

VITAL and HEALTH STATISTICS
DATA FROM THE NATIONAL VITAL STATISTICS SYSTEM

Infant, Fetal, and Maternal Mortality

United States - 1963

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A report on infant, fetal, and maternal deaths, with special reference to differential mortality by race, sex, and region; causes of death; and trends in infant and maternal mortality.

Washington, D.C.

September 1966

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
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IN THIS REPORT infant, fetal, and maternal mortality are analyzed. Of the 103,390 infants who died in 1963 before the end of their first year of life, 3 out of 4 died during the first month. The infant mortality rate was 25.2 deaths under 1 year per 1,000 live births. Prematurity, respiratory disorders, and congenital anomalies were among leading causes of these deaths. The mortality risk was greater for nonwhite infants than for white and for male infants than for female. Infant mortality rates were highest in the South compared with other regions of the country.

In 1963, 94,194 fetal deaths were registered. This figure represents only a small part of total fetal loss in the United States. The fetal death ratio was 15.8 (fetal deaths of gestations of 20 weeks or more plus those of gestation not stated per 1,000 live births). Sex and color differences observed for infant mortality also were characteristic of fetal deaths. Fetal loss was three times as great for twin deliveries as for single deliveries. Fetal loss was lowest for women having second pregnancies. Each advance in total-birth order above the second showed increased mortality. Some variation in this pattern exists when changes in birth order are considered separately for each age-of-mother group.

The number of reported maternal deaths for 1963 was 1,466. Maternal conditions are those assigned to deliveries and complications of pregnancy, childbirth, and the puerperium, International List Numbers 640-689. Toxemia was the principal cause among the causes of maternal mortality. The differential in rates by color was more substantial for maternal mortality than for either infant or fetal mortality—maternal mortality for nonwhite women was four times greater than for white women. Maternal mortality rates were higher in the South Region than in any other region of the country.

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INFANT, FETAL, AND MATERNAL MORTALITY UNITED STATES, 1963

Mary A. McCarthy, *Division of Vital Statistics*

INFANT MORTALITY

The level of infant mortality in 1963 was similar to that observed in recent years. Deaths of infants under 1 year of age totaled 103,390 in 1963, and the infant mortality rate was 25.2 per 1,000 live births; a rate of 25.3 was reported for 1961 and 1962 (table 1).

The number of infants who die during the neonatal period (under 28 days) form the major portion of the infant mortality total—72 percent in 1963. The risk of dying was greatest during the first 24 hours of life and then decreased thereafter. Of the infants who failed to survive the first year of life, 41 percent died during the first day after birth.

The sex and color differences characteristic of infant mortality in the past were repeated for 1963 (table 2). Rates for males were consistently higher than those for females. These differences were substantial until the sixth month of life as the following rates per 1,000 live births at different ages indicate:

	<i>Male</i>	<i>Female</i>
Under 28 days-----	20.7	15.6
Under 1 day-----	11.7	9.0
1-6 days-----	7.0	5.0
7-27 days-----	2.0	1.6
28 days-11 months--	7.7	6.3
1-5 months-----	5.8	4.6
6-11 months-----	1.9	1.7

The mortality risk for nonwhite infants was twice as high as that for the white group, the difference being greatest during the postneonatal period (28 days to 11 months). Rates per 1,000 live births are shown below by age and color.

	<i>White</i>	<i>Non- white</i>	<i>Ratio of nonwhite to white</i>
Under 1 year---	22.2	41.5	1.87
Under 28 days----	16.7	26.1	1.56
28 days-11 months-	5.5	15.4	2.80

CAUSE OF DEATH

Of the more definitive causes of infant death, respiratory disorders and congenital malformations were among the chief causes of mortality. Almost half of the infant deaths were attributed to generalized or less defined conditions—postnatal asphyxia and atelectasis, immaturity, unqualified, and ill-defined diseases (table 3).

The principal causes of mortality are very different when observed by the age of the infant. Adverse conditions present during the fetal period of the child and events surrounding the birth are important among causes of neonatal deaths. Neonatal deaths followed the pattern of total infant deaths. However, during the postneonatal period, pneumonia, except pneumonia of newborn, was the leading cause of mortality and accounted for 3 out

of 10 deaths. Mortality from congenital malformations, which was high in the neonatal period, was likewise important among causes of death during the postneonatal period (table 4).

For leading causes of neonatal mortality, rates for the nonwhite group were about 1.5 times those for white infants with one exception—congenital malformations. The rates per 100,000 live births for this cause were as follows:

	<i>Under 1 year</i>	<i>Under 28 days</i>
White -----	366.0	240.6
Nonwhite -----	302.5	178.1

The differences in rates for major causes were even greater for the postneonatal period.

Neonatal rates and those for the postneonatal period for leading causes of death are shown by sex in table 5. The excess number of deaths for male infants was not due to any single cause or major cause group when detailed data were examined.

GEOGRAPHIC AREA, 1959-63

Infant and neonatal mortality rates by color are shown for each geographic division and region for 1959 through 1963 in tables 6 and 7. Frequencies and rates for individual States appear in tables 8-10.

Infant mortality rates for the 50 States and the District of Columbia for 1963 are illustrated in figure 1. The rates range from a low of 18.6 per 1,000 live births in Utah to 41.3 in Mississippi. Favorable mortality has long been characteristic of Utah. Demographic and health factors contributing to excess mortality in Mississippi may include the high proportion of nonwhite persons in the population (42 percent in 1960) and the relatively low rate of hospital utilization for obstetrical care by the nonwhite group. For 1963 the percents of total births which occurred outside of hospitals were as follows:

	<i>Total</i>	<i>White</i>	<i>Non- white</i>
United States-----	2.6	0.9	12.1
Mississippi -----	25.7	0.9	47.6

Infant mortality rates for nonwhite infants were higher than those for white infants in nearly all States. The exceptions were Hawaii and those areas for which the nonwhite populations constituted only a small part of the total population. The relative dispersion of rates by State from the mean (X) was larger for nonwhite than for white. The coefficients of variation for 1963 were 9.6 for white and 24.5 for the nonwhite group. This relative measure (V) is the ratio of the standard deviation for a series to the mean for the same series and is expressed as a percent.

In 1963 the total infant mortality rate was below the rate for the United States for each State in the Northeast and North Central Regions. In both of these regions the proportion of the total population which was nonwhite in 1960 was considerably below the U.S. average. The following figures show the proportion of nonwhite persons in the total population of each region.

United States -----	11.4
Northeast -----	7.1
North Central -----	7.0
South -----	20.9
West -----	7.9

Among the four regions, infant mortality rates were higher in the South for both white and nonwhite during the period shown in table 6, 1959-63. Also, the differential between death rates for white and nonwhite infants was slightly greater in the South Region. For 1963 the ratios of nonwhite infant mortality rates to those of white were as follows:

United States -----	1.87
Northeast -----	1.85
North Central -----	1.78
South -----	1.91
West -----	1.52

The pattern of these ratios was parallel to differences by color in the percent of births which were medically attended (those in hospitals).

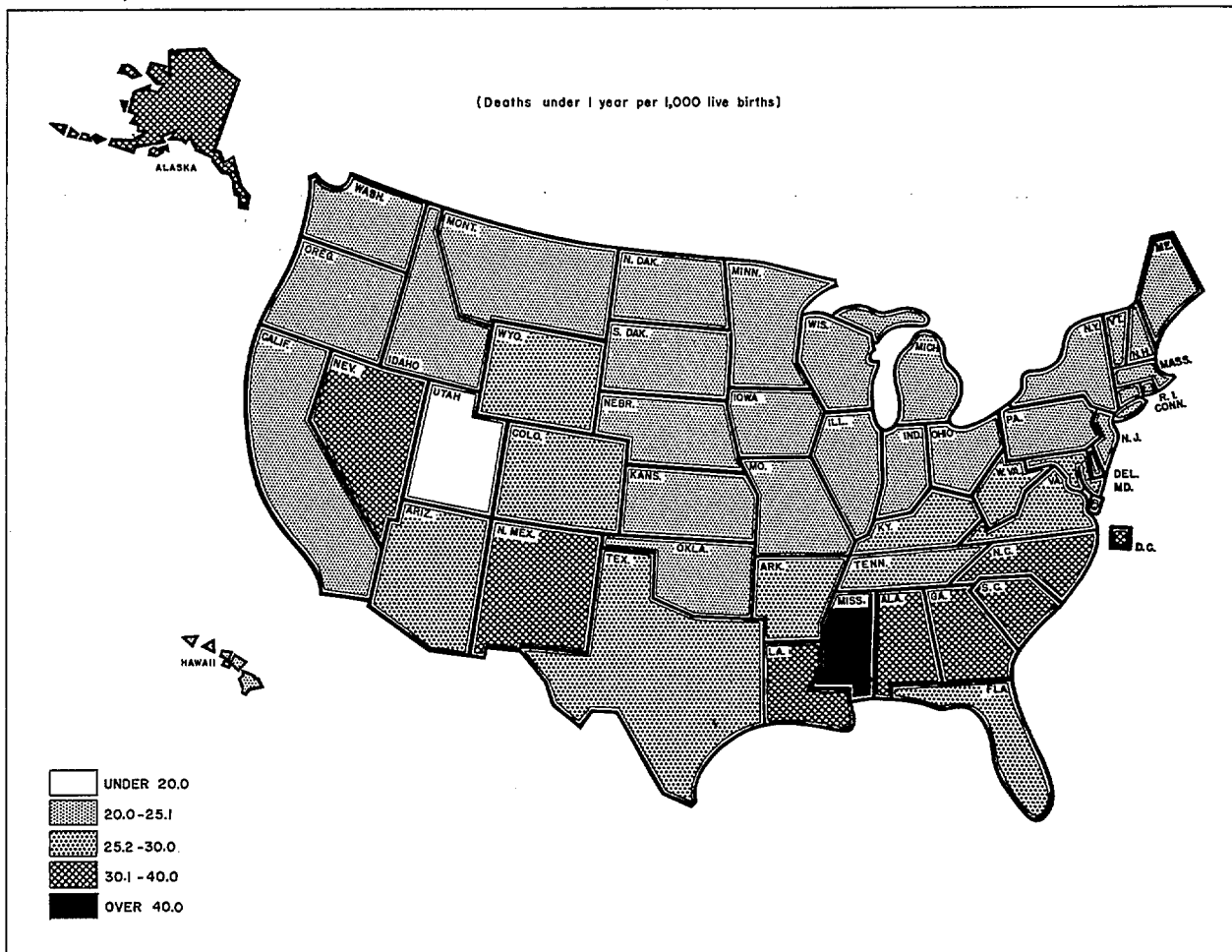


Figure 1. Infant mortality rates: each State, 1963

	White	Non-white	Ratio of white to nonwhite
United States---	99.1	87.9	1.12
Northeast-----	99.5	98.5	1.01
North Central----	99.4	97.2	1.02
South-----	98.3	80.0	1.23
West-----	99.1	97.9	1.01

by the coefficient of variation (V) is shown below for each of the four geographic regions. The dispersion of rates from the mean is greatest in the West.

Northeast-----	4.8
North Central-----	5.8
South-----	13.5
West-----	16.2

The relative dispersion of infant mortality rates per 1,000 live births by State as measured

The infant mortality rates for white infants ranged from 18.2 in Utah to 28.3 in Nevada for 1963;

for nonwhite infants the range was from 21.3 in Oregon to 56.2 in Arizona and 57.6 in Mississippi. The rate observed in Arizona is related to the high mortality of Indians. For 1963 the infant mortality rate for Indians in Arizona was 62.4 per 1,000 live births, and for all other races combined the rate was 24.4. As the following figures show, annual percent changes in the rates for the West have been more consistent than for the other regions.

	1962- 1963	1961- 1962	1960- 1961	1959- 1960	1959- 1963
Northeast--	-2.1	+2.1	-1.7	-2.1	-3.7
North					
Central---	0	-1.7	-1.3	-1.3	-4.2
South-----	+0.7	+1.0	-4.9	-1.0	-4.2
West-----	-1.7	-1.7	-2.0	-2.0	-7.1

Neonatal mortality rates were highest each year from 1959 to 1963 in the South Region for the total group and for white infants (table 7). However, the rates for nonwhite infants who died during the first month of life were highest in the Northeast Region. The Middle Atlantic Division accounted for this high regional neonatal rate for each of the years shown in table 7. Differences between the white and nonwhite rates were greatest in the Northeast. The nonwhite neonatal rate for this region has declined more substantially since 1959 than comparable rates for the other three regions. For white neonates and the total group the decrease was greatest for the West. The following figures indicate the percents of decline from 1959 to 1963.

	Total	White	Nonwhite
Northeast -----	3.8	4.1	10.4
North Central-----	3.4	4.1	1.9
South -----	4.3	3.9	4.0
West-----	6.6	7.3	8.3

Urban and Rural Areas in Metropolitan and Nonmetropolitan Counties

The infant mortality rates per 1,000 live births for urban and rural areas in metropolitan and nonmetropolitan counties are shown below. For each year from 1960 through 1963 the rates have been consistently lowest for rural areas in metropolitan counties compared with the rates for the other areas:

	Metropolitan		Nonmetropolitan	
	Urban	Rural	Urban	Rural
1963----	24.8	21.9	27.2	27.4
1962----	25.3	22.0	26.8	26.8
1961----	25.0	22.2	27.2	26.8
1960----	25.8	22.5	27.9	28.0

As defined by the Division of Vital Statistics, the rural part of a metropolitan area includes mainly the urban fringe. It is probable that health facilities are more accessible than in nonmetropolitan rural areas. The proportion of births occurring in hospitals validates this assumption to some extent: 98.8 percent of metropolitan rural births were delivered in hospitals for 1963; for nonmetropolitan rural births the proportion was 93.3.

For white infants the death rates followed the same general pattern as those for the total group. However, the nonwhite infants have better survival rates in the urban part of metropolitan counties than in the other areas shown in table 11.

TREND

The infant mortality rate declined rapidly for many years (fig. 2). In a previous report it was noted that the change in the trend of the infant death rate began around 1949 or 1950.¹ "During the period 1933-49, the infant mortality rate for all races decreased about 4.3 percent each year (slope computed by the method of least squares).

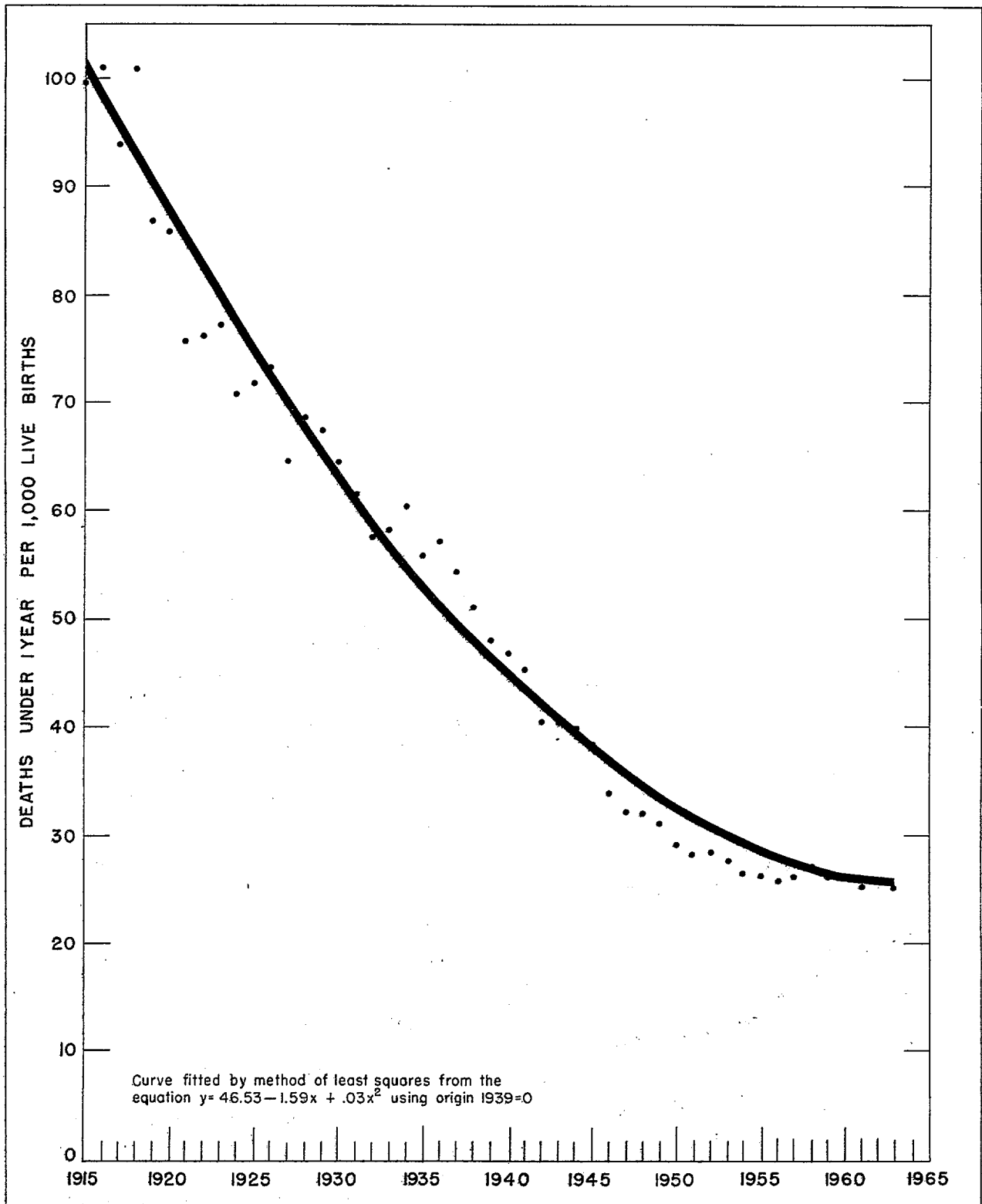


Figure 2. Trend of the infant mortality rate: birth-registration States or United States, 1915-63.

...The mortality experience of white infants follows the same pattern as for the total infant mortality trend. For the nonwhites, the deceleration in the downward trend is even more marked. In the period 1933-49, the nonwhite infant mortality rate decreased 4.6 percent per annum." (Fig. 3.) It was further noted that the change in trend for the neonatal rates occurred around 1950 (fig. 4) and for the postneonatal rates about 1945 or 1946. The annual rates of decline were given as follows:

	<i>Neonatal</i> 1935-49	<i>Postneonatal</i> 1935-45
White-----	3.0	5.0
Nonwhite-----	3.0	5.2

For subsequent periods the rates of decline were computed using data through 1963. Between

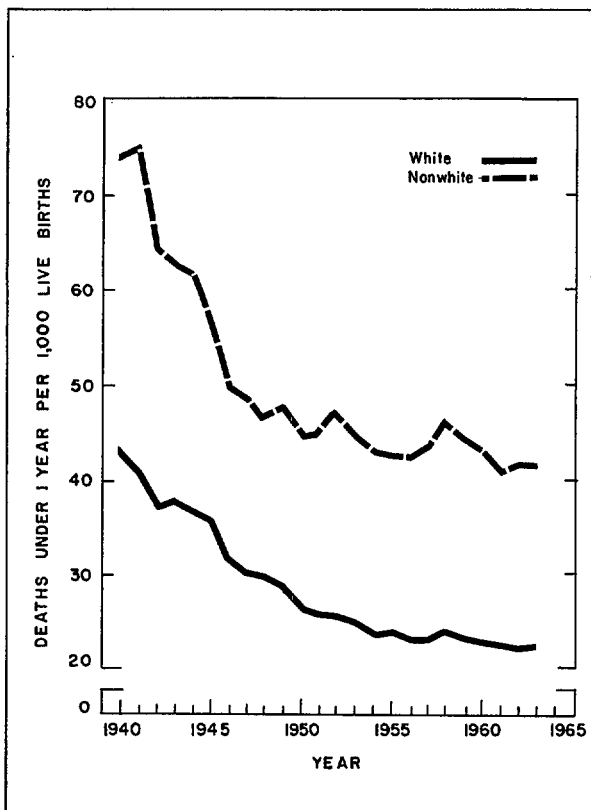


Figure 3. Infant mortality rates by color: United States, 1940-63.

