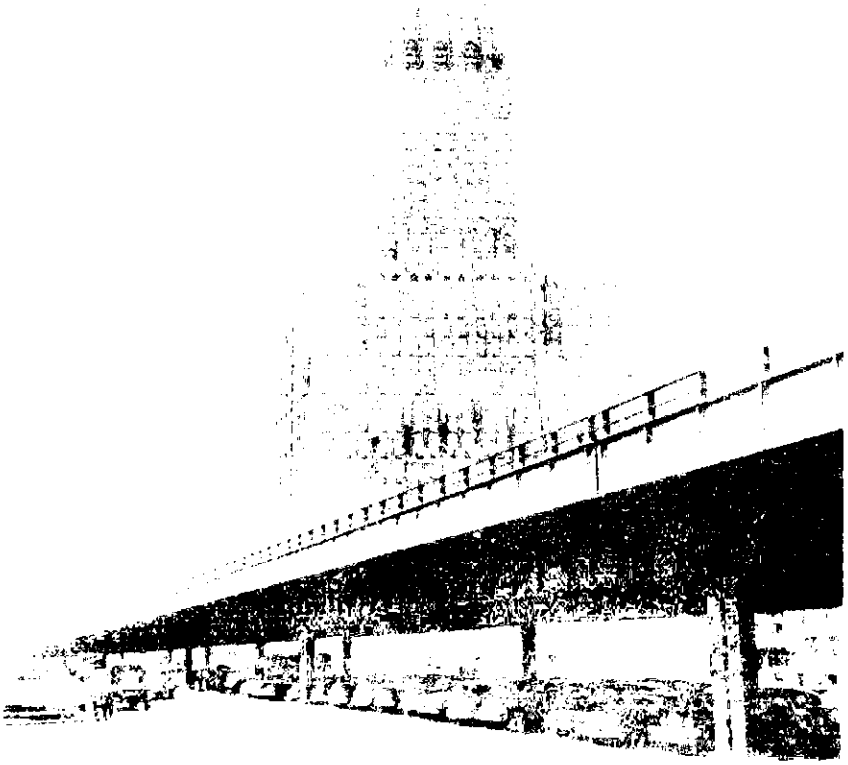
Greater New York has an area of 359 square miles. If, however, reference is made only to the land area, it totals 314.2 square miles. Taking Manhattan's 22.3 square miles as a unit, it is seen that the area of the Bronx, 43.4 square miles, is practically double. That of Staten Island, 60.3 square miles, is 2.7 times the size of Manhattan. Brooklyn's 76 square miles reveal that borough to be three and a half times the size of the central borough. Queens overshadows in size all of the other four boroughs; its land area of 112 square miles is five times that of Manhattan.

With nearly 88 percent of New York's population in 1900 concentrated in Manhattan and in Brooklyn, the congestion was greatest in these two boroughs. On an average, in Brooklyn the density of population was 15,300 per square mile; in Manhattan it was more than five times as great, namely 83,000 residents per square mile. In the Bronx the density of population averaged 4,600 per square mile. But in the large and still comparatively undeveloped sections of Queens and of Staten Island the population coverage per mile was only 1,360 and 1,110 respectively. Furthermore, in all these five boroughs the population was far from being evenly distributed. In Manhattan it was then concentrated mostly below Fifty-ninth Street; in the Bronx, mainly in the Mott Haven, Melrose and Morrisania sections; in Brooklyn, in Williamsburg, Fort Greene, Red Hook-Gowanus and the Bedford sections. In Queens, isolated, individual communities prevailed, the larger ones being Long Island City, Astoria, Flushing and Jamaica.

Racial Composition

Of the three and a half million residents of New York City, at the time of the 1900 Federal Census, 60,666 were Negroes. The other colored, mostly Orientals, numbered only 6,638. The white population besides the 2,108,980 native-born included 1,260,918 foreign-born, the latter comprising more than a third of the entire population of the city. The largest number of the foreign-born white, namely 322,343, were from Germany, followed by 275,102 born in Ireland. Some 317,000 had been born in Russia, Poland, Austria-Hungary and Roumania; the majority of them were Jews.

New York's Changing Scene*
WEST STREET: (upper) About 1887, looking north at Vesey Street; (lower) today, elevated highway and New York Telephone Company building cuts space and crowds sky. *Reproduction by courtesy, Seidman Photo and New York Daily News.



Other foreign-born whites then residing in New York City also included 145,433 born in Italy; 80,000 from either England, Wales or Scotland. Lesser numbers had come from Sweden, France, or from Canada.

