

Infant Mortality in the U.S.

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www.birthbythenumbers.org

How Do we Report Infant Outcomes?

Infant Mortality Rate

***Infant Deaths in
First 365 days
X 1,000***

***Live
Births***

Neonatal Mortality Rate

***Infant Deaths in
First 28 days
X 1,000***

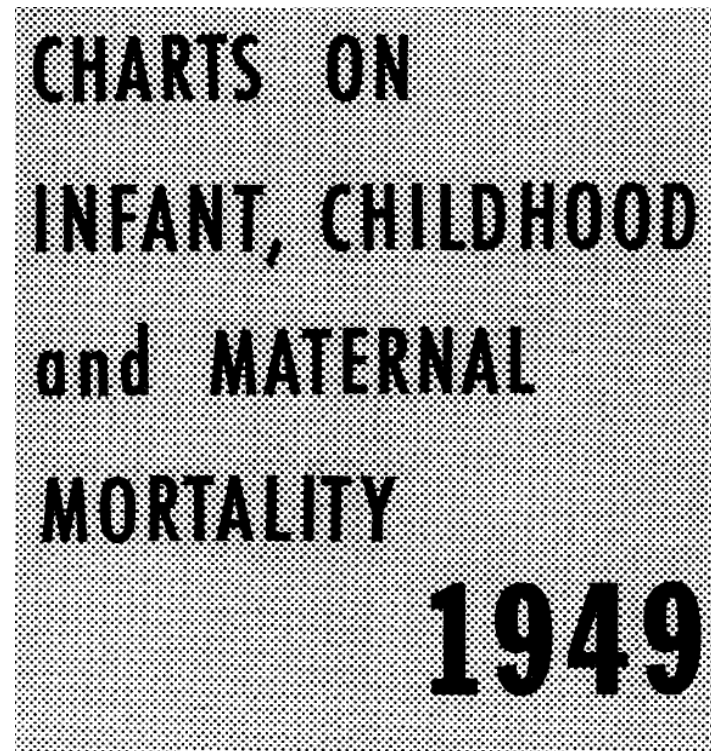
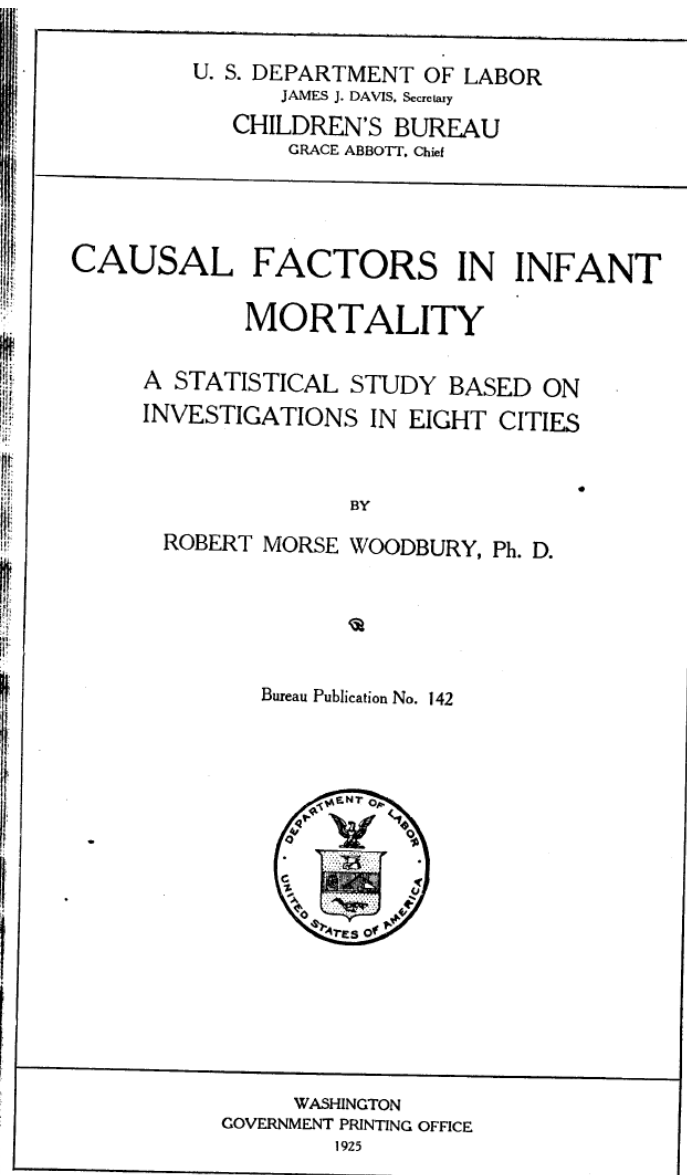
***Live
Births***

Perinatal Mortality Rate

***Fetal Deaths +
Infant Deaths in
First 7 days
X 1,000***

***Live
Births***

Historical Data on U.S. Infant Mortality



Vital and Health Statistics

Trends in Infant Mortality by Cause of Death and Other Characteristics, 1960-88

Series 20:
Data From the National Vital Statistics System
No. 20

Trends and patterns in U.S. infant mortality from 1960-88 are analyzed by age, race, sex, season, and cause of death. The report discusses major shifts in leading causes of infant mortality from 1960-88 and the recent divergence in mortality rates between black and white infants.

Recording U.S. Births and Deaths

Table 1.03. Year in Which Each State was Admitted to the Birth-Registration Area

| Year | State | Year | State |
|------------|-----------------------------------|------------|---------------|
| 1915 | Connecticut | 1921 | Delaware |
| | Maine | | Mississippi |
| | Massachusetts | | New Jersey |
| | Michigan | 1922 | Illinois |
| | Minnesota | | Montana |
| | New Hampshire | | Wyoming |
| | New York | 1924 | Florida |
| | Pennsylvania | | Iowa |
| | Rhode Island ¹ | | North Dakota |
| | Vermont | 1925 | West Virginia |
| | District of Columbia ² | 1926 | Arizona |
| 1916 | Maryland | | Idaho |
| 1917 | Indiana | 1927 | Alabama |
| | Kansas | | Arkansas |
| | Kentucky | | Louisiana |
| | North Carolina | | Missouri |
| | Ohio | | Tennessee |
| | Utah | 1928 | Colorado |
| | Virginia | | Georgia |
| | Washington | | Oklahoma |
| | Wisconsin | 1929 | Nevada |
| 1919 | California | | New Mexico |
| | Oregon | 1932 | South Dakota |
| | South Carolina ³ | 1933 | Texas |
| 1920 | Nebraska | | |

Table 1.04. Year in Which Each State was Admitted to the Death-Registration Area

| Year | State | Year | State |
|------------|-----------------------------------|------------|----------------------|
| 1880 | Massachusetts | 1911 | Missouri |
| | New Jersey | 1913 | Virginia |
| | District of Columbia ¹ | 1914 | Kansas |
| 1890 | Connecticut | 1916 | South Carolina |
| | Delaware ² | 1917 | Tennessee |
| | New Hampshire | 1918 | Illinois |
| | New York | | Louisiana |
| | Rhode Island | | Oregon |
| | Vermont | 1919 | Florida |
| 1900 | Maine | | Mississippi |
| | Michigan | 1920 | Nebraska |
| | Indiana | 1922 | Georgia ⁵ |
| 1906 | California | | Idaho |
| | Colorado | | Wyoming |
| | Maryland | 1923 | Iowa |
| | Pennsylvania | 1924 | North Dakota |
| | South Dakota ³ | 1925 | Alabama |
| 1908 | Washington | | West Virginia |
| | Wisconsin | 1926 | Arizona |
| 1909 | Ohio | 1927 | Arkansas |
| 1910 | Minnesota | 1928 | Oklahoma |
| | Montana | 1929 | Nevada |
| | North Carolina ⁴ | | New Mexico |
| | Utah | 1933 | Texas |
| 1911 | Kentucky | | |

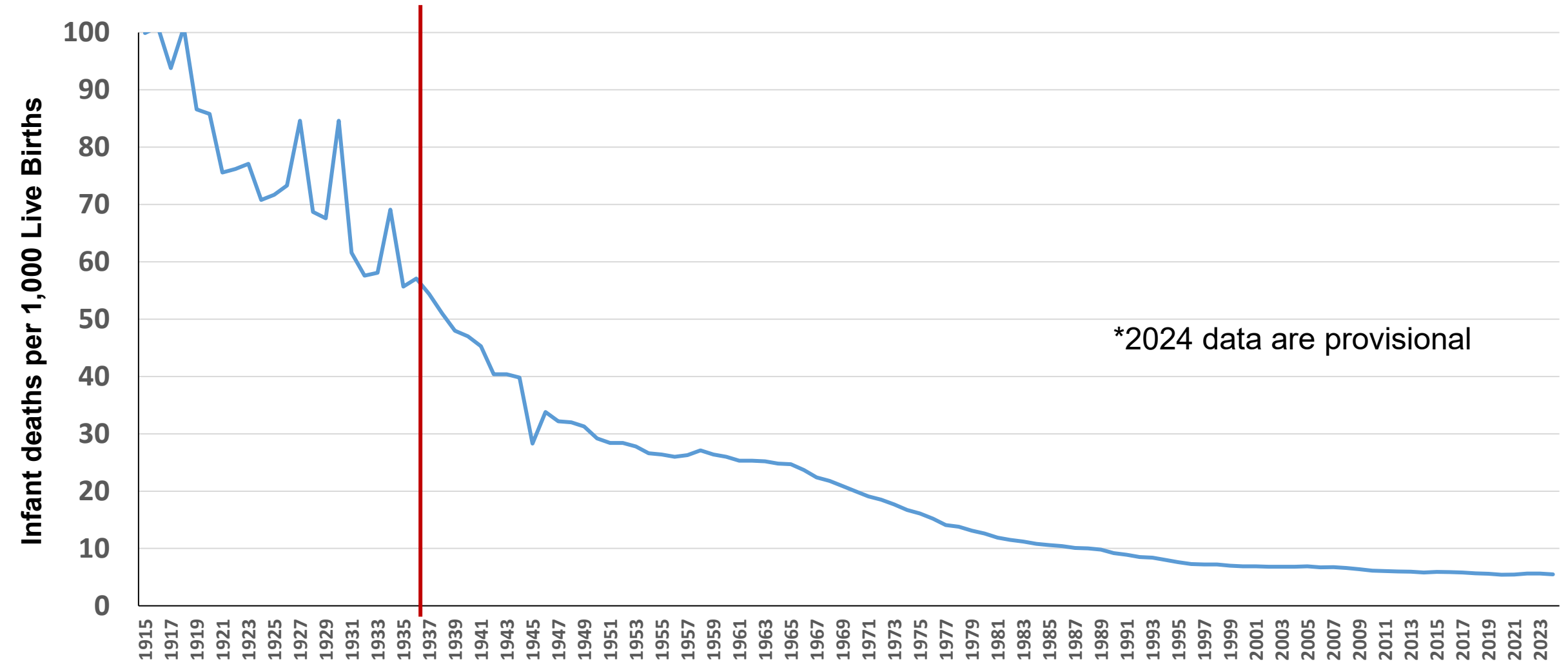


Beginning of the national birth statistics registration area

| | Records on file for entire area | Admitted to US Registration Area | | Records on file for entire area | Admitted to US Registration Area | | Records on file for entire area | Admitted to US Registration Area |
|----------------------|---------------------------------|----------------------------------|----------------|---------------------------------|----------------------------------|---------------|---------------------------------|----------------------------------|
| Connecticut | 1897 | 1915 | Utah | 1905 | 1917 | West Virginia | 1917 | 1925 |
| District of Columbia | 1871 | 1915 | Virginia | 1912 | 1917 | Arizona | 1909 | 1926 |
| Maine | 1892 | 1915 | Washington | 1907 | 1917 | Idaho | 1911 | 1926 |
| Massachusetts | 1841 | 1915 | Wisconsin | 1907 | 1917 | Alabama | 1908 | 1927 |
| Michigan | 1867 | 1915 | California | 1905 | 1919 | Arkansas | 1914 | 1927 |
| Minnesota | 1900 | 1915 | Oregon | 1903 | 1919 | Louisiana | 1914 | 1927 |
| New Hampshire | 1850 | 1915 | South Carolina | 1915 | 1919 | Missouri | 1910 | 1927 |
| New York | 1880 | 1915 | Nebraska | 1905 | 1920 | Tennessee | 1914 | 1927 |
| Pennsylvania | 1906 | 1915 | Delaware | 1881 | 1921 | Colorado | 1907 | 1928 |
| Rhode Island | 1852 | 1915 | Mississippi | 1912 | 1921 | Georgia | 1919 | 1928 |
| Vermont | 1857 | 1915 | New Jersey | 1848 | 1921 | Oklahoma | 1908 | 1928 |
| Maryland | 1898 | 1916 | Illinois | 1916 | 1922 | Hawaii | 1896 | 1929 |
| Indiana | 1907 | 1917 | Montana | 1907 | 1922 | Nevada | 1911 | 1929 |
| Kansas | 1911 | 1917 | Wyoming | 1909 | 1922 | New Mexico | 1919 | 1929 |
| Kentucky | 1911 | 1917 | Florida | 1899 | 1924 | South Dakota | 1905 | 1932 |
| North Carolina | 1913 | 1917 | Iowa | 1880 | 1924 | Texas | 1903 | 1933 |
| Ohio | 1909 | 1917 | North Dakota | 1908 | 1924 | Alaska | 1913 | 1950 |