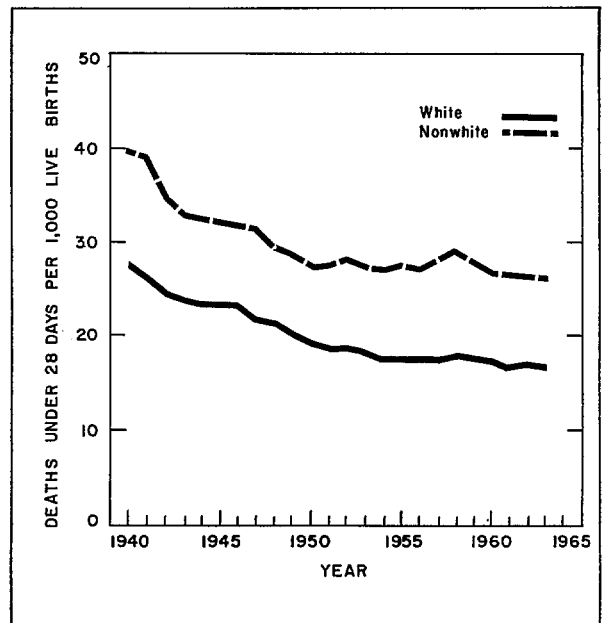


Figure 4. Neonatal mortality rates by color: United States, 1940-63.

1950 and 1963 the average annual decline in the infant mortality rate was 1.0 percent compared with 4.3 for 1933-49. Annual rates of decline for 1950-63 for white and nonwhite of 1.3 and 0.6 percent were likewise only fractions of those for 1933-49. Although the rates of decrease for both neonatal and postneonatal periods have dropped, the gap between the white and nonwhite rates has widened compared with figures for the earlier period.

	<i>Neonatal</i> 1950-63	<i>Postneonatal</i> 1946-63
White-----	1.0	3.0
Nonwhite-----	0.3	1.3

International Trends

"An increasing number of countries have been experiencing lower infant mortality rates than the United States. Also, the gap between the rate for the United States and the figures for countries with the most favorable experience has widened."² In their report, Moriyama and Shapiro included data through 1960 for the 11 countries shown in table 12. The authors stated that it was most

unlikely that international differences in registration practices accounted for the less favorable mortality picture in the United States.

The infant mortality rates for the 11 countries for the most recent 10-year period are shown in table 12. The decrease in the rate for the United States between 1954 and 1963 was 5.3 percent—far less than comparable decreases for the other areas.

Reasons for the international differences in infant mortality rates are currently being investigated by means of contract studies initiated by the National Center for Health Statistics with Denmark, England and Wales, the Netherlands, Norway, and Scotland.

Cause of Death

Infant mortality rates for 55 selected causes of death for 1954-63 are given in table 13. In this period the most important reduction in infant mortality involved those causes included in the broad category infective and parasitic diseases, 001-138, the rate per 100,000 live births for 1963 being 32.3 and that for 1954 being 48.6.

The rate for congenital malformations (750-759) has declined moderately since 1954—from 376.3 per 100,000 live births to 355.8 in 1963. The mortality rate for certain diseases of early infancy (760-776) has likewise declined moderately since 1954. Within this broad category, the rates for certain subcategories have fluctuated, not necessarily from changes in mortality but because of shifts in classification. Chief among these changes is hyaline membrane disease not otherwise specified, which was reclassified in 1958 from 527.2, Other diseases of lung and plural cavity, to 773, Ill-defined diseases peculiar to early infancy. During the period 1954-63, the rate for ill-defined diseases peculiar to early infancy, including nutritional maladjustment, 772 and 773, increased from 82.8 per 100,000 live births to 253.2—an increase of over 200 percent. Part of this increase was due to reclassification in 1958 and part due to the increasing frequency with which this condition is certified. Previously this disease could have been reported on the death records as asphyxia or immaturity, unqualified. Additional changes in the classification affecting cause-of-death code assignments are contained in

another report.³ As previously indicated, the mortality of nonwhite infants is greater than that for white for leading causes of death for 1963. One exception was noted, congenital malformations, 750-759. In addition, there is another cause for which the rates for white infants are higher than those for nonwhite infants. The rates for hemolytic disease of newborn (erythroblastosis), 770, for white infants are twice those for nonwhite infants for each of the 10 years 1954-63. The rates per 100,000 live births for these causes are as follows:

	<i>Congenital malformations</i>		<i>Hemolytic disease of newborn</i>	
	<i>White</i>	<i>Non-white</i>	<i>White</i>	<i>Non-white</i>
1963-----	366.0	302.5	49.4	18.9
1962-----	366.9	300.0	52.5	19.3
1961-----	374.2	305.9	54.6	20.5
1960-----	372.9	298.7	55.4	23.0
1959-----	377.9	306.6	56.7	22.7
1958-----	378.2	323.5	61.1	29.9
1957-----	382.6	307.3	64.0	32.7
1956-----	390.1	299.0	60.9	32.5
1955-----	391.5	307.4	64.8	31.4
1954-----	392.2	280.4	67.0	30.5

Among the hypotheses which have been offered to explain the difference in the rates by color for congenital malformations are the following: First, the risk of a pregnancy terminating in a malformed fetus rather than in a liveborn child dying soon after birth from a congenital defect may be greater for nonwhite women than white women. Second, the lack of a well-defined cause of death on a disproportionate number of certificates for nonwhite infants may understate the infant mortality rate for congenital malformations.

The death rate per 100,000 live births for symptoms and ill-defined conditions (780-793, 795) for nonwhite was over 7½ times the rate for

white infants for 1963; the differential was slightly greater in 1954.

	1963	1954
White -----	30.8	33.6
Nonwhite -----	234.0	283.1
Ratio of nonwhite to white--	7.6	8.4

The differential between the rates for white and nonwhite infants was considerable for certain infections of the digestive and respiratory system in 1963.

	<i>Ratio of</i>	
	<i>Non-</i>	<i>nonwhite</i>
	<i>White</i>	<i>to white</i>
	<i>white</i>	<i>to white</i>

Gastritis, duodenitis, enteritis, and colitis, except diarrhea of newborn (543,571, 572)-----	29.0	170.3	5.9
---	------	-------	-----

Influenza and pneumonia, except pneumonia of newborn (480-493)-----	154.6	556.1	3.6
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Although mortality from infections of the digestive system has decreased markedly over the last 10 years for both color groups, the death rates of influenza and pneumonia, except pneumonia of newborn, in recent years have remained close to the level of 1954.

	<i>Total</i>	<i>White</i>	<i>Nonwhite</i>
1963-----	217.5	154.6	556.1
1962-----	215.6	156.1	534.9
1961-----	215.6	161.3	508.3
1954-----	206.3	154.1	519.8

Table 1. Infant and neonatal mortality rates, by color: birth-registration States or United States, 1915-63

[Refers only to deaths occurring within the specified area. Alaska included beginning 1959, and Hawaii, 1960. Prior to 1933, data are for birth-registration States only. Excludes fetal deaths. Rates are deaths under 1 year and under 28 days.]

Year	Infant mortality rate			Neonatal mortality rate		
	Total	White	Non-white	Total	White	Non-white
	Rates per 1,000 live births					
1963 ¹ -----	25.2	22.2	41.5	18.2	16.7	26.1
1962 ¹ -----	25.3	22.3	41.4	18.3	16.9	26.1
1961-----	25.3	22.4	40.7	18.4	16.9	26.2
1960-----	26.0	22.9	43.2	18.7	17.2	26.9
1959-----	26.4	23.2	44.0	19.0	17.5	27.7
1958-----	27.1	23.8	45.7	19.5	17.8	29.0
1957-----	26.3	23.3	43.7	19.1	17.5	27.8
1956-----	26.0	23.2	42.1	18.9	17.5	27.0
1955-----	26.4	23.6	42.8	19.1	17.7	27.2
1954-----	26.6	23.9	42.9	19.1	17.8	27.0
1953-----	27.8	25.0	44.7	19.6	18.3	27.4
1952-----	28.4	25.5	47.0	19.8	18.5	28.0
1951-----	28.4	25.8	44.8	20.0	18.9	27.3
1950-----	29.2	26.8	44.5	20.5	19.4	27.5
1949-----	31.3	28.9	47.3	21.4	20.3	28.6
1948-----	32.0	29.9	46.5	22.2	21.2	29.1
1947-----	32.2	30.1	48.5	22.8	21.7	31.0
1946-----	33.8	31.8	49.5	24.0	23.1	31.5
1945-----	38.3	35.6	57.0	24.3	23.3	32.0
1944-----	39.8	36.9	60.3	24.7	23.6	32.5
1943-----	40.4	37.5	62.5	24.7	23.7	32.9
1942-----	40.4	37.3	64.6	25.7	24.5	34.6
1941-----	45.3	41.2	74.8	27.7	26.1	39.0
1940-----	47.0	43.2	73.8	28.8	27.2	39.7
1935-39-----	53.2	49.2	81.3	31.0	29.5	41.4
1930-34 ² -----	60.4	55.7	92.9	34.4	32.8	45.5
1925-29-----	69.0	65.0	105.4	37.2	36.0	47.9
1920-24-----	76.7	73.3	115.3	39.7	38.7	51.1
1915-19-----	95.7	92.8	149.7	43.4	42.3	58.1

¹ Figures by color exclude data for residents of New Jersey.

² For 1932-34, Mexicans are included with "Nonwhite."

Table 2. Infant mortality rates, by age, color, and sex: United States, 1963

[Refers only to deaths occurring within the United States. Excludes fetal deaths. Figures by color exclude data for residents of New Jersey]

Age	Total			White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
	Rates per 100,000 live births								
Under 1 year-----	2,522.9	2,842.3	2,186.7	2,216.5	2,514.0	1,902.0	4,149.3	4,598.0	3,687.1
Under 28 days-----	1,821.6	2,072.9	1,557.0	1,667.8	1,907.8	1,414.1	2,610.0	2,923.1	2,287.4
Under 1 day-----	1,037.5	1,171.6	896.5	954.1	1,080.0	821.0	1,456.8	1,636.6	1,271.6
Under 1 hour-----	199.3	212.1	185.8	187.7	197.1	177.8	264.5	298.3	229.7
1-23 hours-----	838.3	959.5	710.7	766.4	882.9	643.2	1,192.3	1,338.3	1,041.9
1 day-----	265.6	304.8	224.4	248.1	286.0	208.1	353.7	398.2	307.9
2 days-----	168.2	202.3	132.3	162.3	197.3	125.2	203.2	234.7	170.6
3 days-----	72.9	86.6	58.4	67.4	81.8	52.2	102.4	111.7	92.8
4 days-----	41.8	47.4	35.9	36.6	41.2	31.8	68.6	79.3	57.5
5 days-----	30.7	33.7	27.6	27.1	29.8	24.4	50.4	54.9	45.8
6 days-----	22.4	24.6	20.1	19.8	22.0	17.4	37.2	38.2	36.2
7-13 days-----	85.7	93.2	77.7	74.4	82.1	66.4	142.3	148.7	135.7
14-20 days-----	52.8	58.9	46.4	42.7	47.6	37.5	106.1	118.8	93.1
21-27 days-----	43.9	49.8	37.7	35.3	40.1	30.2	89.4	102.1	76.3
28-59 days-----	162.5	183.7	140.2	129.8	147.2	111.3	342.0	387.4	295.2
2 months-----	129.4	145.1	112.8	101.9	115.1	87.9	280.6	310.3	250.1
3 months-----	99.2	108.8	89.2	76.3	85.4	66.6	225.7	239.4	211.6
4 months-----	75.0	82.6	67.1	57.2	63.0	51.1	173.4	190.3	156.0
5 months-----	55.8	62.5	48.8	41.7	46.9	36.1	131.5	146.8	115.7
6 months-----	45.0	46.7	43.2	33.6	35.0	32.2	107.2	111.7	102.6
7 months-----	36.4	39.2	33.4	28.5	31.7	25.2	79.2	81.1	77.2
8 months-----	29.7	31.1	28.3	23.4	24.7	22.0	63.5	66.6	60.4
9 months-----	24.7	24.3	25.2	20.2	19.8	20.7	50.2	49.7	50.8
10 months-----	22.1	22.5	21.7	18.7	19.1	18.2	41.0	40.7	41.3
11 months-----	21.6	23.1	19.9	17.4	18.2	16.6	44.9	50.9	38.8

Table 3. Number and rate of infant and neonatal deaths under 1 year and under 28 days, by color and cause of death: United States, 1963

[Refers only to deaths occurring within the United States. Excludes fetal deaths. Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955. Figures by color exclude data for residents of New Jersey]

Color and cause of death	Under 1 year		Under 28 days	
	Number	Rate per 100,000 live births	Number	Rate per 100,000 live births
<u>Total</u>				
All causes-----	103,390	2,522.9	74,648	1,821.6
Postnatal asphyxia and atelectasis-----762	17,934	437.6	17,692	431.7
Immaturity, unqualified-----776	16,769	409.2	16,667	406.7
Congenital malformations-----750-759	14,581	355.8	9,454	230.7
Ill-defined diseases peculiar to early infancy; including nutritional maladjustment--772,773	10,375	253.2	9,683	236.3
Birth injuries-----760,761	8,954	218.5	8,944	218.3
All other causes-----Residual	34,777	848.6	12,208	297.9
<u>White</u>				
All causes-----	73,727	2,216.5	55,477	1,667.8
Postnatal asphyxia and atelectasis-----762	13,286	399.4	13,121	394.5
Immaturity, unqualified-----776	11,535	346.8	11,495	345.6
Congenital malformations-----750-759	12,173	366.0	8,004	240.6
Ill-defined diseases peculiar to early infancy, including nutritional maladjustment--772,773	7,573	227.7	7,291	219.2
Birth injuries-----760,761	7,111	213.8	7,105	213.6
All other causes-----Residual	22,049	662.9	8,461	254.4
<u>Nonwhite</u>				
All causes-----	26,511	4,149.3	16,676	2,610.0
Postnatal asphyxia and atelectasis-----762	3,816	597.3	3,743	585.8
Immaturity, unqualified-----776	4,736	741.2	4,675	731.7
Congenital malformations-----750-759	1,933	302.5	1,138	178.1
Ill-defined diseases peculiar to early infancy, including nutritional maladjustment--772,773	2,556	400.0	2,154	337.1
Birth injuries-----760,761	1,575	246.5	1,571	245.9
All other causes-----Residual	11,895	1,861.7	3,395	531.4

Table 4. Number and rate of postneonatal deaths, by cause of death and color: United States, 1963

[Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths from 28 days through 11 months. Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955. Figures by color exclude data for residents of New Jersey]

Cause of death	Total		White		Nonwhite	
	Number	Rate per 100,000 live births	Number	Rate per 100,000 live births	Number	Rate per 100,000 live births
All causes-----	28,742	701.4	18,250	548.7	9,835	1,539.3
Influenza and pneumonia, except pneumonia of newborn-----480-493	8,887	216.9	5,128	154.2	3,542	554.4
Influenza-----480-483	329	8.0	151	4.5	175	27.4
Pneumonia, except pneumonia of newborn-----490-493	8,558	208.8	4,977	149.6	3,367	527.0
Congenital malformations-----750-759	5,127	125.1	4,169	125.3	795	124.4
Accidents-----E800-E962	2,998	73.2	2,066	62.1	842	131.8
Gastritis, duodenitis, enteritis, and colitis, except diarrhea of newborn-----543,571,572	2,084	50.9	959	28.8	1,085	169.8
Symptoms and ill-defined conditions-----780-793,795	1,631	39.8	688	20.7	937	146.7
All other causes-----Residual	8,015	195.6	5,240	157.5	2,634	412.3

Table 5. Neonatal and postneonatal mortality rates, by age, cause of death, and sex: United States, 1963

[Refers only to deaths occurring within the United States. Excludes fetal deaths. Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955]

Age and cause of death	Male	Female
<u>Under 28 days</u>	Rates per 100,000 live births	
All causes-----	2,072.9	1,557.0
Postnatal asphyxia and atelectasis-----762	503.1	356.6
Immaturity, unqualified-----776	450.8	360.3
Congenital malformations-----750-759	249.8	210.6
Ill-defined diseases peculiar to early infancy, including nutritional maladjustment-----772,773	279.7	190.6
Birth injuries-----760,761	256.3	178.2
All other causes-----Residual	333.2	260.7
<u>28 days to 11 months</u>		
All causes-----	769.4	629.8
Influenza and pneumonia, except pneumonia of newborn-----480-493	241.3	191.1
Congenital malformations-----750-759	128.2	121.9
Accidents-----E800-E962	79.1	66.9
Gastritis, duodenitis, enteritis, and colitis, except diarrhea of newborn-----543,571,572	56.7	44.7
Symptoms and ill-defined conditions-----780-793,795	43.5	35.9
All other causes-----Residual	220.6	169.3

Table 6. Infant mortality rates, by color: United States, each region and division, 1959-63

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 1 year]

Region and division	1963			1962		
	Total	White	Non-white	Total	White	Non-white
	Rates per 1,000 live births					
United States ^{1,2} -----	25.2	22.2	41.5	25.3	22.3	41.4
<u>All regions</u>						
Northeast-----	23.4	21.3	39.5	23.9	21.9	40.9
North Central-----	23.0	21.4	38.1	23.0	21.3	37.7
South-----	29.4	23.7	45.2	29.2	23.6	44.4
West ² -----	23.4	21.2	32.3	23.8	22.6	33.5
<u>Northeast</u>						
New England-----	22.0	21.3	36.2	22.7	22.0	37.8
Middle Atlantic ¹ -----	23.8	21.3	40.0	24.3	21.8	41.3
<u>North Central</u>						
East North Central-----	23.3	21.5	37.8	23.2	21.4	37.5
West North Central-----	22.3	21.1	39.7	22.4	21.3	38.6
<u>South</u>						
South Atlantic-----	29.4	22.9	44.9	29.2	22.9	44.6
East South Central-----	31.8	24.5	49.6	31.1	24.6	46.9
West South Central-----	27.9	24.1	41.6	27.7	24.0	41.8
<u>West</u>						
Mountain-----	26.1	24.1	48.3	26.2	24.6	45.3
Pacific ² -----	22.4	21.5	28.6	22.9	21.8	30.7

¹ Figures by color for 1962 and 1963 exclude data for residents of New Jersey.

² Excludes Hawaii prior to 1960.

Table 6. Infant mortality rates, by color: United States, each region and division, 1959-63—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 1 year.]