In 1900, the age composition of the population was quite different from what it is now (see p. 4). At that time nearly a third or 30.7 percent was made up of children under fifteen years of age; old folks, sixty-five and over, comprised only 2.8 percent of the population. Nowadays the proportion of the child population has been reduced by a third from what it was previously, and that of the aged is two and a half times as great. The latter now comprises 7.7 percent of the entire population.

During the first half of the twentieth century the great metropolis of the New World, New York City, continued to grow at a varying pace. The greatest gain in population was made during the first decade when its inhabitants increased in number from some 3,400,000 to 4,800,000, actually by 1,329,681, an increase of no less than thirty-nine percent. Between 1910 and 1920 growth was at a lesser rate; the population increased by 853,165 or by eighteen percent. The decade of 1920 to 1930 saw again an increased rate of gain, the population growing by no less than 1,310,000 or by twenty-three percent. The effect of Federal legislation restricting immigration soon began to be felt and between 1930 and 1940 the gain in population totalled only 524,549, an increase of but 7.6 percent. It was even less in the last decade of that first half of the century; between 1940 and 1950, the population increased by 436,962 or by slightly less than six percent.

As a result of the great gain in population during the first decade, the proportion of the foreign-born residing here in 1910 reached forty percent of the entire population; they then numbered almost two million. The composition of the foreign-born group at that time began to show different proportions. There was a comparative reduction in the number of those born in Ireland or Germany. Those from Italy were now two and a half times more numerous than ten years previously. There were now 340,770 foreign-born Italians here. Those from Russia were almost three times the number they were ten years before; those from Austria-Hungary doubled; likewise those from Poland. Negroes numbered 91,709 in 1910.

In 1920 those residents of New York born in Russia, 487,275, represented the largest number of the foreign-born. In addition there were 157,000 from Austria; 146,000 from Poland; and 65,000 from Hungary. That year Negroes in New York City numbered 152,467.

In 1920, the proportion of the population which was foreign-born was reduced to 35.6 percent of the total; in 1930, it ropresented 33 percent; in 1940, 28 percent; and, by 1950, it was now down to 23 percent. In 1950, New York's foreign-born white numbered 1,784,089, and the native-white 5,332,027. There were now 747,780 Negroes and 28,028 "other colored", mostly Orientals.

The first half of the twentieth century had seen the population of New York grow to more than double, namely, from some 3,500,000 inhabitants to nearly 8,000,000, not to mention the extreme growth which the surrounding suburban areas of Long Island, New York State and New Jersey have also witnessed.

NEW YORK'S CHANGING SCENE*

HESTER STREET: (left) About 1900, in heart of lower East Side; (right) today, automobiles have displaced pushcarts. *Reproduction by courtesy, New York Historical Society and New York Daily News.

During those fifty years a remarkable development in transportation facilities had perforce taken place. The barriers created by the surrounding waters of the East River, the Hudson and the Harlem River, around Manhattan had been bridged over or had seen a series of tunnels dug under them. Between 1900 and 1910 alone in addition to the already existing Brooklyn Bridge there were erected the Williamsburg, the Queensboro, and the Manhattan bridges across the East River. Over to New Jersey was opened in 1927 the Holland Tunnel; in 1931 was erected the George Washington Bridge; finally, in 1937, the Lincoln Tunnel. More recently, the Triboro Bridge linked Manhattan, Bronx and Queens. Tunnels over to Queens have also been dug under the East River; likewise in 1950 between the Battery and Brooklyn. At the same time a number of important lines for rapid transit were built, not to mention already existing "elevated" lines.

During the fifty years under consideration, the internal growth of the city was not at an even rate. Manhattan, at the turn of the century,was already crowded. As a result between 1900 and 1950 its population increased from 1,854,052 to 1,961,856 or by 107,804, the least of any of the five boroughs of New York City. Numerically the next important increase was on Staten Island where the population, increasing by 125,000, trebled. Brooklyn came along with an increase of 1,570,000 in population; in 1950 the number of its inhabitants, 2,739,000 was 1.7 times what it was in 1900.

It is particularly in the boroughs of the Bronx and of Queens that the major growth of New York City took place, especially when rapid transit lines made these areas more accessible. In the Bronx the population increased by 1,250,000, namely, from 201,646 to 1,452,691--seven times as large in 1950 as it was in 1900. Finally there has been the unusual and remarkable growth in the Borough of Queens, said to be the fastest growing section of the United States. Between 1900 and 1950 it registered an increase of no less than 1,403,000, so that lately its total population, 1,557,179, is ten times what it was originally when it was scattered mostly in small disconnected communities.