U.S. Infant Mortality (per 1,000 births), 1915-2024*

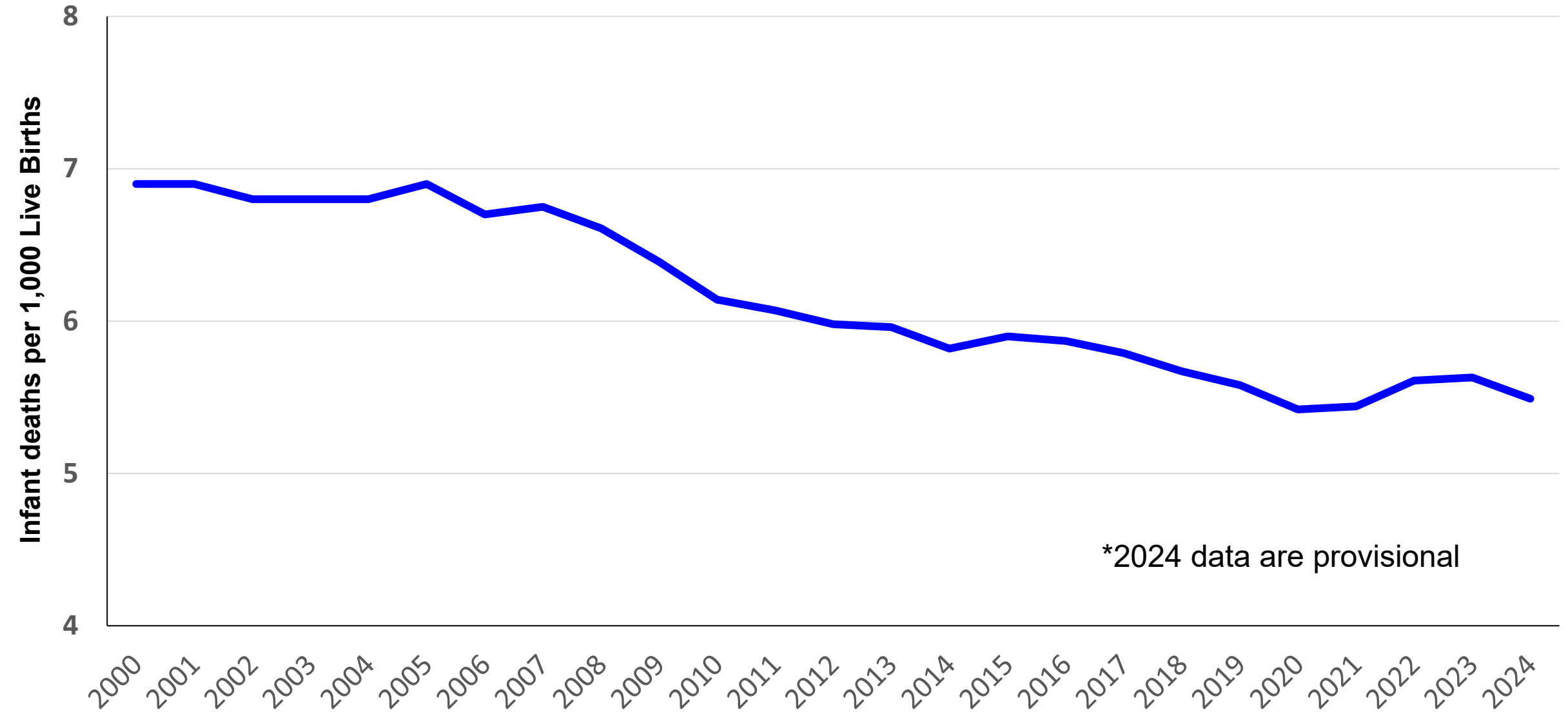


*2024 data are provisional

Source: NCHS. Maternal Mortality and Related Concepts. Vital & Health Statistics. Series 33; #3. & annual data reports. 1915-1960 data from NCHS. *Vital Statistics Rates In The United States 1940-1960*. NOTE: Shifts in measurement (e.g. not all states were part of registration system prior to 1933; infant race was based on race of the child until 1980 & then race of the mother post 1980) accounts for some of the variation over time. 2007-2023 CDC Wonder

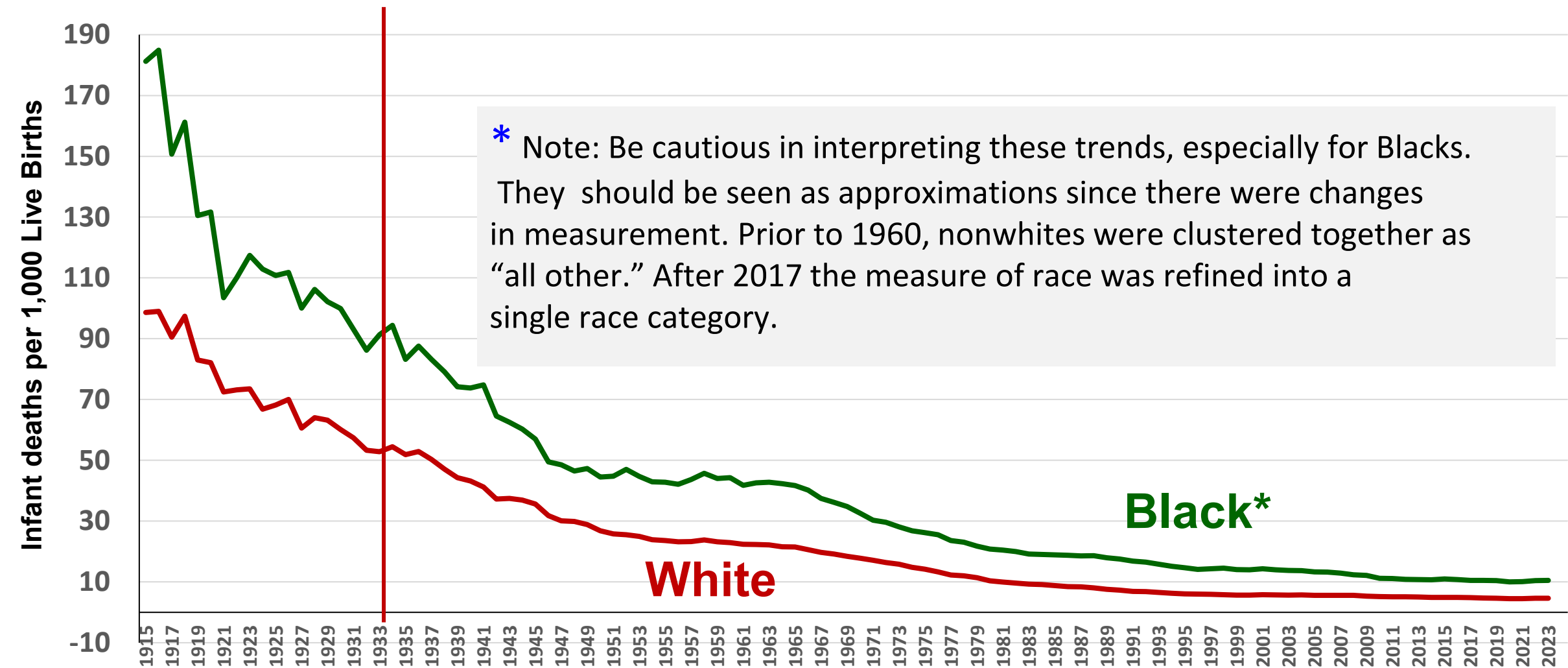


U.S. Infant Mortality (per 1,000 births), 2000-2024*





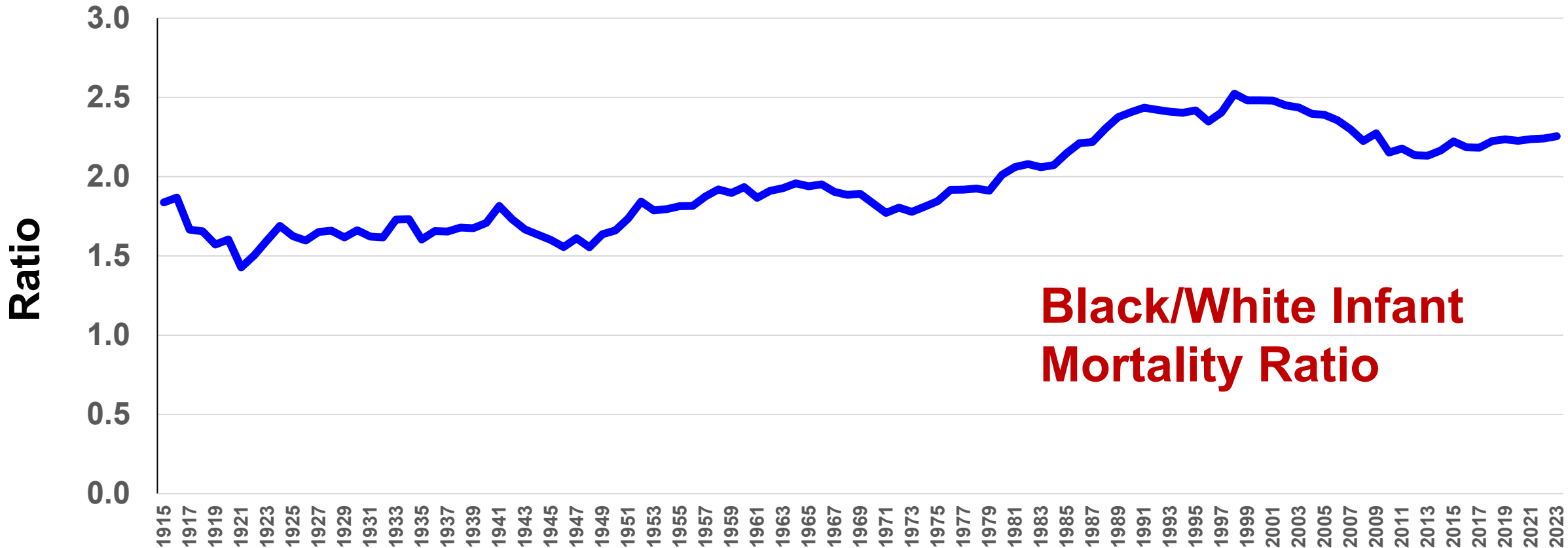
U.S. Infant Mortality (per 1,000 births), by Race* 1915-2023



Source: NCHS. Maternal Mortality and Related Concepts. Vital & Health Statistics. Series 33; #3. & annual data reports. 1915-1960 data from NCHS. *Vital Statistics Rates In The United States 1940-1960*. NOTE: Shifts in measurement (e.g. not all states were part of registration system prior to 1933; infant race was based on race of the child until 1980 & then race of the mother post 1980) accounts for some of the variation over time. 2007-2023 CDC Wonder



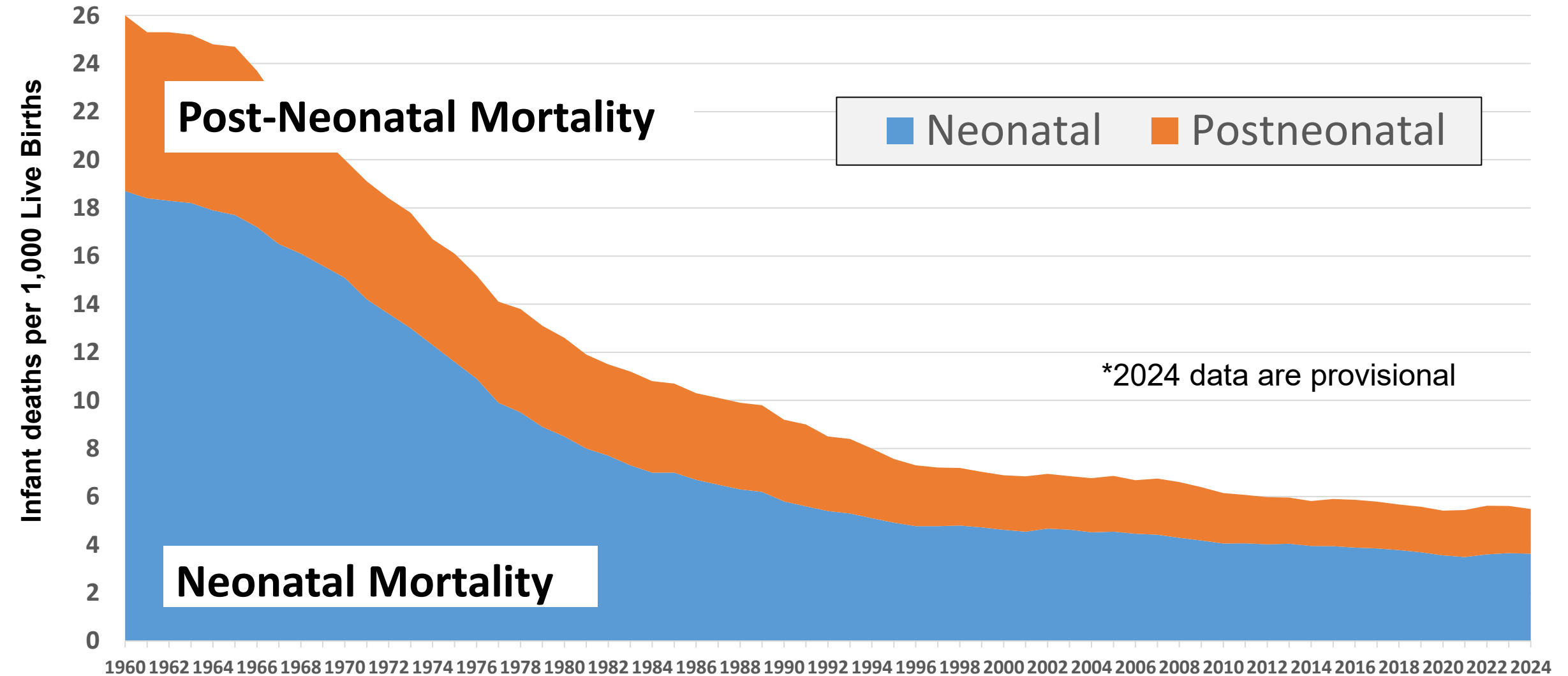
Black to White Ratios, U.S. Infant Mortality, 1915-2023



Sources: NCHS. Maternal Mortality and Related Concepts. Vital & Health Statistics. Series 33; #3. & annual data reports. 1915-1960 data from NCHS. *Vital Statistics Rates In The United States 1940-1960*. NOTE: Shifts in measurement (e.g. not all states were part of registration system prior to 1933; infant race was based on race of the child until 1980 & then race of the mother post 1980) accounts for some of the variation over time. 2007-2020 CDC Wonder



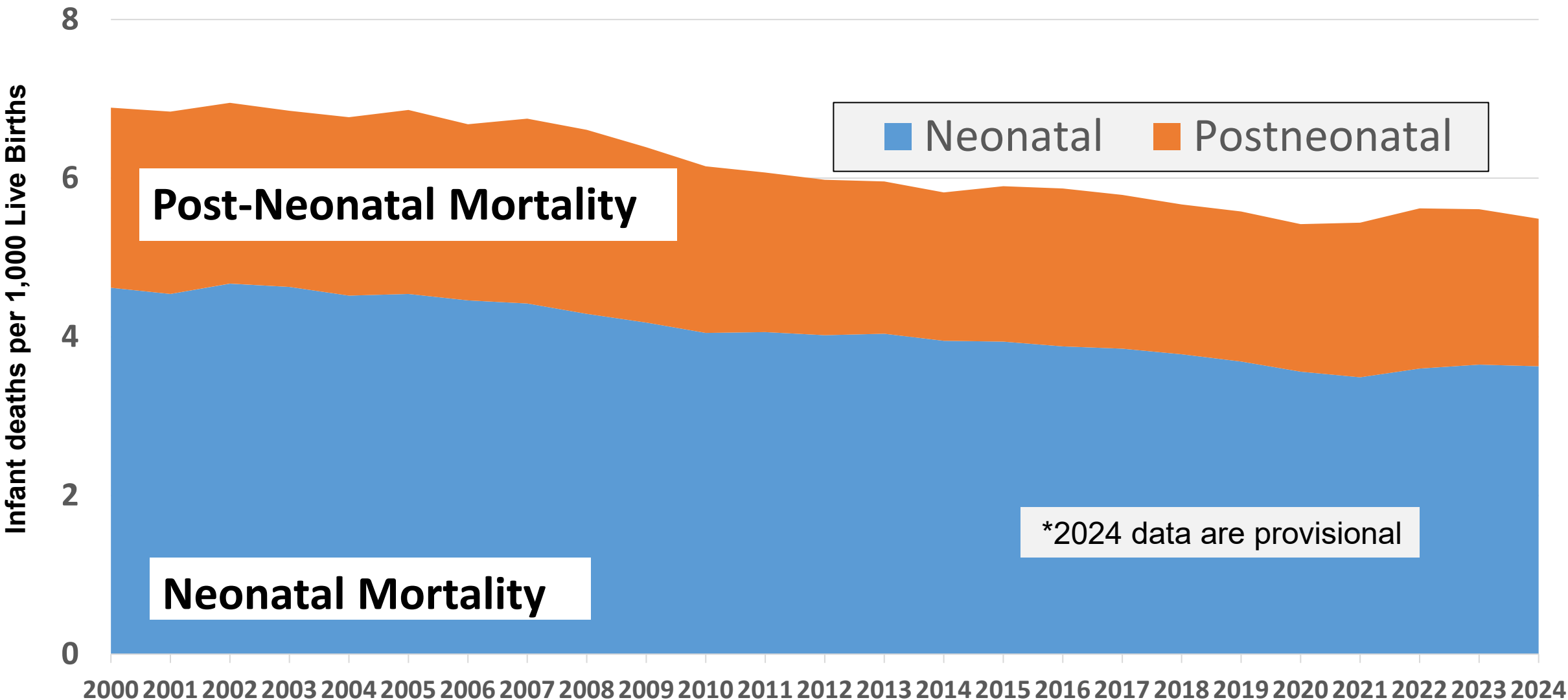
Neonatal & Postneonatal Mortality, 1960-2024*