1961			1960			1959		
Total	White	Non-white	Total	White	Non-white	Total	White	Non-white
Rates per 1,000 live births								
25.3	22.4	40.7	26.0	22.9	43.2	26.4	23.2	44.0
23.4	21.4	40.5	23.8	21.9	40.8	24.3	22.2	43.3
23.4	22.0	36.8	23.7	22.0	40.0	24.0	22.3	39.6
28.9	23.4	43.9	30.4	24.5	46.8	30.7	24.7	46.9
24.2	23.2	32.3	24.7	23.5	34.4	25.2	24.0	36.9
22.6	22.0	34.6	22.2	21.7	35.2	22.9	22.1	43.4
23.6	21.1	41.1	24.3	22.0	41.4	24.8	22.2	43.3
23.7	22.1	36.2	24.0	22.1	39.4	24.5	22.7	39.0
22.8	21.7	39.2	23.0	21.7	42.5	22.7	21.4	42.4
29.1	22.8	44.3	30.6	23.6	47.2	31.6	24.6	47.9
31.1	25.0	45.8	32.3	25.6	48.4	31.7	25.4	46.6
27.2	23.3	41.2	29.0	24.9	44.3	28.7	24.4	45.0
26.6	25.0	45.5	27.7	25.7	51.7	28.1	26.4	49.2
23.3	22.5	29.3	23.6	22.6	30.5	24.1	23.0	33.3

Table 7. Neonatal mortality rates, by color: United States, each region and division, 1959-63

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 28 days.]

Region and division	1963			1962		
	Total	White	Non-white	Total	White	Non-white
	Rates per 1,000 live births					
United States ^{1, 2} -----	18.2	16.7	26.1	18.3	16.9	26.1
<u>All regions</u>						
Northeast ¹ -----	17.8	16.3	28.5	18.2	16.9	29.3
North Central-----	17.3	16.3	26.5	17.2	16.2	26.2
South-----	19.9	17.5	26.5	20.0	17.7	26.2
West ² -----	17.1	16.5	21.0	17.1	16.6	21.4
<u>Northeast</u>						
New England-----	16.8	16.3	26.4	17.4	16.9	26.6
Middle Atlantic ¹ -----	18.2	16.3	28.8	18.5	16.9	29.7
<u>North Central</u>						
East North Central-----	17.6	16.4	26.9	17.5	16.3	26.7
West North Central-----	16.7	16.1	25.1	16.7	16.2	24.1
<u>South</u>						
South Atlantic-----	19.8	17.3	25.8	19.9	17.4	25.8
East South Central-----	20.9	17.7	28.6	20.9	18.3	27.1
West South Central-----	19.4	17.6	25.9	19.4	17.6	26.2
<u>West</u>						
Mountain-----	18.2	17.8	23.1	18.2	17.9	21.6
Pacific ² -----	16.6	16.1	20.6	16.8	16.1	21.3

¹Figures by color for 1962 and 1963 exclude data for residents of New Jersey.

²Excludes Hawaii prior to 1960.

Table 7. Neonatal mortality rates, by color: United States, each region and division, 1959-63—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 28 days]

1961			1960			1959		
Total	White	Non-white	Total	White	Non-white	Total	White	Non-white
Rates for 1,000 live births								
18.4	16.9	26.2	18.7	17.2	26.9	19.0	17.5	27.7
17.9	16.5	29.9	18.1	16.8	29.5	18.5	17.0	31.8
17.5	16.6	26.0	17.8	16.7	27.3	17.9	17.0	27.0
19.9	17.6	26.3	20.5	18.1	27.1	20.8	18.2	27.6
17.6	17.1	21.1	17.8	17.3	21.4	18.3	17.8	22.9
17.2	16.9	25.7	16.9	16.5	25.3	17.3	16.8	31.2
18.1	16.4	30.3	18.5	16.9	30.0	18.9	17.1	31.8
17.8	16.7	26.1	18.0	16.8	27.3	18.3	17.2	27.0
17.0	16.5	25.8	17.2	16.6	26.9	17.1	16.4	27.0
20.1	17.5	26.5	20.6	17.7	27.5	21.3	18.6	27.8
21.1	18.6	26.9	21.2	18.8	27.0	21.2	18.6	27.5
18.8	17.0	25.5	19.9	18.2	26.5	19.7	17.6	27.2
18.9	18.5	23.9	19.0	18.7	22.4	19.8	19.5	24.1
17.1	16.6	20.5	17.3	16.8	21.2	17.7	17.2	22.6

Table 8. Infant mortality rates, by color: United States and each State, by division, 1959-63

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 1 year. Asterisk indicates rate based on a frequency of less than 20]

Division and State	1963			1962		
	Total	White	Nonwhite	Total	White	Nonwhite
	Rates per 1,000 live births					
United States ^{1,2} -----	25.2	22.2	41.5	25.3	22.3	41.4
<u>New England</u>						
Maine-----	24.1	24.1	*24.6	25.3	25.2	*32.8
New Hampshire-----	22.7	22.6	*27.3	22.1	21.9	*43.5
Vermont-----	24.6	24.7	-	22.7	22.8	-
Massachusetts-----	20.6	20.2	29.6	21.8	21.3	33.2
Rhode Island-----	23.9	22.5	54.7	25.5	24.5	48.6
Connecticut-----	22.7	21.0	41.0	22.7	21.0	41.2
<u>Middle Atlantic</u>						
New York-----	24.0	21.2	39.4	24.7	21.7	42.3
New Jersey-----	23.7	---	---	23.8	---	---
Pennsylvania-----	23.7	21.4	41.3	24.0	22.0	39.3
<u>East North Central</u>						
Ohio-----	23.2	21.6	36.9	22.8	21.0	37.9
Indiana-----	23.4	21.9	39.5	23.2	21.9	38.0
Illinois-----	23.9	20.9	38.7	24.0	21.3	37.5
Michigan-----	23.2	21.5	36.9	24.0	22.4	36.8
Wisconsin-----	22.3	21.8	33.7	20.7	19.9	39.0
<u>West North Central</u>						
Minnesota-----	20.8	20.6	29.1	20.9	20.6	33.9
Iowa-----	20.6	20.4	33.7	19.8	19.5	34.2
Missouri-----	24.1	21.4	41.0	25.4	23.1	39.1
North Dakota-----	24.6	23.8	43.3	22.6	22.0	35.7
South Dakota-----	24.7	22.7	46.6	25.3	22.9	54.2
Nebraska-----	21.6	20.6	40.5	20.8	20.0	35.9
Kansas-----	22.4	21.3	37.8	22.3	21.4	35.7

¹Figures by color for 1962 and 1963 exclude data for residents of New Jersey.

²Excludes Hawaii prior to 1960.

Table 8. Infant mortality rates, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 1 year. Asterisk indicates rate based on a frequency of less than 20]

1961			1960			1959		
Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
Rates per 1,000 live births								
25.3	22.4	40.7	26.0	22.9	43.2	26.4	23.2	44.0
25.3	25.2	*27.3	25.5	25.7	*12.9	26.1	26.2	*19.8
24.4	24.4	*16.7	23.6	23.7	*10.6	22.1	22.0	*38.5
27.2	27.2	-	24.1	24.2	-	23.7	23.7	-
21.6	21.1	33.1	21.6	21.1	34.4	22.3	21.8	35.5
22.5	22.3	26.6	23.3	22.4	44.4	24.0	23.7	31.7
22.3	20.9	38.6	21.1	20.0	36.9	22.4	20.3	60.0
23.7	21.1	40.3	24.1	21.5	41.6	24.7	22.1	42.6
23.6	20.7	41.5	24.6	21.9	41.7	24.6	21.7	43.9
23.6	21.3	42.3	24.5	22.6	40.6	24.9	22.7	44.0
23.1	21.7	35.4	24.0	22.2	39.4	25.0	23.0	41.3
24.0	22.5	40.1	23.9	22.6	37.7	23.4	22.0	38.6
24.3	21.8	37.2	25.0	22.2	39.6	25.0	22.4	38.6
23.9	22.6	34.3	24.1	22.1	40.4	24.4	23.0	35.9
22.7	22.3	31.7	21.8	21.2	35.3	23.4	22.6	45.7
22.2	22.0	34.1	21.6	21.6	22.6	21.1	20.8	34.7
20.6	20.4	34.2	21.9	21.7	35.2	21.5	21.2	38.6
24.7	21.9	42.4	24.7	21.4	45.4	24.5	21.6	42.6
23.2	22.2	45.6	24.8	24.1	43.3	23.7	23.0	42.3
25.1	22.7	53.2	28.1	24.2	76.0	22.9	20.1	61.4
22.8	22.2	33.4	21.9	21.3	34.3	23.5	22.6	42.8
22.1	21.8	26.2	22.1	21.3	33.4	22.6	21.4	39.1

Table 8. Infant mortality rates, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 1 year. Asterisk indicates rate based on a frequency of less than 20]

Division and State	1963			1962		
	Total	White	Nonwhite	Total	White	Nonwhite
<u>South Atlantic</u>						
Rates per 1,000 live births						
Delaware-----	24.5	20.3	41.2	21.5	17.9	36.4
Maryland-----	25.6	21.6	39.8	26.8	22.4	42.5
District of Columbia-----	33.0	25.4	36.1	34.9	26.4	38.3
Virginia-----	29.2	24.1	45.0	29.2	23.9	45.8
West Virginia-----	26.1	25.6	36.6	26.5	26.1	34.3
North Carolina-----	31.2	22.2	50.8	30.5	22.2	48.7
South Carolina-----	33.0	22.4	48.1	31.5	23.5	42.8
Georgia-----	31.0	23.0	45.8	30.1	22.3	44.4
Florida-----	27.9	22.6	42.7	28.5	22.3	46.0
<u>East South Central</u>						
Kentucky-----	27.8	26.3	44.4	26.9	25.1	45.6
Tennessee-----	28.0	23.5	44.2	28.7	24.8	42.2
Alabama-----	32.2	24.5	45.3	30.8	23.0	43.9
Mississippi-----	41.3	22.9	57.6	40.0	25.7	52.6
<u>West South Central</u>						
Arkansas-----	28.5	23.4	41.4	28.8	24.3	39.8
Louisiana-----	30.4	20.6	45.5	31.3	21.8	45.9
Oklahoma-----	24.3	22.3	35.5	23.8	21.9	36.0
Texas-----	27.6	25.5	39.3	27.1	24.9	39.7
<u>Mountain</u>						
Montana-----	24.2	22.3	46.6	25.9	24.0	48.8
Idaho-----	22.8	22.4	*43.4	24.1	24.1	*23.5
Wyoming-----	28.5	27.7	*47.9	30.3	29.7	*46.1
Colorado-----	25.9	25.6	34.0	25.2	24.4	45.5
New Mexico-----	30.5	28.2	46.6	30.0	28.5	41.2
Arizona-----	28.8	23.3	56.2	28.5	24.3	50.0
Utah-----	18.6	18.2	34.4	19.7	19.1	40.9
Nevada-----	30.3	28.3	46.1	29.7	28.8	36.3
<u>Pacific</u>						
Washington-----	22.1	20.9	39.6	22.8	21.7	41.7
Oregon-----	21.4	21.4	21.3	21.9	21.6	31.5
California-----	22.3	21.5	28.3	22.9	21.9	30.7
Alaska-----	31.9	24.8	46.7	34.2	22.2	59.0
Hawaii ³ -----	22.5	20.7	23.3	20.8	18.3	22.0

³Figures for 1959 are by place of occurrence.

Table 8. Infant mortality rates, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 1 year. Asterisk indicates rate based on a frequency of less than 20]

1961			1960			1959		
Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
Rates per 1,000 live births								
26.2	20.7	47.9	23.8	17.8	50.6	24.8	20.8	42.5
25.7	21.0	41.7	27.3	22.3	44.6	28.6	23.1	46.9
35.6	27.2	39.2	36.4	29.4	39.6	36.8	31.4	39.4
28.0	23.1	43.1	29.8	24.6	45.5	31.0	24.8	49.0
26.7	26.3	33.7	25.5	24.8	37.7	27.2	26.9	32.8
30.7	22.6	48.3	31.7	22.3	52.4	32.7	24.4	50.2
32.4	22.7	45.7	34.3	23.9	48.5	35.0	23.6	50.1
29.4	21.5	43.4	33.0	24.6	48.1	32.5	24.3	47.5
28.9	23.2	44.9	29.7	23.6	46.1	31.7	25.3	48.7
27.8	26.1	46.0	27.9	26.0	48.3	27.3	26.3	37.9
29.2	25.5	42.3	29.4	25.3	43.5	30.3	26.4	43.6
31.1	23.7	43.6	32.4	24.9	45.0	31.8	23.5	45.3
37.8	23.6	49.9	41.6	26.6	54.3	39.0	24.6	51.3
27.5	21.8	40.9	27.4	22.5	38.7	26.5	22.4	36.2
30.3	21.6	43.7	32.0	22.6	46.9	32.9	21.9	50.1
24.0	22.1	35.7	25.5	22.7	42.8	24.1	21.5	40.4
26.7	24.3	40.0	28.9	26.3	43.9	28.5	25.9	43.9
25.6	23.7	47.5	25.0	24.2	34.5	24.5	22.6	50.8
23.1	23.0	*28.5	22.9	22.7	*33.3	22.2	21.8	*44.5
27.0	26.0	*52.3	28.2	27.5	*48.6	26.9	26.1	*52.0
26.2	25.8	37.1	27.5	26.9	44.0	28.8	28.3	41.8
29.6	28.2	40.3	33.2	30.9	52.8	32.9	31.2	47.3
30.6	26.6	52.4	31.9	26.6	60.8	33.1	29.3	52.6
20.3	19.8	41.9	19.6	18.8	54.0	20.0	19.7	34.8
28.3	26.6	41.1	30.1	29.6	33.9	32.4	28.9	56.8
22.7	21.8	37.5	23.4	22.7	36.7	24.0	23.1	39.2
22.9	22.6	31.8	23.2	23.0	29.2	25.1	24.8	35.4
23.3	22.5	28.9	23.3	22.5	29.7	23.6	22.8	30.5
37.0	25.7	60.2	40.5	27.9	68.2	42.9	26.9	72.9
21.7	21.8	21.6	23.2	21.5	24.0	24.0	23.3	24.3

Table 9. Neonatal mortality rates, by color: United States and each State, by division, 1959-63

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 28 days. Asterisk indicates rate based on a frequency of less than 20¹

Division and State	1963			1962		
	Total	White	Nonwhite	Total	White	Nonwhite
	Rates per 1,000 live births					
United States ^{1,2} -----	18.2	16.7	26.1	18.3	16.9	26.1
<u>New England</u>						
Maine-----	18.0	18.0	*14.1	18.0	18.0	*18.2
New Hampshire-----	17.9	17.9	*18.2	17.0	16.9	*32.6
Vermont-----	19.0	19.1	-	18.2	18.2	-
Massachusetts-----	15.7	15.4	21.0	16.5	16.3	22.7
Rhode Island-----	18.5	17.5	39.4	20.0	19.5	31.9
Connecticut-----	17.3	16.0	30.9	17.8	16.7	30.3
<u>Middle Atlantic</u>						
New York-----	17.9	16.1	28.2	18.6	16.7	30.0
New Jersey-----	18.8	---	---	18.3	---	---
Pennsylvania-----	18.2	16.7	30.2	18.5	17.1	28.9
<u>East North Central</u>						
Ohio-----	17.8	16.7	26.9	17.7	16.4	28.4
Indiana-----	17.6	16.5	29.2	17.4	16.5	27.4
Illinois-----	17.7	15.9	26.6	17.7	16.1	25.5
Michigan-----	17.4	16.2	26.9	17.9	16.8	26.8
Wisconsin-----	16.9	16.6	24.7	15.8	15.3	27.6
<u>West North Central</u>						
Minnesota-----	15.9	15.9	16.6	15.7	15.6	20.0
Iowa-----	15.4	15.3	21.8	15.0	14.8	24.7
Missouri-----	17.6	16.0	27.4	18.9	17.8	26.0
North Dakota-----	18.3	18.4	*17.9	16.8	16.8	*17.1
South Dakota-----	17.9	17.9	17.7	17.4	17.4	17.8
Nebraska-----	16.8	16.4	22.9	15.5	15.0	24.3
Kansas-----	17.1	16.3	27.3	16.8	16.4	22.4

¹Figures by color for 1962 and 1963 exclude data for residents of New Jersey.

²Excludes Hawaii prior to 1960.

Table 9. Neonatal mortality rates, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 28 days. Asterisk indicates rate based on a frequency of less than 20]

1961			1960			1959		
Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
Rates per 1,000 live births								
18.4	16.9	26.2	18.7	17.2	26.9	19.0	17.5	27.7
18.7	18.7	*15.2	18.9	19.0	*6.5	19.0	19.0	*19.8
17.3	17.3	*16.7	18.9	19.0	*10.6	16.4	16.4	*25.6
20.7	20.7	-	18.7	18.7	-	16.5	16.5	-
16.6	16.4	23.7	16.4	16.1	24.3	16.8	16.6	24.0
16.9	17.0	*14.6	16.3	15.6	32.3	18.2	18.1	*20.3
17.3	16.3	30.7	16.4	15.7	27.1	17.6	16.1	45.6
18.1	16.3	29.7	18.3	16.4	30.8	18.7	16.9	31.5
18.1	16.0	30.9	18.5	17.0	28.6	18.8	16.9	31.7
18.2	16.6	31.3	18.9	17.7	29.5	19.1	17.6	32.5
17.9	16.8	27.3	18.4	17.1	29.8	19.3	17.9	31.2
17.6	16.5	28.8	17.5	16.8	25.7	17.1	16.4	25.5
17.8	16.3	25.3	18.1	16.8	25.3	18.0	16.8	24.6
18.0	17.0	25.6	18.3	16.9	29.9	16.5	17.6	26.0
17.2	17.0	22.8	16.5	16.3	22.2	17.6	17.1	32.2
16.4	16.4	19.8	16.0	16.1	*11.0	15.9	15.8	22.1
15.6	15.5	21.8	16.7	16.6	24.1	16.6	16.5	25.4
18.1	16.4	29.0	18.0	16.1	30.4	18.2	16.5	28.2
17.8	17.4	*27.9	19.1	18.9	*22.4	18.1	18.1	*19.5
18.3	17.6	26.2	19.6	18.6	32.0	15.4	14.8	23.4
17.6	17.4	22.1	17.3	17.0	24.4	17.5	17.1	26.2
16.8	16.7	17.9	16.9	16.5	21.7	17.4	16.6	27.4

Table 9. Neonatal mortality rates, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 28 days. Asterisk indicates rate based on a frequency of less than 20]

Division and State	1963			1962		
	Total	White	Nonwhite	Total	White	Nonwhite
<u>South Atlantic</u> Rates per 1,000 live births						
Delaware-----	17.8	16.0	24.9	15.7	14.4	20.9
Maryland-----	19.2	16.6	28.5	20.3	17.7	29.6
District of Columbia-----	24.3	18.9	26.4	26.0	21.6	27.9
Virginia-----	20.9	18.3	28.9	21.0	18.3	29.3
West Virginia-----	18.5	18.4	21.9	19.3	19.1	21.6
North Carolina-----	19.9	16.7	26.8	19.7	16.7	26.4
South Carolina-----	19.0	16.7	22.4	17.8	17.3	18.6
Georgia-----	19.4	17.1	23.7	19.4	16.6	24.6
Florida-----	19.7	17.4	26.1	19.8	17.1	27.3
<u>East South Central</u>						
Kentucky-----	18.3	17.4	27.6	19.2	18.1	30.8
Tennessee-----	19.5	17.5	26.6	20.1	18.1	26.9
Alabama-----	21.3	18.4	26.2	20.4	17.9	24.7
Mississippi-----	25.3	17.6	32.0	24.7	20.1	28.8
<u>West South Central</u>						
Arkansas-----	18.2	17.1	21.0	19.2	17.8	22.5
Louisiana-----	21.4	16.2	29.4	21.9	17.1	29.2
Oklahoma-----	18.0	16.9	24.2	18.2	17.4	23.9
Texas-----	19.1	18.1	24.5	18.8	17.7	25.0
<u>Mountain</u>						
Montana-----	16.6	16.2	21.7	17.7	17.6	19.7
Idaho-----	17.2	17.1	*23.1	17.7	17.9	*8.8
Wyoming-----	22.2	22.0	*27.4	22.9	22.9	*23.0
Colorado-----	19.2	19.0	24.0	18.6	18.0	33.6
New Mexico-----	20.3	20.2	21.1	19.5	19.9	16.3
Arizona-----	18.1	17.0	23.5	17.9	17.1	21.8
Utah-----	13.1	13.1	*10.9	14.3	14.2	*17.3
Nevada-----	22.9	21.6	33.0	22.9	22.4	26.7
<u>Pacific</u>						
Washington-----	16.1	15.5	24.9	15.9	15.4	23.8
Oregon-----	15.8	15.8	*15.6	15.0	14.9	18.1
California-----	16.7	16.1	20.5	17.0	16.3	22.3
Alaska-----	20.6	18.9	24.1	18.6	16.9	21.9
Hawaii ³ -----	18.3	15.9	19.4	16.6	14.9	17.4

³Figures for 1959 are by place of occurrence.

