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INFANT AND MATERNAL MORTALITY
AMONG NEGROES

BY

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Infant and Maternal Mortality Among Negroes*

INTRODUCTION

The mortality of Negro infants and mothers has long been recognized as extremely high, but the actual situation has been somewhat obscure because statistics for Negroes customarily are combined with those for other nonwhite races such as Indian, Chinese, Japanese. This study presents statistics for the Negro as such.

Information with respect to the Negro, as distinct from other races, is greatly needed in connection with planning and developing community programs directed toward reducing the mortality among Negro infants and mothers. The information is especially pertinent at the present time on account of the new maternal and child-health programs being developed under the Social Security Act.

This report presents the available statistics with respect to infant and maternal mortality among Negroes; it reviews the present situation in detail and indicates the general trend of mortality throughout the period of record. In connection with this analysis the underlying factors that affect the reliability of the statistics are discussed.

The material presented for Negroes includes statistics for the expanding birth-registration area, 1915-35, for the geographic sections used for statistics of Negroes by the United States Bureau of the Census, and for the 29 States with 500 or more Negro live births annually.¹ The geographic sections are the Southern States (17 States, including the District of Columbia, which is considered as a State throughout this report), the Northern States (21), and the Western States (11). Of the 29 individual States for which detailed material is presented 17 are Southern, 11 Northern, and 1 Western.

Statistics for white infants and mothers are presented for the purpose of contrasting the mortality experience of the Negro and white races. The more favorable situation of the white race is not suggested as an optimum expectation for the Negro, but rather as an early objective to be reached through improvement in environmental conditions and through health education. There is general appreciation of the need for improvement in maternal and child-health conditions among all races in the United States. Even in the States with the lowest infant and maternal mortality rates (States in which the population is largely white) active effort is being directed toward the reduction of mortality among mothers and infants through the provision of adequate prenatal, natal, and postnatal care, and through the education of mothers in improved methods of infant care and feeding.

* Reprinted, with the addition of some 1935 figures, from the *Journal of Negro Education* for July 1937.
¹ Mortality rates based on 500 or more live births have been demonstrated to be sufficiently stable to be indicative of real differences in health conditions. See *The Significance of Infant Mortality Rates*, by M. Derryberry and E. Van Buskirk. United States Public Health Service Reports, vol. 51, no. 18 (May 1, 1936), pp. 545-551.

The research and informational services of the Children's Bureau have always been inclusive of the children of all races, and all phases of maternal and child-welfare work in the social-security program include services for both Negroes and whites. Practically all States with large Negro populations are employing Negro nurses on State and county staffs, although they are not always indicated separately in the plans and budgets. Many types of health-education services for Negroes are under way in the several States.

The statistics presented in this report are based on the information on births and deaths issued by the United States Bureau of the Census.² The section on stillbirths contains, in addition to census figures, a few preliminary statistics from the special study of causes of stillbirths that is now being made by the Children's Bureau with the cooperation of the Subcommittee on Stillbirths of the American Public Health Association.

The statistics of births and deaths issued by the United States Bureau of the Census are compiled from transcripts of the original birth and death certificates. These certificates, the raw material for all birth and mortality statistics, are filed by physicians, midwives, and others with the local registrars of vital statistics, in the communities in which the births and deaths occur.

The usual procedure of registration includes the filing of a certificate for each birth and each death in the local community and the transmittal of a copy to the State department in charge of vital records. Transcripts of the certificates received in the State office are transmitted to the United States Bureau of the Census for confidential use in the preparation of the statistics which are essential for the protection and promotion of national health.

The initial responsibility for registration of births and deaths lies with the local community. The accuracy and completeness of the statistics for the country as a whole and for each State depend upon the accuracy and completeness of registration in each community of the State and, in the last analysis, upon the degree to which physicians, midwives, and parents realize the importance of filing vital records and appreciate the advantage of having births and deaths recorded.

The Bureau of the Census has estimated³ that registration in the United States as a whole is about 92 percent complete for births and about 97 percent complete for deaths. Special studies⁴ have shown that the percentage of completeness varies widely from State to State and that registration is less complete for the Negro than for the white. It is widely recognized that birth registration is less complete in rural than in urban areas.

² The statistics of births and deaths from 1915 to 1934 have been compiled from the annual reports entitled "Birth, Stillbirth, and Infant Mortality Statistics" and "Mortality Statistics", published by the U. S. Bureau of the Census, and from unpublished tables on file in the Vital Statistics Division of that Bureau. These unpublished tables have been made available through the courtesy of the Director of the U. S. Bureau of the Census. The statistics for 1935 are from Vital Statistics Special Reports which are being issued by the Bureau of the Census for individual States. These State summaries contain much information on Negroes never previously made available.

³ Release of Department of Commerce, Bureau of the Census, Estimated Population of the United States as of July 1, 1935, dated Feb. 12, 1936.

⁴ See the Completeness of Birth Registration in the United States, by P. K. Whelpton. Journal of the American Statistical Association, vol. 29, no. 186 (June 1934), pp. 125-136.

THE PRESENT SITUATION

NEGRO BIRTHS

In the United States, 1 child out of every 8 born alive is a Negro child. In the Southern States, 1 child out of every 4 born alive is Negro; in the Northern States, 1 out of every 27; in the Western States, 1 out of every 115.

More than a quarter of a million Negro infants are born each year in the United States. Almost two-thirds of these Negro infants are born in the rural areas⁵ in the Southern States, but in every large city in the South and in many large cities of the North considerable numbers of Negro births occur each year.

In the Southern States about 208,000 Negro infants are born each year. More than three-fourths of the Negroes born in the Southern States are born in rural areas, but the number in urban areas is also sizable, as more than 46,000 Negro live births occur annually in Southern cities.

In the Northern States about 43,000 Negro live births occur each year. Of these Negro infants, about nine-tenths are born in cities and one-tenth in rural areas.

In the Western States the number of Negro live births is about 1,600 each year. More than half of the Negro infants born in the Western States are born in cities in California.

In this analysis of the present infant and maternal mortality situation among Negroes, the statistics presented are, in the main, averages for the 3-year period, 1933-35. These are the years for which the statistics cover the entire United States. Certain statistics are presented for the year 1935 only, figures for previous years not having been tabulated separately for Negroes by the United States Bureau of the Census.

The States with the largest number of Negro live births are, of course, in the South. (Fig. 1.) Georgia heads the list with an annual average of 25,776 Negro live births (table 1). Mississippi, with 25,142, has almost as large a number. North Carolina, Alabama, and South Carolina average between 21,000 and 24,000 a year; Louisiana has 17,000, Virginia 15,000, and Texas 14,000. No Northern State has as many as 10,000 Negro births a year. In both the North and the South there are States with between 5,000 and 10,000 Negro live births each year. The Northern States with this number are New York, Pennsylvania, Illinois, and Ohio; the Southern States are Arkansas, Florida, Tennessee, and Maryland. The States with as many as 2,000 but less than 5,000 Negro births include the Northern States of New Jersey, Missouri, and Michigan, and the Southern States of Kentucky, West Virginia, and the District of Columbia. The States with between 500 and 2,000 Negro live births include Indiana, Kansas, Massachusetts,

⁵ Throughout this study the term "rural" is used to include areas of less than 10,000 population. The term "urban" is used to include cities of 10,000 or more population.

and Connecticut in the North; Oklahoma and Delaware in the South; and California in the West.

In many of the Southern States a large proportion of all live births registered are Negro. In Mississippi and South Carolina more than 50 percent of the live births are Negro; in Louisiana and Georgia, more than 40 percent; in Alabama, the District of Columbia, North Carolina, Florida, and Virginia, more than 25 percent. In the 8 remaining Southern States less than 25 percent of the live births are Negro (in 5 States, 10 to 24 percent and in 3 States, less than 10 percent). Of the Northern States, New Jersey had the highest proportion (7.8 percent); Massachusetts, the lowest (1.5 percent). (Fig. 2.)

The Negro births in the Southern States were for the most part in rural areas. (Table 1.) In Mississippi and Arkansas more than nine-tenths of the Negro births were in rural areas; in South Carolina, West

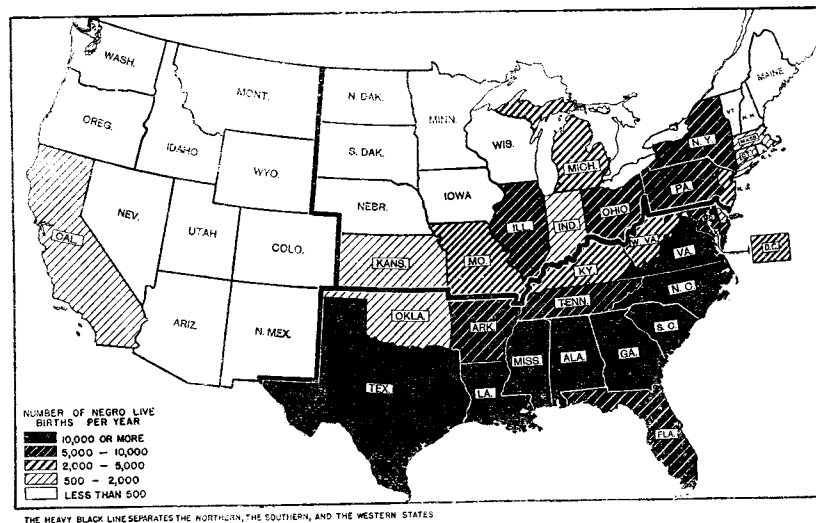


FIGURE 1.—AVERAGE NUMBER OF NEGRO LIVE BIRTHS PER YEAR IN EACH STATE, 1933-35.

Virginia, North Carolina, Alabama, and Georgia more than four-fifths; in Virginia, Texas, Louisiana, and Florida more than two-thirds; and in Oklahoma, Kentucky, Delaware, and Tennessee considerably more than half of the Negro births were in rural areas. In Maryland, the remaining Southern State, only 44 percent occurred in rural areas. The District of Columbia, which is grouped with the Southern States, is, of course, entirely urban.

In the Northern States the Negro births generally occurred in cities. In every Northern State more than two-thirds of the Negro infants are city-born. Michigan had the largest proportion (93 percent) and Missouri the smallest (70 percent).

The only Western State (California) with as many as 500 Negro live births had more than 80 percent of its Negro births in cities—practically all in Los Angeles.