Sources: **1960-1988**: MacDorman MF, Rosenberg HM. Trends in infant mortality by cause of death and other characteristics, 1960-88. **1989-1999**: Hoyert DL, et.al.. Deaths: Final Data for 1999. Nat'l Vital Stat Rep.; vol 49 no 8. Hyattsville, MD: NCHS. 2001.; **2000-2023** CDC Wonder IMR File. 2024 provisional data from CDC website

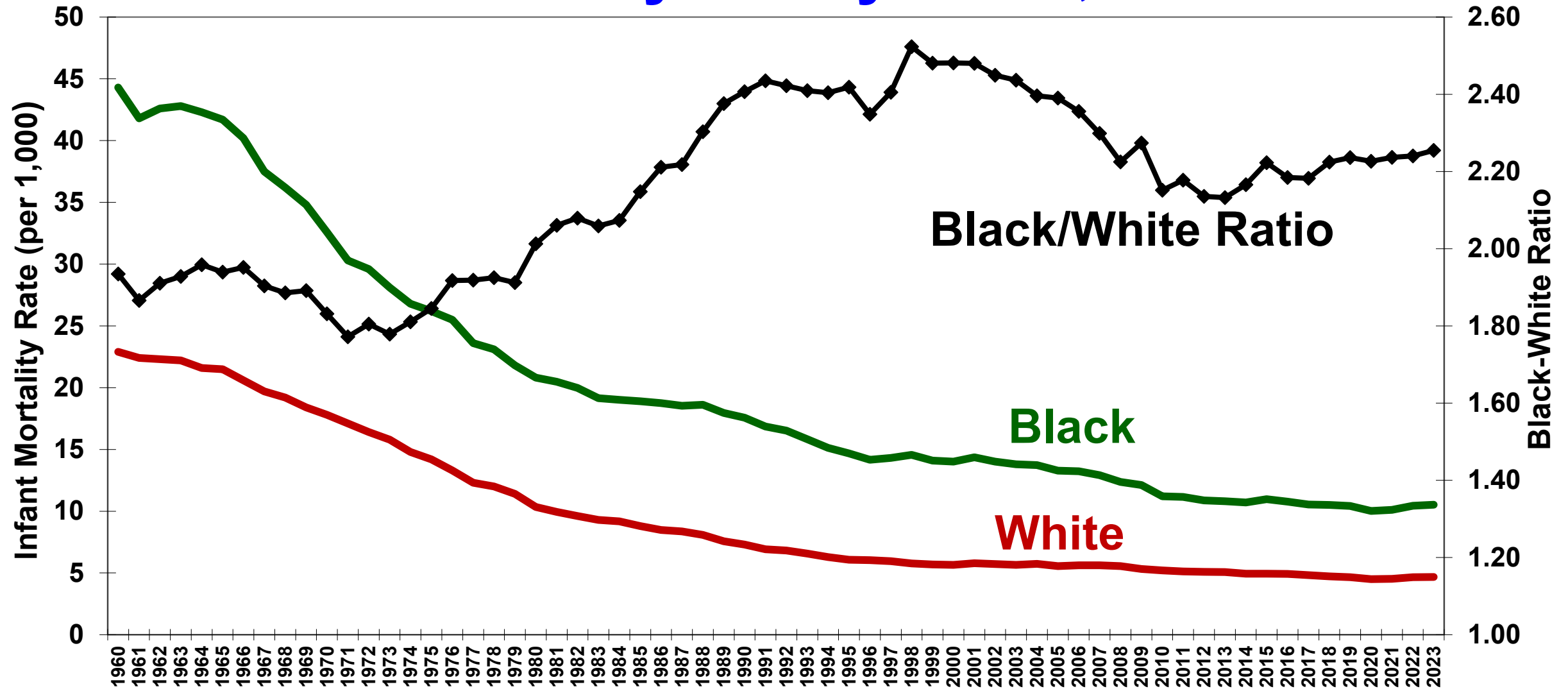


Neonatal & Postneonatal Mortality, 2000-2024*



Sources: CDC Wonder IMR File. 2024 provisional data from CDC website

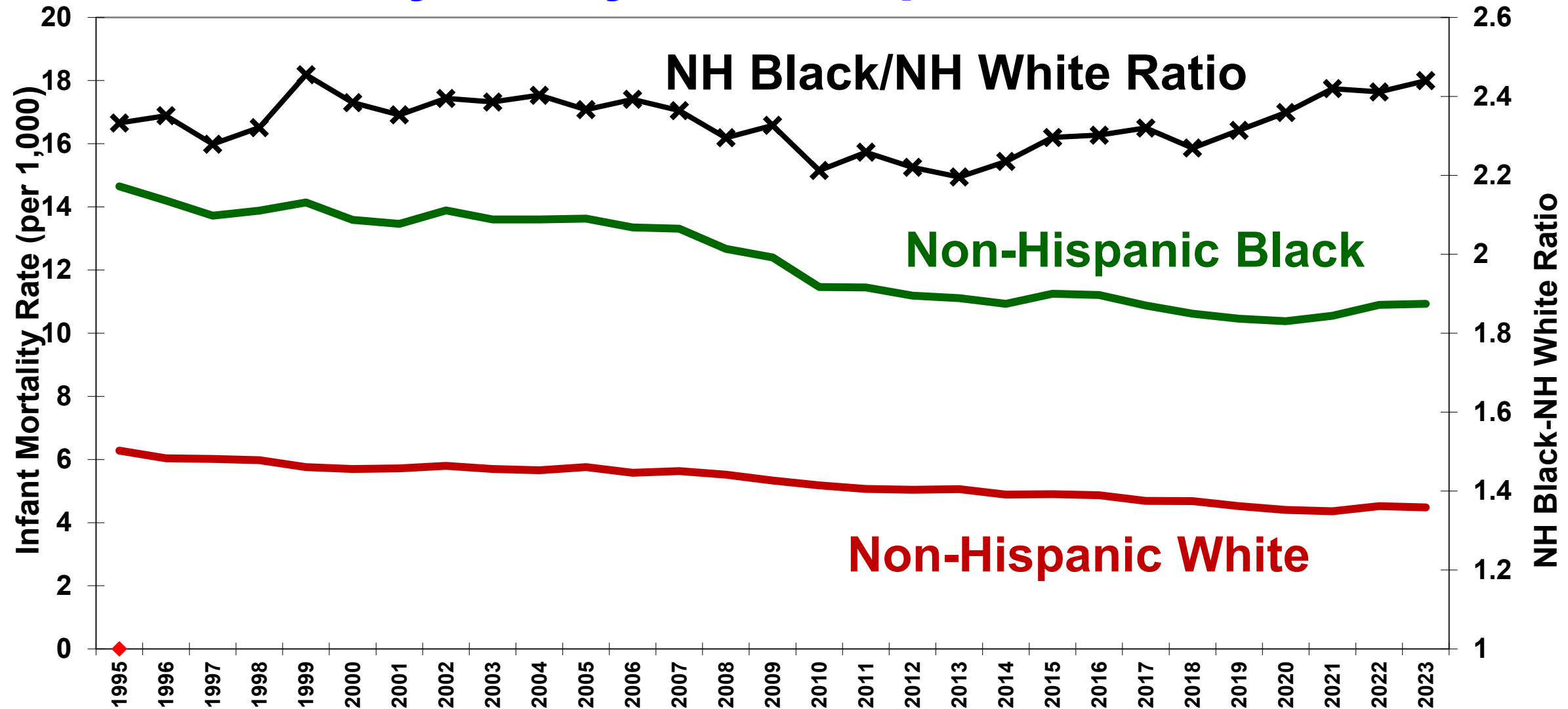
Infant Mortality US by Race, 1960-2023



Source: NCHS. Maternal Mortality and Related Concepts. Vital & Health Statistics. Series 33; #3. & annual data reports. 1915-1960 data from NCHS. *Vital Statistics Rates In The United States 1940-1960*. NOTE: Shifts in measurement (e.g. not all states were part of registration system prior to 1933; infant race was based on race of the child until 1980 & then race of the mother post 1980) accounts for some variation over time. 2007-2023 from CDC Wonder



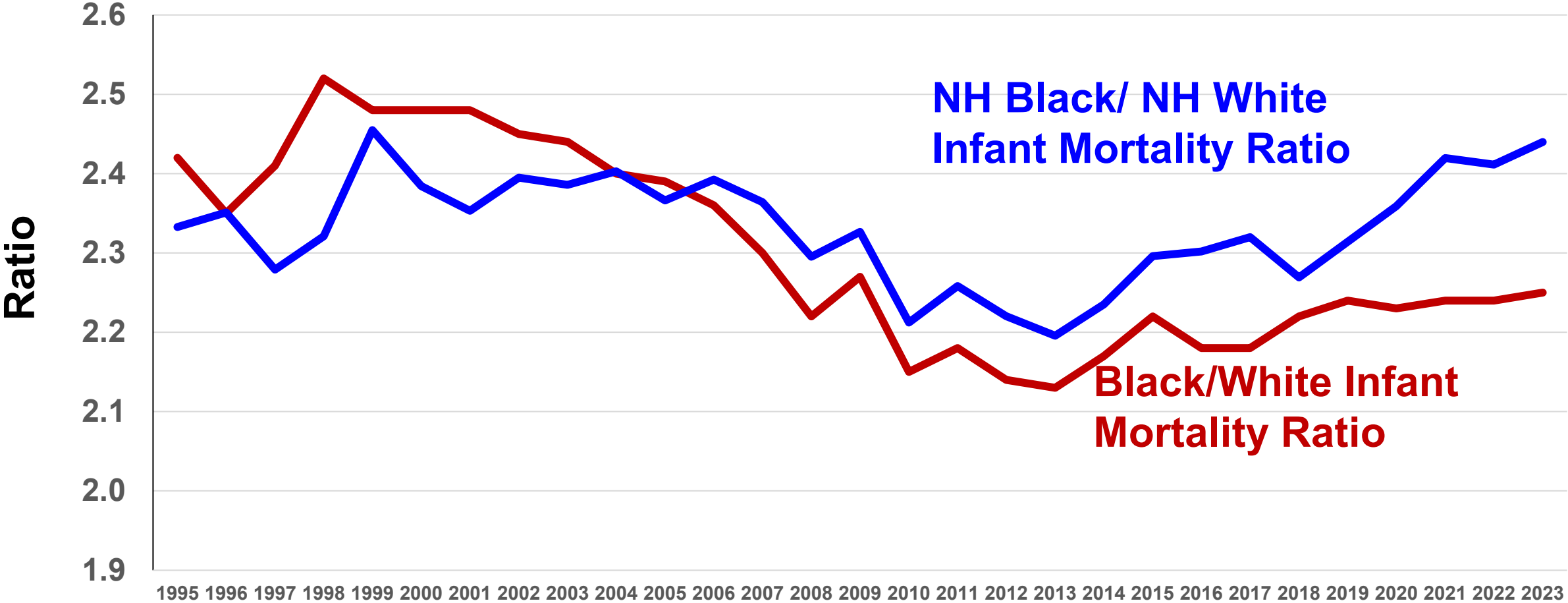
Infant Mortality US by Non-Hispanic Race, 1995-2023



Source: NCHS. Maternal Mortality and Related Concepts. Vital & Health Statistics. Series 33; #3. & annual data reports. 1915-1960 data from NCHS. *Vital Statistics Rates In The United States 1940-1960*. NOTE: Shifts in measurement (e.g. not all states were part of registration system prior to 1933; infant race was based on race of the child until 1980 & then race of the mother post 1980) accounts for some of the variation over time. 2007-2020 CDC Wonder



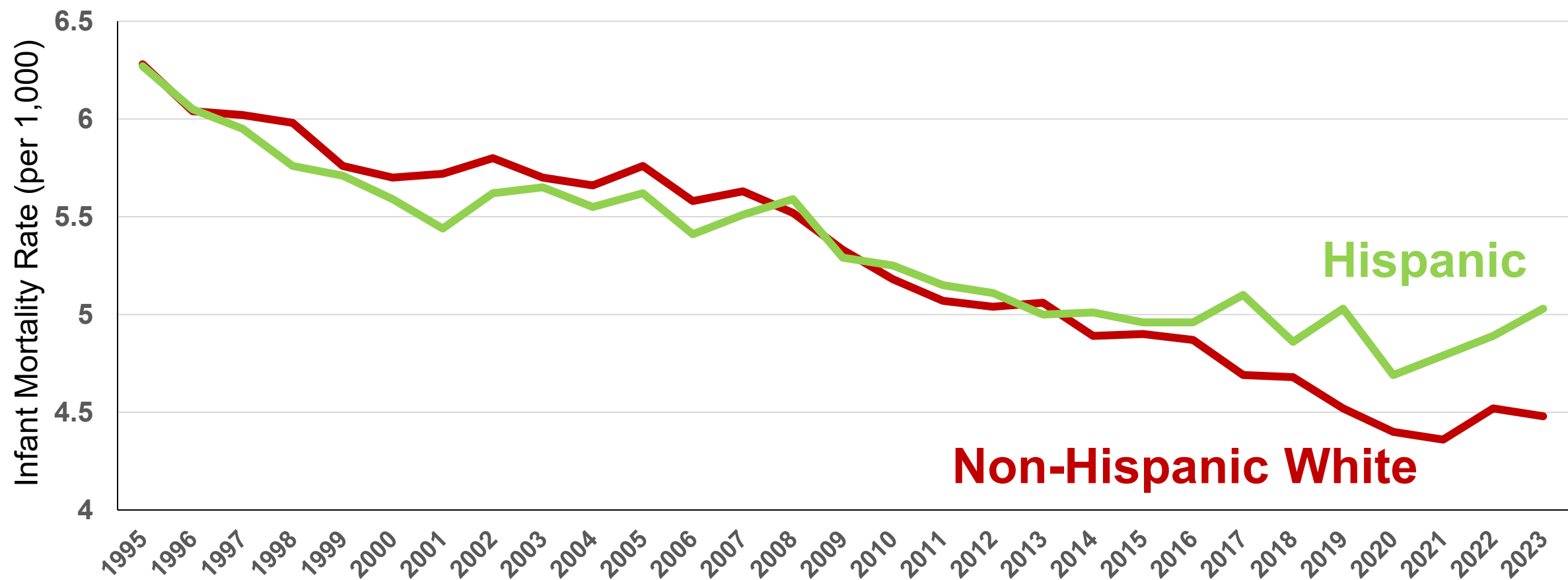
Black to White & NH Black to NH White, U.S. Infant Mortality Ratios, 1995-2023