In relation to the land area of the great city, the density of the population per square mile in 1950 averaged 25,120; it was least on Staten Island, 3,180 per square mile only. Queens, even with its very great growth, but because of its larger size, had a density of population of 13,850 per square mile in 1950. In the Bronx, the density was 33,440; in Brooklyn, it was 36,030. Finally, in Manhattan, the density of population per square mile was 87,900, barely five thousand more than fifty years previously.

Changes in Racial Composition

Great and significant changes in the white and non-white composition of the city have taken place particularly during the last decade.

Between 1940 and 1950, the white population of the city as a whole increased by 2.0 percent only; in the boroughs of Manhattan, the Bronx and Brooklyn it actually decreased. The non-white population

during the decade just mentioned rose from 477,494 to a total of 775,753, an increase of nearly three hundred thousand or of 62 percent. In Manhattan the non-white population increased by 29 percent; on Staten Island, by 54 percent; in Brooklyn, by 93 percent; in Queens, by 99.7 percent; and, in the Bronx, by no less than 310 percent. The colored population was now distributed as follows: 5,492 resided on Staten Island, 53,723 in the Borough of Queens; 100,048 in the Bronx; 212,989 in Brooklyn; finally 403,501 in Manhattan (see p.5).

With regard to concentration, the last Census enumeration indicates that in the Borough of Queens some 30,000 resided in the Jamaica-East Section and 11,757 in the Corona Section. In the Bronx there were 18,145 in the Mott Haven District and 68,220 now in Morrisania. Relatively small numbers resided in the other Bronx districts; however, there were 7,106 in Tremont. In Brooklyn, first of all the non-white population was largest in the Bedford District with 124,501 residents, followed by 41,081 in the Fort Greene District. In Brownsville there were 18,435 and both in Bushwick and Red Hook-Gowanus about 7,500 each. In the Borough of Manhattan, both in the Lower East Side and the Lower West Side there were nearly equal numbers, around 13,000 in each. The non-white population in East Harlem numbered 38,199; in the Riverside District, 52,545; in the Washington Heights section 77,801; and, in Central Harlem, 205,442.

During the last decade there has also been a large influx of Puerto Ricans into New York City. Official figures of their number have not been published, but studies of the Federal Census records by the Welfare and Health Council of New York City show in 1950 that there were here approximately some 246,000 people who were born in Puerto Rico or of Puerto Rican parentage; their number has greatly increased since.

The vast horde and streams of population which have gone through and into New York during the fifty years under consideration, the type and composition of these groups, the limited space available to them for dwelling purposes have all combined to make extremely difficult the control of a communicable disease like tuberculosis.

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New York's Changing Scene*
MADISON SQUARE AREA: (upper) Early 1900s, Madison Square Garden, statue of Diana tops edifice; (lower) today, massive buildings of Metropolitan and New York Life insurance companies overshadow New York Court of Appeals.*Reproduction by courtesy,New York Daily News.

HEALTH CONDITIONS AND CHANGES, 1900-1950

DURING the first half of the twentieth century New York City reflected sharply the dramatic gains in health which have been made in recent times. The reports to be quoted are all the more striking when it is recalled, first, that it is especially in large and dense centers of population that opportunities for the spread of communicable diseases are greatest. Secondly, the competition for space and a living is here likewise of the most intensive character. Finally, since food unlike in rural areas must all be purchased and come from afar, the maintenance of good nutrition and health under these conditions is of greater difficulty than elsewhere.

Mahoney(3), the Commissioner of Health of the City of New York, in his report "New York City's Health in 1950", has well summarized the changes and the tremendous advances which have been made. "An indication", says he, "of some of the achievements of preventive medicine and public health in New York City during the past half century can be obtained by contrasting the vital statistics of 1900 and 1950. Among the most dramatic accomplishments were tremendous reductions in infant and maternal mortality; the conquest of such communicable diseases as smallpox, typhoid fever, diphtheria, malaria and scarlet fever. Rapid strides were made toward the conquest of venereal diseases. Significant also was the reduction of mortality from tuberculosis, pneumonia, and appendicitis.

"In 1900, the general death rate was 20.6 per thousand population. At the same time the birth rate was 35.7 and the infant mortality rate, 135 per thousand births."

In 1950, the general death rate of ten was only one-half of what it was formerly. And whereas the average age at death at the beginning of the century was 30.2 years for both sexes, it has risen, in fact, doubled to 60.2 in 1950, the gain having been continuous during that period.

Since 1900 the birth rate has fallen gradually until by 1950 it averaged 19.7 per thousand. It varies sharply in the two largest racial groups now residing in New York City: the whites and the Negroes. The birth rate of the white population in 1950 was only 18.7 and that of the Negroes 28.6. In 1910 the white population had a natural rate of increase of 14 per thousand population since at that time its birth rate was 30 and its death rate 15.9, but in 1950 the natural increase, even with the much lower general death rate of the white population, had been reduced to 8.7.