Information is not available with respect to the numbers of Negro births in individual cities, but the Negro urban population of the North is largely concentrated in a few large cities, and it is obvious

that it is in these cities that the Negro births mainly occur. In 1930, as is shown by the census of population, more than 50 percent of all the urban Negro population of the North resided in 7 cities (New

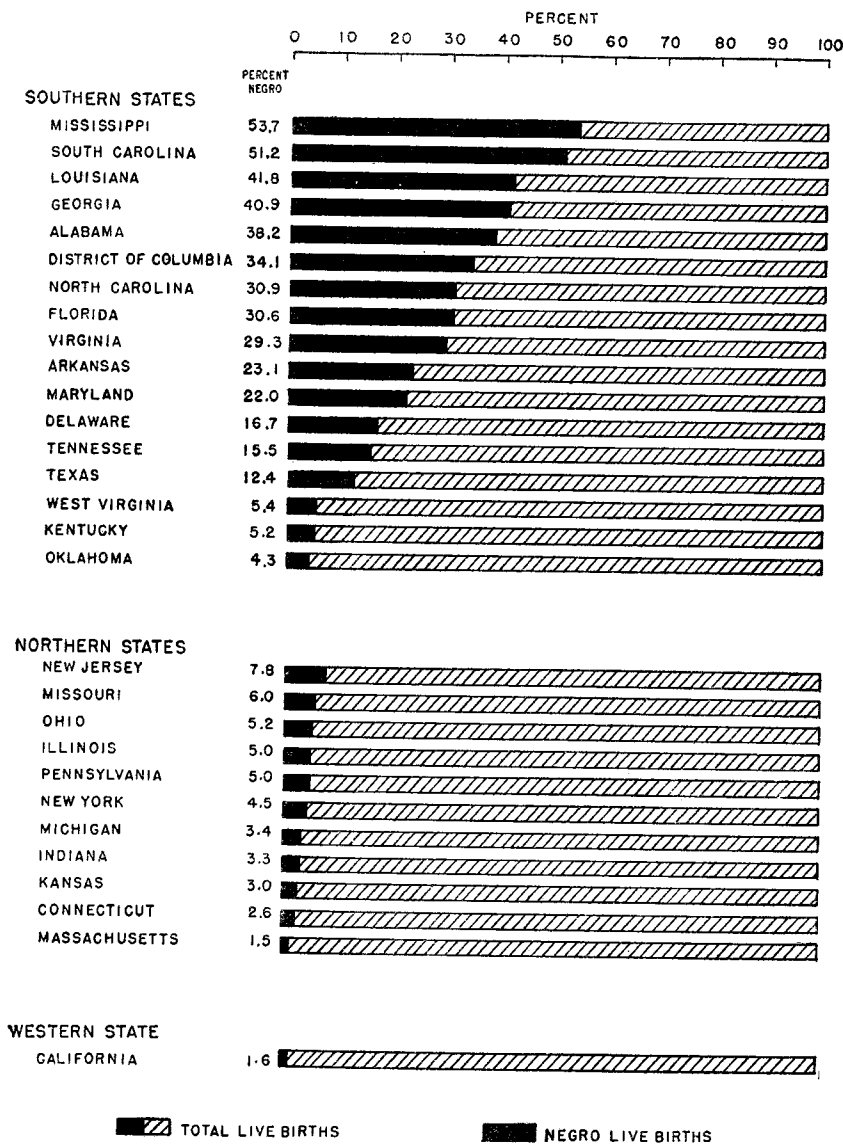


FIGURE 2.—PROPORTION OF TOTAL LIVE BIRTHS THAT WERE NEGRO: 29 STATES, 1933-35.

York, Chicago, Philadelphia, Detroit, St. Louis, Cleveland, and Pittsburgh), and these cities, together with 6 others (Cincinnati, Indianapolis, Newark, Kansas City, Mo., Columbus, and Boston), included two-thirds of the urban Negro population of the Northern States.

TABLE 1.—Average number of Negro live births annually in rural and urban areas; geographic sections and 29 States, 1933-35

Geographic section and State	Negro live births				
	Total	In rural areas		In urban areas	
		Number	Percent	Number	Percent
United States.....	252,835	167,857	66.4	84,978	33.6
All Southern States (17).....	208,489	161,911	77.7	46,578	22.3
Alabama.....	23,590	19,192	81.4	4,398	18.6
Arkansas.....	8,407	7,750	92.2	657	7.8
Delaware.....	664	410	61.8	254	38.2
District of Columbia.....	3,511			3,511	100.0
Florida.....	8,194	5,493	67.0	2,701	33.0
Georgia.....	25,776	20,635	80.1	5,141	19.9
Kentucky.....	3,025	1,886	62.3	1,139	37.7
Louisiana.....	17,424	12,216	70.1	5,208	29.9
Maryland.....	6,026	2,663	44.2	3,363	55.8
Mississippi.....	25,142	23,385	93.0	1,757	7.0
North Carolina.....	24,065	19,915	82.8	4,150	17.2
Oklahoma.....	1,927	1,218	63.2	709	36.8
South Carolina.....	21,372	19,161	89.7	2,211	10.3
Tennessee.....	8,030	4,595	57.2	3,435	42.8
Texas.....	14,052	9,957	70.9	4,095	29.1
Virginia.....	15,124	11,595	76.7	3,529	23.3
West Virginia.....	2,160	1,840	85.2	320	14.8
All Northern States (21).....	42,698	5,584	13.1	37,114	86.9
Connecticut.....	573	52	9.1	521	90.9
Illinois.....	5,533	500	9.0	5,033	91.0
Indiana.....	1,736	153	8.8	1,583	91.2
Kansas.....	946	254	26.8	692	73.2
Massachusetts.....	934	141	15.1	793	84.9
Michigan.....	2,826	195	6.9	2,631	93.1
Missouri.....	3,448	1,045	30.3	2,403	69.7
New Jersey.....	4,273	798	18.7	3,475	81.3
New York.....	8,304	637	7.7	7,667	92.3
Ohio.....	5,195	714	13.7	4,481	86.3
Pennsylvania.....	7,972	931	11.7	7,041	88.3
All Western States (11).....	1,648	362	22.0	1,286	78.0
California.....	1,208	215	17.8	993	82.2

The urban Negro population of the South is more widely distributed than that of the North. Every large Southern city has a considerable number of Negro residents and, therefore, many Negro births. Of the urban Negro population of the Southern States, about half lived in 22 cities, whereas a similar proportion of the urban Negro population of the Northern States was concentrated in 7 cities.

Attendant at birth.

Of all the Negro live births in 1935 more than half (56 percent) were attended at delivery by midwives; only 43 percent were attended by physicians (17 percent in hospitals and 26 percent in homes); 1 percent were attended by other persons, such as relatives or friends. (Table 2.)

The large proportion of Negro births attended by midwives and the small proportion occurring in hospitals are in sharp contrast to corresponding proportions for white births and also for births among other races. In the United States as a whole practically all (94 percent) of the white infants born alive in 1935 were attended at

birth by physicians (40 percent of the births in hospitals). Among other races (Indians, Chinese, Japanese, and so forth) only 13 percent of the live births were attended by midwives; 75 percent were attended by physicians (38 percent in hospitals); and 12 percent were attended by other persons.

TABLE 2.—Attendant at birth of white and Negro infants and infants of other races born alive in the United States, 1935

Race	Percent of live-born infants attended at birth by—				
	Physicians			Mid-wives	Other persons
	Total	In hos-pitals	In homes		
Total.....	87.5	36.9	50.6	10.7	1.8
Negro.....	43.2	17.3	26.0	56.0	.8
White.....	93.6	39.6	54.0	4.5	1.9
Other races.....	74.7	38.4	36.3	12.9	12.4

Whether the birth of a Negro infant is attended by a physician or by a midwife and whether or not the birth occurs in a hospital apparently depends, as a rule, upon whether the infant is born in the North or in the South and, if in the South, upon whether the birth occurs in an urban or in a rural district. In 1935 practically all Negro births in Northern cities (97.9 percent) were attended by physicians, the majority (61.8 percent) in hospitals. In Southern cities physicians attended almost three-fourths (73.0 percent) of the Negro births; more than a third (38.5 percent) occurred in hospitals.

In the rural districts of the South it is a different story. In 1935 practically no Negro births (0.6 percent) occurred in hospitals; physicians attended only 20.0 percent of all the Negro births. Approximately 130,000 (79.3 percent) of the Negro births in the rural South in 1935 were attended by midwives. In the rural areas of the Southern States the numbers of Negro live births attended by midwives were: Mississippi, about 21,000; Alabama, Georgia, and South Carolina, more than 16,000 each; North Carolina and Louisiana, more than 11,000 each; Virginia, more than 8,000; Texas and Arkansas, more than 6,000 each; and Florida, more than 4,000. (Table 3.)

Age of mother.

The mothers of the Negro infants born during the period 1933-35 not only as a rule lived in rural areas and were generally attended by midwives, but many of them were so young that they could not be expected to have much appreciation of their own need for adequate care or much education with respect to methods of feeding and caring for infants. Of the Negro mothers for whom age was reported, 23 percent were under 20 years of age as compared with 11 percent of the white mothers. These are young ages for childbearing and rearing. Fifty-five percent of the mothers of Negro infants were under 25 years of age, as compared with 41 percent of the mothers of white infants. (Table 4.)

TABLE 3.—Attendant at birth of Negro infants born alive in rural and urban areas; geographic sections and 29 States, 1935

Geographic section and State	Negro infants born alive in—											
	Rural areas					Urban areas						
	Number	Percent attended at birth by—				Number	Percent attended at birth by—					
		Total	In hospitals	In homes	Mid-wives		Other	Total	In hospitals	In homes	Mid-wives	Other
United States.....	169,392	22.4	1.2	21.2	76.7	0.9	85,732	84.3	49.0	35.3	15.1	0.6
All Southern States (17).....	163,414	20.0	.6	19.4	79.3	.7	46,929	73.0	38.5	34.5	26.5	.5
Alabama.....	19,491	14.9	.1	14.8	84.7	.4	4,371	69.1	32.3	36.8	30.8	.1
Arkansas.....	7,779	14.2	.1	14.1	83.2	2.6	723	62.4	5.8	56.6	36.1	1.5
Delaware.....	397	31.7	4.3	27.5	68.3		259	66.8	59.5	7.3	33.2	
District of Columbia.....							3,617	99.7	76.5	23.2		.2
Florida.....	5,692	17.1	1.0	16.0	81.8	1.2	2,756	43.8	16.8	27.0	55.8	.5
Georgia.....	20,871	10.1	.1	10.0	89.7	.2	5,048	70.0	45.0	25.1	29.9	.1
Kentucky.....	1,748	85.1	.7	84.3	14.6	.3	1,043	95.9	42.1	53.8	4.1	
Louisiana.....	12,322	9.9	.1	9.8	89.9	.2	5,460	78.8	62.5	16.3	21.2	(¹)
Maryland.....	2,561	47.1	4.6	42.4	51.9	1.0	3,332	90.9	45.9	44.9	9.0	.1
Mississippi.....	24,375	13.5	.6	12.9	86.1	.5	1,884	27.0	8.4	18.6	72.5	.6
North Carolina.....	20,126	28.1	.7	27.4	71.6	.3	4,231	61.8	17.8	44.0	38.0	.2
Oklahoma.....	1,223	47.2	.8	46.4	47.6	5.2	742	79.9	16.2	63.7	19.9	.1
South Carolina.....	18,822	10.0	.2	9.8	90.0	(¹)	2,167	65.5	20.1	45.4	34.4	(¹)
Tennessee.....	4,744	44.8	.2	44.6	54.7	.5	3,585	94.7	48.0	46.7	3.5	1.8
Texas.....	9,809	31.2	.3	30.9	66.1	2.7	4,067	79.5	42.7	36.8	18.8	1.7
Virginia.....	11,507	26.7	2.0	24.7	71.6	1.7	3,332	55.7	17.1	38.6	43.6	.7
West Virginia.....	1,947	95.7	2.2	93.5	2.3	2.1	312	98.7	20.8	77.9	.6	.6
All Northern States (21).....	5,614	89.7	17.7	72.0	5.5	4.9	37,445	97.9	61.8	36.1	1.2	.8
Connecticut.....	46	(²)	(²)	(²)	(²)	(²)	508	98.2	69.7	28.5	1.6	.2
Illinois.....	548	92.5	7.1	85.4	3.3	4.2	5,138	99.6	55.2	44.4	.2	.3
Indiana.....	159	100.0	9.4	90.6			1,669	98.9	23.9	75.0	.8	.2
Kansas.....	218	99.1	11.5	87.6	.5	.5	694	98.8	21.5	77.4	1.0	.1
Massachusetts.....	132	7.6	7.6			92.4	746	76.0	65.8	10.2		24.0
Michigan.....	192	88.0	13.0	75.0	10.4	1.6	2,691	97.2	45.4	51.7	2.0	.9
Missouri.....	1,048	67.7	8.5	59.3	21.6	10.7	2,502	99.2	66.5	32.6	.8	
New Jersey.....	776	97.7	34.0	63.7	1.9	.4	3,407	97.6	70.9	26.7	2.3	(¹)
New York.....	612	97.4	50.5	46.9	2.1	.5	7,736	97.1	79.8	17.3	2.8	.1
Ohio.....	729	99.6	1.6	97.9		.4	4,467	99.7	48.6	51.0	.2	.2
Pennsylvania.....	980	98.4	8.5	89.9	1.4	.2	7,081	98.5	67.6	30.8	.6	1.0
All Western States (11).....	364	92.0	41.2	50.8	4.1	3.8	1,358	98.5	59.4	39.0	.7	.8
California.....	206	94.1	61.6	32.5		5.9	1,055	98.6	61.6	37.0	.4	1.0

¹ Less than one-tenth of 1 percent.² Percent not shown because the number of Negro live births was less than 50.