NH – non-Hispanic

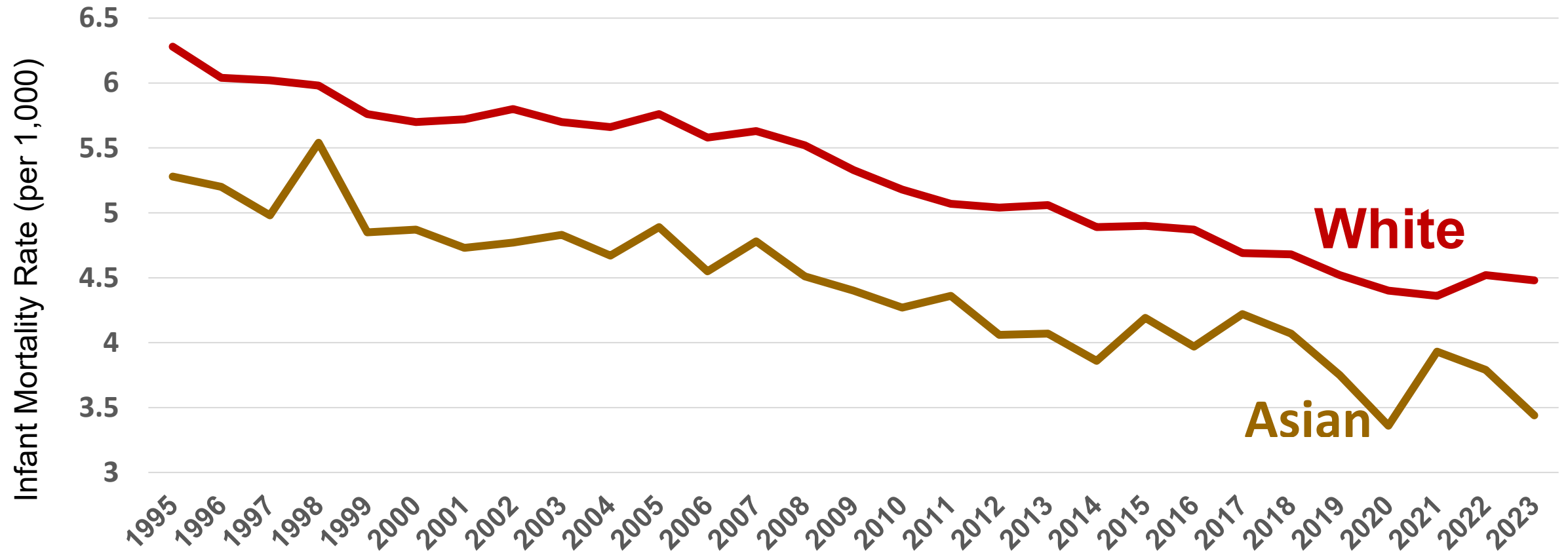


Infant Mortality US, Non-Hispanic Whites and Hispanics, 1995-2023





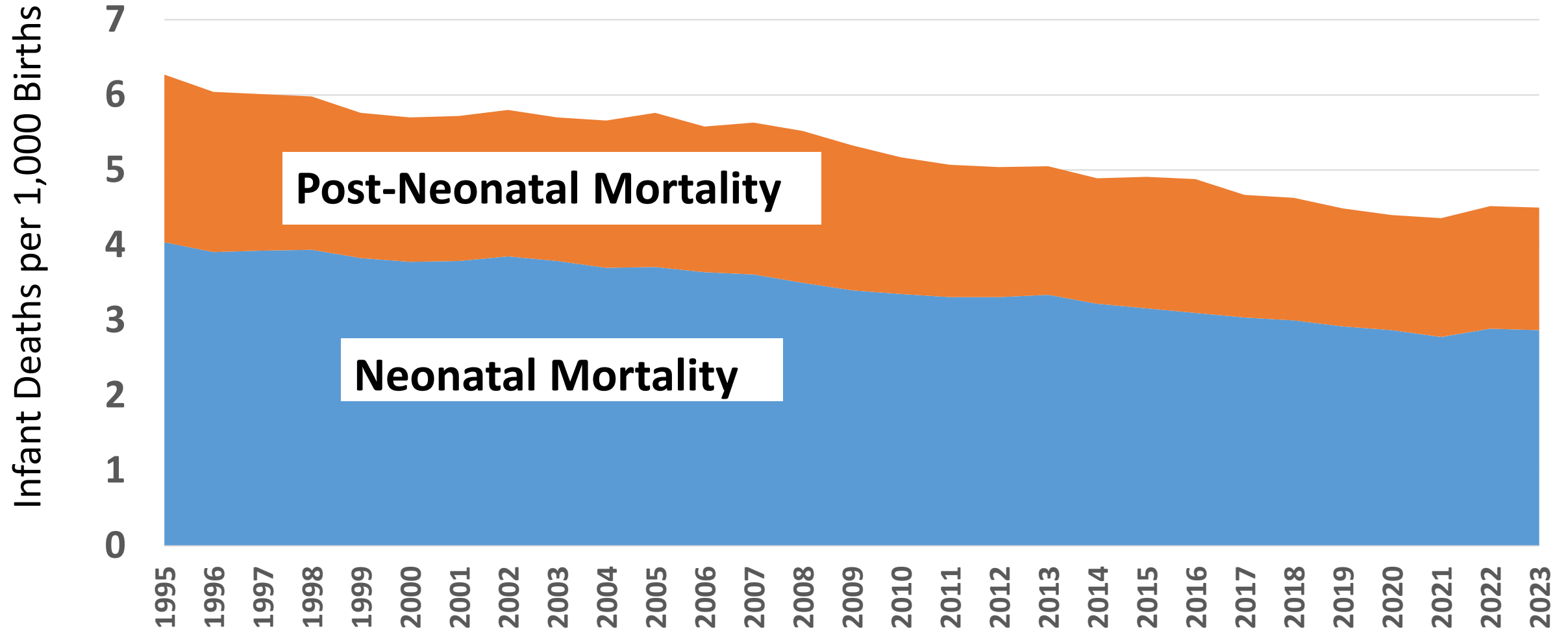
Infant Mortality US, Non-Hispanic Whites and Asians*, 1995-2023



* All Asian births, Non-Hispanic category not included for Asian births until 2017

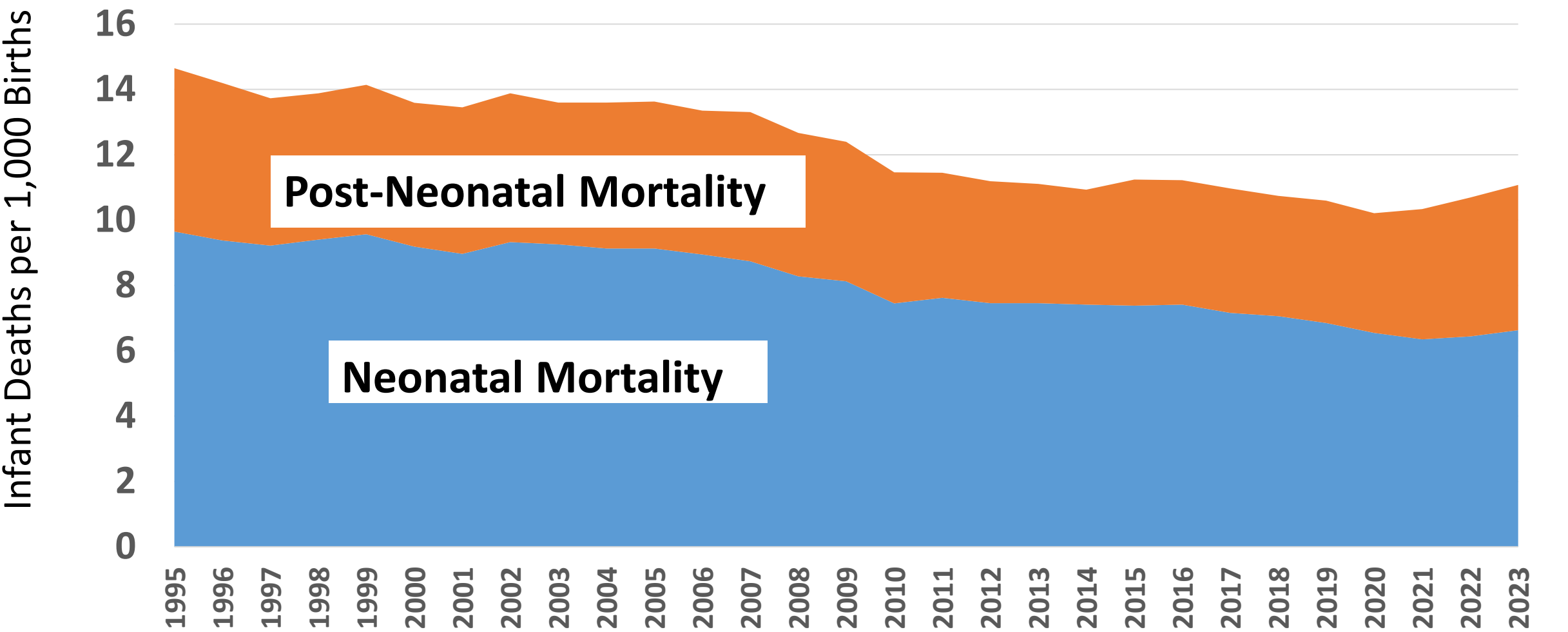


Non-Hispanic **White** Neonatal & Postneonatal Mortality Rates (per 1,000 births), 1995-2023

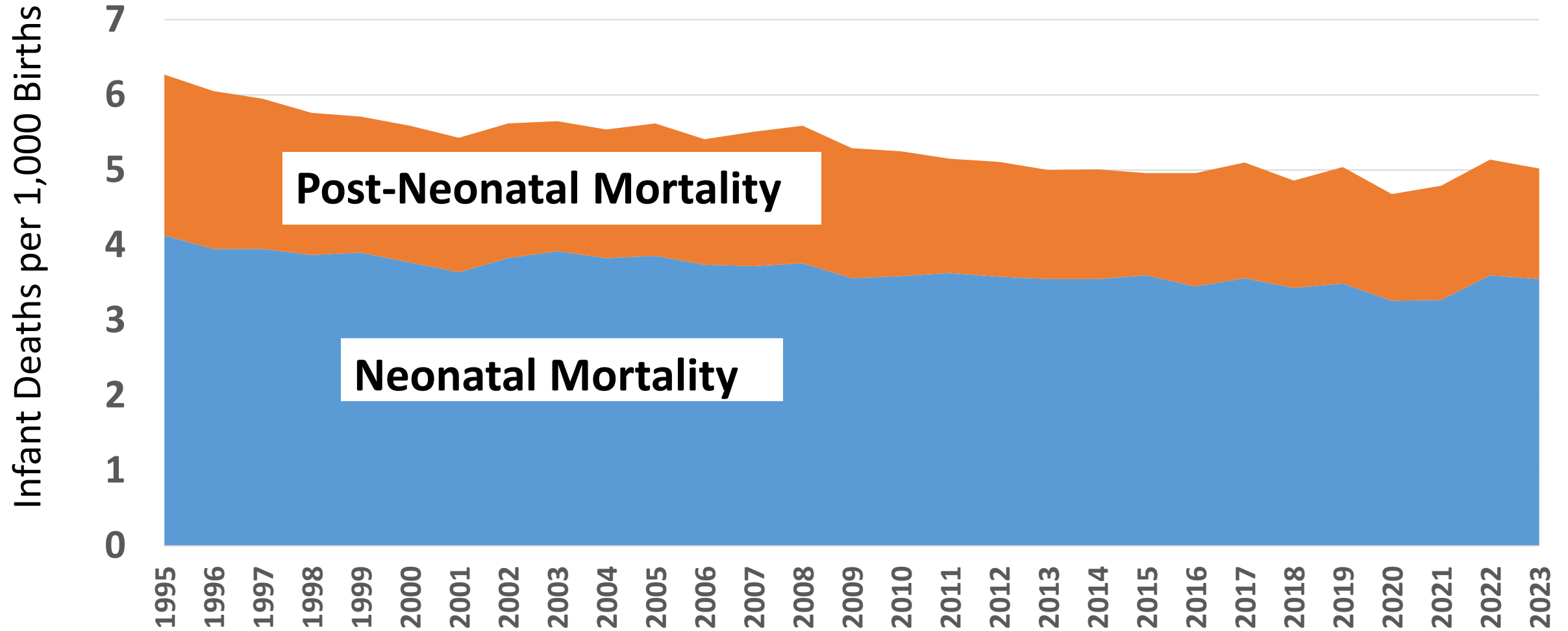




Non-Hispanic **Black** Neonatal & Postneonatal Mortality Rates (per 1,000 births), 1995-2023