In 1910 the Negro birth rate in New York City was 24.1 per thousand but its death rate was almost as high, 24.7. Living conditions were particularly hard for them in this already congested city. But in 1950, when the Negro birth rate was 28.6, their general death rate had come all the way down to 9.63, which meant that their natural rate of increase was now 18.9, or more than double that of the white population. These reports testify to the fact that the capacity for improvement in health

LEADING CAUSES OF DEATH, NEW YORK CITY
1900, 1910, 1920, 1930, 1940 AND 1950

Year 1900

Rank	Cause of Death	Deaths	Rate*
1	Pneumonias	10,482	304
2	Tuberculosis	9,630	280
3	Diarrhea, enteritis	6,830	198
4	Bright's, nephritis	5,362	156
5	Pre.-birth, debility	4,801	139
6	Heart diseases	4,069	118
7	Accidents	3,012	87
8	Cer. hem., arter'l dis.†	2,482	72
9	Cancer	2,291	66
10	Diphtheria, croup	2,277	66
-	Other causes	19,636	571
	Deaths, all causes	70,872	2057
	population: (3,446,042)		
	Live births	123,000	35.7‡
	Infant mortality	16,640	135.3+

Year 1910

Rank	Cause of Death	Deaths	Rate*
1	Pneumonias	10,519	220
2	Tuberculosis	10,074	211
3	Heart diseases	8,350	174
4	Diarrhea, enteritis	6,370	133
5	Bright's, nephritis	5,638	118
6	Pre.-birth, debility	4,655	97
7	Cancer	3,710	78
8	Accidents	3,527	74
9	Cer. hem., arter'l dis.†	2,852	60
10	Diphtheria, croup	1,715	36
-	Other causes	19,332	403
	Deaths, all causes	76,742	1604
	population: (4,785,535)		
	Live births	143,000	29.9‡
	Infant mortality	16,215	113.4+

Year 1920

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases	12,117	213
2	Pneumonias	10,058	177
3	Tuberculosis	7,135	126
4	Cancer	5,317	94
5	Bright's, nephritis	4,833	85
6	Pre.-birth, debility	3,631	64
7	Accidents	3,619	64
8	Cer. hem., arter'l dis.†	3,542	62
9	Influenza	3,492	61
10	Diarrhea, enteritis	2,926	51
-	Other causes	16,579	292
	Deaths, all causes	73,249	1289
	population: (5,683,765)		
	Live births	132,856	23.4‡
	Infant mortality	11,340	85.4+

Year 1930

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases	17,786	256
2	Cancer	8,125	117
3	Pneumonias	8,058	116
4	Cer. hem., arter'l dis.†	5,231	75
5	Tuberculosis	5,089	73
6	Accidents	4,868	70
7	Pre.-birth, debility	3,173	46
8	Nephritis	2,905	42
9	Diabetes	1,784	26
10	Suicide	1,403	20
-	Other causes	16,466	238
	Deaths, all causes	74,888	1079
	population: (6,943,560)		
	Live births	122,811	17.7‡
	Infant mortality	7,030	57.2+

Year 1940

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases†	26,529	355
2	Cancer	12,310	165
3	Cer. hem., arter'l dis.	4,771	64
4	Accidents	3,885	52
5	Tuberculosis	3,627	49
6	Nephritis	3,545	47
7	Pneumonias	3,410	46
8	Diabetes	3,106	42
9	Pre.-birth, debility	2,651	36
10	Suicide	1,263	17
-	Other causes	10,911	145
	Deaths, all causes	76,008	1,018
	population: (7,465,919)		
	Live births	107,287	14.4‡
	Infant mortality	3,746	34.9+

Year 1950

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases†	34,652	438
2	Malignant neoplasm(cancer)	14,632	185
3	Cer.hem.,(vascles.C.N.S.)	5,168	65
4	Pre.-birth, dis.infancy.	3,369	43
5	Accidents	3,252	41
6	Pneumonias	2,394	30
7	Tuberculosis	2,321	29
8	Liver,gallbladder,pancreas	1,789	23
9	Diabetes	1,584	20
10	Dis. arteries	1,216	15
-	Other causes	8,705	112
	Deaths, all causes	79,082	1001
	population: (7,902,881)		
	Live births	155,818	19.7‡
	Infant mortality	3,858	24.8+

*Per 100,000 population. †Inclusive of diseases of coronary arteries. ‡Per 1,000 population. +Per 1,000 live births. Note: Deaths in 1950 classified according to 6th rev. Inter. List Causes of Death. Based on reports, Bureau of Records and Statistics, Department of Health, City of New York.