Table 9. Neonatal mortality rates, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 28 days. Asterisk indicates rate based on a frequency of less than 20]

1961			1960			1959		
Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
Rates per 1,000 live births								
19.4	16.9	29.4	16.1	12.7	31.4	19.0	16.8	28.4
19.3	16.4	29.0	20.0	17.2	29.7	20.8	17.9	30.5
27.2	22.5	29.3	27.4	22.3	29.8	27.6	25.2	28.7
20.1	17.7	27.4	21.0	18.6	28.3	21.6	18.3	31.2
19.6	19.5	21.8	18.1	18.0	18.8	18.6	18.6	18.4
20.4	17.2	27.4	20.2	16.5	28.2	21.2	18.6	26.9
19.6	16.7	23.6	20.3	17.4	24.3	20.2	16.8	24.8
19.6	16.6	25.1	21.3	18.4	26.5	21.4	18.6	26.4
20.2	18.1	26.1	20.8	18.2	27.9	22.3	19.6	29.2
20.4	19.3	31.8	19.6	18.7	29.9	19.0	18.5	24.3
20.3	18.7	25.6	20.2	18.6	25.9	21.2	19.6	26.7
20.7	17.7	25.6	20.6	18.5	24.2	21.1	17.3	27.5
23.5	18.6	27.8	25.3	20.4	29.6	24.0	18.6	28.5
17.4	16.0	20.6	17.6	16.5	20.2	17.2	16.2	19.5
21.7	16.9	29.0	21.7	17.5	28.5	22.7	17.3	31.1
17.3	16.4	22.7	18.4	17.4	24.3	17.3	16.1	24.5
18.4	17.3	24.3	20.0	18.7	27.1	19.4	18.2	26.5
18.4	17.4	31.2	17.1	17.3	*14.9	16.8	16.7	16.9
17.4	17.5	*9.5	17.3	17.3	*18.2	16.8	16.6	*24.0
21.0	20.5	*35.9	21.5	21.0	*34.7	19.8	20.0	*16.0
19.6	19.3	28.0	21.2	20.7	33.9	22.0	21.8	26.3
20.0	19.9	20.6	20.2	20.1	21.1	21.6	21.3	24.0
19.7	19.0	23.3	19.3	18.8	22.0	21.4	20.6	25.6
15.1	15.0	*21.0	14.5	14.3	*25.2	15.3	15.3	*15.8
21.3	20.8	24.6	21.0	21.8	*15.9	22.3	21.4	28.4
16.3	15.8	23.6	17.2	17.0	21.3	17.6	17.3	22.9
16.0	16.0	15.5	16.6	16.5	18.0	18.0	18.0	19.4
17.2	16.7	21.2	17.2	16.7	21.8	17.5	17.0	21.8
21.8	19.4	26.7	22.7	21.0	26.7	25.7	19.5	37.3
16.7	17.0	16.6	18.4	18.3	18.5	18.9	17.6	19.5

Table 10. Number of infant deaths under 1 year and under 28 days, by color: United States, each region, division, and State, 1963

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths]

Region, division, and State	Under 1 year			Under 28 days		
	Total	White	Nonwhite	Total	White	Nonwhite
	Number of infant deaths					
All regions ¹ -----	103,390	73,727	26,511	74,648	55,477	16,676
Northeast-----	22,013	15,308	3,553	16,793	11,732	2,566
New England-----	5,090	4,698	392	3,882	3,596	286
Maine-----	530	523	7	395	391	4
New Hampshire-----	317	314	3	250	248	2
Vermont-----	216	216	-	167	167	-
Massachusetts-----	2,306	2,161	145	1,753	1,650	103
Rhode Island-----	436	393	43	337	306	31
Connecticut-----	1,285	1,091	194	980	834	146
Middle Atlantic ¹ -----	16,923	10,610	3,161	12,911	8,136	2,280
New York-----	8,526	6,394	2,132	6,377	4,849	1,528
New Jersey-----	3,152	---	---	2,495	---	---
Pennsylvania-----	5,245	4,216	1,029	4,039	3,287	752
North Central-----	26,599	22,191	4,408	19,986	16,919	3,067
East North Central-----	19,028	15,504	3,524	14,315	11,807	2,508
Ohio-----	4,944	4,108	836	3,779	3,170	609
Indiana-----	2,504	2,148	356	1,883	1,620	263
Illinois-----	5,383	3,908	1,475	3,988	2,977	1,011
Michigan-----	4,155	3,428	727	3,115	2,585	530
Wisconsin-----	2,042	1,912	130	1,550	1,455	95
West North Central-----	7,571	6,687	884	5,671	5,112	559
Minnesota-----	1,671	1,622	49	1,279	1,251	28
Iowa-----	1,192	1,158	34	889	867	22
Missouri-----	2,183	1,663	520	1,593	1,245	348
North Dakota-----	375	346	29	279	267	12
South Dakota-----	414	348	66	299	274	25
Nebraska-----	707	640	67	549	511	38
Kansas-----	1,029	910	119	783	697	86

¹Figures by color exclude data for residents of New Jersey.

Table 10. Number of infant deaths under 1 year and under 28 days, by color: United States, each region, division, and State, 1963—Con.

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths]

Region, division, and State	Under 1 year			Under 28 days		
	Total	White	Nonwhite	Total	White	Nonwhite
	Number of infant deaths					
South-----	38,823	22,855	15,968	26,233	16,871	9,362
South Atlantic-----	18,275	10,082	8,193	12,310	7,602	4,708
Delaware-----	282	186	96	205	147	58
Maryland-----	1,991	1,308	683	1,492	1,003	489
District of Columbia-----	669	145	524	491	108	383
Virginia-----	2,834	1,766	1,068	2,026	1,340	686
West Virginia-----	933	871	62	662	625	37
North Carolina-----	3,348	1,638	1,710	2,135	1,234	901
South Carolina-----	1,925	770	1,155	1,110	572	538
Georgia-----	3,087	1,488	1,599	1,930	1,104	826
Florida-----	3,206	1,910	1,296	2,259	1,469	790
East South Central-----	8,953	4,888	4,065	5,871	3,528	2,343
Kentucky-----	1,889	1,630	259	1,242	1,081	161
Tennessee-----	2,239	1,467	772	1,558	1,093	465
Alabama-----	2,453	1,175	1,278	1,622	881	741
Mississippi-----	2,372	616	1,756	1,449	473	976
West South Central-----	11,595	7,885	3,710	8,052	5,741	2,311
Arkansas-----	1,183	693	490	756	507	249
Louisiana-----	2,598	1,061	1,537	1,830	835	995
Oklahoma-----	1,214	949	265	899	718	181
Texas-----	6,600	5,182	1,418	4,567	3,681	886
West-----	15,955	13,373	2,582	11,636	9,955	1,681
Mountain-----	4,709	3,978	731	3,280	2,931	349
Montana-----	384	326	58	264	237	27
Idaho-----	342	327	15	258	250	8
Wyoming-----	217	203	14	169	161	8
Colorado-----	1,097	1,032	65	811	765	46
New Mexico-----	848	687	161	564	491	73
Arizona-----	1,069	722	347	671	526	145
Utah-----	464	442	22	326	319	7
Nevada-----	288	239	49	217	182	35
Pacific-----	11,246	9,395	1,851	8,356	7,024	1,332
Washington-----	1,345	1,192	153	978	882	96
Oregon-----	748	722	26	551	532	19
California-----	8,508	7,238	1,270	6,344	5,425	919
Alaska-----	245	129	116	158	98	60
Hawaii-----	400	114	286	325	87	238

Table 11. Infant mortality rates, by color: urban and rural areas in metropolitan and nonmetropolitan counties in the United States, 1960-63

[By place of residence. Refers only to deaths occurring within the United States. Excludes fetal deaths. Rates are deaths under 1 year]

Area	1963 ¹	1962 ¹	1961	1960
<u>WHITE</u>				
<u>Metropolitan counties</u>				
Rates per 1,000 live births				
Urban-----	21.7	22.2	22.2	22.7
Rural-----	20.4	20.6	20.9	20.8
<u>Nonmetropolitan counties</u>				
Urban-----	24.3	24.1	24.3	24.7
Rural-----	23.1	22.8	23.0	23.7
<u>NONWHITE</u>				
<u>Metropolitan counties</u>				
Urban-----	37.4	38.2	37.6	39.1
Rural-----	40.1	39.6	38.4	42.8
<u>Nonmetropolitan counties</u>				
Urban-----	47.2	46.7	46.6	50.0
Rural-----	49.6	47.2	46.5	50.3

¹Figures exclude data for residents of New Jersey.

Table 12. Infant mortality rates: selected countries, 1954-63

[Rates are deaths under 1 year]

Selected countries	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954
	Rates per 1,000 live births									
Australia-----	19.5	20.4	19.5	20.2	21.5	20.5	21.4	21.7	22.0	22.5
Canada-----	26.3	27.6	27.2	27.3	28.4	30.2	30.9	31.9	31.3	31.9
Denmark-----	¹ 19.1	20.1	21.8	21.5	22.5	22.4	23.4	24.9	25.2	26.9
England and Wales-----	¹ 21.1	¹ 21.7	21.6	21.8	22.2	22.5	23.1	23.7	24.9	25.4
Finland-----	18.2	20.5	20.8	21.0	23.6	24.5	27.9	25.7	29.7	30.6
Netherlands-----	15.8	17.0	17.0	17.9	18.1	18.5	18.4	20.2	21.6	22.6
New Zealand-----	19.6	20.4	22.8	22.6	23.9	23.4	24.3	23.2	24.5	24.1
Norway-----	---	17.7	17.9	18.9	18.7	20.0	20.5	21.2	20.6	21.4
Sweden-----	15.4	15.4	15.8	16.6	16.6	15.9	17.8	17.3	17.4	18.7
Switzerland-----	20.5	21.2	21.0	21.1	22.2	22.2	22.9	25.8	26.5	27.2
United States-----	25.2	25.3	25.3	26.0	26.4	27.1	26.3	26.0	26.4	26.6

¹Provisional.

Sources: For 1954-59, Statistical Office of the United Nations, Demographic Yearbook, 1963, New York, United Nations, 1964; for 1960-63, Statistical Office of the United Nations, Demographic Yearbook, 1964, New York, United Nations, 1965; National Center for Health Statistics, Vital Statistics of the United States, 1963, Vol. II, Pt. A, Public Health Service, Washington, U.S. Government Printing Office, 1965.

Table 13. Infant mortality rates for 55

[Refers only to deaths occurring within the United States. Alaska included beginning 1959, and Hawaii, 1960. Excludes fetal deaths. Rates are classified according to the Sixth Revision for 1954-57 and according to the Seventh

Cause of death	
1	All causes-----
2	Dysentery, all forms-----045-048
3	Septicemia and pyemia-----053
4	Whooping cough-----056
5	Meningococcal infections-----057
6	Tetanus-----061
7	Other infective and parasitic diseases-----001-044,049-052,054,055,058-060,062-138
8	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues-----140-205
9	Benign neoplasms and neoplasms of unspecified nature-----210-239
10	Diseases of thymus gland-----273
11	Meningitis, except meningococcal and tuberculous-----340
12	Other diseases of nervous system and sense organs-----330-334,341-398
13	Acute upper respiratory infections-----470-475
14	Influenza and pneumonia, except pneumonia of newborn-----480-493
15	Influenza-----480-483
16	Pneumonia, except pneumonia of newborn-----490-493
17	Bronchitis-----500-502
18	Other diseases of respiratory system-----510-522,525-527
19	Pulmonary congestion and hypostasis-----522
20	Other chronic interstitial pneumonia-----525
21	Bronchiectasis-----526
22	Other diseases of lung and pleural cavity-----527.2
23	All other diseases of respiratory system-----510-521,527.1
24	Hernia and intestinal obstruction-----560,561,570
25	Gastritis, duodenitis, enteritis, and colitis, except diarrhea of newborn-----543,571,572
26	Other diseases of digestive system-----530-542,544-553,573-587
27	Congenital malformations-----750-759
28	Spina bifida and meningocele-----751
29	Congenital hydrocephalus and other congenital malformations of nervous system and sense organs-----752,753
30	Congenital malformations of circulatory system-----754
31	Other congenital malformations-----750,755-759
32	Certain diseases of early infancy-----760-776
33	Birth injuries-----760,761
34	Without mention of immaturity (.0)-----
35	With immaturity (.5)-----
36	Intracranial and spinal injury at birth-----760
37	Without mention of immaturity (.0)-----
38	With immaturity (.5)-----
39	Other birth injury-----761
40	Without mention of immaturity (.0)-----
41	With immaturity (.5)-----

selected causes: United States, 1954-63

deaths under 1 year. Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955. Deaths Revision for 1958-63. Asterisk indicates rate based on a frequency of less than 20]

1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	
Rates per 100,000 live births										
2,522.9	2,531.1	2,529.2	2,604.0	2,638.7	2,706.8	2,634.5	2,598.6	2,641.3	2,658.2	1
2.3	2.8	2.4	3.3	4.0	4.4	5.1	5.2	6.7	7.5	2
8.9	8.8	8.8	9.6	10.0	10.3	10.2	7.9	7.7	7.3	3
2.1	1.6	1.3	1.7	4.3	3.1	2.9	4.1	8.3	6.5	4
5.0	4.5	3.8	4.6	4.8	5.8	5.8	6.1	6.3	7.5	5
1.1	1.3	1.5	1.6	1.9	2.0	1.8	1.9	1.9	2.3	6
13.0	14.4	12.7	13.1	13.1	13.8	12.5	15.2	13.6	17.4	7
6.3	6.3	6.9	7.0	6.6	6.2	6.6	7.2	7.1	7.6	8
3.1	3.0	2.9	3.2	3.0	3.2	3.1	3.8	4.0	4.2	9
2.2	2.4	2.1	2.7	3.5	3.3	4.0	4.4	6.1	7.2	10
21.1	21.8	20.5	20.5	19.7	20.9	18.1	17.9	16.7	16.1	11
16.9	18.4	20.1	22.3	22.0	22.9	20.0	19.2	20.4	20.8	12
9.4	9.7	9.1	9.8	11.7	10.8	10.8	9.9	10.4	10.0	13
217.5	215.6	215.6	230.8	229.6	235.9	225.9	207.4	205.5	206.3	14
8.7	6.8	6.0	12.6	8.0	10.6	15.2	6.9	9.1	10.6	15
208.8	208.8	209.6	218.2	221.6	225.3	210.7	200.5	196.4	195.7	16
13.3	13.9	14.0	15.4	17.3	18.6	18.0	18.8	16.6	17.1	17
41.6	38.2	37.3	36.1	35.5	36.3	61.6	54.4	46.4	38.3	18
5.7	4.3	5.1	4.3	3.7	---	---	---	---	---	19
26.0	24.1	21.5	21.9	20.9	---	---	---	---	---	20
*0.1	*0.1	*0.0	*0.0	*0.0	---	---	---	---	---	21
6.1	5.7	6.2	5.5	5.9	---	---	---	---	---	22
3.7	4.0	4.5	4.3	4.9	---	---	---	---	---	23
22.2	21.3	21.8	21.7	22.5	22.6	24.5	25.9	23.6	25.5	24
51.1	56.2	53.8	61.6	60.1	63.5	72.8	67.4	80.5	89.4	25
16.1	15.7	15.5	15.9	16.1	17.6	13.0	13.9	12.8	16.4	26
355.8	355.9	363.5	361.4	367.0	370.0	371.4	376.5	379.4	376.3	27
32.6	32.0	24.5	25.7	28.2	27.6	27.6	31.3	29.8	34.1	28
30.2	31.9	38.1	38.6	38.8	39.7	41.6	40.9	44.6	43.3	29
172.3	172.3	178.7	178.2	177.2	181.0	178.0	177.5	172.4	171.9	30
120.7	119.8	122.3	118.8	122.8	121.8	124.2	126.9	132.6	127.0	31
1,529.1	1,540.2	1,538.4	1,575.3	1,600.0	1,639.9	1,564.2	1,549.7	1,581.7	1,579.4	32
218.5	227.2	232.5	238.6	246.5	264.7	267.9	276.6	285.7	280.0	33
83.4	88.4	90.1	94.0	98.0	108.7	111.6	119.4	123.7	126.9	34
135.1	138.8	142.3	144.6	148.5	156.1	156.3	157.2	162.0	153.1	35
65.4	69.6	70.6	74.6	80.7	92.9	97.3	104.1	109.6	109.5	36
38.6	41.7	40.4	43.6	48.1	56.5	60.0	66.3	70.6	73.6	37
26.8	27.9	30.2	31.0	32.6	36.3	37.3	37.7	38.9	36.0	38
153.1	157.6	161.8	164.0	165.8	171.9	170.6	172.5	176.1	170.4	39
44.8	46.7	49.7	50.4	49.8	52.1	51.5	53.0	53.0	53.3	40
108.3	110.9	112.1	113.6	116.0	119.7	119.0	119.5	123.1	117.1	41

Table 13. Infant mortality rates for 55

[Refers only to deaths occurring within the United States. Alaska included beginning 1959, and Hawaii, 1960. Excludes fetal deaths. Rates are are classified according to the Sixth Revision for 1954-57 and according to the Seventh

Cause of death	
Certain diseases of early infancy--Con.	
1	Postnatal asphyxia and atelectasis-----762
2	Without mention of immaturity (.0)-----
3	With immaturity (.5)-----
4	Pneumonia of newborn-----763
5	Without mention of immaturity (.0)-----
6	With immaturity (.5)-----
7	Diarrhea of newborn-----764
8	Without mention of immaturity (.0)-----
9	With immaturity (.5)-----
10	Other infections of newborn-----765-768
11	Without mention of immaturity (.0)-----
12	With immaturity (.5)-----
13	Neonatal disorders arising from certain diseases of mother during pregnancy-----769
14	Without mention of immaturity (.0-.4)-----
15	With immaturity (.5-.9)-----
16	Hemolytic disease of newborn (erythroblastosis)-----770
17	Without mention of immaturity (.0-.2)-----
18	With immaturity (.5-.7)-----
19	Hemorrhagic disease of newborn-----771
20	Without mention of immaturity (.0)-----
21	With immaturity (.5)-----
22	Ill-defined diseases peculiar to early infancy, including nutritional maladjustment--772,773
23	Without mention of immaturity (.0)-----
24	With immaturity (.5)-----
25	Immaturity with mention of any other subsidiary condition-----774
26	Immaturity, unqualified-----776
27	Symptoms and ill-defined conditions-----780-793,795
28	All other diseases-----Residual
29	Accidents-----E800-E962
30	Inhalation and ingestion of food or other object causing obstruction or suffocation-----E921,E922
31	Accidental mechanical suffocation in bed and cradle-----E924
32	Other accidental causes-----E800-E920,E923,E925-E962
33	Homicide-----E964,E980-E984

selected causes: United States, 1954-63—Con.