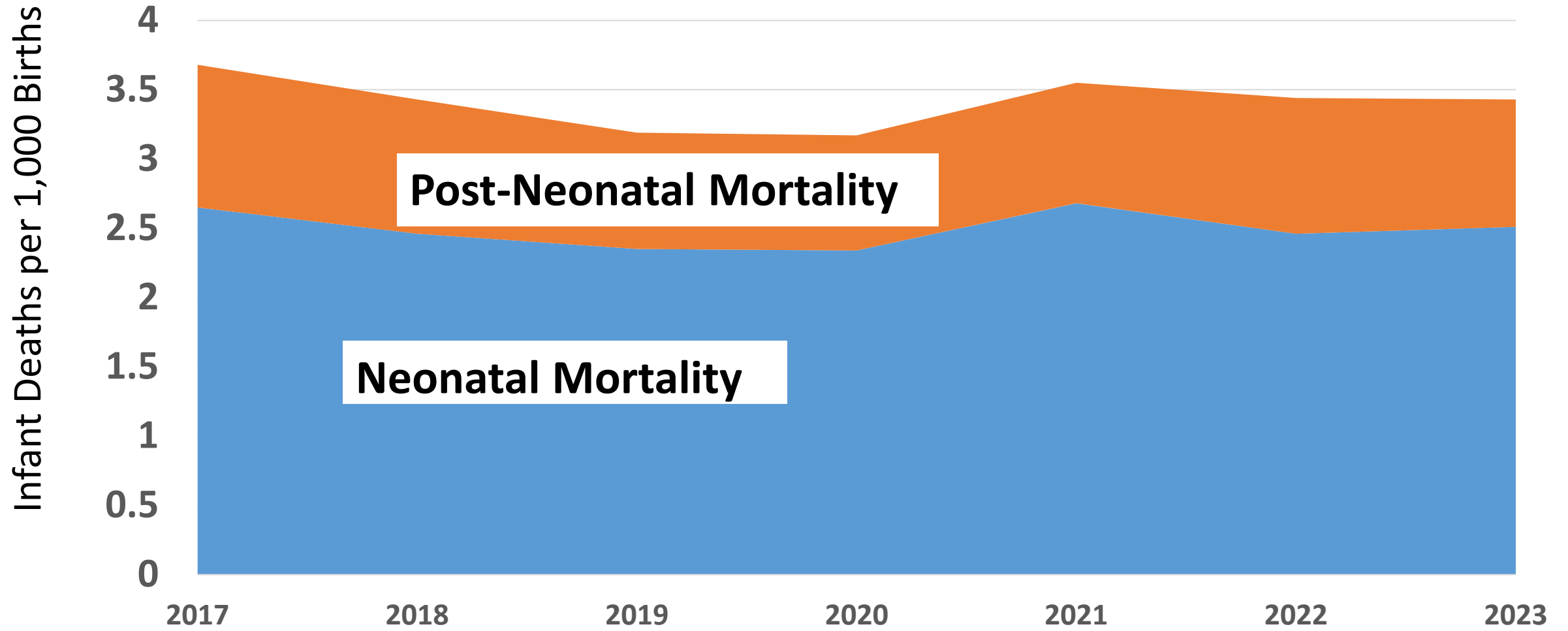


Hispanic Neonatal & Postneonatal Mortality Rates (per 1,000 births), 1995-2023



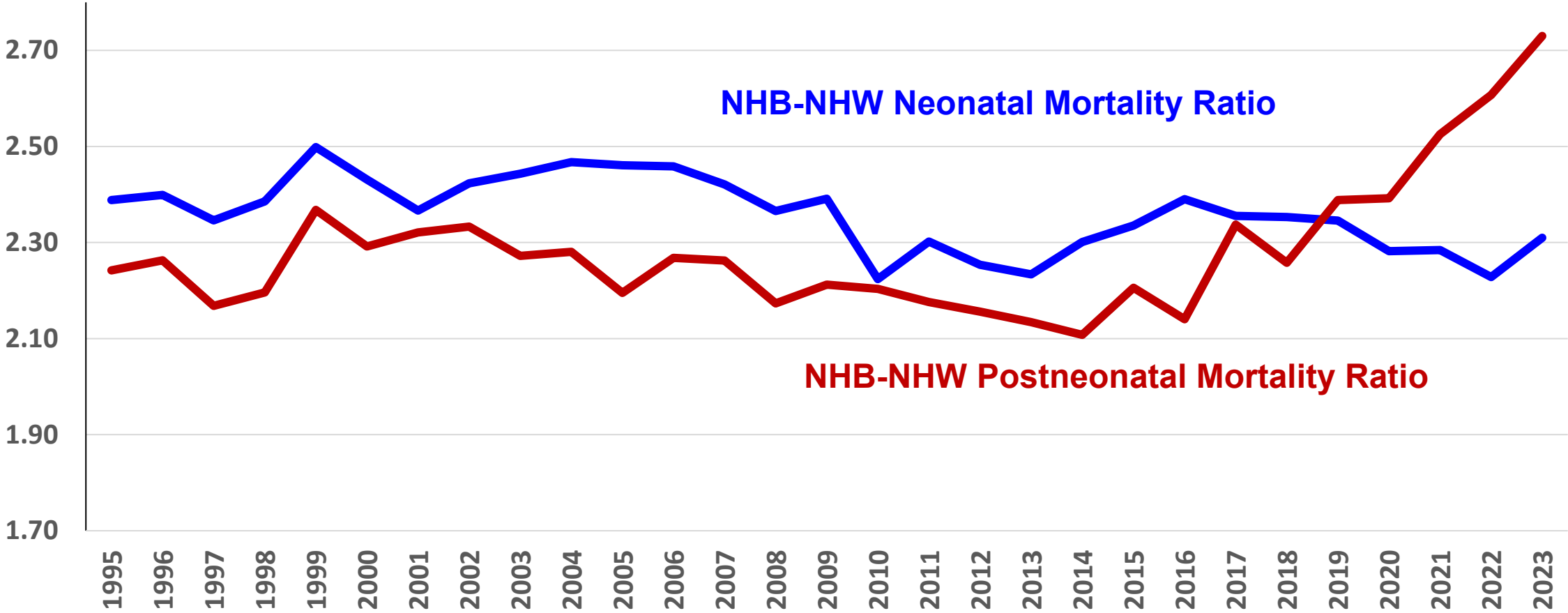


Non-Hispanic Asian Neonatal & Postneonatal Mortality Rates (per 1,000 births), 2017-2023



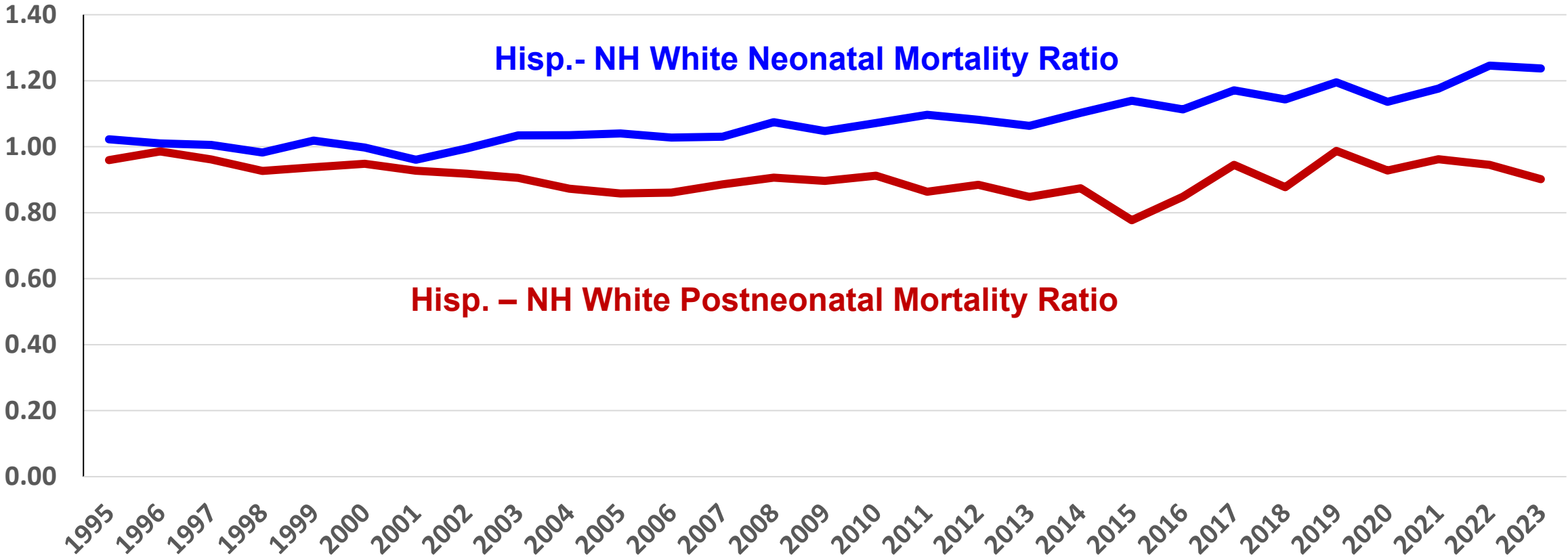


Non-Hispanic (NH)White and NH Black, Neonatal and Postneonatal Mortality Ratios, U.S., 1995-2023





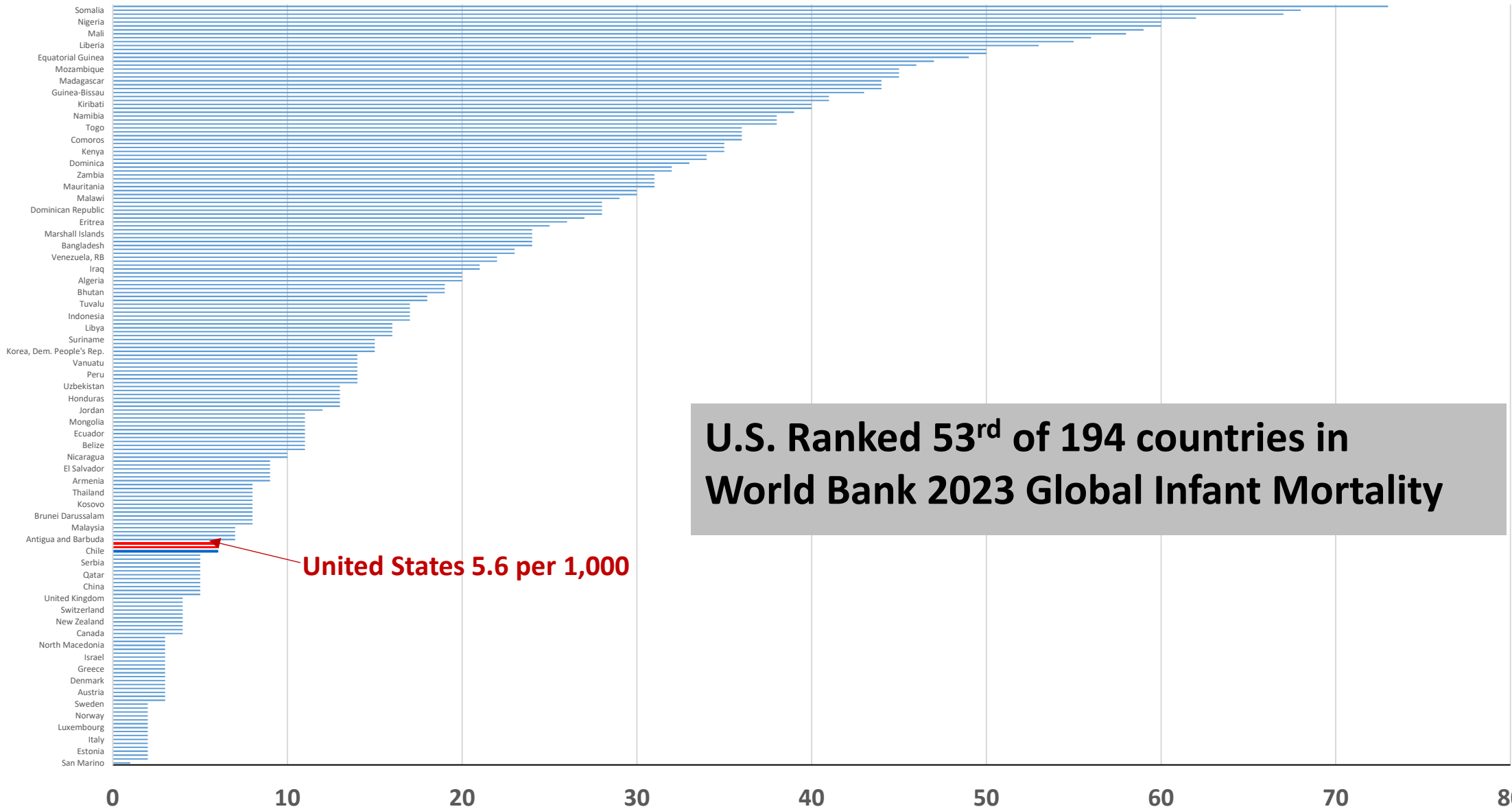
Non-Hispanic White and Hispanic, Neonatal and Postneonatal Mortality Ratios, U.S., 1995-2023