It is especially in the field of communicable diseases that some of the greatest advances in saving lives have been made. Smallpox which still accounted for 410 deaths in 1901 and 310 in 1902 has since been wiped out. Typhoid fever which killed 718 persons in 1900 took only one life in 1950. Malaria and erysipelas which took only one person recently, killed 532 in 1900. Ravages from pneumonia and the reduction lately have been mentioned above.

Specific factors mentioned by Mahoney "which have brought about these remarkable changes can be classified under (1) environmental sanitation, (2) specific immunization, and (3) specific therapy.

"Improvements in environmental sanitation included purification of the city's water and milk supplies. In 1910 chlorination of water was introduced and in 1912 pasteurization of milk. In addition has been the attention given to the protection of the purity of foods and drugs."

With regard to specific immunization mention must be made particularly of the conquest of diphtheria; likewise the widespread vaccination which during the past fifty years has wiped out smallpox.

"The specific drugs, ranging from salvarsan to the most recent antibiotics, are the latest means for the control of communicable diseases. The introduction of the sulfonamides in 1934 and of penicillin a decade later opened a new era in medication."

In 1950 the degenerative conditions peculiar naturally and more to the older section of the population head the mortality returns. Heart diseases, cancer, cerebral hemorrhage are responsible now for more than half of all the mortality.

The gains in lives saved can be measured in a way from the previous statement that the average age at death in New York City has doubled. A few comparative figures for the United States frame the picture interestingly. Whereas at the beginning of the century the expectation of life at birth averaged 49 years it has now risen to practically 69 years-- a gain for all, of twenty years; the improvement has even been slightly greater in the female sex.

While as previously mentioned it is particularly children who have benefited most by having the opportunity to live their lives through, it is worth noting that even at the older periods of life there has been an improvement in the expectation of life. For those aged twenty, in the United States in the white population, the expectation of life has risen from 42 years to 49 years; for those forty years of age, a rise from 27.7 more years to 30.7. Even for those over sixty-five, a slight gain of one year in life expectancy has been recorded, the expectation being approximately some twelve years to be added onto their present age.

During the half century under review while the customary epidemics among children have occurred their severity as previously mentioned, has been greatly reduced. However, during those fifty years there have been other epidemics due to virus infections. Poliomyelitis struck severely in 1916 when among some nine thousand reported cases there were 2,448

LEADING CAUSES OF DEATH AMONG WHITE POPULATION, NEW YORK CITY 1910, 1920, 1930, 1940 AND 1950

Year 1910

Rank	Cause of Death	Deaths	Rate*
1	Pneumonias	10,128	216
2	Tuberculosis	9,507	203
3	Heart diseases	8,144	174
4	Diarrhea, enteritis	6,207	132
5	Bright's, nephritis	5,456	116
6	Pre.-birth, debility	4,502	96
7	Cancer	3,650	78
8	Accidents	3,450	74
9	Cer.hem.,arter'l dis.†	2,793	60
10	Diphtheria, croup	1,698	36
-	Other causes	18,795	401
	Deaths, all causes	74,330	1586
	Population, 4,686,439		
	Live births	140,736	30.0‡
	Infant mortality	15,680	111.4+

Year 1920

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases	11,738	213
2	Pneumonias	9,374	170
3	Tuberculosis	6,488	118
4	Cancer	5,210	94
5	Bright's, nephritis	4,688	85
6	Accidents	3,498	63
7	Pre.-birth, debility	3,433	62
8	Cer.hem.,arter'l dis.†	3,426	62
9	Influenza	3,379	61
10	Diarrhea, enteritis	2,803	51
-	Other causes	15,833	288
	Deaths, all causes	69,870	1267
	Population,5,514,404		
	Live births	128,646	23.3‡
	Infant mortality	10,663#	82.9+

Year 1930

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases	16,926	257
2	Cancer	7,866	119
3	Pneumonias	7,283	110
4	Cer.hem., arter'l dis.†	5,000	76
5	Accidents	4,516	68
6	Tuberculosis	4,072	62
7	Pre.-birth, debility	2,891	44
8	Nephritis	2,695	41
9	Diabetes	1,713	26
10	Suicide	1,351	20
-	Other causes	15,117	229
	Deaths, all causes	69,430	1052
	Population,6,596,982		
	Live births	115,114	17.4‡
	Infant mortality	6,299	54.7+