deaths under 1 year. Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955. Deaths Revision for 1956-63. Asterisk indicates rate based on a frequency of less than 20]

1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	
Rates per 100,000 live births										
437.6	449.4	445.7	458.9	466.1	485.2	443.6	434.2	436.9	432.7	1
120.1	119.9	119.5	123.4	129.4	138.9	126.1	124.0	138.2	145.5	2
317.5	329.5	326.1	335.5	336.6	346.2	317.5	310.2	298.6	287.3	3
77.6	80.4	83.0	83.2	88.6	93.2	87.3	81.7	76.8	78.2	4
56.2	58.9	60.3	60.2	62.9	65.1	59.9	57.1	52.4	51.9	5
21.4	21.5	22.6	23.0	25.7	28.1	27.5	24.6	24.4	26.3	6
9.4	9.8	9.8	10.9	11.6	12.6	12.1	12.7	13.5	17.4	7
7.8	7.6	7.7	8.5	9.1	10.2	9.4	10.2	10.6	13.2	8
1.6	2.2	2.2	2.4	2.5	2.5	2.7	2.5	2.9	4.2	9
20.5	19.0	17.5	18.3	19.1	25.7	20.1	16.5	13.5	12.9	10
12.4	11.3	11.1	11.9	13.1	16.2	13.5	11.1	8.8	8.7	11
8.2	7.7	6.4	6.4	6.0	9.6	6.7	5.3	4.6	4.3	12
17.9	18.7	21.4	23.5	20.6	19.1	15.3	15.9	17.5	10.1	13
6.5	6.8	7.8	8.3	6.9	6.5	4.7	4.7	5.5	5.3	14
11.4	11.9	13.6	15.2	13.7	12.6	10.6	11.3	12.0	4.8	15
44.8	47.8	49.2	50.4	51.5	56.4	59.3	56.7	59.9	61.8	16
35.0	37.5	38.6	40.0	40.9	45.8	48.0	45.1	47.2	49.8	17
9.8	10.3	10.7	10.4	10.6	10.6	11.3	11.7	12.7	11.9	18
13.8	12.8	13.2	14.6	15.9	16.2	17.4	17.3	18.9	21.1	19
8.3	7.5	8.1	9.2	9.6	9.8	10.8	11.0	11.5	13.3	20
5.5	5.3	5.1	5.3	6.3	6.4	6.5	6.3	7.4	7.8	21
253.2	222.4	198.9	189.2	179.7	159.5	95.3	93.0	82.2	82.8	22
67.8	60.3	57.4	55.3	52.7	49.1	23.1	23.2	23.4	24.8	23
185.3	162.0	141.5	134.0	127.0	110.4	72.2	69.7	58.8	57.9	24
26.5	22.9	31.6	30.8	31.5	30.8	58.5	51.9	46.7	41.1	25
409.2	429.7	435.7	457.0	468.9	476.4	487.3	493.2	530.1	541.4	26
61.8	54.4	56.1	59.1	58.1	65.5	60.1	61.4	68.9	69.2	27
32.3	32.2	32.6	32.6	33.6	33.8	33.1	33.4	31.7	33.6	28
85.7	87.7	83.9	90.0	90.9	93.2	86.3	84.0	81.7	89.1	29
19.8	20.1	28.8	28.3	27.2	30.2	26.4	23.7	21.7	24.8	30
20.3	22.0	21.7	23.9	27.0	26.8	25.1	24.3	24.8	28.0	31
45.6	45.6	33.4	37.8	36.7	36.1	34.9	36.0	35.2	36.4	32
5.0	5.1	4.5	4.7	3.5	3.2	2.9	3.0	3.2	3.3	33

FETAL MORTALITY

The total number of fetal deaths registered in the United States in 1963 was 94,194. Although no quantitative information about the completeness of fetal death registration exists for the country as a whole, one study estimated that only 15 percent of the total annual number of fetal deaths is registered.⁴

As indicated in table 14, the minimum period of gestation for which fetal death registration is required is 20 weeks or more for most States. Only nine States and New York City require reporting of fetal deaths at all periods of gestation. Unless otherwise noted, the fetal death rates and ratios presented in this report are based on occurrences at gestations of 20 weeks or more. These ratios or rates for occurrences at gestations of 20 weeks or more are representative of all the States. One of the chief limitations of the ratios is the inclusion of the gestation not stated group. In view of the variation in registration requirements it

cannot be assumed that the fetal deaths for which gestation information is not given belong chiefly to the 20 weeks or more group.

COLOR AND SEX

Fetal death ratios based on events reported as having occurred at gestations of 20 weeks or more or with gestation not stated are given in table 15 for each year from 1942 to the present. The decline in the fetal death ratio has been fairly steady since 1942 (fig. 5). Currently the ratio is 15.8 fetal deaths per 1,000 live births—less than two-thirds of the comparable figure for 1942 (25.6). Proportionally the decrease among nonwhite births has been somewhat greater than among white, although the former ratio remains substantially higher. The ratio of 13.7 for white in 1963 was the lowest ever recorded. Similarly, the ratio of 26.7 is the lowest recorded for

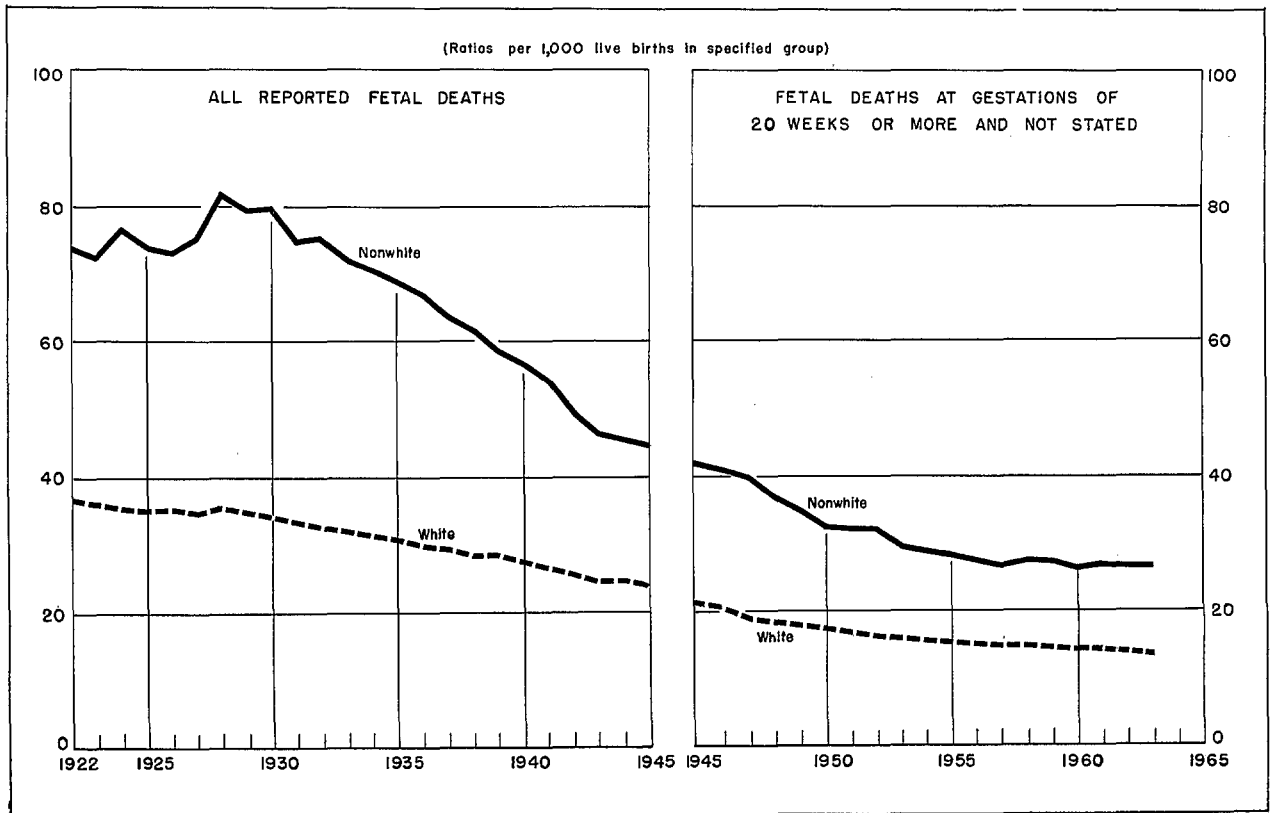


Figure 5. Fetal-death ratios by color: birth-registration States or United States, 1922-63.

nonwhite. This differential between the white and nonwhite fetal death ratios—95 percent—is somewhat higher than that noted previously for infant deaths (87 percent) and considerably greater than for neonatal deaths (56 percent).

Although not shown in the tables, differences in the fetal death ratios by sex for 1963 were examined. The differential was greater at the earlier periods of gestation as the following ratios per 1,000 live births indicate:

	<i>Male</i>	<i>Female</i>
Under 20 weeks -----	9.8	4.5
20 weeks and over and not stated-----	16.4	15.1

The inclusion of the "gestation not stated" or the proportionate allocation of the "sex not stated" does not appear to have any effect on this difference in the ratios by sex.

AGE OF MOTHER, GESTATION, AND LEGITIMACY

Comparison of fetal losses which occur before gestations of 20 weeks with those which occur after 20 weeks can be made for the areas which require reporting of fetal losses at all gestations. There were 10 such areas in 1963; they are listed in the headnote to table 16. The percentage of fetal deaths at gestations of less than 20 weeks is considerably lower for mothers under age 20 than is the case for fetal deaths of longer gestations. This result is similar to that found in previous years. A possible explanation for this is that the early fetal deaths may be poorly reported among the younger mothers because of the high proportion of illegitimate births in these earlier ages.

Information concerning illegitimate fetal deaths by age of mother and color is given in table 17. The data for this table are provided by 34 States in which legitimacy is reported on both live birth and fetal death certificates. The fetal death ratios for married women are lower in almost every age category than those for unwed mothers among both white and nonwhite women. Differences in the ratios by legitimacy status are smaller among nonwhite mothers than among white.

Ratios for total fetal deaths in each group show that some important differences exist when age of mother alone is considered. Ratios are lowest for mothers aged 20-24 years. In the age groups immediately below and above this (15-19 and 25-29 years) the ratio is slightly higher, but it is still below the average for mothers of all ages. With increasing age, the fetal death ratio increases sharply. This pattern with respect to age of mother is similar for white and nonwhite women.

PLURALITY

Fetal deaths and fetal death rates (fetal deaths per 1,000 live births and fetal deaths) by plurality and color are given in table 18. Fetal death rates are lower than ratios computed for the same data because of the addition of the fetal death component to the denominator of the rate. They are also more meaningful since the sum of births and fetal deaths represents the entire population known to be exposed to the risk of fetal death. The use of ratios in other fetal death tables has been deemed satisfactory because in groups where the ratios do not vary too greatly among themselves the effect of omitting fetal deaths from the denominator is approximately the same for all ratios in the table and they are therefore comparable. The variation in relative incidence of fetal deaths between the groups represented in table 18 is too great to permit the use of ratios. Slightly less than 6 percent of all fetal deaths in 1963 occurred in plural births. In comparison, 2.0 percent of all liveborn infants were plural born. The fetal death rate among twins was 41.6, almost three times the fetal death rate for single births. For other plural deliveries (triplets or higher) the fetal death rate was 60.7, about four times that for single deliveries. High fetal death rates among twin deliveries affect both sexes in approximately the same proportions.

TOTAL-BIRTH ORDER

In the majority of States total-birth order represents approximately the number of pregnancies a woman has had. In some registration

areas the item on previous fetal loss indicates that reporting should be limited to previous fetal deaths at gestations of 20 weeks or more. In these areas total-birth order should correspond to pregnancies of 20 weeks or more. (For lists of the States that request information on all previous fetal deaths or those of 20 weeks or more on both the live birth and fetal death certificates, see pages 6-10 and 6-11, Volume II of *Vital Statistics of the United States, 1963*.)

Fetal death rates by age of mother and total-birth order for 1963 appear in table 19. Comparison of these rates with similar rates for 1950,⁵ 1956,⁶ and 1957⁷ indicates that the pattern of the rates by birth order is similar for each of the 4 years. Fetal loss was lowest among second pregnancies (10.8 per 1,000). The rate was higher for the first birth order (14.9), and each advance in birth order above the second showed increased mortality.

When changes in birth order are viewed for each age-of-mother group, the risk of fetal loss is greater for the first pregnancy than for subsequent pregnancies for women 30 years and over. For younger women (under 30) the risk increased with each pregnancy after the second. This pattern is similar for white and nonwhite women alike.

GEOGRAPHIC AREA, 1959-63

Fetal death ratios by color are shown for each geographic division and region for 1959 through 1963 in table 20. Comparable ratios for individual States and the District of Columbia as well as the numbers of fetal deaths at gestations of 20 weeks or more and with gestation not stated appear in tables 21 and 22. As previously mentioned, fetal deaths are known to be seriously underreported. The extent to which this underreporting varies from one State, division, or region to another is unknown. Comparisons between one time period and others for the same State can be made, however, subject to the assumption that the extent to which fetal deaths were underreported did not vary greatly over a short period of years. Such an assumption would not be warranted in a State where it was known

that concerted efforts toward improvement in reporting had been made. A second important use of the data is in the evaluation of the effect of changes in State regulations for reporting fetal deaths.

Another limitation, which is associated with variations in reporting requirements, concerns the effect of including the not stated gestation group. Inclusion of these fetal deaths in computing ratios in table 20 tends to overstate the ratios for areas having registration of all fetal deaths in comparison with those for areas with more limited registration.

Fetal death ratios are generally highest in the Northeast Region. For 1963 the ratios per 1,000 live births were 17.7 for the total group and 15.9 and 34.9 for white and nonwhite persons, respectively. However, variations in reporting practices contribute to the above-average ratios in this region. Primary among these factors is the better-than-average reporting of fetal deaths in New York City. This city alone accounts for over a third of all fetal deaths at gestations of 20 weeks or more or with gestation not stated registered in this region. To a lesser degree the absence of events classified by color for New Jersey inflated the ratios for white and nonwhite persons since ratios for this State have been below comparable figures for the Middle Atlantic Division and the Northeast Region.

On the other hand, the understatement of fetal deaths for Massachusetts had the opposite effect on the ratios for the Northeast Region. Figures for fetal deaths in this report exclude about 300 fetal deaths which were recorded in Boston but not received by this office. Therefore the fetal death ratio for Massachusetts was about 21 percent below the true figure. Ratios per 1,000 live births for Massachusetts were as follows:

	1963	1962
Total-----	9.6	12.4
White -----	9.7	12.1
Nonwhite -----	6.5	18.4

Fetal mortality statistics are circumscribed by a number of limitations such as underregis-

tration and variation in reporting requirements which have been discussed above. However, certain observations are valid. First, there has been progress in the reduction of fetal mortality. The ratios for 1963 were below comparable figures for 1959 with the exception of that for nonwhite persons in the North Central Region as the following percent changes show:

	<i>Total</i>	<i>White</i>	<i>Nonwhite</i>
United States-----	-2.5	-3.5	-2.2
Northeast-----	-2.2	-1.9	-1.4
North Central-----	-3.5	-6.0	+5.8
South-----	-1.7	-1.4	-1.8
West-----	-1.5	-1.6	-6.4

Ratios for nonwhite persons increased for most States in the North Central Region. This may be due to an improvement in registration completeness for nonwhite persons between the 2 years.

The differential in fetal mortality between white and nonwhite persons is even greater than differences observed in the neonatal rates for the four regions. That this differential has remained virtually unchanged since 1959 is shown by the following ratios of nonwhite to white persons:

	<i>1963</i>	<i>1959</i>
United States-----	1.9	1.9
Northeast-----	2.2	2.2
North Central-----	1.9	1.7
South-----	2.0	2.0
West-----	1.3	1.3

Table 14. Minimum period of gestation for which fetal death registration is required and fetal deaths, by period of gestation: United States and each State, 1963

[By place of occurrence]

	Area	Minimum period of gestation for which fetal death registration is required	Total fetal deaths	Period of gestation ¹		
				Under 16 weeks	16-19 weeks	20-23 weeks
1	United States-----	-----	94,194	24,564	4,990	7,734
2	Alabama-----	After 5th month (20 weeks)-----	1,546	6	17	137
3	Alaska-----	20 weeks or more ² -----	106	-	2	8
4	Arizona-----	Advanced to 20th week-----	522	-	6	43
5	Arkansas-----	All periods of gestation-----	897	³ 172	66	74
6	California-----	Advanced to 20th week-----	4,769	11	39	318
7	Colorado-----	All periods of gestation-----	2,310	³ 1,295	226	139
8	Connecticut-----	20 weeks or more-----	675	-	3	71
9	Delaware-----	20 weeks or more-----	158	-	-	26
10	District of Columbia--	After 5th month-----	573	5	11	45
11	Florida-----	20 weeks or more-----	1,787	-	-	165
12	Georgia-----	All periods of gestation-----	3,144	³ 888	270	317
13	Hawaii-----	All periods of gestation-----	1,194	³ 885	82	44
14	Idaho-----	After 20 weeks-----	170	-	2	11
15	Illinois-----	20 weeks or more-----	3,385	5	24	386
16	Indiana-----	20 weeks or more-----	1,463	8	9	124
17	Iowa-----	Advanced to 5th month (20 weeks)-	701	1	1	57
18	Kansas-----	Weight in excess of 350 grams----	592	2	11	54
19	Kentucky-----	20 weeks or more-----	885	-	-	88
20	Louisiana-----	After 20 weeks-----	1,469	5	15	119
21	Maine-----	All periods of gestation-----	378	³ 45	24	31
22	Maryland-----	20 weeks or more ⁴ -----	1,129	12	22	72
23	Massachusetts ⁵ -----	20 weeks or more-----	1,075	2	11	95
24	Michigan-----	Advanced through 20th week-----	2,537	6	12	234
25	Minnesota-----	After 20 weeks-----	1,002	1	13	95
26	Mississippi-----	All periods of gestation-----	2,795	³ 1,065	224	209
27	Missouri-----	After 20 weeks-----	1,271	11	16	107
28	Montana-----	After 20 weeks-----	189	-	-	14
29	Nebraska-----	Advanced to 5th month-----	371	-	4	35
30	Nevada-----	After 20 weeks-----	119	-	2	9
31	New Hampshire-----	20 weeks or more-----	179	2	-	15

See footnotes on page 40.

Table 14. Minimum period of gestation for which fetal death registration is required and fetal deaths, by period of gestation: United States and each State, 1963—Con.