Negro mothers in the Southern States were in general younger than Negro mothers in the Northern States. In the Southern States 24 percent were under 20 years of age, as compared with 21 percent in the Northern States; 56 percent in the Southern States were under 25 years of age, as compared with 51 percent in the Northern States. Although the differences in age distribution are not so great between Negro mothers in the South and the North as between Negro and white mothers, they are sufficient to be statistically significant in view of the large numbers of births to Negro mothers under 25 years. Infants born to Negro mothers under 25 years of age numbered approximately 138,000 annually in the United States during the years 1933-35; of these infants, 115,000 were born in the Southern States, 22,000 in the Northern States, and about 1,000 in the Western States.

TABLE 4.—Age of mother of Negro and white infants born alive in the United States, 1933-35

Age of mother	Average number of infants born alive annually			
	Negro		White	
	Number	Percent	Number	Percent
Total.....	252, 836		1, 849, 730	
Age reported.....	249, 706	100. 0	1, 844, 446	100. 0
10 to 14.....	1, 679	. 7	1, 181	. 1
15 to 19.....	56, 215	22. 5	202, 130	11. 0
20 to 24.....	79, 729	31. 9	556, 436	30. 2
25 to 29.....	51, 650	20. 7	496, 905	26. 9
30 to 34.....	31, 941	12. 8	322, 542	17. 5
35 to 39.....	20, 964	8. 4	191, 574	10. 4
40 to 44.....	6, 553	2. 6	67, 423	3. 7
45 to 49.....	941	. 4	6, 167	. 3
50 to 54.....	34	(¹)	88	(¹)
Age not reported.....	3, 130		5, 284	

¹ Less than one-tenth of 1 percent.

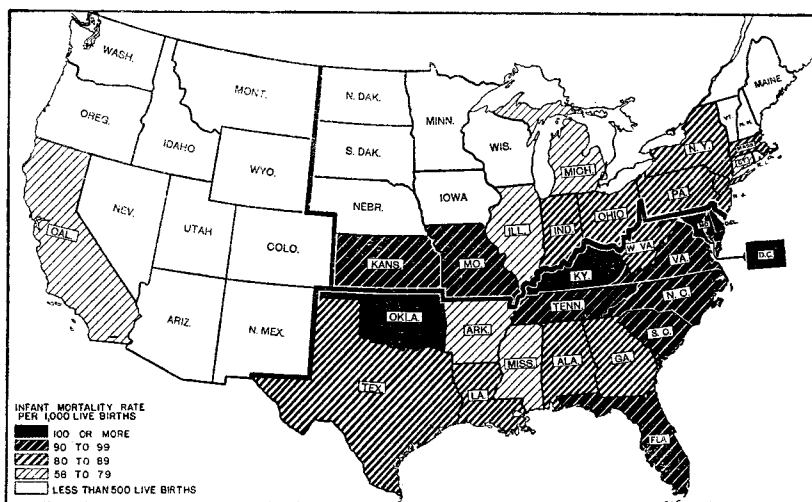


FIGURE 3.—MORTALITY AMONG NEGRO INFANTS IN STATES WITH 500 OR MORE NEGRO LIVE BIRTHS PER YEAR, 1933-35.

INFANT MORTALITY

In each year of the period 1933-35, about 22,000 live-born Negro infants died in the United States before completing their first year of life. The average mortality rate for Negro infants in the United States, as well as in each of the 29 States with 500 or more Negro live births annually, was in excess of the rate for white infants. The rate for Negro infants in the United States was 86.1 per 1,000 live births and for white infants, 53.

The average Negro infant mortality rate for the 3-year period, 1933-35, was more than 100 per 1,000 live births in 5 States (Oklahoma, Delaware, Kentucky, Maryland, and the District of Columbia). (Fig. 3 and table 5.) It was between 90 and 99 in 7 States (Missouri,

Tennessee, South Carolina, Virginia, North Carolina, Florida, and Kansas); between 80 and 89 in 11 States (Indiana, New York, Louisiana, Georgia, Pennsylvania, Massachusetts, Ohio, New Jersey, West Virginia, Alabama, and Texas); and less than 80 in 6 States (Illinois, Connecticut, Mississippi, Michigan, California, and Arkansas).

The extreme height of these rates for Negro infants is stressed by comparison with rates for white infants for the same period, 1933-35. (Table 5.) During this period no State had a rate as high as 65 per 1,000 live births for white infants. The highest rates for white infants were between 60.1 and 64.3 per 1,000 live births. Seven States fell in this group (West Virginia, Texas, Tennessee, South Carolina, Georgia, North Carolina, and Virginia). Four States had rates of 55 to 59.9 per 1,000 live births for white infants (Kentucky, Louisiana, Missouri, and Maryland); 9 States, 50 to 54.9 (Alabama, Oklahoma, Delaware, Indiana, Florida, Pennsylvania, Mississippi, Ohio, and Arkansas); and 9 States, less than 50 (Kansas, New York, Michigan, Massachusetts, Illinois, Connecticut, California, New Jersey, and the District of Columbia).

TABLE 5.—Mortality in the first year of life among Negro and white infants: geographic sections and 29 States, 1933-35

Geographic section and State	Deaths under 1 year per 1,000 live births		Geographic section and State	Deaths under 1 year per 1,000 live births	
	Negro	White		Negro	White
United States.....	86.1	53.0	All Northern States (21).....	83.6	49.8
All Southern States (17).....	86.7	58.9	Connecticut.....	73.9	46.0
Alabama.....	82.0	54.9	Illinois.....	77.1	47.8
Arkansas.....	58.1	50.0	Indiana.....	88.9	52.2
Delaware.....	111.4	53.1	Kansas.....	92.7	49.8
District of Columbia.....	102.0	44.2	Massachusetts.....	83.9	49.2
Florida.....	93.1	51.6	Michigan.....	65.9	49.3
Georgia.....	84.5	62.3	Missouri.....	98.2	56.0
Kentucky.....	104.9	58.2	New Jersey.....	82.9	44.2
Louisiana.....	87.2	56.6	New York.....	88.1	49.4
Maryland.....	103.8	55.4	Ohio.....	83.0	50.6
Mississippi.....	68.7	51.2	Pennsylvania.....	84.3	51.4
North Carolina.....	94.2	60.7	All Western States (11).....	74.8	54.1
Oklahoma.....	116.9	53.4	California.....	64.3	45.8
South Carolina.....	96.3	63.4			
Tennessee.....	98.0	63.6			
Texas.....	81.6	64.1			
Virginia.....	94.9	60.1			
West Virginia.....	82.7	64.3			

Attention is also called to the high infant mortality among the Negroes by the excess in the rate for Negro infants over the rate for white infants in the same State (fig. 4). In the District of Columbia, Oklahoma, and Delaware the rates for Negro infants were more than 100 percent in excess of the rates for white infants. In New Jersey, Maryland, Kansas, Florida, Kentucky, New York, and Missouri the rates for Negro infants exceeded the rates for white infants by more than 75 percent. In Massachusetts, Indiana, Ohio, Pennsylvania, Illinois, Connecticut, Virginia, North Carolina, Louisiana, Tennessee, and South Carolina the Negro rates were at least 50 percent in excess. The only States in which Negro rates were less than 50 percent in excess of those for white infants were Alabama, California, Georgia, Mississippi, Michigan, West Virginia, Texas, and

Arkansas. In all these States, except Arkansas, the excess of the Negro rates amounted to more than 25 percent. The States with the greatest excess were in the South, but in all the Northern States, except Michigan, the infant mortality rates for Negroes exceeded those for white infants by 60 to 90 percent.

Urban versus rural mortality.

Infant mortality rates for Negroes were higher in urban than in rural districts in the United States as a whole and in the Southern

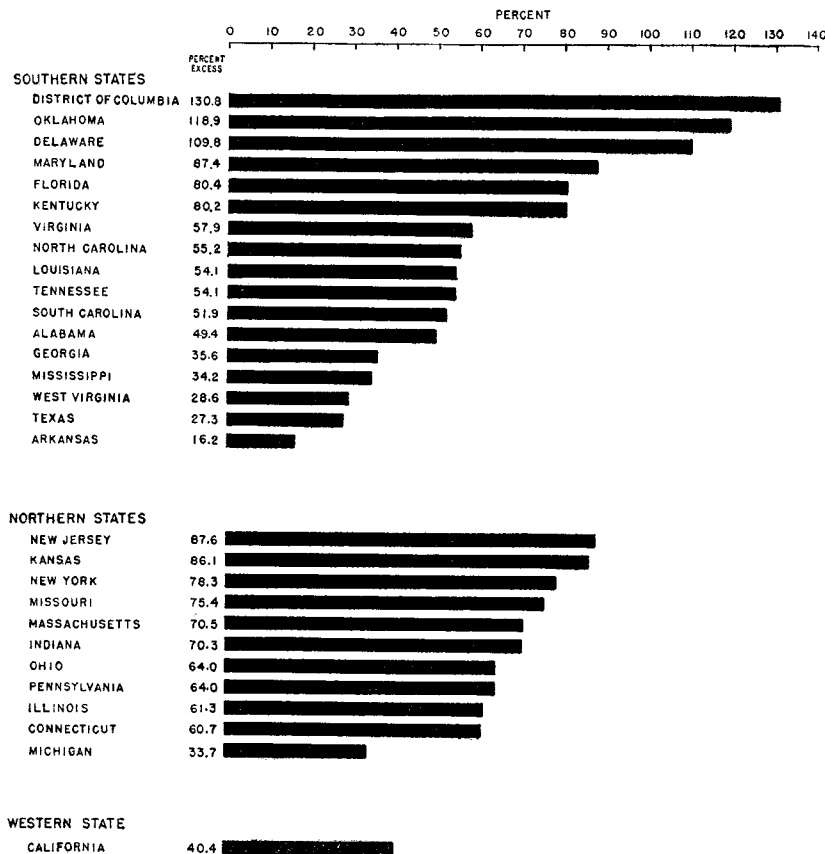


FIGURE 4.—PERCENTAGE EXCESS OF NEGRO INFANT MORTALITY RATES OVER WHITE INFANT MORTALITY RATES; 29 STATES, 1933-35.

States, but in the Northern and in the Western States the rural rates exceeded the urban (table 6). The infant mortality rate for Negroes in rural districts of the United States during the period 1933-35 was 81.0 per 1,000 live births as compared with 96.3 in urban areas. In the South the rural rate was 80.2; the rate for urban areas was 109.3. In the Northern States the rural rate for Negroes (100.9) was almost 20 points higher than the urban (81). In the Western States the Negro infant mortality rate in rural areas was 103.2 as compared with 66.9 in urban areas.

In all the Southern States, except Delaware and Maryland, rural rates for Negroes were lower than urban rates. In seven Northern States (Illinois, Kansas, Massachusetts, Michigan, Missouri, New Jersey, and Pennsylvania) the rural rates were much higher than the urban. In four Northern States (Connecticut, Indiana, New York, and Ohio) the urban rates were higher than the rural. In California the rural rate for Negroes exceeded the urban.