The U.S. in a Global Context



Infant Mortality (per 1,000 live births), 2023 estimates

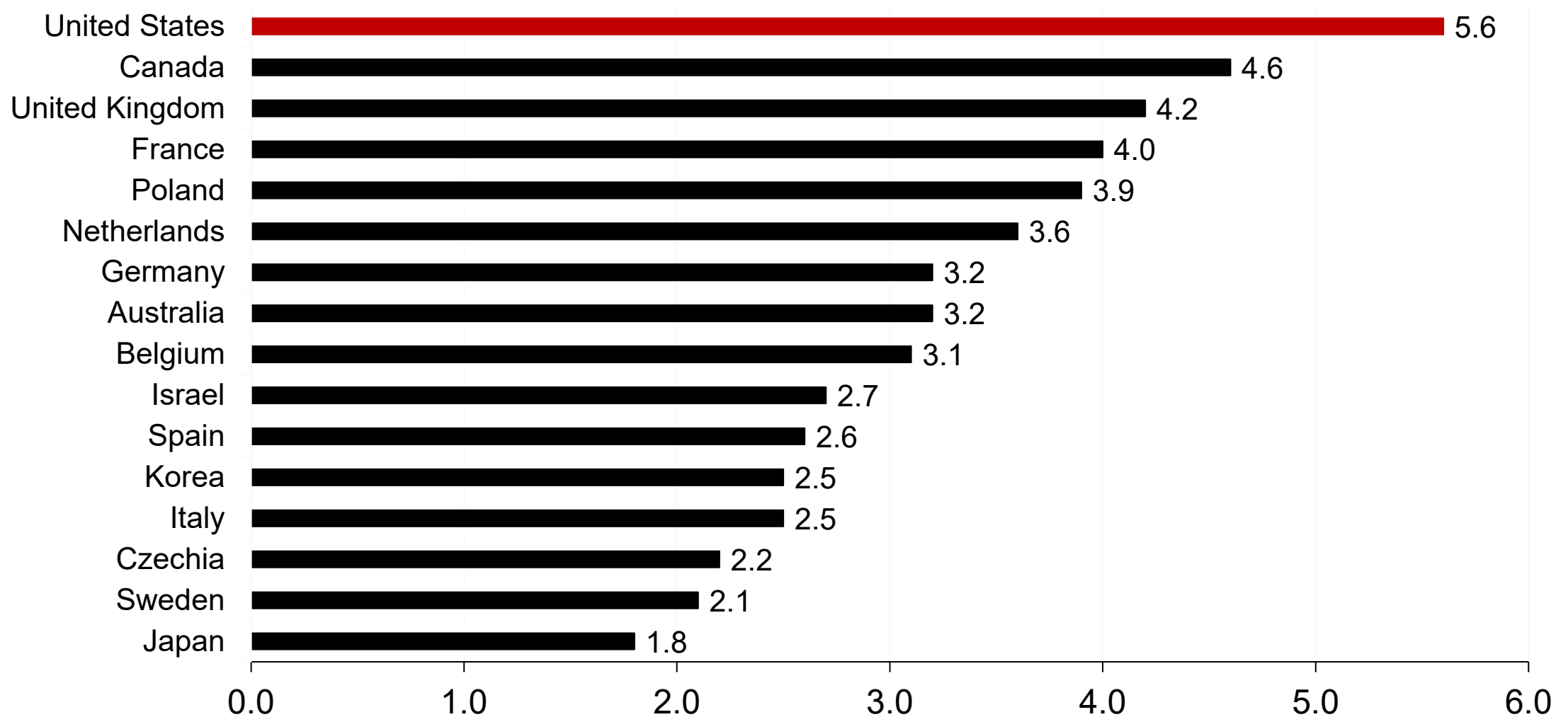


U.S. Ranked 53rd of 194 countries in World Bank 2023 Global Infant Mortality

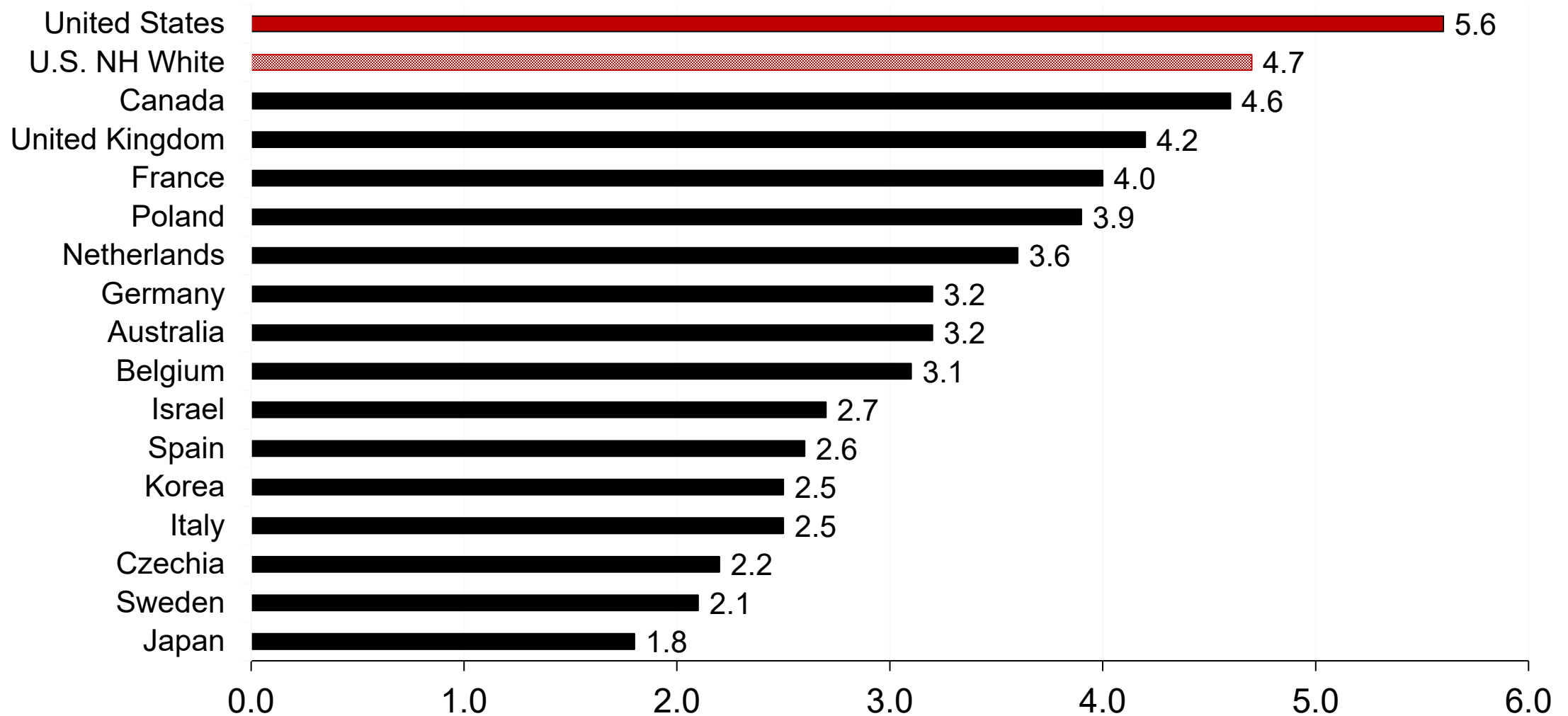
United States 5.6 per 1,000



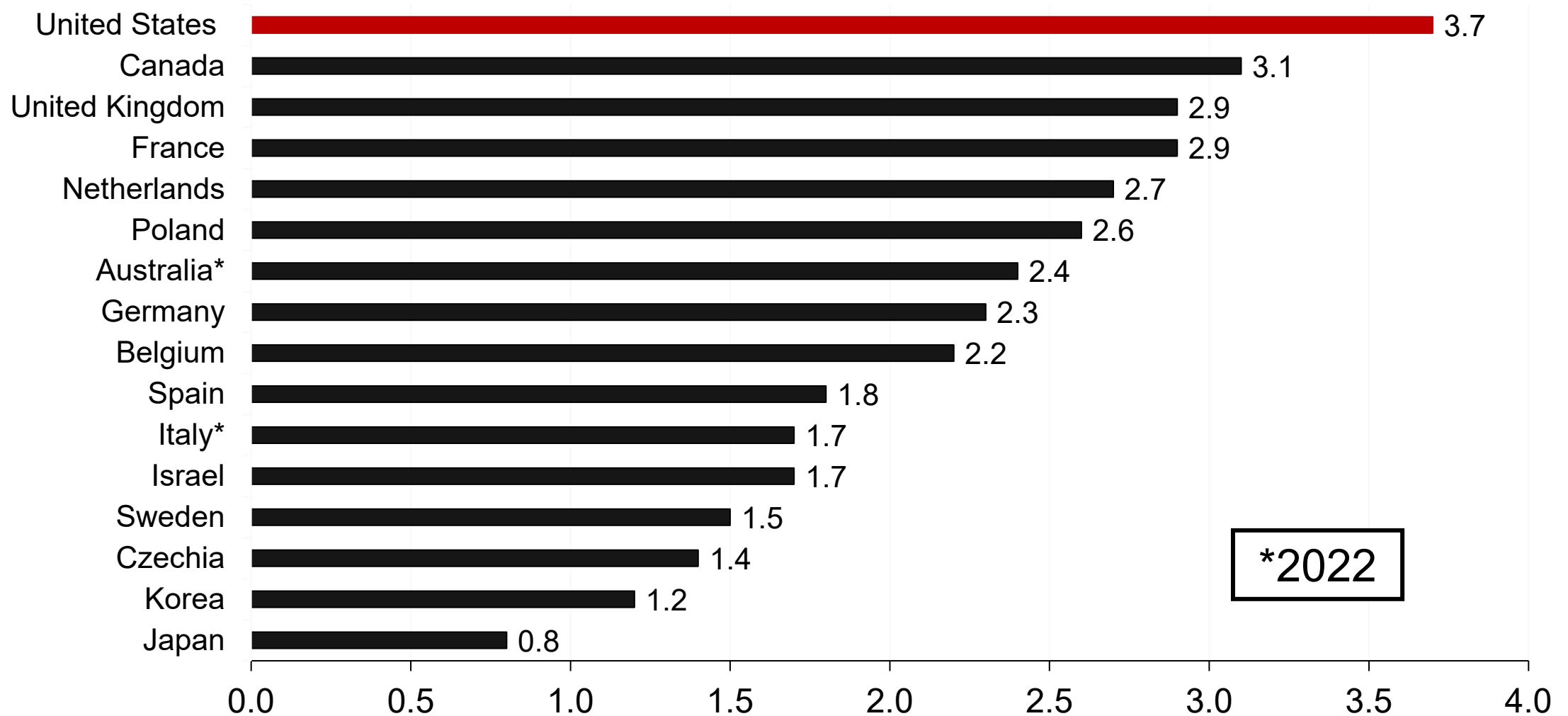
Infant Mortality Rates (per 1,000 births), 2023, Industrialized Countries 90,000+ Births



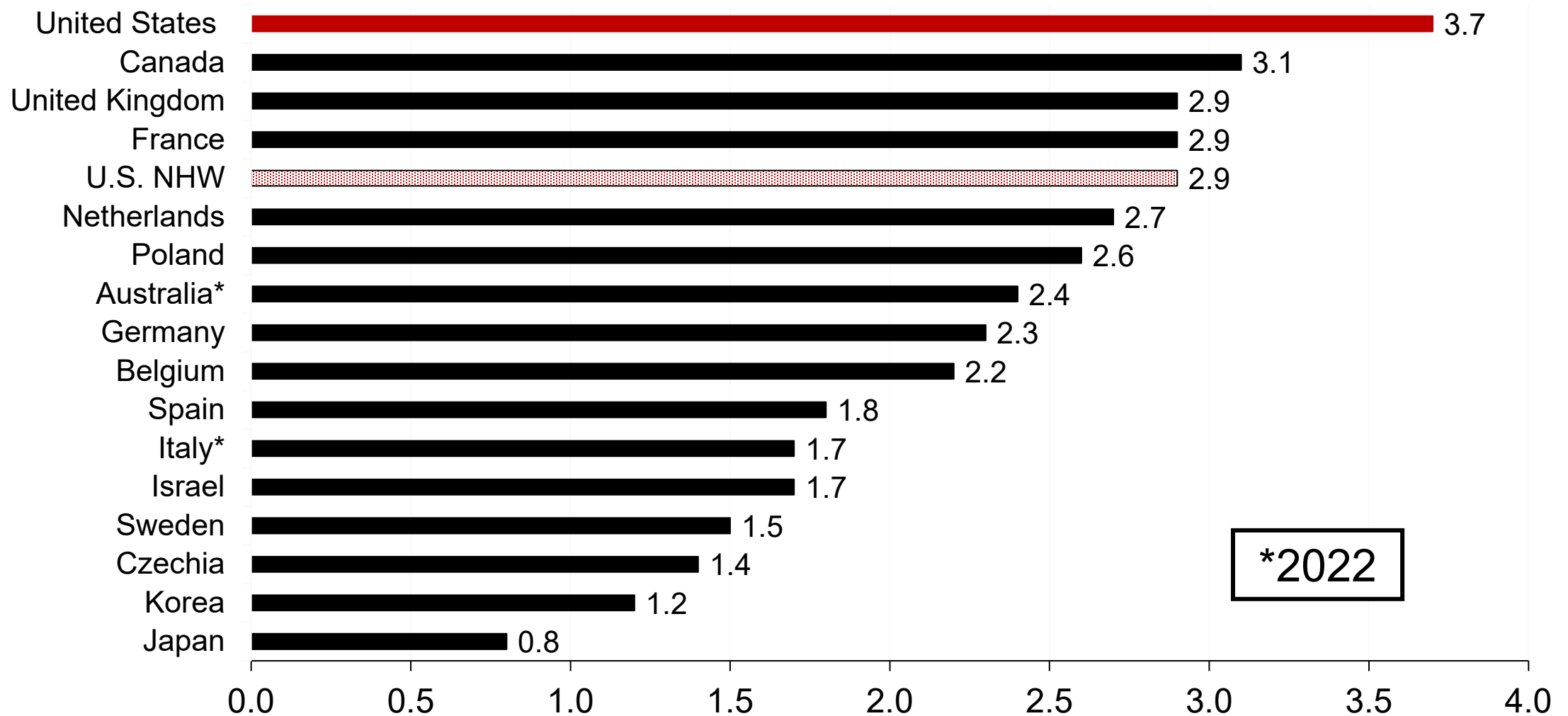
Infant Mortality Rates (per 1,000 births), 2023, Industrialized Countries 90,000+ Births



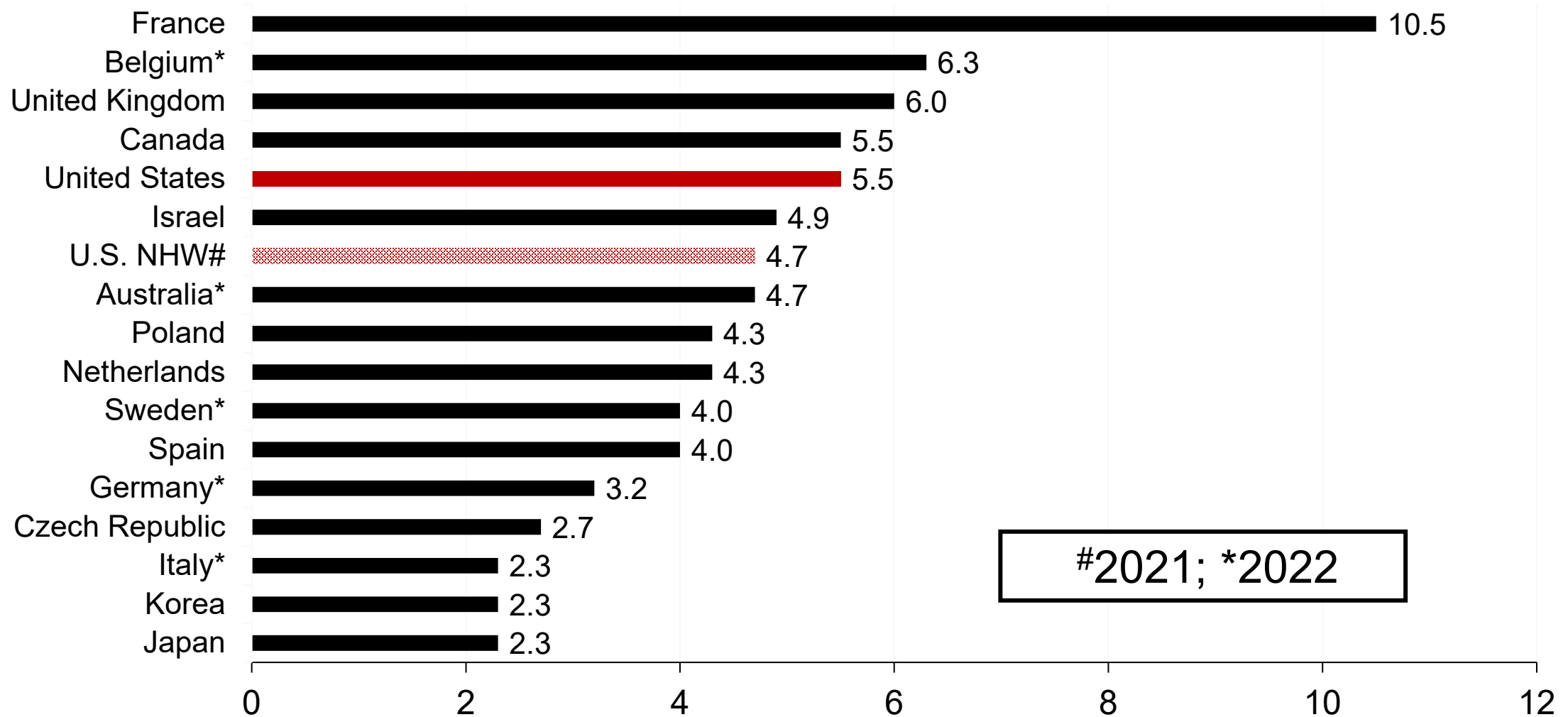
Neonatal Mortality Rates (per 1,000 births), 2023, Industrialized Countries 90,000+ Births