[By place of occurrence]

Period of gestation ¹									
24-27 weeks	28-31 weeks	32-35 weeks	36 weeks	37-39 weeks	40 weeks	41-42 weeks	43 weeks and over	Not stated	
7,008	7,395	8,432	4,655	7,632	12,915	2,037	876	5,956	1
164	192	182	113	123	509	16	4	83	2
8	15	15	12	15	20	6	1	4	3
44	60	68	54	90	129	10	4	14	4
67	70	63	50	44	148	5	4	134	5
378	418	656	218	765	276	315	187	1,188	6
57	69	82	58	104	95	15	7	163	7
86	93	122	56	91	121	13	8	11	8
14	13	15	13	14	32	5	-	26	9
78	74	97	27	81	28	51	22	54	10
225	235	254	200	201	461	25	15	6	11
229	273	198	149	173	493	24	8	122	12
15	13	26	26	32	50	4	1	16	13
11	14	18	11	18	24	2	-	59	14
398	412	464	234	410	912	88	44	8	15
127	155	151	94	162	331	32	10	260	16
55	80	103	55	98	151	37	6	57	17
75	66	79	43	84	134	28	7	9	18
99	102	122	94	86	259	18	4	13	19
159	239	200	139	129	417	28	5	14	20
25	35	29	19	26	41	12	6	85	21
120	118	194	51	190	45	65	43	197	22
121	124	156	104	164	159	57	18	64	23
280	287	360	192	341	569	73	30	153	24
116	119	150	80	150	171	46	9	52	25
161	182	140	90	94	466	13	4	147	26
110	146	146	108	168	286	42	13	118	27
17	21	26	18	35	35	8	4	11	28
32	49	54	36	53	76	19	3	10	29
17	14	15	13	9	27	4	-	9	30
17	22	21	21	22	30	7	1	21	31

Table 14. Minimum period of gestation for which fetal death registration is required and fetal deaths, by period of gestation: United States and each State, 1963—Con.

[By place of occurrence]

	Area	Minimum period of gestation for which fetal death registration is required	Total fetal deaths	Period of gestation ¹		
				Under 16 weeks	16-19 weeks	20-23 weeks
1	New Jersey-----	20 weeks or more-----	2,039	11	35	207
2	New Mexico-----	20 weeks or more-----	381	2	5	31
3	New York(excl. N.Y.C.)-	20 weeks or more-----	2,726	7	15	270
4	New York City-----	All periods of gestation-----	22,329	³ 14,582	2,327	1,238
5	North Carolina-----	Advanced to 20th week-----	1,932	-	1	207
6	North Dakota-----	20 weeks or more-----	225	18	7	31
7	Ohio-----	20 weeks or more-----	3,002	1	3	363
8	Oklahoma-----	20 weeks or more-----	610	4	11	50
9	Oregon-----	All periods of gestation-----	1,257	⁸ 495	125	87
10	Pennsylvania-----	After 16 weeks-----	4,408	4	591	792
11	Rhode Island-----	20 weeks or more ² -----	529	180	42	49
12	South Carolina-----	After 20 weeks-----	1,174	8	13	68
13	South Dakota-----	20 weeks or more-----	261	26	9	31
14	Tennessee-----	20 weeks or more-----	1,429	-	2	171
15	Texas-----	20 weeks or more-----	3,598	6	38	336
16	Utah-----	After 20 weeks-----	288	1	4	22
17	Vermont-----	All periods of gestation-----	419	⁸ 202	30	24
18	Virginia-----	All periods of gestation-----	7,601	³ 4,586	599	358
19	Washington-----	20 weeks or more-----	669	2	10	64
20	West Virginia-----	Advanced to 5th month ⁶ -----	637	-	8	60
21	Wisconsin-----	After 20 weeks-----	1,185	2	1	124
22	Wyoming-----	After 20 weeks-----	104	-	2	9

¹Period of gestation reported in months allocated to gestation interval in weeks as follows: 1-3 months to "Under 16 weeks"; 4 months to "16-19 weeks"; 5 months to "20-23 weeks"; 6 months to "24-27 weeks"; 7 months to "28-31 weeks"; 8 months to "32-35 weeks"; 9 months to "40 weeks"; 10 months to "43 weeks and over."

²A certificate may be filed for periods of gestation of less than 20 weeks but it is not required.

³For areas which require reporting of fetal deaths at all periods of gestation, those at gestations of under 16 weeks are distributed as follows:

	Under 4 weeks	4-7 weeks	8-11 weeks	12-15 weeks
Arkansas-----	3	32	71	66
Colorado-----	13	241	633	408
Georgia-----	4	122	426	336
Hawaii-----	5	159	433	288
Maine-----	1	11	17	16
Mississippi-----	18	303	468	276
New York City----	366	2,503	6,841	4,872
Oregon-----	2	83	236	174
Vermont-----	2	13	117	70
Virginia-----	37	1,127	2,227	1,195

⁴Further specifies "if the gestation period is unknown but the fetus weighs 500 or more grams."

⁵Figures exclude approximately 300 fetal deaths recorded in this State; see text.

⁶Further specifies "or total length of 10 inches."

Table 14. Minimum period of gestation for which fetal death registration is required and fetal deaths, by period of gestation: United States and each State, 1963—Con.

[By place of occurrence]

Period of gestation ¹									
24-27 weeks	28-31 weeks	32-35 weeks	36 weeks	37-39 weeks	40 weeks	41-42 weeks	43 weeks and over	Not stated	
197	219	282	127	241	414	87	25	194	1
27	33	52	33	55	69	11	6	57	2
309	309	411	198	378	606	105	41	77	3
694	583	582	158	543	188	202	144	1,088	4
228	243	270	139	217	585	22	10	10	5
19	15	26	20	30	53	4	2	-	6
307	352	438	252	397	578	91	42	178	7
66	70	73	66	53	179	14	5	19	8
45	48	58	35	51	81	15	5	212	9
500	438	485	261	400	763	126	34	14	10
26	43	34	18	53	44	18	9	13	11
103	143	135	111	101	339	13	6	134	12
20	26	28	18	23	54	9	5	12	13
167	190	197	127	118	424	24	6	3	14
437	444	500	329	393	965	86	18	46	15
17	29	32	19	43	44	14	2	61	16
16	16	18	9	25	14	8	2	55	17
242	195	219	142	166	435	28	17	614	18
74	80	119	48	103	119	21	9	20	19
71	73	70	60	73	202	12	4	4	20
126	125	181	100	179	242	56	16	33	21
12	11	16	7	18	22	3	-	4	22

Table 15. Number of fetal deaths and fetal death ratios, by color: birth-registration States, 1922-32, and United States, 1933-63

[Refers only to fetal deaths occurring within specified area]

Area and year	All fetal deaths reported regardless of period of gestation						Fetal deaths at gestations of 20 weeks or more and not stated					
	Total	White	Non-white	Total	White	Non-white	Total	White	Non-white	Total	White	Non-white
<u>United States</u> ¹	Number of fetal deaths			Ratios per 1,000 live births			Number of fetal deaths			Ratios per 1,000 live births		
1963 ² -----	94,194	66,203	25,705	23.0	19.9	40.2	64,640	45,495	17,075	15.8	13.7	26.7
1962 ² -----	95,841	68,178	25,498	23.0	20.1	39.7	66,421	47,326	17,128	15.9	13.9	26.7
1961-----	97,007	71,219	25,788	22.7	19.8	38.6	68,767	50,728	18,039	16.1	14.1	27.0
1960-----	94,452	69,116	25,336	22.2	19.2	38.6	68,480	50,894	17,586	16.1	14.1	26.8
1959-----	92,566	67,993	24,573	21.8	18.9	38.0	68,613	50,911	17,702	16.2	14.2	27.3
1958-----	92,873	68,970	23,903	22.1	19.3	37.9	69,355	51,969	17,386	16.5	14.5	27.5
1957-----	92,681	69,518	23,163	21.8	19.2	36.6	69,561	52,591	16,970	16.3	14.5	26.8
1956-----	92,282	69,227	23,055	22.2	19.5	37.3	68,659	51,865	16,794	16.5	14.6	27.2
1955-----	91,907	69,174	22,733	22.7	20.0	38.6	69,153	52,411	16,742	17.1	15.2	28.4
1954-----	92,144	70,043	22,101	22.9	20.3	38.5	70,109	53,532	16,577	17.5	15.5	28.9
1953-----	86,313	65,636	20,677	22.1	19.6	37.9	69,393	53,252	16,141	17.8	15.9	29.6
1952-----	85,549	64,702	20,847	22.2	19.5	39.8	70,447	53,541	16,906	18.3	16.1	32.2
1951-----	84,696	64,629	20,067	22.6	20.0	39.1	70,569	54,071	16,498	18.8	16.7	32.1
1950-----	81,300	62,092	19,208	22.9	20.3	39.2	68,262	52,319	15,943	19.2	17.1	32.5
1949-----	81,489	62,599	18,890	22.9	20.3	39.7	70,584	54,114	16,470	19.8	17.5	34.6
1948-----	83,021	64,262	18,759	23.5	20.9	41.3	72,838	56,232	16,606	20.6	18.3	36.5
1947-----	87,831	69,013	18,818	23.7	21.1	44.2	77,917	61,072	16,845	21.1	18.7	39.6
1946-----	84,270	67,677	16,593	25.6	23.2	44.2	74,849	59,494	15,355	22.8	20.4	40.9
1945-----	72,854	57,690	15,164	26.6	24.1	44.6	65,513	51,242	14,271	23.9	21.4	42.0
1944-----	75,495	60,053	15,442	27.0	24.5	45.4	68,374	---	---	24.5	---	---
1943-----	78,485	62,776	15,709	26.7	24.2	46.2	71,873	---	---	24.5	---	---
1942-----	79,174	63,301	15,873	28.2	25.5	49.3	72,017	---	---	25.6	---	---
1941-----	75,133	58,467	16,666	29.9	26.5	54.0	---	---	---	---	---	---
1940-----	73,802	57,220	16,582	31.3	27.7	56.7	---	---	---	---	---	---
1939-----	72,598	55,892	16,706	32.0	28.2	59.0	---	---	---	---	---	---
1938-----	73,467	56,306	17,161	32.1	28.1	61.1	---	---	---	---	---	---
1937-----	73,609	56,242	17,367	33.4	29.2	63.2	---	---	---	---	---	---
1936-----	73,735	56,156	17,579	34.4	29.8	66.9	---	---	---	---	---	---
1935-----	77,119	58,767	18,352	35.8	31.1	68.7	---	---	---	---	---	---
1934-----	78,503	59,643	18,860	36.2	31.4	70.1	---	---	---	---	---	---
1933-----	77,059	58,749	18,310	37.0	32.2	71.1	---	---	---	---	---	---
<u>Birth-registration States</u> ³												
1932-----	78,351	59,641	18,710	37.8	32.7	74.4	---	---	---	---	---	---
1931-----	80,616	62,417	18,199	38.2	33.4	74.1	---	---	---	---	---	---
1930-----	86,466	66,440	20,026	39.2	34.0	79.9	---	---	---	---	---	---
1929-----	85,678	66,124	19,554	39.5	34.4	79.7	---	---	---	---	---	---
1928-----	89,765	69,317	20,448	40.2	35.0	81.5	---	---	---	---	---	---
1927-----	82,931	67,056	15,875	38.8	34.8	74.8	---	---	---	---	---	---
1926-----	70,716	59,842	10,874	38.1	35.1	73.0	---	---	---	---	---	---
1925-----	71,519	60,762	10,757	38.1	35.1	73.1	---	---	---	---	---	---
1924-----	75,817	63,029	12,788	39.3	35.8	76.2	---	---	---	---	---	---
1923-----	69,757	59,089	10,668	38.9	35.9	71.8	---	---	---	---	---	---
1922-----	70,010	59,329	10,681	39.4	36.4	73.4	---	---	---	---	---	---

¹Alaska included beginning 1959, and Hawaii, 1960.

²Figures by color exclude data for residents of New Jersey.

³Increased in number from 30 States and the District of Columbia in 1922 to the entire conterminous United States in 1933.

Table 16. Number and percent distribution of fetal deaths, by age of mother, for specified periods of gestation: selected areas combined, 1963

[By place of residence. Includes fetal deaths for those areas in the United States which required reporting of all periods of gestation. The areas are Arkansas, Colorado, Georgia, Hawaii, Maine, Mississippi, New York City, Oregon, Vermont, and Virginia. Figures for age of mother not stated are distributed]

Age of mother	Total	Period of gestation			Total	Period of gestation		
		Under 20 weeks	20 weeks and over	Not stated		Under 20 weeks	20 weeks and over	Not stated
		Number of fetal deaths				Percent distribution		
All ages-----	41,090	27,141	11,374	2,575	100.0	100.0	100.0	100.0
Under 15 years-----	93	37	49	7	0.2	0.1	0.4	0.3
15-19 years-----	4,338	2,474	1,568	296	10.6	9.1	13.8	11.5
20-24 years-----	12,024	8,166	3,125	733	29.3	30.1	27.5	28.5
25-29 years-----	10,245	7,096	2,530	619	24.9	26.1	22.2	24.0
30-34 years-----	7,578	5,007	2,066	505	18.4	18.4	18.2	19.6
35-39 years-----	4,842	3,085	1,465	292	11.8	11.4	12.9	11.3
40-44 years-----	1,783	1,154	521	108	4.3	4.3	4.6	4.2
45 years and over--	187	122	50	15	0.5	0.4	0.4	0.6

Table 17. Number of fetal deaths and fetal death ratios, by legitimacy status, color, and age of mother: total of 34 reporting States, 1963

[By place of residence. Refers only to fetal deaths for which the period of gestation was given as 20 weeks or more or was not stated. Figures by color exclude data for residents of New Jersey. Figures for age of mother not stated are distributed]

Color and age of mother	Total	Legitimate ¹	Illegitimate	Total	Legitimate ¹	Illegitimate
<u>Total</u>	Number of fetal deaths			Ratios per 1,000 live births		
All ages-----	40,402	35,757	4,645	15.3	14.5	26.5
Under 15 years-----	137	28	109	26.4	21.2	28.2
15-19 years-----	5,339	3,831	1,508	13.9	12.2	21.5
20-24 years-----	10,806	9,567	1,239	11.6	10.9	22.6
25-29 years-----	8,942	8,245	697	13.7	13.1	29.6
30-34 years-----	7,194	6,630	564	18.5	17.7	42.7
35-39 years-----	5,557	5,183	374	26.9	26.0	51.0
40 years and over-----	2,427	2,273	154	39.6	38.6	64.2
<u>White</u>						
All ages-----	27,265	25,977	1,288	13.1	12.9	20.4
Under 15 years-----	27	17	10	16.2	18.9	13.1
15-19 years-----	3,186	2,771	415	11.2	10.7	16.6
20-24 years-----	7,672	7,283	389	10.1	9.9	17.6
25-29 years-----	6,218	6,034	184	11.9	11.7	23.8
30-34 years-----	4,803	4,669	134	15.8	15.5	32.2
35-39 years-----	3,678	3,569	109	22.7	22.4	43.6
40 years and over-----	1,681	1,634	47	34.9	34.6	50.1
<u>Nonwhite</u>						
All ages-----	11,067	7,866	3,201	26.3	25.0	30.3
Under 15 years-----	106	10	96	31.9	25.4	32.8
15-19 years-----	1,956	921	1,035	22.2	20.2	24.4
20-24 years-----	2,606	1,806	800	19.3	17.3	26.3
25-29 years-----	2,262	1,763	499	24.4	22.7	33.4
30-34 years-----	1,944	1,529	415	33.0	30.4	48.0
35-39 years-----	1,563	1,312	251	48.1	47.2	54.0
40 years and over-----	630	525	105	64.2	62.5	74.2

¹Includes legitimacy not stated.

NOTE: States which do not report legitimacy status are as follows:

Arizona	Idaho	New Mexico
Arkansas	Maryland	New York
California	Massachusetts	Oklahoma
Colorado	Montana	Vermont
Connecticut	Nebraska	Virginia
Georgia	New Hampshire	

Table 18. Number of fetal deaths and fetal death rates, by color and plurality of birth: United States, 1963

[Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated. Figures by color exclude data for residents of New Jersey]

Color and plurality of birth	Number of fetal deaths	Rate per 1,000 live births and fetal deaths
<u>Total</u>		
All fetal deaths-----	64,640	15.5
Fetal deaths in single deliveries-----	61,090	15.0
Fetal deaths in twin deliveries-----	3,478	41.6
Fetal deaths in other plural deliveries-----	72	60.7
<u>White</u>		
All fetal deaths-----	45,495	13.5
Fetal deaths in single deliveries-----	43,055	13.0
Fetal deaths in twin deliveries-----	2,384	37.6
Fetal deaths in other plural deliveries-----	56	66.5
<u>Nonwhite</u>		
All fetal deaths-----	17,075	26.0
Fetal deaths in single deliveries-----	16,092	25.2
Fetal deaths in twin deliveries-----	967	55.8
Fetal deaths in other plural deliveries-----	16	51.6

Table 19. Fetal death rates, by age of mother and total-birth order: United States, 1963

[Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated. Asterisk indicates rate based on a frequency of less than 20]

Age of mother	Total-birth order						
	Total	First	Second	Third	Fourth	Fifth	Sixth and over
Rates per 1,000 live births and fetal deaths							
All ages-----	15.5	14.9	10.8	13.1	15.9	18.5	26.9
Under 20 years-----	14.0	14.1	12.5	16.8	22.9	22.5	*20.8
20-24 years-----	11.9	12.6	9.2	11.5	14.2	17.5	25.2
25-29 years-----	14.0	17.1	10.2	11.5	13.4	15.9	21.5
30-34 years-----	18.8	29.7	14.7	14.2	16.4	17.0	23.9
35-39 years-----	26.5	46.7	21.5	20.4	21.6	23.7	30.6
40 years and over-----	37.9	68.2	28.4	33.5	32.0	32.2	41.1

Table (2) Fetal death ratios by region: United States, each region and division, 1959-63

[Refers only to fetal deaths occurring within the United States for which the period of gestation was registered as 20 weeks or more or was not stated.]

Region and division	1963			1962		
	Total	White	Nonwhite	Total	White	Nonwhite
Fetal deaths per 1,000 live births						
1 United States ^{1,2}	15.38	13.77	25.07	15.50	13.91	26.71
<u>All regions</u>						
2 Northeast ¹	17.77	15.95	34.9	18.01	16.51	35.4
3 North Central	13.77	12.55	23.9	13.81	12.8	23.6
4 South	17.77	13.95	27.9	17.81	14.2	27.7
5 West ²	13.00	12.05	16.1	13.01	12.5	17.1
<u>Northeast</u>						
6 New England	11.83	11.77	16.3	13.7	13.4	21.2
7 Middle Atlantic ¹	19.65	17.83	30.9	19.4	17.9	37.3
<u>North Central</u>						
8 East North Central	14.22	12.83	24.4	14.3	13.1	23.3
9 West North Central	12.65	11.50	22.00	12.7	12.0	21.5
<u>South</u>						
10 South Atlantic	18.81	15.00	27.05	13.9	13.3	27.51
11 East South Central	18.81	13.7	31.22	19.3	14.4	31.81
12 West South Central	15.1	12.4	25.11	15.3	12.7	24.38
<u>West</u>						
13 Mountain	14.1	13.9	16.22	13.3	13.51	17.31
14 Pacific ²	12.7	12.2	16.11	12.7	12.21	17.00

¹ Figures by color for 1962 and 1963 exclude data for residents of New Jersey.

² Excludes Hawaii prior to 1960.

Table 20. Fetal death ratios, by color: United States, each region and division, 1959-63—Con.

[Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated]

1961			1960			1959			
Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite	
Ratios per 1,000 live births									
16.1	14.1	27.0	16.1	14.1	26.8	16.2	14.2	27.3	1
18.1	16.3	33.6	18.2	16.4	34.1	18.1	16.2	35.4	2
13.7	12.6	23.4	14.2	13.2	23.6	14.2	13.3	22.6	3
18.5	14.9	28.4	17.8	14.1	28.0	18.0	14.1	28.4	4
12.9	12.4	17.4	13.1	12.6	16.4	13.2	12.8	17.2	5
13.7	13.4	21.0	13.6	13.4	19.2	13.5	13.3	19.9	6
19.6	17.3	35.0	19.7	17.5	35.6	19.6	17.3	36.8	7
14.0	12.8	23.2	14.6	13.5	23.7	14.5	13.4	22.8	8
12.9	12.1	24.1	13.2	12.5	23.3	13.5	12.9	21.9	9
19.9	16.0	29.1	18.6	14.7	28.1	18.5	14.3	28.2	10
19.6	14.9	30.7	19.8	14.8	31.7	20.0	14.8	32.2	11
15.8	13.4	24.8	15.3	12.9	24.1	16.0	13.4	25.4	12
13.0	12.6	17.6	13.4	13.2	15.5	13.9	13.7	16.6	13
12.9	12.3	17.3	12.9	12.4	16.6	12.9	12.5	17.3	14

Table 21. Number of fetal deaths, by color: United States, each region, division, and State, 1963

[By place of residence. Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated]

Region, division, and State	Total	White	Nonwhite
	Number of fetal deaths		
All regions ¹ -----	64,640	45,495	17,075
Northeast-----	16,649	11,437	3,142
New England ² -----	2,720	2,576	144
Maine-----	297	294	3
New Hampshire-----	188	186	2
Vermont-----	188	188	-
Massachusetts ² -----	1,068	1,036	32
Rhode Island-----	290	268	22
Connecticut-----	689	604	85
Middle Atlantic ¹ -----	13,929	8,861	2,998
New York-----	8,066	5,821	2,245
New Jersey-----	2,070	---	---
Pennsylvania-----	3,793	3,040	753
North Central-----	15,801	13,034	2,767
East North Central-----	11,544	9,267	2,277
Ohio-----	2,986	2,429	557
Indiana-----	1,441	1,223	218
Illinois-----	3,383	2,429	954
Michigan-----	2,545	2,073	472
Wisconsin-----	1,189	1,113	76
West North Central-----	4,257	3,767	490
Minnesota-----	982	942	40
Iowa-----	694	675	19
Missouri-----	1,230	929	301
North Dakota-----	190	179	11
South Dakota-----	230	202	28
Nebraska-----	359	331	28
Kansas-----	572	509	63

¹Figures by color exclude data for residents of New Jersey.

²Figures exclude approximately 300 fetal deaths recorded in this State, primarily to residents of the State; see text.

Table 21. Number of fetal deaths, by color: United States, each region, division, and State, 1963—Con.

[By place of residence. Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated]

Region, division, and State	Total	White	Nonwhite
	Number of fetal deaths		
South-----	23,291	13,411	9,880
South Atlantic-----	11,697	6,615	5,082
Delaware-----	155	108	47
Maryland-----	1,201	805	396
District of Columbia-----	403	81	322
Virginia-----	2,469	1,637	832
West Virginia-----	611	575	36
North Carolina-----	1,937	998	939
South Carolina-----	1,175	414	761
Georgia-----	1,944	974	970
Florida-----	1,802	1,023	779
East South Central-----	5,293	2,738	2,555
Kentucky-----	883	756	127
Tennessee-----	1,366	870	496
Alabama-----	1,540	697	843
Mississippi-----	1,504	415	1,089
West South Central-----	6,301	4,058	2,243
Arkansas-----	681	373	308
Louisiana-----	1,460	583	877
Oklahoma-----	602	460	142
Texas-----	3,558	2,642	916
West-----	8,899	7,613	1,286
Mountain-----	2,532	2,287	245
Montana-----	200	186	14
Idaho-----	161	160	1
Wyoming-----	97	95	2
Colorado-----	785	735	50
New Mexico-----	380	336	44
Arizona-----	519	416	103
Utah-----	273	265	8
Nevada-----	117	94	23
Pacific-----	6,367	5,326	1,041
Washington-----	677	617	60
Oregon-----	620	587	33
California-----	4,738	3,982	756
Alaska-----	105	66	39
Hawaii-----	227	74	153

Table 22. Fetal death ratios, by color: United States and each State, by division, 1959-63

[By place of residence. Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated. Asterisk indicates rate based on a frequency of less than 20]

	Division and State	1963			1962		
		Total	White	Nonwhite	Total	White	Nonwhite
		Ratios per 1,000 live births					
1	United States ^{1,2} -----	15.8	13.7	26.7	15.9	13.9	26.7
	<u>New England</u>						
2	Maine ³ -----	13.5	13.6	*10.6	15.3	15.3	*21.9
3	New Hampshire-----	13.5	13.4	*18.2	15.5	15.6	*10.9
4	Vermont ³ -----	21.4	21.5	-	19.0	19.1	-
5	Massachusetts ⁴ -----	9.6	9.7	6.5	12.4	12.1	18.4
6	Rhode Island-----	15.9	15.4	28.0	16.5	15.5	43.1
7	Connecticut-----	12.2	11.6	18.0	13.4	12.7	20.9
	<u>Middle Atlantic</u>						
8	New York ³ -----	22.7	19.3	41.5	22.8	19.5	42.3
9	New Jersey-----	15.6	---	---	14.9	---	---
10	Pennsylvania-----	17.1	15.4	30.2	16.8	15.5	27.4
	<u>East North Central</u>						
11	Ohio-----	14.0	12.8	24.6	14.5	13.5	22.5
12	Indiana-----	13.5	12.5	24.2	14.4	13.5	24.8
13	Illinois-----	15.0	13.0	25.1	14.7	13.0	23.3
14	Michigan-----	14.2	13.0	23.9	15.0	13.6	26.0
15	Wisconsin-----	13.0	12.7	19.7	11.8	11.3	23.8
	<u>West North Central</u>						
16	Minnesota-----	12.2	12.0	23.8	12.3	12.2	18.7
17	Iowa-----	12.0	11.9	*18.8	11.3	11.2	19.0
18	Missouri-----	13.6	11.9	23.7	15.0	13.2	25.8
19	North Dakota-----	12.5	12.3	*16.4	11.8	11.7	*14.3
20	South Dakota ⁵ -----	13.7	13.2	19.8	12.5	11.8	20.8
21	Nebraska-----	11.0	10.6	16.9	11.5	11.3	16.4
22	Kansas-----	12.5	11.9	20.0	11.7	11.2	17.7

¹Figures by color for 1962 and 1963 exclude data for residents of New Jersey.

²Excludes Hawaii prior to 1960.

³Maine, Vermont, New York City, Virginia (effective July 1, 1960), Georgia, Mississippi, Arkansas, Colorado, Oregon, and Hawaii required reporting of all fetal deaths regardless of gestation period. Since fetal deaths for which gestation was not stated are included in computing the ratios in this table, the ratios may be overstated as a result of inclusion of some early fetal deaths from the not stated group.

⁴Figures for 1963 exclude approximately 300 fetal deaths recorded in Massachusetts, primarily to residents of the State; see text.

⁵Required reporting of all fetal deaths through June 1959, after which the registration requirement was limited to fetal deaths at gestations of 20 weeks or more.

Table 22. Fetal death ratios, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated. Asterisk indicates rate based on a frequency of less than 20]

1961			1960			1959			
Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite	
Ratios per 1,000 live births									
16.1	14.1	27.0	16.1	14.1	26.8	16.2	14.2	27.3	1
14.2	14.3	*6.1	14.3	14.4	*6.5	15.0	15.0	15.9	2
15.4	15.2	*66.7	12.7	12.7	*10.6	13.1	13.1	*25.6	3
18.8	18.8	-	15.0	15.0	-	17.1	17.2	-	4
13.4	13.1	21.5	13.7	13.5	18.7	13.2	13.0	18.7	5
14.6	14.2	*22.6	14.8	14.5	*22.8	14.1	13.7	*21.6	6
12.5	11.8	20.8	12.9	12.4	20.5	12.7	12.2	21.4	7
22.9	19.9	42.2	23.2	19.9	45.7	23.3	19.8	46.7	8
15.3	13.8	25.0	15.3	14.1	23.1	15.1	13.8	23.7	9
16.9	15.5	28.4	17.0	15.9	25.7	16.7	15.4	27.8	10
13.9	13.1	20.9	14.5	13.8	20.7	14.9	13.9	23.4	11
13.8	12.8	24.9	14.0	13.1	23.4	13.8	13.0	23.3	12
14.7	13.0	23.4	15.0	13.2	24.2	14.7	13.3	22.2	13
14.0	12.8	24.2	15.5	14.1	26.4	14.9	13.9	22.9	14
12.7	12.1	26.5	13.3	12.8	23.2	12.7	12.3	22.4	15
12.4	12.3	20.4	12.0	11.9	17.7	13.2	13.1	20.8	16
11.6	11.5	*17.1	11.6	11.5	21.1	11.7	11.6	*14.2	17
14.7	12.8	27.1	15.2	13.7	24.2	15.0	13.7	23.6	18
13.2	13.0	*17.6	13.0	12.7	*20.8	11.9	11.7	*16.3	19
13.2	13.0	14.6	12.7	11.9	22.4	15.3	14.4	27.5	20
12.1	11.7	20.2	12.3	12.1	17.8	13.5	13.3	16.6	21
11.9	11.1	22.8	13.9	13.1	26.1	13.0	12.6	18.8	22

Table 22. Fetal death ratios, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated. Asterisk indicates rate based on a frequency of less than 20]

Division and State		1963			1962		
		Total	White	Nonwhite	Total	White	Nonwhite
<u>South Atlantic</u>		Ratios per 1,000 live births					
1	Delaware-----	13.5	11.8	20.2	14.7	12.9	21.8
2	Maryland-----	15.4	13.3	23.1	16.0	14.0	23.1
3	District of Columbia-----	19.9	14.2	22.2	18.0	13.9	19.7
4	Virginia ³ -----	25.5	22.4	35.1	27.4	24.0	38.0
5	West Virginia-----	17.1	16.9	21.3	16.0	15.8	21.6
6	North Carolina-----	18.0	13.5	27.9	18.2	13.8	27.8
7	South Carolina-----	20.2	12.1	31.7	17.7	10.9	27.4
8	Georgia ³ -----	19.5	15.1	27.8	19.7	15.3	27.8
9	Florida-----	15.7	12.1	25.7	15.6	11.9	25.9
<u>East South Central</u>							
10	Kentucky-----	13.0	12.2	21.8	13.7	13.0	21.5
11	Tennessee-----	17.1	13.9	28.4	17.8	15.0	27.6
12	Alabama-----	20.2	14.6	29.9	20.1	14.0	30.5
13	Mississippi ³ -----	26.2	15.4	35.7	27.0	16.8	35.9
<u>West South Central</u>							
14	Arkansas ³ -----	16.4	12.6	26.0	17.7	13.7	27.7
15	Louisiana-----	17.1	11.3	26.0	16.3	11.0	24.5
16	Oklahoma-----	12.0	10.8	19.0	12.3	10.9	21.2
17	Texas-----	14.9	13.0	25.4	15.1	13.4	24.8
<u>Mountain</u>							
18	Montana-----	12.6	12.7	*11.3	12.3	12.1	*15.0
19	Idaho-----	10.8	10.9	*2.9	9.9	9.8	*14.7
20	Wyoming-----	12.7	13.0	*6.8	10.6	10.6	*9.9
21	Colorado ³ -----	18.6	18.2	26.1	17.6	17.6	18.3
22	New Mexico-----	13.7	13.8	12.7	14.3	14.1	16.3
23	Arizona-----	14.0	13.4	16.7	13.3	12.7	16.4
24	Utah-----	10.9	10.9	*12.5	11.2	11.0	*20.4
25	Nevada-----	12.3	11.1	21.7	16.8	15.1	28.6
<u>Pacific</u>							
26	Washington-----	11.1	10.8	15.5	11.0	10.7	14.6
27	Oregon ³ -----	17.7	17.4	27.0	17.9	17.4	31.5
28	California-----	12.4	11.8	16.8	12.5	11.8	17.6
29	Alaska-----	13.7	12.7	15.7	12.3	8.6	19.9
30	Hawaii ^{3,6} -----	12.8	13.5	12.4	13.3	12.2	13.8

³Maine, Vermont, New York City, Virginia (effective July 1, 1960), Georgia, Mississippi, Arkansas, Colorado, Oregon, and Hawaii required reporting of all fetal deaths regardless of gestation period. Since fetal deaths for which gestation was not stated are included in computing the ratios in this table, the ratios may be overstated as a result of inclusion of some early fetal deaths from the not stated group.

⁶Figures for 1959 are by place of occurrence.

Table 22. Fetal death ratios, by color: United States and each State, by division, 1959-63—Con.

[By place of residence. Refers only to fetal deaths occurring within the United States for which the period of gestation was given as 20 weeks or more or was not stated. Asterisk indicates rate based on a frequency of less than 20]

1961			1960			1959			
Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite	
Ratios per 1,000 live births									
14.2	12.1	22.3	15.0	12.5	26.2	13.9	11.9	22.4	1
15.7	13.4	23.6	15.8	13.6	23.4	16.4	14.4	23.0	2
18.6	15.1	20.0	20.0	16.3	21.7	18.2	14.6	20.0	3
29.6	26.5	39.0	22.1	19.3	30.3	18.3	14.8	28.5	4
17.7	17.5	21.8	15.0	14.4	27.2	16.7	16.1	26.5	5
19.6	14.5	31.0	19.0	14.1	29.5	19.3	13.9	30.7	6
19.9	12.5	30.0	21.1	13.3	31.7	20.2	12.6	30.4	7
19.8	14.6	29.0	20.5	15.3	30.1	21.2	16.1	30.6	8
16.5	12.6	27.3	15.9	12.3	25.6	17.0	13.1	27.4	9
15.9	15.0	26.4	15.2	14.3	25.0	16.1	15.2	25.4	10
16.9	14.5	25.4	17.1	14.6	25.8	16.5	13.8	25.9	11
21.2	14.8	32.0	21.9	15.1	33.4	21.6	15.0	32.6	12
25.3	15.9	33.3	26.1	16.0	34.7	27.2	16.1	36.8	13
18.3	15.1	25.7	16.4	12.6	25.2	16.4	11.9	26.9	14
16.5	10.8	25.3	16.1	11.0	24.2	16.8	12.1	24.1	15
12.8	11.4	21.2	13.6	12.1	23.0	13.5	12.4	20.4	16
15.8	14.2	24.6	15.1	13.6	23.9	16.1	14.2	27.0	17
11.2	11.1	*11.9	10.8	10.5	*14.9	12.7	12.1	21.2	18
10.5	10.4	*15.8	12.1	11.8	*24.2	11.5	11.4	*20.5	19
13.0	13.0	*13.1	11.2	11.1	*13.9	14.4	14.3	*16.0	20
16.4	16.0	24.6	17.2	17.0	22.6	16.6	16.5	19.7	21
13.0	12.7	14.6	14.1	14.0	15.0	13.7	13.8	13.6	22
13.9	12.7	20.3	12.7	12.4	14.5	14.2	13.6	17.0	23
9.9	9.8	*16.1	10.5	10.5	*7.2	11.6	11.4	*15.8	24
10.1	10.1	*10.3	13.9	13.8	*14.8	14.3	14.6	*12.5	25
11.7	11.3	19.4	11.5	11.1	18.2	11.6	11.2	18.2	26
15.7	15.2	30.2	16.1	16.1	17.2	14.7	14.6	18.5	27
12.8	12.1	18.0	12.8	12.2	17.1	13.0	12.5	17.5	28
11.8	11.4	12.5	12.0	10.2	16.1	13.5	14.4	11.8	29
14.4	15.3	13.9	15.3	17.9	14.1	15.3	16.4	14.9	30

MATERNAL MORTALITY

In 1963 the number of women who died of maternal causes was 1,466. This number does not represent all deaths of pregnant women but only those for which physicians have designated a maternal condition as the underlying cause. Maternal conditions are those assigned to deliveries and complications of pregnancy, child-birth, and the puerperium (640-689).

The maternal mortality rate was 35.8 maternal deaths per 100,000 live births for 1963—close to the level prevailing in recent years (table 23). Maternal loss was four times as great for nonwhite women as for white. Excess mortality for nonwhite women existed for each age group shown in table 24. The maternal death rates were at a minimum at ages under 25 years and then increased with age for both white and nonwhite women.

Toxemia was important among the causes of maternal mortality—accounting for a third of the maternal deaths. Mortality from those toxemias arising during pregnancy and puerperium but excluding abortion increased in 1963. The rate for this cause (642, 685, 686) was 6.8 maternal deaths per 100,000 live births compared with 5.6 in 1962. Rates for other causes of maternal deaths were virtually unchanged in the 2 years.

The number of maternal deaths for individual States is currently too small to give statistically reliable rates. Consequently combined data for 3 years are more useful to measure differences in rates between areas. The average maternal death rates by color for each State for 1961-63 are shown in table 25. Comparable rates for each region and division are shown in table 26.

The level of maternal mortality varied extensively among the 50 States and the District of Columbia—from a low of 11.2 maternal deaths per 100,000 live births in Minnesota to 84.1 in Mississippi (1961-63). Patterns similar to those observed for infant mortality rates by division and region existed for maternal mortality rates. Rates were high for the three divisions of the South Region, and New England registered the lowest of the division rates, 20.8 maternal deaths per 100,000 live births, which was well below the U.S. average of 35.9.

A comparison of maternal mortality in the United States with that of other countries of low mortality is limited by several factors. First,

differences exist in registration practices and in definitions of vital events. In addition, rates for a number of countries of low mortality, such as Norway, Sweden, and Denmark, are based on a small number of events.⁸ Therefore these rates are subject to considerable variation. Currently the average maternal mortality rate for the United States compares favorably with that of the Scandinavian countries.

TREND

The maternal mortality rate has declined consistently since 1915, the first year this figure

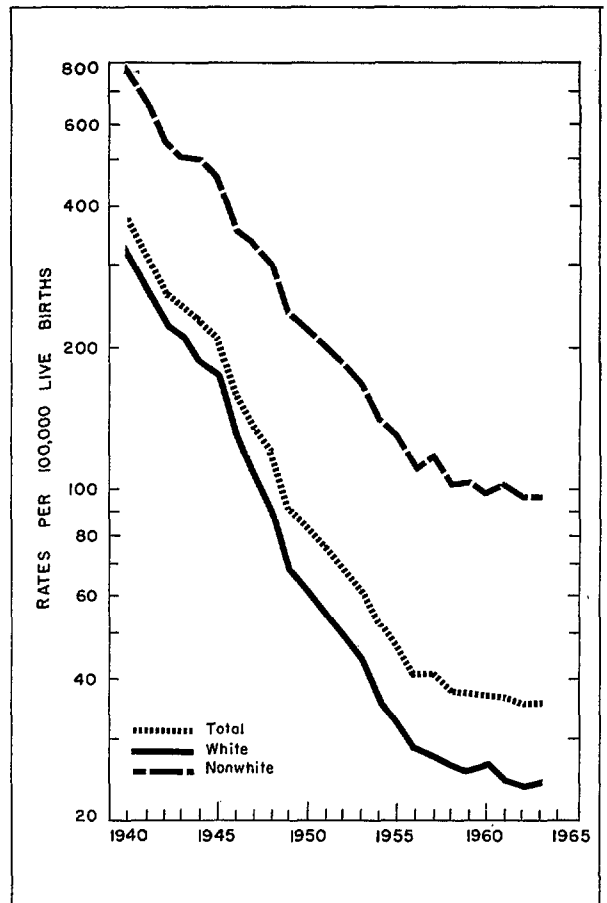


Figure 6. Maternal mortality rates by color: United States, 1940-63.

was recorded. The rates changed only slightly until the middle of the 1930 decade when they began a rapid drop. The annual average percent decline was 12.8 between 1937 and 1955. Since that time the average decline has been less rapid, only 2.1 percent between 1956 and the current year.

The differential between rates for white and nonwhite women has been more or less constant for the past 10 years—the maternal death rates being about four times greater for nonwhite women (fig. 6). After the completion of the birth-registration area in 1933 the gap widened until the mid-1950's.