TABLE 6.—Mortality in the first year of life among Negro and white infants in rural and urban areas; geographic sections and 29 States, 1933-35

Geographic section and State	Deaths under 1 year per 1,000 live births			
	Negro		White	
	Rural	Urban	Rural	Urban
United States.....	81.0	96.3	53.9	52.1
All Southern States (17).....	80.2	109.3	56.0	68.0
Alabama.....	76.2	107.3	52.8	64.3
Arkansas.....	54.4	102.0	48.0	67.5
Delaware.....	124.3	90.7	54.8	51.8
District of Columbia.....		102.0		44.2
Florida.....	91.4	96.4	51.2	52.1
Georgia.....	78.4	109.1	60.4	69.0
Kentucky.....	100.7	111.8	56.7	65.9
Louisiana.....	78.1	108.4	51.4	67.0
Maryland.....	122.9	88.7	54.5	56.1
Mississippi.....	66.9	92.0	47.9	72.0
North Carolina.....	87.3	127.1	57.3	77.7
Oklahoma.....	109.2	130.2	50.3	63.6
South Carolina.....	91.8	135.5	61.1	74.9
Tennessee.....	81.0	120.6	59.4	78.4
Texas.....	71.5	106.1	57.4	78.0
Virginia.....	89.2	113.9	59.8	61.0
West Virginia.....	81.2	91.6	60.6	82.7
All Northern States (21).....	100.9	81.0	50.6	49.3
Connecticut.....	70.1	74.3	49.0	45.3
Illinois.....	119.3	72.9	51.2	46.1
Indiana.....	74.2	90.3	49.3	55.7
Kansas.....	102.5	89.1	48.7	52.4
Massachusetts.....	92.4	82.4	47.1	49.5
Michigan.....	78.5	65.0	47.9	50.3
Missouri.....	139.0	80.5	58.1	52.8
New Jersey.....	88.5	81.6	47.0	43.5
New York.....	80.1	88.7	50.7	49.1
Ohio.....	72.4	84.7	50.5	50.6
Pennsylvania.....	109.6	81.0	53.4	49.7
All Western States (11).....	103.2	66.9	61.2	46.6
California.....	94.6	57.7	50.6	43.2

The excess in the rates in urban areas for Negro infants, especially in the Southern States, emphasizes the great need of child-health activities for Negroes in Southern cities. It does not, however, minimize the importance of work in the rural areas. As was previously pointed out, more than three-fourths (161,900) of the Negro infants born in the Southern States each year were born in the rural areas and less than one-fourth (46,600) in urban areas. The number

of Negro infant deaths each year in rural areas of the Southern States was 13,000 and in urban areas 5,100. These figures on births and deaths in rural and urban areas of the Southern States must be taken into consideration in the determination of the greatest opportunity for service for Negro mothers and babies.

Among white infants in the United States as a whole, in the Northern States, and in the Western States, the mortality in the first year of life in rural areas exceeded that in urban. In the Southern States mortality in rural areas was lower than in urban. The differences in the rates in urban and rural areas in the United States as a whole and in the Northern States are small, but they add emphasis to the importance of the rural problem. The States in which rural rates for white infants exceeded urban rates are: Delaware, Connecticut, Illinois, Missouri, New Jersey, New York, Pennsylvania, and California.

The difference between the urban and rural rates in each State is less for white infants than for Negro. In connection with the greater mortality of white infants in rural areas than in urban in the United States as a whole, it is important to note that more than half (53 percent) of the white infants born alive each year are born in rural areas, and that child-health activities have been long established in most cities, whereas such activities have only recently been initiated on a large scale in rural areas.

Cause of death.

As is shown by death certificates, natal and prenatal causes were responsible for more deaths of Negro infants during the period 1933-35 than any other cause. (Table 7.) The deaths from these causes occurred largely in the first month of life. These causes, which include premature birth, congenital debility, injury at birth, congenital malformations, and syphilis, were responsible for the deaths of 34 out of every 1,000 Negro infants born alive. Respiratory diseases stood next in importance and caused the deaths of 16 Negro infants out of every 1,000 born alive; gastrointestinal diseases stood third, with 9 deaths for every 1,000 live births; epidemic and other communicable diseases, especially whooping cough and measles, were fourth, with 5 deaths for every 1,000 live births. The mortality rates from these types of causes, which are medical and biological entities, understate for Negro infants the actual death toll for which they are responsible; for 17 percent of all Negro infant deaths in 1933-35 the cause of death was either omitted from the death certificate or stated in such indefinite terms that it was not classifiable. The corresponding proportion for white infants was only 4 percent.

The mortality rate for Negro infants was greatly in excess of the corresponding rate for white infants. The rate for Negro infants from natal and prenatal causes exceeded the rate for white infants by 15 percent; from respiratory diseases, by 90 percent; from gastrointestinal diseases, by 67 percent; and from epidemic and other communicable diseases, by 81 percent.

INFANT AND MATERNAL MORTALITY

TABLE 7.—Mortality from specified causes in the first year of life among Negro and white infants; United States, 1933-35

Cause of death	Deaths under 1 year per 1,000 live births		Cause of death	Deaths under 1 year per 1,000 live births	
	Negro	White		Negro	White
All causes.....	86.1	53.0	Gastrointestinal diseases.....	9.0	5.4
Natal and prenatal causes.....	34.3	29.7	Diarrhea and enteritis.....	7.8	4.9
Premature birth.....	19.1	15.4	Dysentery.....	.7	.3
Congenital debility.....	4.2	1.9	Diseases of the stomach.....	.5	.2
Injury at birth.....	3.3	4.7	Epidemic and other communi- cable diseases.....	4.7	2.6
Congenital malformation.....	2.1	5.4	Whooping cough.....	3.0	1.3
Other diseases of early infancy.....	2.5	1.8	Measles.....	.6	.4
Syphilis.....	2.9	.4	Tuberculosis (all forms).....	.7	.3
Tetanus.....	.3	(1)	Diphtheria.....	.2	.1
Respiratory diseases.....	16.0	8.4	Other diseases.....	.2	.4
Bronchitis and bronchopneu- monia.....	8.4	5.4	External causes.....	1.8	.9
Influenza and pneumonia.....	7.5	3.1	All other causes.....	5.8	3.9
			Unknown or ill-defined diseases.....	14.5	2.0

¹ Less than one-tenth per 1,000 live births.

Age at death.

More than half of the Negro infants who die in the first year of life die in the first month. During the period 1933-35 an annual average of 21,778 Negro infants died in the first year of life, and of these, 11,329 died in the first month of life and 10,449 in the second to the twelfth month. The mortality in the first day and the first week is especially high. In each of the months after the first month the number of infants dying is smaller than in the month preceding. Whereas 52 percent of all infants who died under 1 year of age in 1933-35 died in the first month of life, the proportion in the second month was 9 percent, and in each succeeding month it was even less. (Table 8.)

TABLE 8.—Average number of Negro infants who died in each month of the first year of life; United States, 1933-35

Month of life	Deaths of Negro infants	
	Number	Percent
First year.....	21,778	100.0
First.....	11,329	52.0
Second.....	1,887	8.7
Third.....	1,465	6.7
Fourth.....	1,304	6.0
Fifth.....	1,101	5.1
Sixth.....	914	4.2
Seventh.....	888	4.1
Eighth.....	709	3.3
Ninth.....	638	2.9
Tenth.....	578	2.7
Eleventh.....	475	2.2
Twelfth.....	490	2.3

¹ Of these infants, 4,287 died in the first day of life and 8,214 in the first week.

Neonatal mortality.

The mortality rate of Negro infants who died in the first month of life (generally called the neonatal period) during 1933-35 was 44.8 per 1,000 live births, as compared with 31.7 for white infants. Natal and prenatal conditions were largely responsible for this mortality; the neonatal rate among Negro infants from causes of this type was 29.2 per 1,000 live births. Next in numerical importance stood respiratory diseases (2.5 per 1,000 live births). The deaths of young infants due to respiratory conditions are recognized as closely related to natal and prenatal causes and as seldom due to infections of the respiratory tract contracted postnally.

Mortality in the second to the twelfth month of life.

Of the more than 240,000 Negro infants who were born alive and survived the first month of life each year of the period 1933-35, about 10,450 died before completing their first year (i. e., in the second to the twelfth month)—a mortality rate of 43.3 per 1,000 infants surviving the first month. The corresponding rate for white infants was 22.0 per 1,000 survivors.

Respiratory diseases, with a rate of 14.1, were responsible for the deaths of more Negro infants than any other group of causes. Gastrointestinal diseases stood second (8.3), natal and prenatal conditions, third (5.3), and epidemic and other communicable diseases, fourth (4.6). Had the cause of death for Negro infants been more completely entered on the death certificates, the rates for all these types of causes would have been higher. Among Negro infants dying in this period of life, 5.2 deaths per 1,000 survivors were classified as due to unknown or ill-defined diseases.

STILLBIRTHS

In considering the total loss of life due to natal and prenatal conditions it is imperative to include consideration of fetal mortality, or stillbirths—i. e., infants that present no evidence of life at birth. More than 18,000 Negro stillbirths are registered annually in the United States. The stillbirth rate per 1,000 live births was 72 for Negroes during the period 1933-35, as compared with 32 for the white. For both races these rates greatly understate the actual fetal loss.

The stillbirth rates among Negroes in the individual States are of little real value. "Stillbirth registration is recognized as grossly incomplete in practically all sections of the country."⁶ It is generally conceded that the incompleteness of registration of stillbirths is greater among Negroes than among white. There is a glaring lack of uniformity in the minimum period of gestation for which registration of stillbirths is required in the States. Variation also exists in the evidence of life used to distinguish between live births and stillbirths.⁷

⁶ See Stillbirths: Report of the Subcommittee on Stillbirths of the Committee on Accuracy of Certified Causes of Death (American Public Health Association Year Book, 1935-36, pp. 224-249).

⁷ See Comparability of Maternal Mortality Rates in the United States and Certain Foreign Countries, by Elizabeth C. Tandy (Children's Bureau Pub. 229), footnote 15, p. 17, for summary of replies from State officials giving information regarding the distinction between live births and stillbirths.

The study of stillbirths⁸ that is being made by the Children's Bureau with the cooperation of the Subcommittee on Stillbirths of the American Public Health Association will supply much-needed information regarding the fetal and maternal conditions associated with stillbirths among Negroes. This study is under way in 216 hospitals, located in 49 cities in 26 States and the District of Columbia. The cities are widely scattered, being located in every geographic section of the United States. Forty-five of the 49 cities had 100,000 or more population in 1930.⁹

The total number of schedules will be about 6,000. It appears from the first 4,500 received that the 6,000 schedules will include about 1,000 schedules of Negro stillbirths. The first 2,000 schedules of stillbirths received from hospitals include 346 Negro stillbirths, 1,636 white stillbirths, 17 stillbirths of other races, and 1 stillbirth for which race was not reported. A few of the pertinent findings from the preliminary analysis of these 2,000 schedules with particular reference to the findings from the 346 schedules for Negro stillbirths follow. All these findings, especially those with respect to Negroes, are preliminary.

The racial distribution of these first 2,000 stillbirths is similar to that for all the stillbirths registered in urban areas of the United States in 1935. Of the first 2,000 stillbirths, 17 percent were to Negro mothers, 82 percent to white mothers, and 1 percent to mothers of other races (Chinese, Japanese, and Puerto Rican). The corresponding percentages for all the stillbirths registered in the urban areas of the United States during 1935 were 18, 82, and less than 1, respectively.