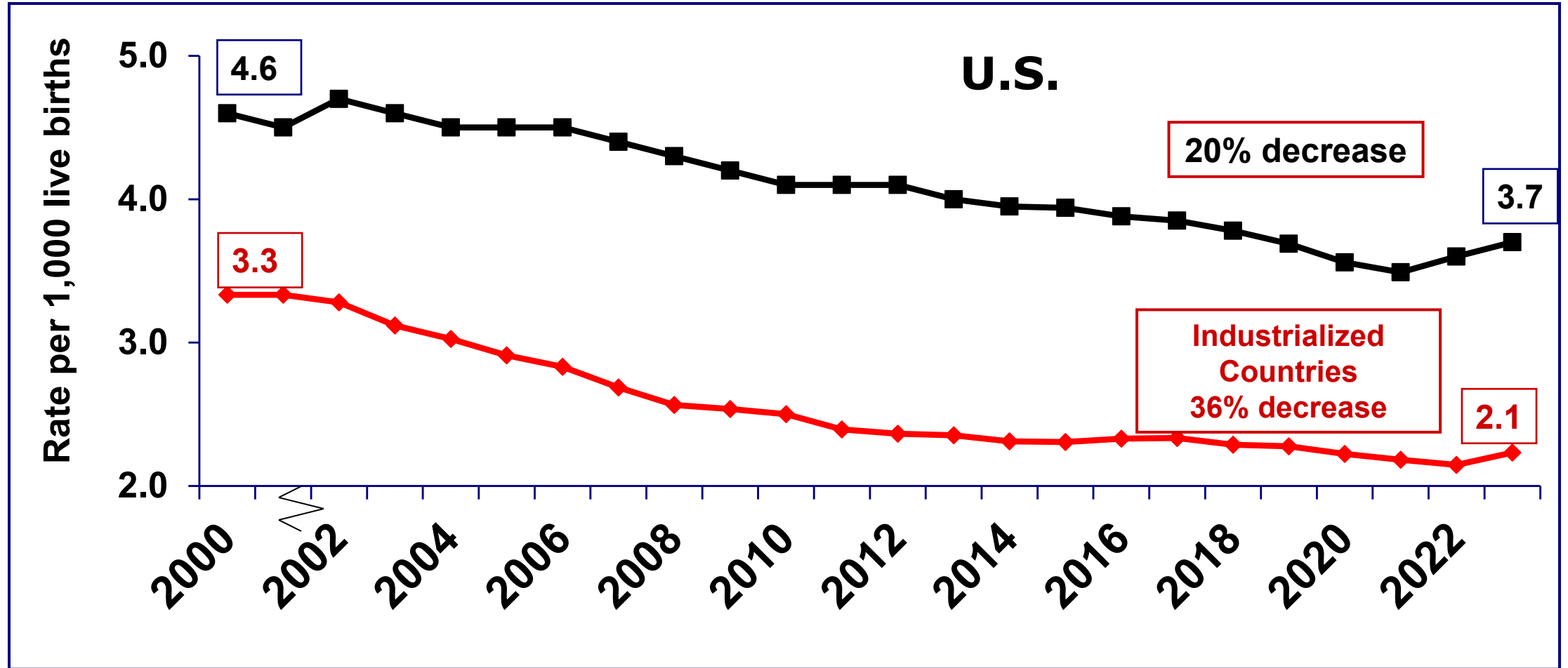
Neonatal Mortality Rates (per 1,000 births), 2023, Industrialized Countries 90,000+ Births



Perinatal Mortality Rates (per 1,000 births), 2023, Industrialized Countries 90,000+ Births

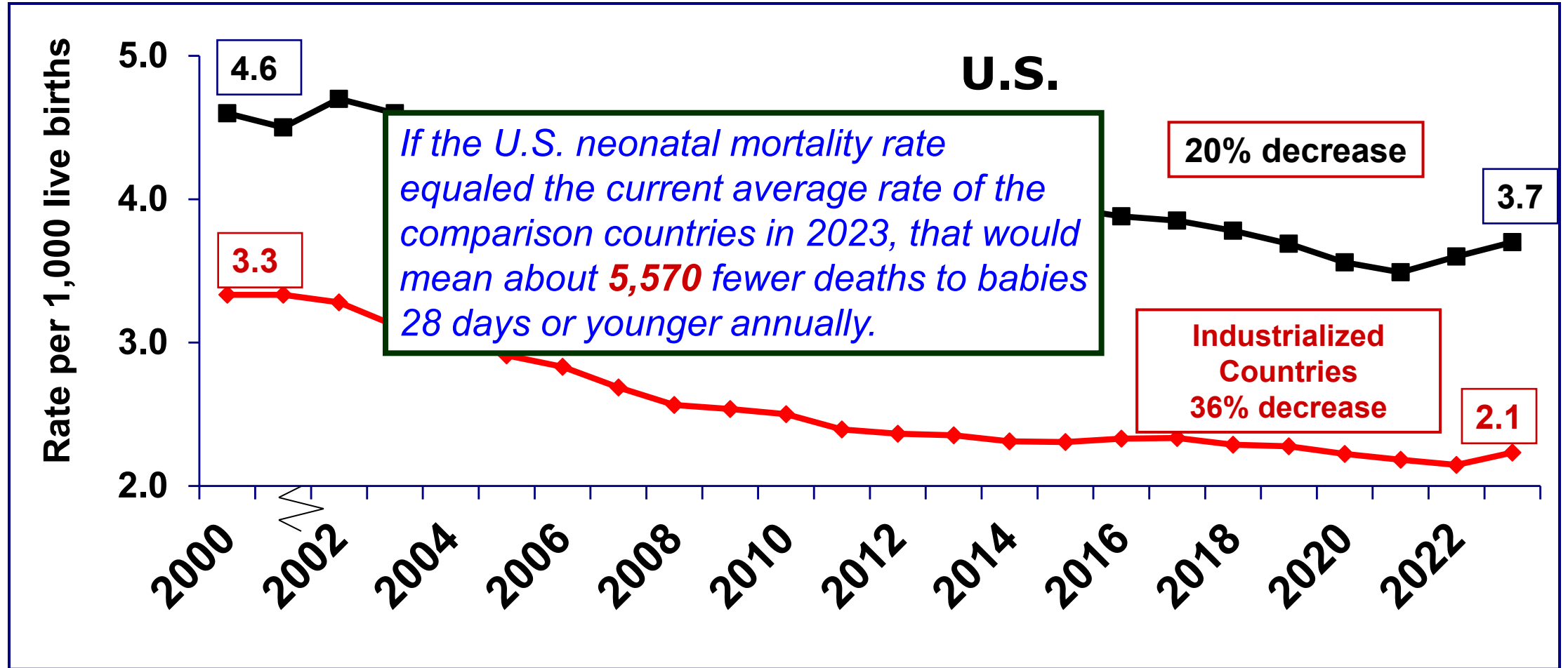


Neonatal Mortality Rate (per 1,000 births), 2000-2023, U.S., & Ave. for Industrialized Countries*



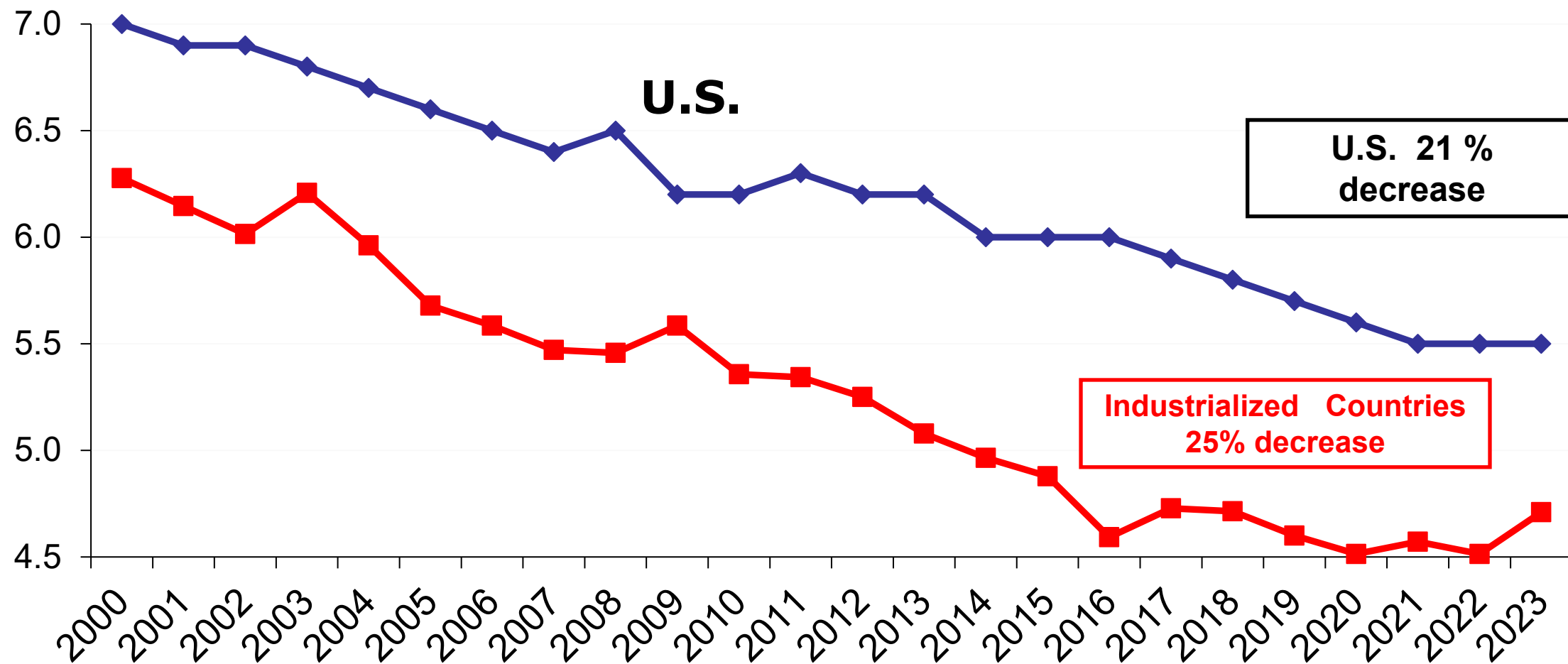
* Countries with 100,000+ births (2020): Australia, Belgium, Canada, Czech Republic, France, Germany, Israel, Italy, Japan, Netherlands, Poland, Spain, S. Korea, Sweden, U.K.

Neonatal Mortality Rate (per 1,000 births), 2000-2023, U.S., & Ave. for Industrialized Countries*



* Countries with 100,000+ births (2024): Australia, Belgium, Canada, Czech Republic, France, Germany, Israel, Italy, Japan, Netherlands, Poland, Spain, S. Korea, Sweden, U.K.

Perinatal Mortality Rates, 2000-2023 , U.S., & Ave. for Industrialized Countries*



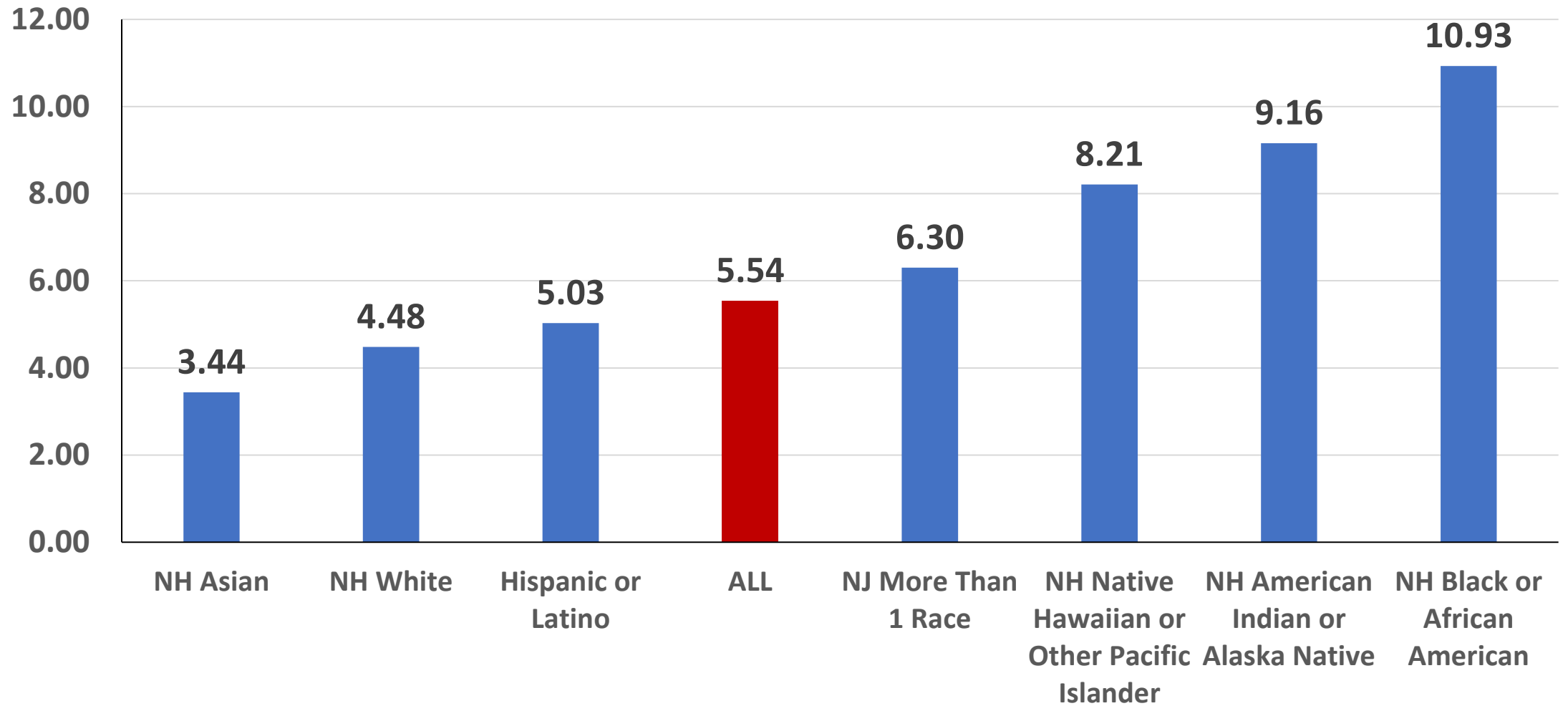
* Countries with 90,000+ births (2024): Australia, Belgium, Canada, Czech Republic, France, Germany, Israel, Italy, Japan, Netherlands, Poland, S. Korea, Spain, Sweden, United Kingdom