Year 1940

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases†	25,154	360
2	Cancer	11,721	168
3	Cer.hem., arter'l dis.	4,487	64
4	Accidents	3,602	52
5	Nephritis	3,234	46
6	Pneumonias	3,100	44
7	Diabetes	2,972	43
8	Tuberculosis	2,640	38
9	Pre.-birth, debility	2,350	34
10	Suicide	1,229	18
-	Other causes	10,591	151
	Deaths, all causes	71,080	1018
	Population,6,980,974		
	Live births	99,005	14.2‡
	Infant mortality	3,293	33.3+

Year 1950

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases†	32,364	455
2	Malignant neoplasm(cancer)	13,574	191
3	Cer.hem.,(vasc.les.C.N.S.)	4,771	67
4	Accidents	2,852	40
5	Pre.-birth,dis.infancy	2,647	37
6	Pneumonias	2,036	29
7	Tuberculosis	1,604	23
8	Liver,gallbladder,pancreas	1,638	23
9	Diabetes	1,465	21
10	Dis. arteries	1,121	16
-	Other causes	8,483	103
	Deaths, all causes	71,555	1005
	Population,7,119,901		
	Live births	133,340	18.7‡
	Infant mortality	2,992	22.4+

*Per 100,000 White population as of July 1st.

†Inclusive of diseases of coronary arteries.

‡Live births per 1,000 White population.

#Includes a few "other colored".

+Infant deaths per 1,000 live births.

Note: Death in 1950 classified according to 6th rev. Inter. List Causes of Death.

Based on reports, Bureau of Records and Statistics, Department of Health, City of New York.

LEADING CAUSES OF DEATH AMONG NEGRO POPULATION, NEW YORK CITY 1910, 1920, 1930, 1940 AND 1950

Year 1910

Rank	Cause of Death	Deaths	Rate*
1	Tuberculosis	522	561
2	Pneumonias	384	413
3	Heart diseases	198	213
4	Bright's, nephritis	174	187
5	Diarrhea, enteritis	162	174
6	Pre.-birth, debility	153	164
7	Accidents	72	77
8	Cancer	59	63
9	Cer.hem.,arter'l dis.†	57	63
10	Bronchitis	51	55
-	Other causes	469	505
	Deaths, all causes	2303	2475
	Population, 93,038		
	Live births	2245	24.1‡
	Infant mortality	535#	238.3+

Year 1920

Rank	Cause of Death	Deaths	Rate*
1	Pneumonias	663	412
2	Tuberculosis	596	370
3	Heart diseases	355	221
4	Pre.-birth, debility	189	117
5	Diarrhea, enteritis	120	75
6	Accidents	115	71
7	Cer.hem.,arter'l dis.†	112	70
8	Influenza	102	63
9	Cancer	100	62
10	Whooping cough	46	29
-	Other causes	816	506
	Deaths, all causes	3214	1996
	Population, 160,988		
	Live births	4129	25.6‡
	Infant mortality	677	164.0+

Year 1930

Rank	Cause of Death	Deaths	Rate*
1	Tuberculosis	971	293
2	Heart diseases	839	253
3	Pneumonias	756	228
4	Accidents	335	101
5	Pre.-birth, debility	279	84
6	Cancer	245	74
7	Cer.hem.,arter'l dis.†	220	66
8	Nephritis	206	62
9	Syphilis	204	62
10	Homicide	104	31
-	Other causes	1542	468
	Deaths, all causes	5265	1591
	Population, 330,975		
	Live births	7537	22.8‡
	Infant mortality	722	95.8+

Year 1940

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases†	1342	288
2	Tuberculosis	929	199
3	Cancer	569	122
4	Syphilis	350	75
5	Nephritis	305	65
6	Pneumonias	300	64
7	Pre.-birth,dis.infancy	292	63
8	Accidents	272	58
9	Cer.hem.,arter'l dis.	268	58
10	Diabetes	129	26
-	Other causes	860	188
	Deaths, all causes	5616	1206
	Population, 465,673		
	Live births	8081	17.4‡
	Infant mortality	441	54.6+

Year 1950

Rank	Cause of Death	Deaths	Rate*
1	Heart diseases†	2224	295
2	Malignant neoplasm(cancer)	1007	133
3	Pre.-birth,dis. infancy	709	94
4	Tuberculosis	683	90
5	Cer.hem.(vasc.les.C.N.S.)	389	52
6	Accidents	385	51
7	Pneumonias	348	46
8	Homicide	163	22
9	Diabetes	114	15
10	Syphilis	104	14
-	Other causes	1146	151
	Deaths, all causes	7272	963
	Population, 754,849		
	Live births	21,568	28.6‡
	Infant mortality	866	40.2+