Of the 346 Negro stillbirths included in the first 2,000 stillbirths, 33 percent were to primiparae, as compared with 30 percent of the total Negro stillbirths registered in the United States in 1935; 67 percent to multiparae, the same proportion as in the United States as a whole (for 3 percent of the registered stillbirths, parity of the mother was not reported). Of these 346 Negro stillbirths, 22 percent were to mothers under 20 years of age and 46 percent to mothers 20 to 29 years, as compared with 22 percent and 50 percent, respectively, of the total Negro stillbirths registered in the United States in 1935 for which age of mother was reported. From this comparison it appears

⁸ For a full description of the plan and purpose of the study and a preliminary analysis of the findings based on the first 1,000 schedules received, see *A Statistical Study of Stillbirths in Hospitals—A Preliminary Report*, American Journal of Public Health (vol. 27, no. 2, February 1937, pp. 161-166). The study is being made by the present writer in cooperation with Ethel C. Dunham, M. D., Director, Division of Research in Child Development, U. S. Children's Bureau.

⁹ The purposes of the study of stillbirths in hospitals, as stated in the general plan, are:

(1) To obtain statistical information regarding fetal and maternal conditions associated with fetal mortality in hospitals.

(2) To make possible the development of a classification of causes of stillbirth (fetal and maternal).

(3) To further the development of a special certificate for registration of stillbirths which will serve as a base for comparable statistics for the various States.

The plan of the study was to obtain from a group of hospitals with large obstetric services individual schedules for all stillbirths of 20 weeks or more gestation delivered in the hospitals during the period of the study.

The definition of a stillborn child is that incorporated in the Rules of Statistical Practice of the American Public Health Association:

A stillborn child is one which shows no evidence of life after complete birth (no breathing, no action of heart, no movement of voluntary muscle). Birth is considered complete when the child is altogether (head, trunk, and limbs) outside the body of the mother, even if the cord is uncut and the placenta still attached. (See Rules of Statistical Practice adopted by the American Public Health Association—Rule no. 18 (18, 1908) and Rule no. 19 (19, 1908 as amended in 1913).)

that these 346 Negro stillbirths are a fairly typical sample of the stillbirths registered in the United States. The similarity of the proportions is surprising in view of the small number of Negro stillbirths included in the first 2,000 schedules.

From the comparison of the percentages for the 346 Negro stillbirths with those for the 1,636 white stillbirths included in the first 2,000 schedules, it appears that—

(1) About the same proportion of the Negro stillbirths (20 percent) were previsible (20 to 27 weeks of gestation) as of the white (18 percent), but a much larger proportion of the Negro stillbirths (60 percent) were delivered prior to term (before the thirty-sixth week of gestation) than of the white (46 percent), and that 2 percent of the Negro stillbirths and 6 percent of the white stillbirths were post-term deliveries (i. e., in the forty-first week of gestation or later).

(2) A larger proportion of the Negro stillbirths (64 percent) than of the white (54 percent) were dead before the onset of labor.

(3) A larger proportion of the Negro (71 percent) than of the white (59 percent) were spontaneous deliveries and, correspondingly, a smaller proportion of the Negro (29 percent) than of the white (41 percent) were operative deliveries. In approximately three-fourths of the operative deliveries of both Negro and white, the fetus was dead prior to the operation.

From the preliminary analysis of maternal conditions underlying these 346 Negro and 1,636 white stillbirths, it appears that about 30 percent of the Negro and 11 percent of the white stillbirths were associated with nonpuerperal conditions in the mother. Of these the most important was syphilis, which was reported for 25 percent of the Negro stillbirths as compared with 2 percent of the white. Puerperal conditions were responsible for 43 percent of the Negro stillbirths and 61 percent of the white. The percentage of cases associated with hemorrhage (antepartum and intrapartum hemorrhage, placenta previa, and premature separation of placenta) was very similar for the two races (17 percent for the Negro and 19 percent for the white). Toxemias of pregnancy were reported somewhat less frequently for the Negro (13 percent) than for the white (17 percent). A striking difference between the races appears in the proportions of fetal deaths associated with abnormalities of labor and delivery; these were responsible for 10 percent of the Negro stillbirths as compared with 19 percent of the white. No maternal condition of causal significance was reported for 25 percent of the Negro stillbirths and 28 percent of the white.

Although these findings are preliminary and based on relatively few cases, it appears that some of the racial differences are sufficiently great to be of real significance. The differences in the frequency of delivery prior to term and of fetal death before onset of labor (both were markedly greater for Negro than for white) were sufficiently outstanding to indicate that a larger number of cases will afford similar evidence. The greater frequency of syphilis among Negroes is in line with the general experience of obstetric practice. So, too, is the greater frequency of abnormalities of labor among the white.

MATERNAL MORTALITY

The maternal mortality of Negro women is a matter for serious concern. During the period 1933-35 approximately 2,400 Negro women died each year from conditions directly due to pregnancy and childbirth—a mortality rate of 96.1 per 10,000 live births. One Negro woman out of every 12 who died in the reproductive period of life (15 to 44 years) during the period 1933-35 died from a puerperal cause. Diseases of pregnancy and childbirth were responsible for the deaths of more Negro women of these ages than any other disease except tuberculosis.

The most frequent cause of maternal mortality among Negro women was puerperal sepsis. During the period 1933-35 sepsis was responsible for 39 percent of the deaths assigned to puerperal causes. Next in order of importance were the toxemias of pregnancy, which accounted for 29 percent. These two types of causes, which accounted for 68 percent of the maternal deaths among Negro mothers, are recognized as largely preventable. The other 32 percent of the puerperal deaths were mainly due to accidents of pregnancy, puerperal hemorrhages, and accidents of labor.

The number of deaths assigned to the puerperal state, great as it is, does little more than suggest the total loss associated with pregnancy and childbirth. The resistance of many mothers with diseases of the heart, tuberculosis, chronic nephritis, or other long-standing conditions is lowered by pregnancy and childbirth and their deaths are, in many instances, assigned not to puerperal disease but to the disease which preceded their pregnancy. Also, many of the mothers who survive childbirth do so with lowered health status. This morbidity must be mentioned as a definite loss, for the impaired health of the mother results in lowered efficiency and markedly affects the welfare of the family, especially the health and welfare of the newborn child. The Negro mother, even more commonly than the white mother, serves as nurse, cook, and housekeeper and also as an important contributor to the family income. The health and welfare of the child are recognized as wrapped in the health and well-being of the mother. This is even more true for the Negro child than for the white child.

The maternal mortality rate among Negroes (96.1 per 10,000 live births) during the period 1933-35 was greatly in excess of that for white mothers (54.6). (Table 9.) The mortality rate from sepsis was 37.2 among Negroes as compared with 21.8 among the white; from toxemia, 27.5 among Negroes as compared with 11.8 among the white. The mortality rates from accidents of pregnancy (8.7), puerperal hemorrhage (8.2), and other accidents of childbirth (12.4) among Negro mothers were considerably in excess of the rates among white mothers from the corresponding causes—(5.0, 6.1, and 7.0, respectively).

TABLE 9.—*Maternal mortality from specified causes among Negro and white mothers; United States, 1933-35*

Cause of death	Deaths assigned to pregnancy and childbirth per 10,000 live births	
	Negro	White
All puerperal causes.....	96.1	54.6
Puerperal sepsis.....	37.2	21.8
Abortion with septic conditions.....	12.9	9.7
Other puerperal sepsis.....	24.3	12.1
All other puerperal causes.....	59.0	32.8
Toxemias of pregnancy.....	27.5	11.8
Accidents of pregnancy.....	8.7	5.0
Puerperal hemorrhage.....	8.2	6.1
Puerperal phlegmasia, alba dolens, embolus, sudden death.....	2.0	2.8
Other accidents of childbirth.....	12.4	7.0
Other puerperal causes.....	.2	.2

Maternal mortality at specified ages.

The maternal mortality rates for Negro mothers exceeded those for white mothers at every age. (Table 10.) Figures for the period 1933-35 show that the rates for both Negro and white mothers were high in the age period 10 to 14 years (168.8 per 10,000 live births for Negro mothers and 101.6 for white mothers). These are early ages for child-bearing, but in each year of the period, 1933-35, about 1,680 Negro mothers and about 1,180 white mothers, 10 to 14 years of age, gave birth to live-born children (see table 4). Rates for both Negro and white mothers were lowest in the age period 20 to 24 years (70.8 per 10,000 live births for Negroes as compared with 37.8 for white), but here, as well as at all other ages, the rate for Negro mothers was in excess of that for white mothers. After the age of 39 for both Negro and white mothers the maternal mortality rates were in excess of those for mothers of their own race 10 to 14 years of age. The maximum for each race appeared at 45 years and over (259.7 for Negro mothers and 155.6 for white mothers). At these ages about 975 Negro mothers and about 6,255 white mothers gave birth to live-born infants in each year of the period 1933-35.

TABLE 10.—*Maternal mortality among Negro and white mothers of specified ages; United States, 1933-35*

Age of mother	Deaths assigned to pregnancy and childbirth per 10,000 live births	
	Negro	White
All ages.....	96.1	54.6
10 to 14.....	168.8	101.6
15 to 19.....	84.1	44.3
20 to 24.....	70.8	37.8
25 to 29.....	89.3	46.0
30 to 34.....	126.9	65.0
35 to 39.....	164.4	94.3
40 to 44.....	187.7	117.3
45 and over.....	259.7	155.6
Age not reported.....	18.1	18.9

Maternal mortality rates for Negro mothers are available by States only for the year 1935. Rates for a single year are not so reliable an index of the present maternal-mortality situation among Negroes as rates based on a 3-year period. They are, however, of considerable interest and suggest the extent of mortality due to puerperal causes. (Table 11.) In the Southern States the rate was 95.3 per 10,000 live births as compared with 96.1 in the Northern States and 98.7 in the Western. The rates for white mothers were 56.5 in the Southern States, 51.6 in the Northern, and 51.1 in the Western.

Maternal mortality rates for Negro mothers vary widely from State to State. (Fig. 5.) There is no geographic concentration of high and low rates. For example, Oklahoma and Texas, with rates in 1935 of 157.8 and 144.1 per 10,000 live births, respectively, are geographically

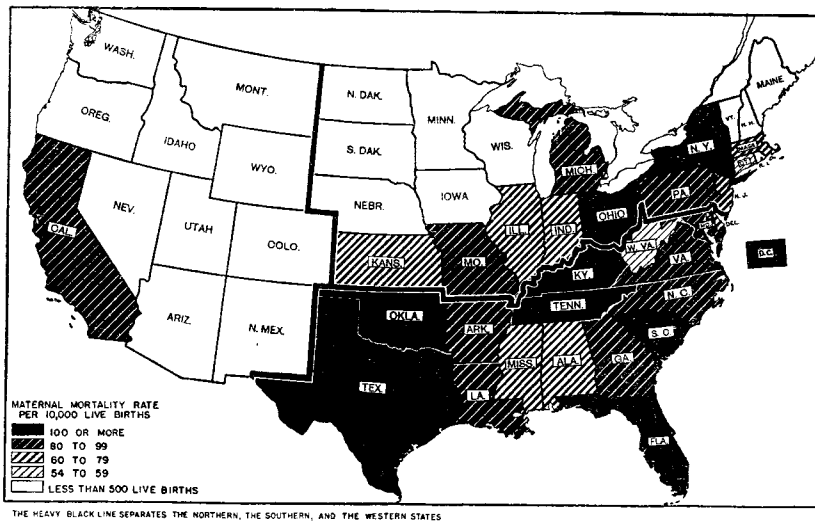


FIGURE 5.—MATERNAL MORTALITY AMONG NEGROES IN STATES WITH 500 OR MORE NEGRO LIVE BIRTHS, 1935.

situated due west of Arkansas and Louisiana, with rates of 81.2 and 99.0, respectively; New York, with a rate of 131.8, is contiguous to Massachusetts (68.3), New Jersey (69.3), and Pennsylvania (89.3).