During the period of rapid decline in maternal mortality, 1937-55, the average annual decline in the rate for the white group was 14.0 percent and

10.6 percent for the nonwhite. For the period 1956-63 the annual rate of decline slowed to 2.5 percent for white mothers and 3.5 for nonwhite mothers.

Causes of maternal mortality can be considered according to whether the condition arises during pregnancy, delivery, or puerperium. There has been great improvement in mortality from those complications which arise during pregnancy (640-649); the rate for this category has decreased over 50 percent in the last decade (table 27). However, the rate for abortion remains virtually unchanged. The decrease in maternal mortality rates for each of the four categories is somewhat greater for white women than for nonwhite between the two periods 1952-54 and 1961-63.

Table 23. Maternal mortality rates, by color: birth-registration States or United States, 1915-63

[Refers only to deaths occurring within the specified area. Alaska included beginning 1959, and Hawaii, 1960. Prior to 1933, data are for birth-registration States only. Deaths are classified according to the International Lists used at the time]

Year	Total	White	Nonwhite
	Rates per 100,000 live births		
1963 ¹ -----	35.8	24.0	96.9
1962 ¹ -----	35.2	23.8	95.9
1961-----	36.9	24.9	101.3
1960-----	37.1	26.0	97.9
1959-----	37.4	25.8	102.1
1958-----	37.6	26.3	101.8
1957-----	41.0	27.5	118.3
1956-----	40.9	28.7	110.7
1955-----	47.0	32.8	130.3
1954-----	52.4	37.2	143.8
1953-----	61.1	44.1	166.1
1952-----	67.8	48.9	188.1
1951-----	75.0	54.9	201.3
1950-----	83.3	61.1	221.6
1949-----	90.3	68.1	234.8
1948-----	116.6	89.4	301.0
1947-----	134.5	108.6	334.6
1946-----	156.7	130.7	358.9
1945-----	207.2	172.1	454.8
1944-----	227.9	189.4	506.0
1943-----	245.2	210.5	509.9
1942-----	258.7	221.8	544.0
1941-----	316.5	266.0	678.1
1940-----	376.0	319.8	773.5
1935-39-----	493.9	439.9	875.5
1930-34 ² -----	636.0	575.4	1,080.7
1925-29-----	668.6	615.0	1,163.7
1920-24-----	689.5	649.2	1,134.3
1915-19-----	727.9	700.3	1,253.5

¹Figures by color exclude data for residents of New Jersey.

²For 1932-34, Mexicans are included with "Nonwhite."

Table 24. Number of maternal deaths and maternal death rates for selected causes, by age and color: United States, 1963

[Refers only to deaths occurring within the United States. Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955. Figures by color exclude data for residents of New Jersey]

Cause of death and color	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45+ years
Number of maternal deaths								
Deliveries and complications of pregnancy, childbirth, and the puerperium-----640-689	1,466	137	275	289	321	312	122	10
White-----	797	65	164	145	174	170	72	7
Nonwhite--	619	69	104	129	132	135	47	3
Sepsis of pregnancy, childbirth, and puerperium-----640,641,681,682,684	164	25	32	39	22	31	14	1
White-----	88	16	20	15	12	18	7	-
Nonwhite--	71	8	12	22	9	12	7	1
Toxemias of pregnancy and puerperium, except abortion with toxemia-----642,685,686	280	45	52	49	54	53	25	2
White-----	135	18	30	22	22	28	14	1
Nonwhite--	137	27	21	23	30	24	11	1
Hemorrhage of pregnancy and childbirth-----643,644,670-672	248	13	40	50	61	58	26	-
White-----	131	10	23	21	32	29	16	-
Nonwhite--	110	3	16	27	27	28	9	-
Ectopic pregnancy-----645	96	6	21	14	26	24	4	1
White-----	35	3	7	5	7	11	1	1
Nonwhite--	58	3	13	8	19	12	3	-
Abortion without mention of sepsis or toxemia-----650	66	5	12	19	14	14	2	-
White-----	42	2	9	14	6	10	1	-
Nonwhite--	23	2	3	5	8	4	1	-
Abortion with sepsis-----651	201	14	43	46	49	41	7	1
White-----	113	3	30	22	32	22	3	1
Nonwhite--	78	11	12	21	12	18	4	-
Abortion with toxemia, without mention of sepsis-----652	13	-	2	6	3	-	2	-
White-----	6	-	-	3	2	-	1	-
Nonwhite--	6	-	2	3	1	-	-	-
Other complications of pregnancy, childbirth, and puerperium, and delivery without mention of complication----646-649,660,673-680,683,687-689	398	29	73	66	92	91	42	5
White-----	247	13	45	43	61	52	29	4
Nonwhite--	136	15	25	20	26	37	12	1

Table 24. Number of maternal deaths and maternal death rates for selected causes, by age and color: United States, 1963—Con.

[Refers only to deaths occurring within the United States. Numbers after causes of death are category numbers of the Seventh Revision of the International Lists, 1955. Figures by color exclude data for residents of New Jersey]

Cause of death and color	All ages	Under 20 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45+ years
Rates per 100,000 live births								
Deliveries and complications of pregnancy, childbirth, and the puerperium-----640-689	35.8	23.1	18.9	28.2	52.6	96.8	137.1	202.8
White-----	24.0	14.6	13.6	17.2	35.1	65.1	99.8	178.7
Nonwhite--	96.9	51.0	50.1	90.4	146.9	277.0	343.7	343.2
Sepsis of pregnancy, childbirth, and puerperium-----640,641,681,682,684	4.0	4.2	2.2	3.8	3.6	9.6	15.7	20.3
White-----	2.6	3.6	1.7	1.8	2.4	6.9	9.7	-
Nonwhite--	11.1	5.9	5.8	15.4	10.0	24.6	51.2	114.4
Toxemias of pregnancy and puerperium, except abortion with toxemia-----642,685,686	6.8	7.6	3.6	4.8	8.8	16.5	28.1	40.6
White-----	4.1	4.0	2.5	2.6	4.4	10.7	19.4	25.5
Nonwhite--	21.4	20.0	10.1	16.1	33.4	49.2	80.4	114.4
Hemorrhage of pregnancy and childbirth-----643,644,670-672	6.1	2.2	2.8	4.9	10.0	18.0	29.2	-
White-----	3.9	2.2	1.9	2.5	6.4	11.1	22.2	-
Nonwhite--	17.2	2.2	7.7	18.9	30.1	57.4	65.8	-
Ectopic pregnancy-----645	2.3	1.0	1.4	1.4	4.3	7.4	4.5	20.3
White-----	1.1	0.7	0.6	0.6	1.4	4.2	1.4	25.5
Nonwhite--	9.1	2.2	6.3	5.6	21.1	24.6	21.9	-
Abortion without mention of sepsis or toxemia-----650	1.6	0.8	0.8	1.9	2.3	4.3	2.2	-
White-----	1.3	0.4	0.7	1.7	1.2	3.8	1.4	-
Nonwhite--	3.6	1.5	1.4	3.5	8.9	8.2	7.3	-
Abortion with sepsis-----651	4.9	2.4	3.0	4.5	8.0	12.7	7.9	20.3
White-----	3.4	0.7	2.5	2.6	6.4	8.4	4.2	25.5
Nonwhite--	12.2	8.1	5.8	14.7	13.4	36.9	29.2	-
Abortion with toxemia, without mention of sepsis-----652	0.3	-	0.1	0.6	0.5	-	2.2	-
White-----	0.2	-	-	0.4	0.4	-	1.4	-
Nonwhite--	0.9	-	1.0	2.1	1.1	-	-	-
Other complications of pregnancy, childbirth, and puerperium, and delivery without mention of complication----646-649,660,673-680,683,687-689	9.7	4.9	5.0	6.4	15.1	28.2	47.2	101.4
White-----	7.4	2.9	3.7	5.1	12.3	19.9	40.2	102.1
Nonwhite--	21.3	11.1	12.0	14.0	28.9	75.9	87.7	114.4

Table 25. Maternal mortality rates, by color: United States and each State, by division, 1961-63
(3-year average)

[By place of residence. Refers only to deaths occurring within the United States]

Division and State	Total	White	Non-white	Division and State	Total	White	Non-white
Rates per 100,000 live births				Rates per 100,000 live births			
United States ¹	35.9	24.2	98.1	<u>South Atlantic—Con.</u>			
<u>New England</u>				North Carolina-----	50.5	22.1	112.6
Maine-----	21.9	20.7	112.6	South Carolina-----	65.2	18.4	131.2
New Hampshire-----	33.4	33.6	-	Georgia-----	49.8	28.0	89.3
Vermont-----	14.6	14.6	-	Florida-----	42.7	21.2	102.7
Massachusetts-----	19.4	17.2	71.7	<u>East South Central</u>			
Rhode Island-----	12.7	9.5	88.6	Kentucky-----	44.9	36.1	138.9
Connecticut-----	23.6	21.2	51.9	Tennessee-----	44.8	31.1	93.2
<u>Middle Atlantic</u>				Alabama-----	74.8	27.1	155.3
New York-----	46.3	32.0	131.5	Mississippi-----	84.1	29.3	131.9
New Jersey-----	34.8	---	---	<u>West South Central</u>			
Pennsylvania-----	28.2	19.3	99.6	Arkansas-----	49.1	24.9	108.5
<u>East North Central</u>				Louisiana-----	41.9	21.4	73.5
Ohio-----	24.5	19.8	64.0	Oklahoma-----	33.5	23.7	92.5
Indiana-----	31.7	24.6	111.1	Texas-----	45.6	35.1	105.2
Illinois-----	28.0	21.5	60.3	<u>Mountain</u>			
Michigan-----	36.2	25.7	120.9	Montana-----	20.0	13.0	103.6
Wisconsin-----	26.0	23.8	77.7	Idaho-----	31.1	31.7	-
<u>West North Central</u>				Wyoming-----	24.8	21.5	110.9
Minnesota-----	11.2	11.0	20.2	Colorado-----	26.0	25.6	37.3
Iowa-----	17.0	17.3	-	New Mexico-----	51.8	48.3	77.7
Missouri-----	34.4	29.3	66.3	Arizona-----	38.4	24.5	111.2
North Dakota-----	27.3	24.2	97.6	Utah-----	24.5	21.1	158.2
South Dakota-----	25.2	21.1	72.6	Nevada-----	22.9	13.0	97.3
Nebraska-----	20.7	17.6	81.9	<u>Pacific</u>			
Kansas-----	27.0	21.5	104.7	Washington-----	18.3	17.3	35.2
<u>South Atlantic</u>				Oregon-----	19.2	16.1	105.9
Delaware-----	31.7	21.6	71.8	California-----	28.4	22.8	70.6
Maryland-----	31.1	18.3	75.7	Alaska-----	56.8	19.5	133.9
District of Columbia-	64.3	5.7	88.4	Hawaii-----	20.6	24.4	18.9
Virginia-----	44.7	25.1	105.6				
West Virginia-----	50.0	44.1	165.8				

¹Figures by color exclude data for residents of New Jersey for 1962 and 1963.

Table 26. Maternal mortality rates, by color: United States, each region and division, 1961-63
(3-year average)

[By place of residence. Refers only to deaths occurring within the United States]

Region and division	Total	White	Nonwhite
	Rates per 100,000 live births		
United States ¹ -----	35.9	24.2	98.1
<u>All regions</u>			
Northeast ¹ -----	34.1	24.2	115.2
North Central-----	27.3	21.8	77.4
South-----	49.0	27.8	107.1
West-----	28.1	23.0	67.5
<u>Northeast</u>			
New England-----	20.8	18.8	64.7
Middle Atlantic ¹ -----	38.4	26.4	121.5
<u>North Central</u>			
East North Central-----	29.2	22.7	79.7
West North Central-----	22.8	19.8	67.7
<u>South</u>			
South Atlantic-----	47.1	24.0	102.7
East South Central-----	61.0	31.5	132.3
West South Central-----	43.7	30.5	92.6
<u>West</u>			
Mountain-----	32.0	26.8	92.3
Pacific-----	26.6	21.5	61.7

¹Figures by color exclude data for residents of New Jersey for 1962 and 1963.

Table 27. Maternal mortality rates for selected causes, by color: United States, 1952-54 and 1961-63 (3-year average)

[Refers only to deaths occurring within the United States. Figures by color exclude data for residents of New Jersey for 1962 and 1963]

Cause of death	1961-63			1952-54		
	Total	White	Non-white	Total	White	Non-white
Rates per 100,000 live births						
Deliveries and complications of pregnancy, childbirth, and the puerperium-----640-689	35.9	24.2	98.1	59.4	42.9	156.8
Complications of pregnancy-----640-649	11.2	6.9	34.2	24.5	16.1	73.9
Abortion-----650-652	7.3	4.6	21.4	7.5	5.0	22.3
Delivery-----660,670-678	12.3	9.0	29.7	18.3	14.5	40.6
Complications of the puerperium-----680-689	5.2	3.8	12.8	9.1	7.2	20.0

QUALIFICATIONS OF DATA

SOURCES OF DATA

Death and fetal death statistics are based on information obtained from microfilm copies of original certificates. These copies are received from the registration offices of all States, certain cities, and the District of Columbia. The statistical information on these records is edited, classified, placed on punchcards, transferred to a tape for computer processing, and tabulated in the National Center for Health Statistics (NCHS).

Mortality data for the United States (the aggregate of the 50 States and the District of Columbia) are confined to events registered within the United States and include events occurring to nonresident aliens but not those occurring to U.S. citizens outside the United States.

CLASSIFICATION BY OCCURRENCE AND RESIDENCE

Tabulations by place of occurrence include all events occurring in a given area. In residence tabulations, all deaths are allocated to the usual place of residence of the decedent—of the mother in the case of fetal deaths—as reported on the certificate. All events occurring within the United States are allocated to a place of residence within the United States. For nonresident aliens the State of residence is considered to be the same as the State of occurrence.

METROPOLITAN AND NONMETROPOLITAN COUNTIES

Metropolitan counties are those which comprise standard metropolitan statistical areas (except in New England). Nonmetropolitan counties are all other counties. Standard metropolitan statistical areas (SMSA's) are those established by the U.S. Bureau of the Budget and used by the U.S. Bureau of the Census as of the 1960 census. Except in New England States, an SMSA is a county or a group of contiguous counties which contains at least one city of 50,000 inhabitants or more or "twin cities" with a combined population of at least 50,000 in the 1960 census.

In addition, contiguous counties are included in an SMSA if, according to specified criteria, they are (a) essentially metropolitan in character and (b) socially and economically integrated with the central city or cities.⁹

In New England the Bureau of the Budget uses towns and cities rather than counties as geographic components of the SMSA. The National Center for Health Statistics cannot use the SMSA classification for these States because its data are not coded to identify all towns. Instead the metropolitan State economic area (MSEA) established by the Bureau of the Census, which is made up of county units, is used.¹⁰

URBAN AND RURAL AREAS

Vital statistics data for 1963 are classified as urban or rural according to the population of the area enumerated in the 1960 census. The urban population consists of inhabitants residing in the following places:

1. Each incorporated city, borough, village, and town of 2,500 inhabitants or more (except towns in New England, New York, and Wisconsin).
2. Each town in New England and each township in New Jersey and Pennsylvania that has no incorporated municipality as a subdivision and has either 25,000 inhabitants or more or a population of 2,500 to 25,000 and a density of 1,500 persons or more per square mile.^a
3. Each county in States other than the New England States, New Jersey, and Pennsylvania that has no incorporated municipality within its boundary and has a density of 1,500 persons or more per square mile.^b

The rural population consists of inhabitants residing in all other areas.

This classification differs from the 1960 census definition of urban population. The latter definition includes, in addition, persons living in (a) unincorporated places of 2,500 inhabitants or

^aThese areas are identified by the symbol (UT) in table 30 of the U.S. Bureau of the Census publication cited in reference 9.

^bArlington County, Virginia, is the only county in this category.

more not included in the above definition of "urban" and (b) incorporated and unincorporated places of less than 2,500 inhabitants located within urban fringes of urbanized areas.

It was not feasible to use the 1960 census definitions of urban and rural for classifying vital statistics data since (a) boundary delineations for many urban unincorporated places were made by the Bureau of the Census for enumeration purposes only; many unincorporated places do not conform to political units and their boundaries change with population growth; in most instances the residence information on vital records is insufficient to allocate residence to arbitrary delimitations of unincorporated areas; and (b) vital statistics were not tabulated separately for places of less than 2,500 inhabitants. The difference in the percent distribution of the population in 1960 according to NCHS and the Bureau of the Census is as follows:

	<i>Census Bureau</i>	<i>NCHS</i>	<i>Percent difference^c</i>
Total--	100.0	100.0	...
Urban ---	69.9	61.1	-12.6
Rural ---	30.1	38.9	+29.2

^cCensus figures used as the base.

RACE AND COLOR

The category "white" includes, in addition to persons reported as "white," those reported as Mexican or Puerto Rican. The category "nonwhite" includes Negro, American Indian, Chinese, Japanese, Aleut and Eskimo, Hawaiian and Part-Hawaiian, "other nonwhite," and persons of mixed races.

Figures by color or race are not available for New Jersey in 1962 and 1963. This State omitted the item on color or race from its certificates of live birth, death, and fetal death in use for most of 1962 and 1963. Therefore all events to residents of New Jersey were classified as "color or race not stated."

In tables containing totals for the United States, the category "color or race not stated" is not shown in order to conserve space. However, the numbers of events classified as "color or race not stated" can be obtained in each table by subtracting from the totals for all races the sum of the events classified by color or race.

In tables by place of residence for individual States or their geographic subdivisions, the "color or race" classification is not shown for New Jersey for 1962 and 1963. In the relatively infrequent cases in which the event occurred in New Jersey to a resident of another State, it was arbitrarily classified as "white."

FETAL DEATHS

Definition

In May 1950 the World Health Organization recommended for adoption for international use the definition of fetal death as "death prior to the complete expulsion or extraction from its mother of a product of conception irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation, the fetus does not breathe or show any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles." The term "fetal death" was defined on an all-inclusive basis to end confusion arising from usage of such terms as stillbirth, abortion, and miscarriage.

The definition has been adopted by about half the States. In most of the other States a fetal death is defined as a birth of a minimum gestation period which is not a live birth and live births are defined in varying detail.

Period of Gestation

The period of gestation is the number of completed weeks which have elapsed between the first day of the last menstrual period and the date of delivery, irrespective of whether the product of

conception was liveborn or born without evidence of life.

It is evident from the data in table 14 that there are inaccuracies in the reported period of gestation. The comparatively large proportion of fetal deaths at gestation periods of 36 weeks is believed to result from erroneous conversion of gestation periods of 9 calendar months to 36 weeks. In addition, the heavy concentrations at 40 weeks result partly from failure to calculate the period of gestation for fetuses of normal size.

California, the District of Columbia, Maryland (including Baltimore), and New York City specify "date of last menses" on their certificates in place of the "length of pregnancy"

item or its equivalent. Vermont specifies "date of menses or if unknown, weeks of gestation."

CAUSE OF DEATH

Beginning with 1958, the cause-of-death statistics published by the National Center for Health Statistics have been classified in accordance with the Seventh Revision of the International Lists of Diseases and Causes of Death (1955). The Seventh Revision is described in the Manual of the International Statistical Classification.¹¹ Earlier revisions and comparability between revisions are discussed in the Technical Appendix of *Vital Statistics of the United States, 1964*, Volume II, and the references cited therein.

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¹⁰For discussion of MSEA's, see U.S. Bureau of the Census, *State Economic Areas*, Washington, U.S. Government Printing Office, 1951, and the first reference cited in reference 9.

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