*Per 100,000 Negro population as of July 1st.
†Inclusive of diseases of coronary arteries.
‡Live births per 1,000 Negro population.
#Included are few "other colored".
+Infant deaths per 1,000 live births
Note: Deaths in 1950 classified according to 6th rev. Inter. List Causes of Death. Based on reports, Bureau of Records and Statistics, Department of Health, City of New York.

deaths. In 1931 another "polio" epidemic also caused 504 deaths. There seems to have been a slight recurrence lately when in 1949 among some twenty-four hundred cases, 186 deaths occurred. There was, we must remember, in 1918 the pandemic influenza which struck with particular severity here and was responsible for 12,562 deaths.

Reference has been made previously to differences in the natural increase of population among the white and Negro residents of New York City. Records are available separately for each of the two groups as to leading causes of mortality beginning in 1910. At that time the Negro community already numbered 93,038. By 1950 it had risen to more than 750,000, undoubtedly the largest urban concentration of Negroes in any place. It is therefore of special interest to see the changes in the health records of the two groups during that period, when as previously mentioned the Negroes have made great health gains.

White, Negro, Principal Causes of Death

In 1910, the general death rate of the white population was 15.86 per thousand population and in 1950 it was down to 10.05. Formerly, the principal causes of death were in this order; first, pneumonia; second, tuberculosis; third, heart diseases; fourth, diarrhea and enteritis. It is worth noting that even at that time the death rate from accidents was 74 or almost twice what it is even these days. The infant mortality rate in the white population was 111 per thousand births, whereas in 1950 it was down to 22. Leading causes of death in 1950 in the white population were first heart diseases; second, cancer; third, cerebral hemorrhage; and, fourth, accidents. Tuberculosis from second place in 1910 has come down to seventh place.

In the Negro community in 1910, the general death rate was 24.75 per thousand and the infant mortality rate 238 per thousand births, whereas in 1950 the death rate was down to 9.63 and the infant mortality to 40. The slightly lower general death rate of the Negro population recently as compared with that of the white is due to the difference in the age composition of the two, the first being still a comparatively younger group and the other including a large proportion of the aged.

Among Negroes in 1910, the leading causes of death were first, tuberculosis; second, the pneumonias; third, heart diseases. In 1950 the order was changed and the list was headed by heart diseases followed by cancer and then, among children, pre-maturity and diseases of early infancy. Tuberculosis is now down to fourth place. The death rate from tuberculosis which in 1910 was no less than 561 per hundred thousand population, has now been brought down to 90.

* * *

LEADING CAUSES OF DEATH, BY RACE AND SEX, NEW YORK CITY, 1950

Line	Cause of Death*	Deaths							Death rate per 100,000							Line
			White			Nonwhite			Rate	White			Nonwhite			
		Total Deaths	Both Sexes	Male Deaths	Female Deaths	Both Sexes	Male Deaths	Female Deaths	All Races	Both Sexes	Male Rate	Female Rate	Both Sexes	Male Rate	Female Rate	
1	Heart diseases	34,652	32,364	18,532	13,832	2,288	1,112	1,176	438	455	534	379	292	315	273	1
2	Malig.neoplasm(cancer).	14,632	13,574	7,129	6,445	1,058	521	537	185	191	205	177	135	148	125	2
3	Cerebral hemorrhage ...	5,168	4,771	2,212	2,559	397	161	236	65	67	64	70	51	46	55	3
4	Pre.birth,dis.infancy..	3,369	2,647	1,516	1,131	722	415	307	43	37	44	31	92	118	71	4
5	Accidents	3,252	2,852	1,810	1,042	400	282	118	41	40	52	29	51	80	27	5
6	Pneumonias	2,394	2,036	1,181	855	358	211	147	30	29	34	23	46	60	34	6
7	Tuberculosis	2,321	1,604	1,262	342	717	456	261	29	23	36	9	92	129	61	7
8	Liver,gallbladder,panc.	1,789	1,638	1,000	638	151	93	58	23	23	29	17	19	26	13	8
9	Diabetes	1,584	1,465	551	914	119	42	77	20	21	16	25	15	12	18	9
10	Dis. arteries	1,216	1,121	549	572	95	44	51	15	16	16	16	12	12	12	10
11	Suicide	938	885	602	283	53	37	16	12	12	17	8	7	10	4	11
12	Hernia,intest.,perit. .	665	601	315	286	64	30	34	8	8	9	8	8	9	8	12
13	Dis.stomach,duodenum ..	626	586	478	108	40	34	6	8	8	14	3	5	10	1	13
14	Hypertension	583	493	247	246	90	42	48	7	7	7	7	11	12	11	14
15	Nephritis	555	475	263	212	80	37	43	7	7	8	6	10	10	10	15
16	Homicide	329	163	130	33	166	131	35	4	2	4	1	21	37	8	16
17	Benign neoplasm	322	278	119	159	44	10	34	4	4	3	4	6	3	8	17
18	Alcoholism	295	218	174	44	77	62	15	4	3	5	1	10	18	3	18
19	Prostate, hyperplasia† .	274	256	256	...	18	18	...	7	7	7	...	5	5	...	19
20	Syphilis	264	156	135	21	108	77	31	3	2	4	1	14	22	7	20
21	Appendicitis	190	163	101	62	27	11	16	2	2	3	2	3	3	4	21
22	Poliomyelitis	73	71	43	28	2	1	1	1	1	1	1	0.3	0.3	0.2	22
--	Other(remaining) causes	3,591	3,138	1,778	1,360	453	218	235	45	40	67	37	56	62	56	--
	All causes	79,082	71,555	40,383	31,172	7,527	4,045	3,482	1001	1005	1163	855	961	1147	809	All