Maternal mortality rates for Negro mothers in 9 States were in excess of 100 per 10,000 live births (Oklahoma, Texas, Kentucky, New York, Ohio, South Carolina, Florida, District of Columbia, and Tennessee). The rates ranged from 80 to 99 per 10,000 live births in 10 States (Louisiana, Michigan, California, North Carolina, Georgia, Pennsylvania, Missouri, Virginia, Maryland, and Arkansas); from 60 to 79 in 8 States (Alabama, Kansas, Mississippi, New Jersey, Massachusetts, Illinois, Delaware, and Indiana); the rates were less than 60 in 2 States (West Virginia and Connecticut).

In sharp contrast, in this same group of 29 States the rates for white mothers ranged from the maximum of 73.0 per 10,000 live births in Florida to the minimum of 42.4 in Connecticut. For white mothers 8 States had rates from 60 to 73 per 10,000 live births (Florida, South Carolina, Delaware, Louisiana, Texas, Mississippi, Kansas, and Georgia); 12 States had rates from 50 to 59 (Tennessee, Ohio, Massachusetts, Arkansas, Missouri, North Carolina, Pennsylvania, Oklahoma, Alabama, Indiana, West Virginia, and Michigan), and 9 States had rates from 40 to 49 (Illinois, New York, Kentucky, Maryland, Virginia, District of Columbia, California, New Jersey, and Connecticut).

TABLE 11.—*Maternal mortality among Negro and white mothers; geographic sections and 29 States, 1935*

Geographic section and State	Deaths assigned to pregnancy and childbirth per 10,000 live births		Geographic section and State	Deaths assigned to pregnancy and childbirth per 10,000 live births	
	Negro	White		Negro	White
United States	95.5	53.1	All Northern States (21)	96.1	51.6
All Southern States (17)	95.3	56.5	Connecticut	54.2	42.4
Alabama	77.5	52.7	Illinois	65.1	48.8
Arkansas	81.2	55.6	Indiana	60.2	52.3
Delaware	61.0	65.1	Kansas	76.8	60.7
District of Columbia	110.6	44.7	Massachusetts	68.3	57.2
Florida	118.4	73.0	Michigan	97.1	51.3
Georgia	89.9	60.5	Missouri	87.3	54.5
Kentucky	143.3	48.4	New Jersey	69.3	44.1
Louisiana	99.0	64.3	New York	131.8	48.7
Maryland	81.5	46.0	Ohio	130.9	58.3
Mississippi	70.5	61.0	Pennsylvania	89.3	53.0
North Carolina	90.7	53.5	Western States (11)	98.7	51.1
Oklahoma	157.8	52.8	California	95.4	44.2
South Carolina	118.6	69.4			
Tennessee	106.9	59.6			
Texas	144.1	63.0			
Virginia	82.2	45.9			
West Virginia	57.5	51.4			

The maternal mortality rate for Negro mothers in the United States as a whole in 1935 exceeded that for white mothers by 80 percent. In the Southern States the rate for Negro mothers exceeded that for white mothers by 69 percent and in the Northern States, by 86 percent. The greater excess percentage in Northern than in Southern States is due essentially to the lower mortality rates for white mothers in the North. The maternal mortality rates for Negroes in the two sections (96.1 for Northern States and 95.3 for Southern States) are very similar. In 2 Northern States (New York and Ohio), in 4 Southern States (Kentucky, Oklahoma, Texas, and the District of Columbia), and in California the maternal mortality rate for Negroes is more than double the rate for white mothers. In 7 Southern States and in 4 Northern States the maternal mortality rates for Negroes are 50 percent in excess of those for whites. Delaware had a higher

rate for white mothers in 1935 than for Negro mothers; the difference in the rates is, however, too small to be of any real importance. (Fig. 6.)

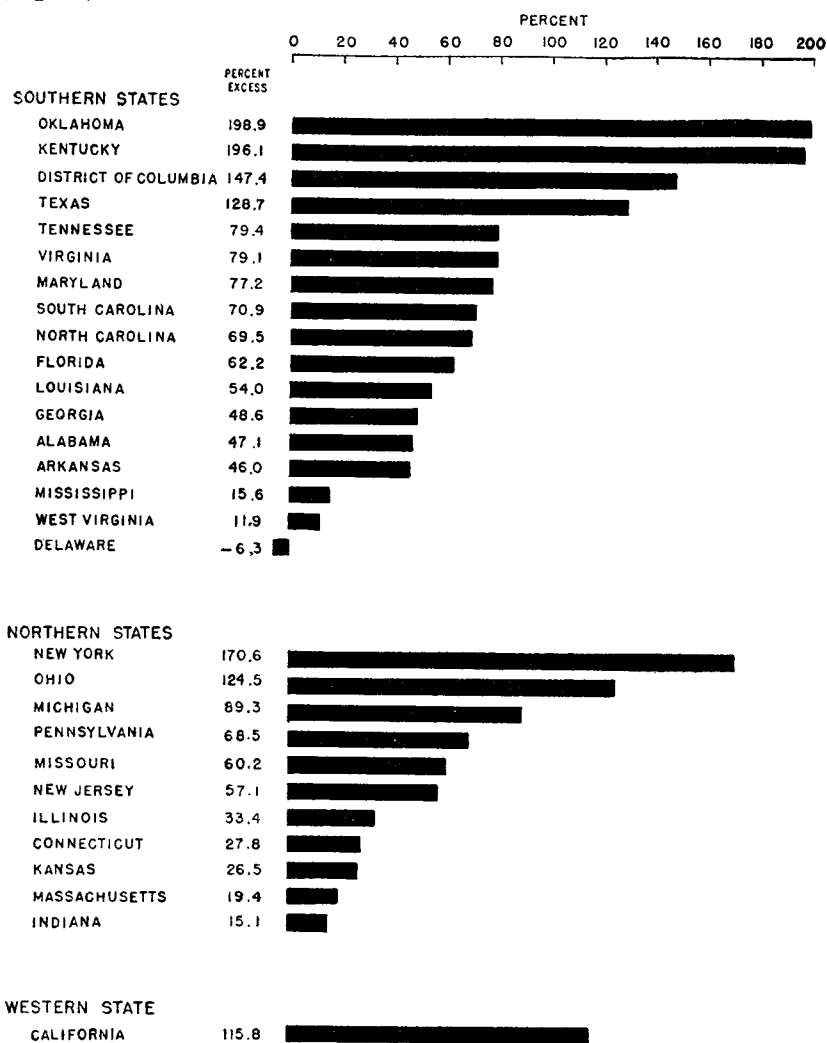


FIGURE 6.—PERCENTAGE EXCESS OF NEGRO MATERNAL MORTALITY RATES OVER WHITE MATERNAL MORTALITY RATES; 29 STATES, 1935.

TRENDS DURING THE PERIOD OF RECORD

Statistics which serve as an index of the loss of life among infants and mothers in the United States date from the establishment of the United States birth-registration area in 1915. For earlier years a certain amount of information on deaths is available, but no reliable statistics on births, and consequently no base from which to measure the number of infants exposed to the risk of dying in their first year of life or the number of mothers exposed to the risk of dying in child-birth. With the establishment of the birth-registration area in 1915 the needed information with respect to births began to be available.

FACTORS AFFECTING TRENDS

Any study of infant and maternal mortality rates in the United States over a period of years involves consideration of the expansion of the birth- and death-registration areas. It involves also consideration of the differences in completeness of registration and the movement of the Negro population.

The birth-registration area of 1915 was composed of the 11 States (including the District of Columbia) which had satisfactory birth-registration laws and were able to show at least 90 percent completeness in registration of births. The area of 1915 included 31 percent of the total population and 6 percent of the Negro population of the United States. The registration area was expanded from year to year as additional States met the requirements for admission. By 1921 the area comprised 28 States; it included 65 percent of the total population and 48 percent of the Negro population of the United States. By 1928 the area comprised 45 States; it included 94 percent of the total population and 93 percent of the Negro population of the United States. Nation-wide statistics of births were finally achieved in 1933, when the last State, Texas, was admitted to the birth-registration area.

During this same period the registration area for deaths, established in 1880, also was rapidly expanded, and by 1933 this area also included the entire continental United States.

States admitted to the birth-registration area at the time the area was established were recognized as having a high percentage of completeness of registration. These were mostly Northern States in which satisfactory laws had long been in effect and the practice of registration had long been established. The States admitted after 1915 had, of course, the 90 percent completeness of registration required for admission. Special studies¹⁰ have pointed out that in most States the percentage of completeness was increased during the years immediately following admission to the area. This completeness, however, was not uniformly maintained. South Carolina, for example, which was admitted in 1919, was dropped in 1925 "after

¹⁰ See footnote 4, p. 2.

failure in two separate tests to reach 90 percent complete registration."¹¹ Special studies¹² also show that as late as 1930 there was wide variation in completeness in the individual States.

The movement of population must be given especial consideration in interpreting trends in infant and maternal mortality among Negroes. It is well known that, beginning shortly after 1915, large numbers of Negroes migrated northward and settled in the great urban centers, where they found not only a climate totally different from that of their previous experience, but also the social and economic conditions of industrialized, densely populated areas. In the South the movement was from plantation to town and from town to city. Some of this movement was intrastate, from plantation to small city, but in many States Negroes in small cities migrated across State lines to larger cities, such as Baltimore, Washington, New Orleans, Atlanta, and Birmingham, where industry offered greater opportunity for gainful employment on a wage basis. The Negroes whose migrations were confined to the South faced problems of adaptation to new environment to a less extent than those who moved North, for the climatic factors were unchanged for them. Living conditions in the city, however, were vastly different from those of the plantation. Here, as in the North, the Negroes were crowded together in slum areas, with inadequate facilities for care of their health and for recreation. The employment opportunities were as a rule in seasonal and irregular work. The earnings, which had seemed great, proved small in purchasing power and provided, at best, meager subsistence.

TRENDS IN INFANT MORTALITY

In the United States expanding birth-registration area, in the geographic sections, and in most of the 29 States with 500 or more Negro live births annually, infant mortality rates of recent years among Negroes are markedly lower than those for the earliest years for which statistics are available. (Table 12.) In several of the States the 1935 infant mortality rate is less than half as high as that of the year in which the State was admitted. The rates in all States show considerable variation from year to year. Many of the variations are unquestionably due to the underlying factors—completeness of registration and movement of population. Had the geographic distribution of the Negro remained constant, it is possible that the downward trend of the rates would have been more rapid.

¹¹ Birth, Stillbirth, and Infant Mortality Statistics, 1925, Part II, p. 5.

¹² See footnote 4, p. 2.

AMONG NEGROES

TABLE 12.—Trend of mortality in the first year of life among Negro infants in each geographic section and State with 500 or more Negro live births; United States expanding birth-registration area, 1915-35¹

Geographic section and State	Deaths under 1 year per 1,000 live births																				
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Expanding birth-registration area ¹	181	184	151	162	134	136	111	112	120	114	112	112	100	106	101	100	93	84	85	91	82
All Southern States (17)	174	197	145	155	131	129	106	107	113	110	106	105	97	103	100	99	91	82	86	92	83
Alabama.....													82	95	91	94	77	76	80	85	81
Arkansas.....													77	86	69	56	51	52	65	61	49
Delaware.....																					
District of Columbia.....																					
Florida.....	174	159	159	188	132	139	123	134	143	206	132	157	113	125	130	120	155	91	92	107	134
Georgia.....																					
Kentucky.....																					
Louisiana.....																					
Maryland.....																					
Mississippi.....																					
North Carolina.....																					
Oklahoma.....																					
South Carolina.....																					
Tennessee.....																					
Texas.....																					
Virginia.....																					
West Virginia.....																					
All Northern States (21).....	182	174	172	186	150	162	132	128	141	126	127	128	108	117	109	102	102	93	84	88	79
Connecticut.....																					
Illinois.....																					
Indiana.....																					
Kansas.....																					
Massachusetts.....																					
Michigan.....																					
Missouri.....																					
New Jersey.....																					
New York.....																					
Ohio.....																					
Pennsylvania.....																					
All Western States (11).....	185	181	195	227	151	167	134	142	152	138	132	140	113	117	106	107	115	99	79	93	81
California.....																					

¹ The birth-registration area in 1915 included 6.2 percent of the Negro population of the United States; in 1921 it included 48.3 percent; in 1928, 92.8 percent; and in 1933, 1934, and 1935 the entire Negro population of continental United States.

² Dropped from the area.

³ Rate not shown because the number of Negro live births was less than 500.

The mortality rate for Negro infants in the United States has decreased during the period for which statistics are available. (Fig. 7.) In both 1915 and 1916 more than 180 out of every 1,000 Negro

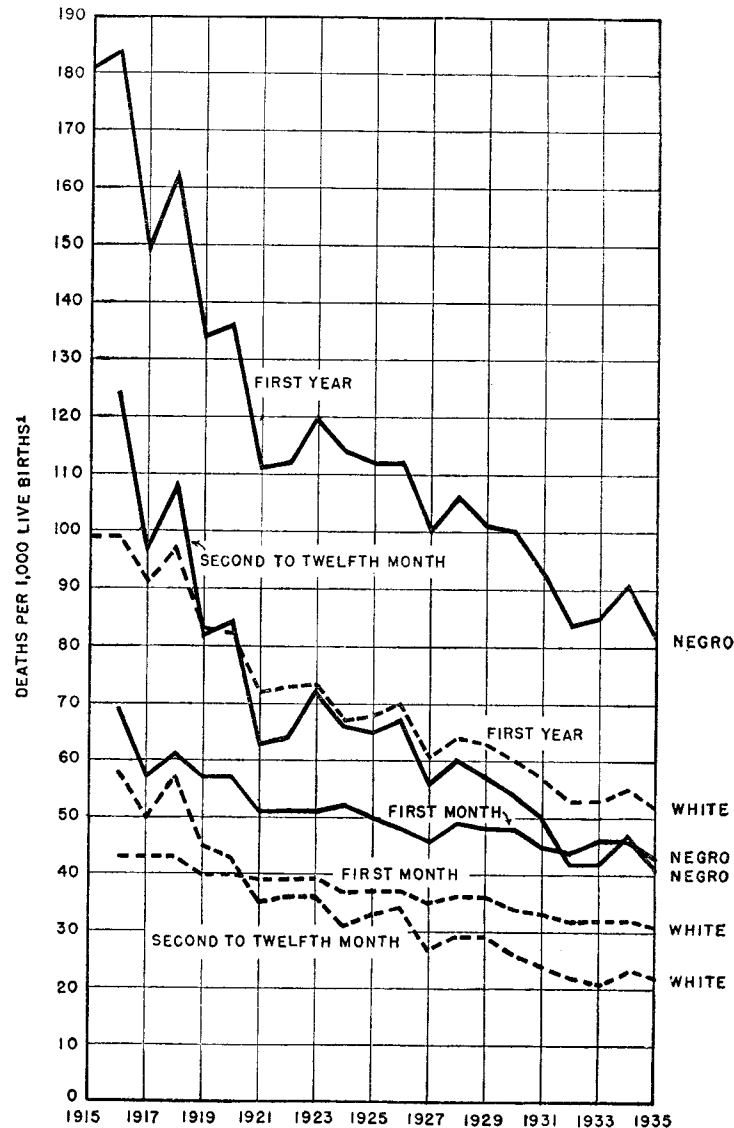


FIGURE 7.—MORTALITY IN CERTAIN PERIODS OF THE FIRST YEAR OF LIFE AMONG NEGRO AND WHITE INFANTS; EXPANDING BIRTH-REGISTRATION AREA, 1915-35.

infants born alive died before reaching their first birthday. In no year from 1932 to 1935 was the rate higher than 91 per 1,000 live births. (Table 13.) In the first month and in the second to the twelfth month decreases are apparent. In 1916, 69 infants, and in

1935, 43 infants out of every 1,000 born alive died before completing their first month of life. In 1916 out of every 1,000 Negro infants who survived the first month of life, 124 died before completing their first year; in 1935 the number was 41.

The mortality among Negro infants today, however, is almost as high as that of white infants at the time the birth-registration area was established. In 1935 the mortality rate for Negro infants was 82 in the first year of life, 43 in the first month, and 41 in the second to the twelfth month. In 1916 the corresponding rates for white infants were 99, 43, and 58, respectively.

TABLE 13.—Mortality in certain periods of the first year of life¹ among Negro and white infants in the expanding birth-registration area, 1915-35

Year	Mortality rates in the first year of life ¹					
	Negro			White		
	First year	First month	Second to twelfth month	First year	First month	Second to twelfth month
1915.....	181	(²)	(²)	99	(²)	(²)
1916.....	184	69	124	99	43	58
1917.....	149	57	97	91	43	50
1918.....	162	61	108	97	43	57
1919.....	134	57	82	83	40	45
1920.....	136	57	84	82	40	43
1921.....	111	51	63	72	39	35
1922.....	112	51	64	73	39	36
1923.....	120	51	72	73	39	36
1924.....	114	52	66	67	37	31
1925.....	112	50	65	68	37	33
1926.....	112	48	67	70	37	34
1927.....	100	46	56	61	35	27
1928.....	106	49	60	64	36	29
1929.....	101	48	57	63	36	29
1930.....	100	48	54	60	34	26
1931.....	93	45	50	57	33	24
1932.....	84	44	42	53	32	22
1933.....	85	46	42	53	32	21
1934.....	91	46	47	55	32	22
1935.....	82	43	41	52	31	23

¹ First year and first month, deaths per 1,000 live births; second to twelfth month, deaths per 1,000 infants surviving the first month of life.

² Not available.

In the early years of the period the mortality rate for Negro infants in the second to the twelfth month exceeded that of white infants in the entire first year; from 1923 to 1926 the rates were practically identical; only from 1927 onward has the rate for Negro infants in the second to the twelfth month been substantially lower than that for white infants in the entire first year. In 1932, for the first time, the rate for Negro infants in the second to the twelfth month dropped below that of Negro infants in the first month of life. Since 1921, among white infants the mortality rate in the second to the twelfth month has been lower than that of the first month.

During the period under review the mortality of Negro infants in each period of the first year of life has decreased at about the same rate as that of white infants. The rate for Negro infants for the entire first year decreased on the average¹³ about 3.6 percent annu-

¹³ To bring out the general tendency toward a constant rate of decrease the average annual percentage rate of change has been calculated by the ordinary equation for geometric progression: $\log y = a + bx$. For a full description of method, see *Secular Changes in Mortality Rates Connected with Certain Organ Systems*, by Elizabeth C. Tandy. (*Human Biology*, vol. 3, no. 4 (December 1931), pp. 499-528).

ally¹⁴ (1915-35); in the first month, about 1.8 percent annually (1916-35); and in the second to the twelfth month of life, about 4.8 percent annually (1916-35). The average annual rate of decrease for white infants was 3.3 percent¹⁵ for the entire first year, 1.7 per-

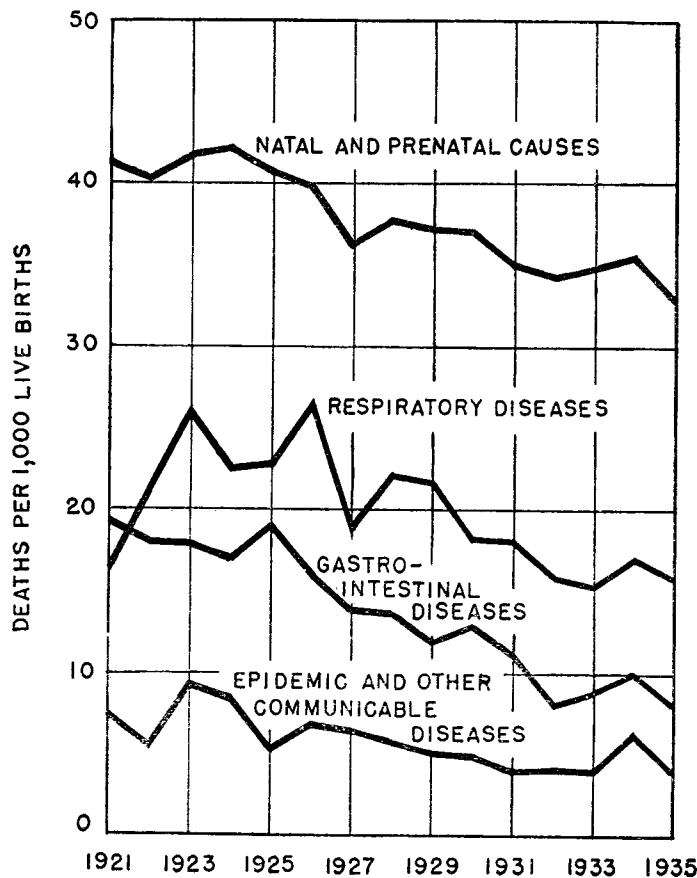


FIGURE 8.—MORTALITY FROM SPECIFIED CAUSES IN THE FIRST YEAR OF LIFE AMONG NEGRO INFANTS; EXPANDING BIRTH-REGISTRATION AREA, 1921-35.

cent for the first month, and 5.0 percent for the second to the twelfth month.

¹⁴ The average annual percentage rate of decrease in mortality during each period of the first year of life among Negro and white infants is:

	Negro	White
First year (1915-35).....	-3.566±.185	-3.258±.115
First month (1916-35).....	-1.816±.125	-1.725±.045
Second to twelfth month (1916-35).....	-4.825±.265	-4.965±.212

¹⁵ The significance of any result is judged by its probable error. The probable error of the difference between any 2 rates of change is calculated by the formula:

$$P. E. \text{ of difference} = \sqrt{(P. E._1)^2 + (P. E._2)^2}$$

A difference is considered significant whenever it exceeds 3 times its probable error.

The mortality in the first year of life from each of the principal causes of death has decreased during the period 1921-35.¹⁶ (Fig. 8 and table 14.) The most outstanding decreases are in the mortality from gastrointestinal and from epidemic and other communicable diseases. Mortality from respiratory diseases also shows a marked drop. Mortality from natal and prenatal causes, which occurs largely in the first month of life, has shown some decrease, but it is relatively small as compared with other principal causes of death in the first year.

TABLE 14.—Mortality from specified causes in the first year of life among Negro and white infants; expanding birth-registration area, 1921-35

Year	Deaths under 1 year per 1,000 live births						
	All causes	Natal and prenatal causes	Gastro-intestinal diseases	Respiratory diseases	Epidemic and other communicable diseases	External and all other causes	Unknown or ill-defined diseases
NEGRO							
1921	110.7	41.1	19.2	16.5	7.4	126.5	(^c)
1922	111.7	40.2	18.0	21.3	8.6	11.3	15.2
1923	119.9	41.6	17.9	25.9	9.3	10.6	14.5
1924	114.1	42.1	17.0	22.5	8.5	10.6	13.4
1925	112.0	40.8	18.9	22.8	5.3	10.4	13.7
1926	112.1	39.8	16.0	26.4	6.8	9.7	13.3
1927	99.9	36.2	13.8	18.9	6.5	8.8	15.8
1928	105.9	37.7	13.6	22.1	5.7	9.1	17.7
1929	101.5	37.1	12.0	21.6	5.1	8.8	16.9
1930	99.5	37.0	12.9	18.2	4.8	8.6	18.0
1931	92.7	35.0	11.1	18.1	4.0	7.8	16.7
1932	84.1	34.2	8.1	15.8	4.1	6.7	15.2
1933	85.4	34.8	8.8	15.2	4.0	7.6	15.1
1934	91.0	35.4	10.1	16.9	6.3	7.7	14.7
1935	81.9	32.7	8.1	15.8	3.9	7.6	13.5
WHITE							
1921	72.5	35.9	14.5	9.7	4.4	18.0	(^c)
1922	73.2	36.0	12.4	13.0	3.8	6.6	1.5
1923	73.5	35.7	12.2	12.9	5.0	6.4	1.4
1924	66.8	34.8	9.5	10.8	4.0	6.3	1.4
1925	68.3	34.5	11.5	11.1	3.4	6.5	1.2
1926	70.0	34.7	10.0	12.9	4.6	6.5	1.3
1927	69.6	32.6	7.9	9.1	3.4	6.0	1.7
1928	64.0	33.1	7.9	11.7	3.3	6.0	2.0
1929	65.2	32.9	7.2	11.8	3.3	5.8	2.1
1930	59.6	31.8	7.8	9.5	2.9	5.4	2.2
1931	56.7	31.0	6.4	9.7	2.5	5.1	2.0
1932	53.3	30.1	5.1	8.9	2.5	4.6	2.0
1933	52.8	30.0	5.3	8.5	2.2	4.7	2.1
1934	54.5	30.4	5.8	8.4	3.2	4.8	1.9
1935	51.9	28.9	5.2	8.4	2.4	5.1	1.9

^c Unknown and ill-defined diseases were included in all other causes.