*Classified according to 6th rev.(1948) Inter.List Causes of Death: (1)Diseases of the heart 410-443; (2)malignant neoplasms, neoplasms of lymphatic and hematopoietic tissues 140-205; (3)vascular lesions affecting central nervous system 330-334; (4)congenital malformations 750-759. certain diseases of early infancy 760-776; (5)accidents 800-962; (6)pneumonia,all forms 490-493; (7)tuberculosis,all forms 1-19; (8)diseases of liver,gallbladder and pancreas 580-587; (9)diabetes mellitus 260; (10)diseases of arteries 450-456; (11)suicides 963,970-979; (12)hernia and other diseases of intestines and peritoneum 560-578; (13)diseases of stomach and duodenum 540-545; (14)hypertension without mention of heart 444-447; (15)nephritis and nephrosis 590-594; (16)homicides 964,980-985; (17)benign neoplasms 210-229, neoplasm of unspecified nature 230-239; (18)alcoholism 322; (19)hyperplasia of prostate 610; (20) syphilis and its sequelae 20-29; (21)appendicitis 550-553; (22)acute poliomyelitis 80, late effects of acute polio. 81. †Rate based on male population.

MILESTONES IN THE PROGRESS AGAINST TUBERCULOSIS

BECAUSE of the widespread incidence of tuberculosis, its communicable character, and the influence upon infection and disease of both personal and environmental conditions, the fight against it has had to be led from a variety of approaches, specific and general.

Following the identification of the cause of tuberculosis by Koch through his discovery of the tubercle bacillus in 1882, it became obvious that the first approach towards its control would be the identification and location of cases of tuberculosis, the possible foci of new infections. These characteristics and aspects of the situation were keenly realized in New York City by Biggs who led in securing the adoption in 1894 of the resolution by the Board of Health providing for the reporting of cases, the free examination of sputum, and the home visiting of consumptives. By 1897 the Sanitary Code required the universal reporting of tuberculosis cases including those under the care of medical practitioners.

In 1901 the Board of Health adopted a regulation to permit the compulsory segregation of recalcitrant cases of tuberculosis; the effectiveness of this measure was limited greatly by the lack of special wards or buildings where such cases could be isolated. Ultimately it was realized that educational methods were more effective in securing the consent of patients to go to institutions than police measures.

An important step at that time was the enactment of the Tenement House Law of 1901 which had a wide influence on the type of construction where large numbers of people were being housed. In crowded sections there were numerous habitations used where some of the rooms had no access to air or light. In these dark ill-ventilated places where there were cases of tuberculosis the chances for spread were greatly heightened. The Tenement House Law just mentioned marked a new epoch in tenement house reform. Conditions under which new tenement houses could be built were prescribed; in existing buildings alterations were required to make them habitable and decent. The character of official inspections of old and new houses was defined; the following conditions were declared illegal: inadequate lighting, ventilation or water supply; insufficient facilities for escape in case of fire and improper sanitary equipment. A new Municipal Department responsible for the enforcement of the Tenement House laws was created.

Beginning in 1902 inspectors of the country staff of the Department of Health were assigned to posts in the city's milkshed to ascertain sanitary condition of dairies, methods of handling and transporting milk to the city. These steps, along with those already in effect within the city to assure purity and cleanliness of the milk supply, had an important influence especially on child health.

Tuberculosis Hospital Facilities

For some time prior to the beginning of the twentieth century, especially following the opening of the Adirondack Cottage Sanitarium