The average annual rate of decrease¹⁷ in mortality from all the principal causes of death¹⁸ among Negro infants has been about the

¹⁶ Statistics regarding cause of death in the first year of life among Negroes are available from 1916 onward. The period 1921-35 has been selected for analysis because only since 1921 has as much as 48 percent of the Negro population of the United States been included in the birth-registration area.

¹⁷ See footnote 13, p. 27.

¹⁸ The average annual percentage rate of decrease in mortality from the principal causes of death among Negro and white infants (1921-35) is:

	Negro	White
Natal and prenatal causes	-1.654±.122	-1.585±.062
Respiratory diseases	-2.511±.580	-2.524±.465
Gastrointestinal diseases	-6.284±.382	-7.132±.353
Epidemic and other communicable diseases	-4.499±.760	-4.568±.521

same as among whites.¹⁹ During the period 1921-35 the mortality rate of Negro infants from natal and prenatal causes decreased on the average about 1.7 percent annually; from respiratory diseases, about 2.5 percent; from gastrointestinal diseases, about 6.3 percent; from epidemic and other communicable diseases, 4.5 percent. The average annual rate of decrease among white infants from natal and prenatal causes was 1.6 percent; from respiratory diseases, 2.5 percent; from gastrointestinal diseases, 7.1 percent; and from epidemic and other communicable diseases, 4.6 percent.

TRENDS IN MATERNAL MORTALITY

Information with respect to maternal mortality among Negroes in the United States is available since 1928.²⁰ The mortality rate for Negro mothers has decreased during the period for which statistics are available. (Fig. 9.) In 1928 and 1929 more than 120 Negro mothers died from diseases of pregnancy and childbirth for every 10,000 Negro infants born alive. (Table 15.) In 1934 and 1935 the rates were 93 and 95, respectively. Mortality from puerperal sepsis has decreased. In 1928 and 1929, the rates from sepsis were 42 and 45, respectively, per 10,000 live births, as compared with 36 and 39 in 1934 and 1935. Marked decrease is apparent in the rates from all other puerperal causes. From 1928 to 1930 the rates from these causes were in excess of 76 per 10,000 live births; in 1934 and 1935 the rates were 57 and 56, respectively.

TABLE 15.—*Maternal mortality among Negro and white women; expanding birth-registration area, 1928-35*

Year	Deaths assigned to pregnancy and childbirth per 10,000 live births					
	Negro			White		
	All puerperal causes	Puerperal sepsis	All other puerperal causes	All puerperal causes	Puerperal sepsis	All other puerperal causes
1928	122.0	42.5	79.5	62.7	22.9	39.8
1929	121.5	44.9	76.6	63.1	24.1	39.0
1930	118.9	41.1	77.7	60.8	22.3	38.5
1931	112.5	40.9	71.5	60.1	23.0	37.0
1932	100.5	35.4	65.1	58.1	21.9	36.3
1933	100.0	36.3	63.7	56.4	21.5	34.8
1934	93.1	35.8	57.3	54.4	21.8	32.6
1935	95.5	39.3	56.2	53.1	21.9	31.1

The mortality rates for Negro mothers in recent years, however, are greatly in excess of those for white mothers in the earliest years of the period under review. In 1935 the mortality rate for Negro mothers from all puerperal causes was 95 per 10,000 live births, from puerperal sepsis, 39, and from all other puerperal causes, 56. The corresponding rates for white mothers in 1928 were 63, 23, and 40, respectively.

¹⁹ See footnote 15, p. 28.

²⁰ Maternal-mortality figures are issued by the U. S. Bureau of the Census for the death-registration area. The birth- and death-registration States are identical from 1928 onward, except that South Dakota was admitted to the death-registration area in 1930 and to the birth-registration area in 1932. In South Dakota there were only 2, 5, 2, and 7 Negro live births in 1932, 1933, 1934, and 1935, respectively. The difference between the death- and birth-registration States of 1930 and 1931 is obviously of no importance as far as Negroes are concerned.

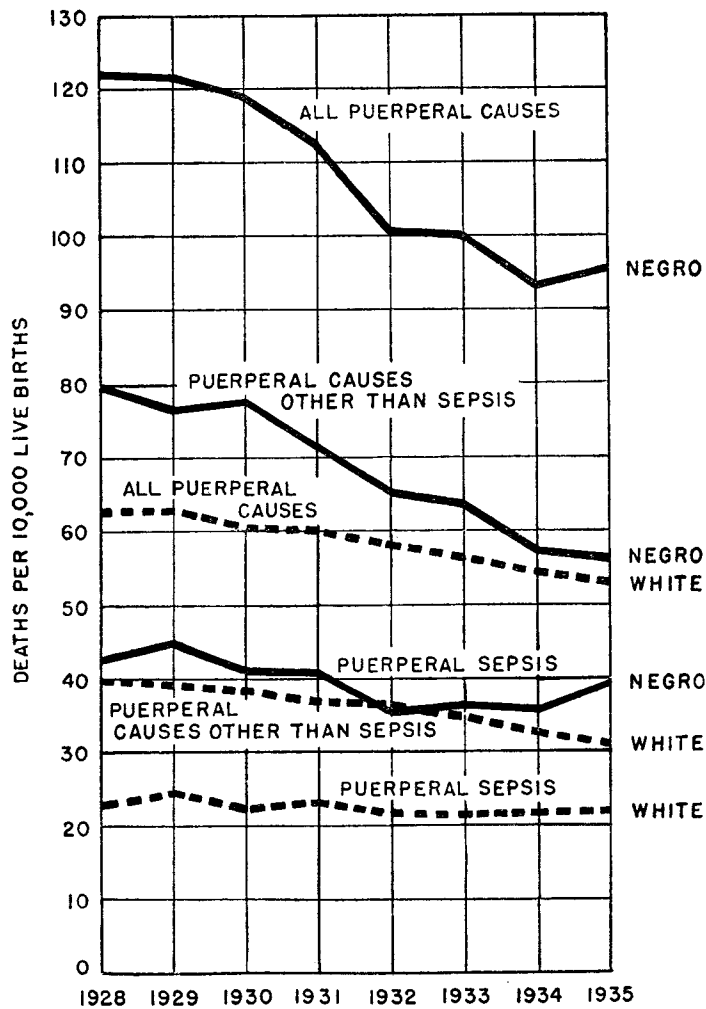


FIGURE 9.—MATERNAL MORTALITY AMONG NEGRO AND WHITE WOMEN: EXPANDING BIRTH-REGISTRATION AREA, 1928-35.

During the period 1928-35 the rates for Negro mothers from all puerperal causes and from causes other than sepsis decreased²¹ more rapidly²² than the rates for white mothers. The rates for Negro mothers from all puerperal causes decreased on the average²³ about 4.3 percent annually, from puerperal sepsis 2.6 percent, and from all other puerperal causes, 5.3 percent. The average annual rate of decrease for white mothers was 2.5 percent from all puerperal causes, 1.2 percent from sepsis, and 3.4 percent from all other puerperal causes.

The rates from sepsis, as from all other puerperal causes, for Negro mothers during this period show a significant decrease, but the increase in 1935 is so great that the average annual rate of decrease for the Negro (2.6 percent) is not significantly different from that for the white (1.2 percent).

²¹ See footnote 13, p. 27.

²² See footnote 15, p. 28.

²³ The average annual percentage rate of decrease in mortality from all puerperal causes, from sepsis, and from all other puerperal causes among Negro and white mothers (1928-35) is:

	Negro	White
All puerperal causes.....	-4.284±.344	-2.544±.125
Puerperal sepsis.....	-2.582±.649	-1.151±.277
All other puerperal causes.....	-5.294±.322	-3.445±.208

SUMMARY

More than 250,000 Negro infants are born alive each year in the United States. Almost two-thirds of these Negro infants are born in the rural areas of the Southern States, but in every large city in the South and in many large cities in the North considerable numbers of Negro births occur each year.

Midwives attend more than half of all Negro live births. In the rural areas of the South about four-fifths of the Negro births are attended by midwives. In Southern cities about three-fourths of the Negro live births are attended by physicians. In Northern cities practically all are attended by physicians and almost two-thirds by physicians in hospitals.

About 22,000 Negro infants die each year in the United States. In every section of the United States the mortality rate for Negro infants is greatly in excess of that for white infants. Mortality rates for Negro infants, on the whole, are higher in urban than in rural areas, but in several States the rates in rural areas are higher than the rates in urban.

More than half the Negro infants who die in the first year of life die in the first month. Natal and prenatal causes are responsible for more deaths than any other cause (deaths from these causes occur largely in the first month of life). Respiratory diseases are second in importance—gastrointestinal diseases third, epidemic and other communicable diseases fourth. The mortality rate from each of these causes is higher among Negro than among white infants.

Mortality among Negro infants decreased greatly during the period 1915-35. Most of the decrease was in the second to the twelfth month of life. The decrease in the first month of life was slight as compared with that in the second to the twelfth month. The decrease has been as rapid among Negro as among white infants, but the mortality rate for Negro infants today is practically as high as that for white infants in the earliest years of record (1915 and 1916).

The stillbirth rate is considerably higher for the Negro than for the white. Preliminary analysis of the special study now under way in the Children's Bureau shows that Negro stillbirths occur more frequently than white in the early periods of gestation and that fetal death prior to onset of labor occurs more often among the Negro than the white. Nonpuerperal diseases of the mother, especially syphilis, are more frequently associated with Negro stillbirths than with white. Abnormalities of labor and delivery are less often reported for the Negro than for the white.

Maternal mortality among Negro women is far greater than that among white women. In several of the States the rate from puerperal causes for Negro mothers is more than double the rate for white mothers. The principal causes of maternal deaths among Negro women, as among white, are puerperal sepsis and toxemias of pregnancy—causes known to be largely preventable.

Maternal mortality rates for Negroes from all puerperal causes, from puerperal sepsis, and from all causes other than sepsis have decreased during the period 1928-35. In spite of these decreases the mortality rate of Negro mothers in 1935 was greatly in excess of that of white mothers in 1928.

The downward trends of the rates for Negro infants and mothers throughout the period of record are probably due largely to the gradual adaptation of the Negro to his environment and to the increasing healthfulness of the community in which he lives. To some extent the downward trends in recent years are associated with the development of maternal and child-health programs, but such programs among Negroes in most sections of this country are still in the pioneer stage.

The high mortality of the present day points out the great need for the development of widespread activities which will help to bring Negro mothers safely through childbirth and Negro infants safely through their first year of life. The wholehearted acceptance by the Negro people of the health facilities that have been made available for their use in the past gives great encouragement to workers who may be active in the development of future programs for safeguarding the health of the Negro mother and infant.