Breaking Down U.S. Infant Mortality by Key Population Groups



2023 Infant Mortality by Race & Ethnicity

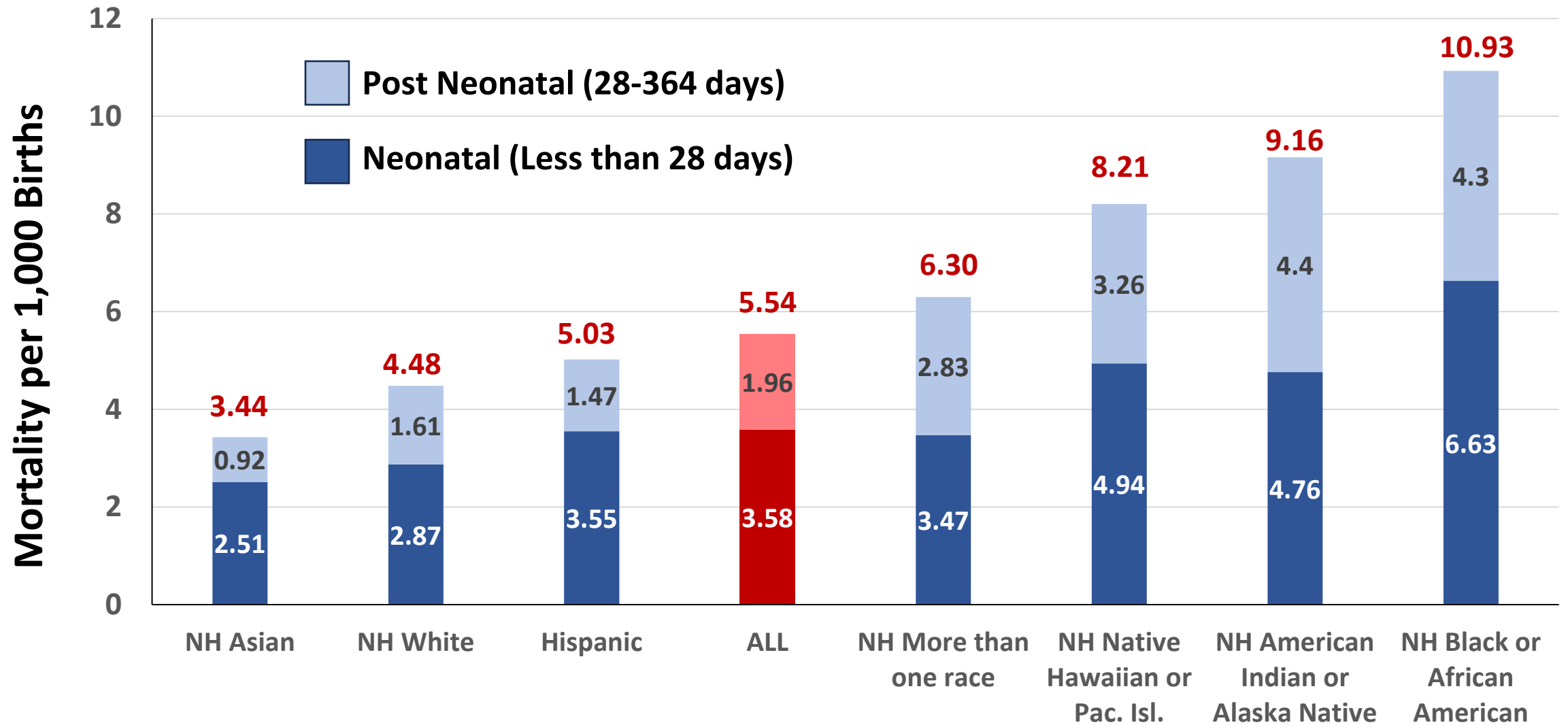
Infant Mortality per 1,000 Births



NH – Non-Hispanic



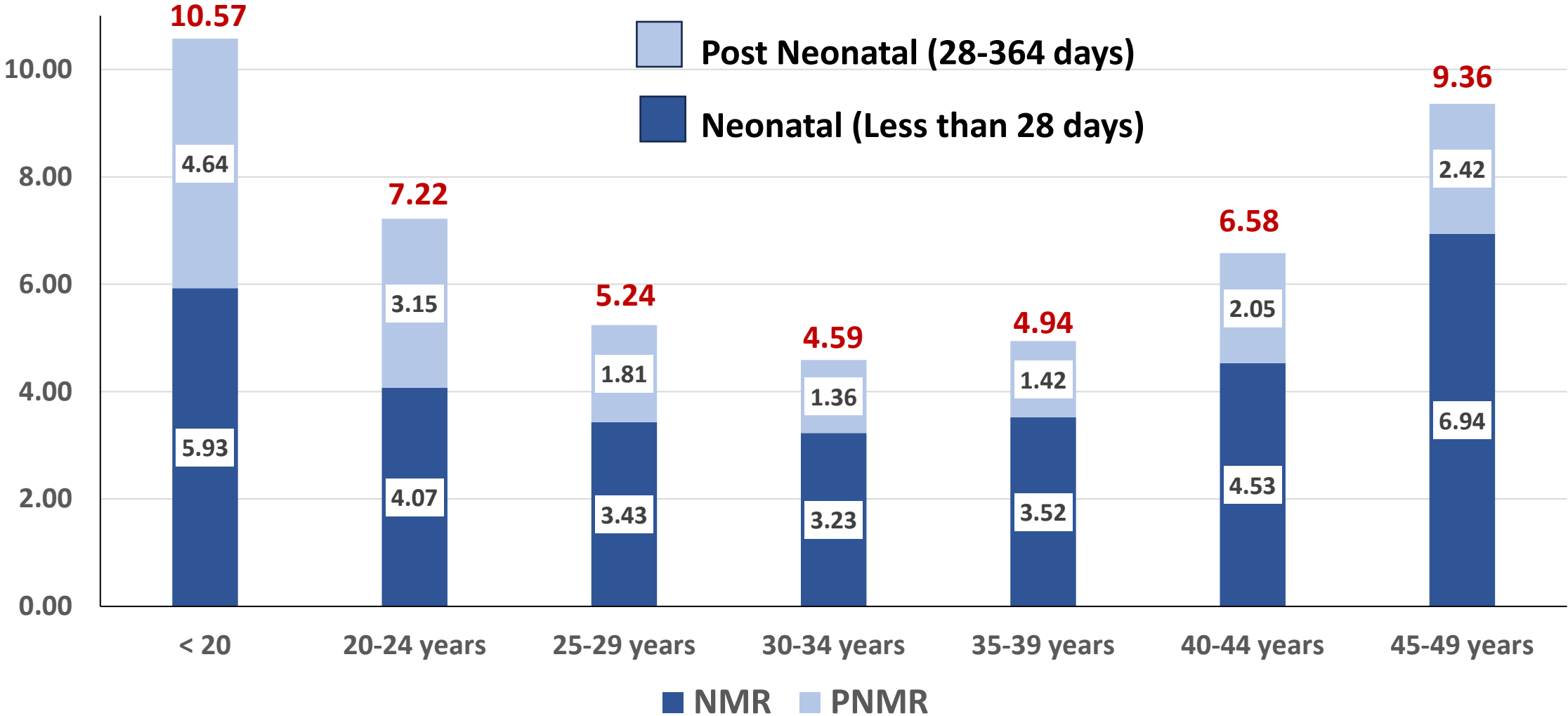
2023 Neonatal & Post Neonatal Mortality by Race & Ethnicity



NH – Non-Hispanic

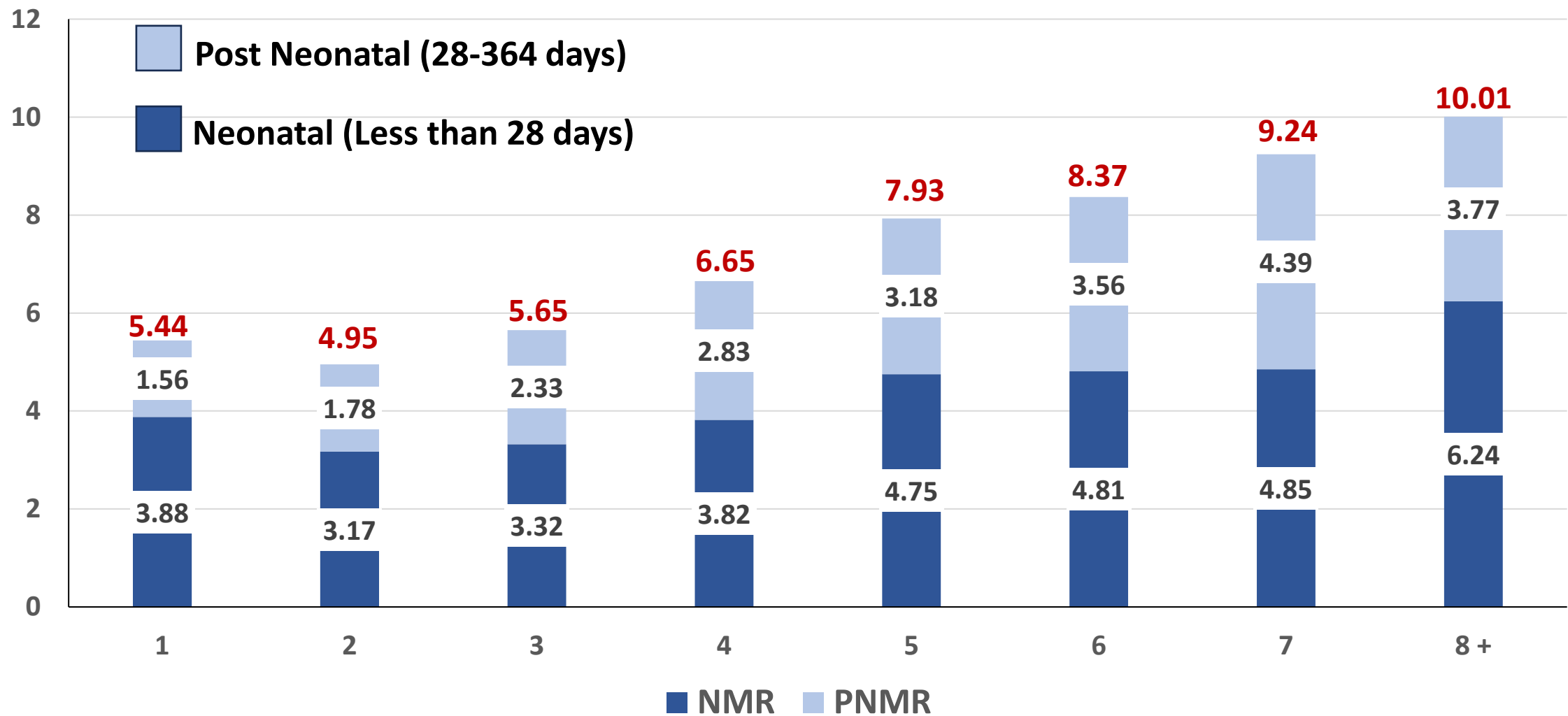


2023 Neonatal & Post Neonatal Mortality by Maternal Age



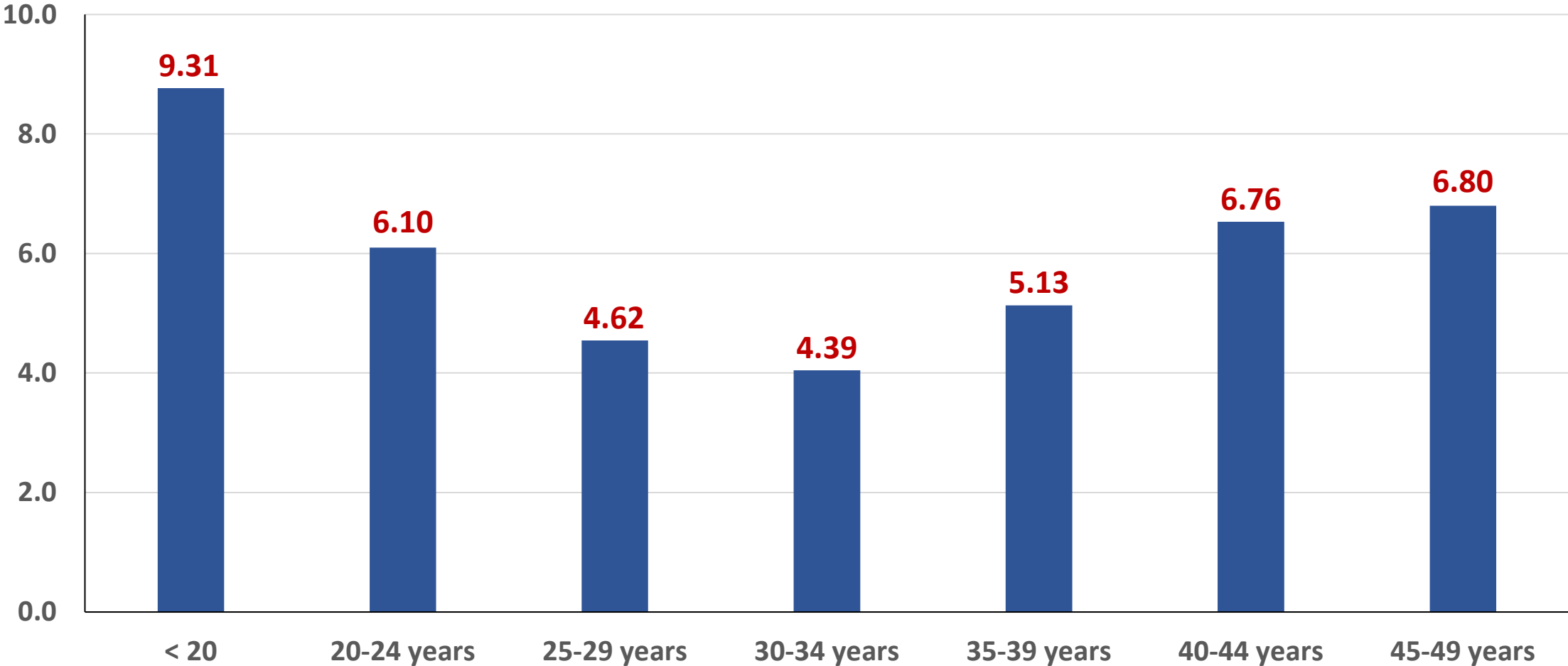


2023 Neonatal & Post Neonatal Mortality by Parity



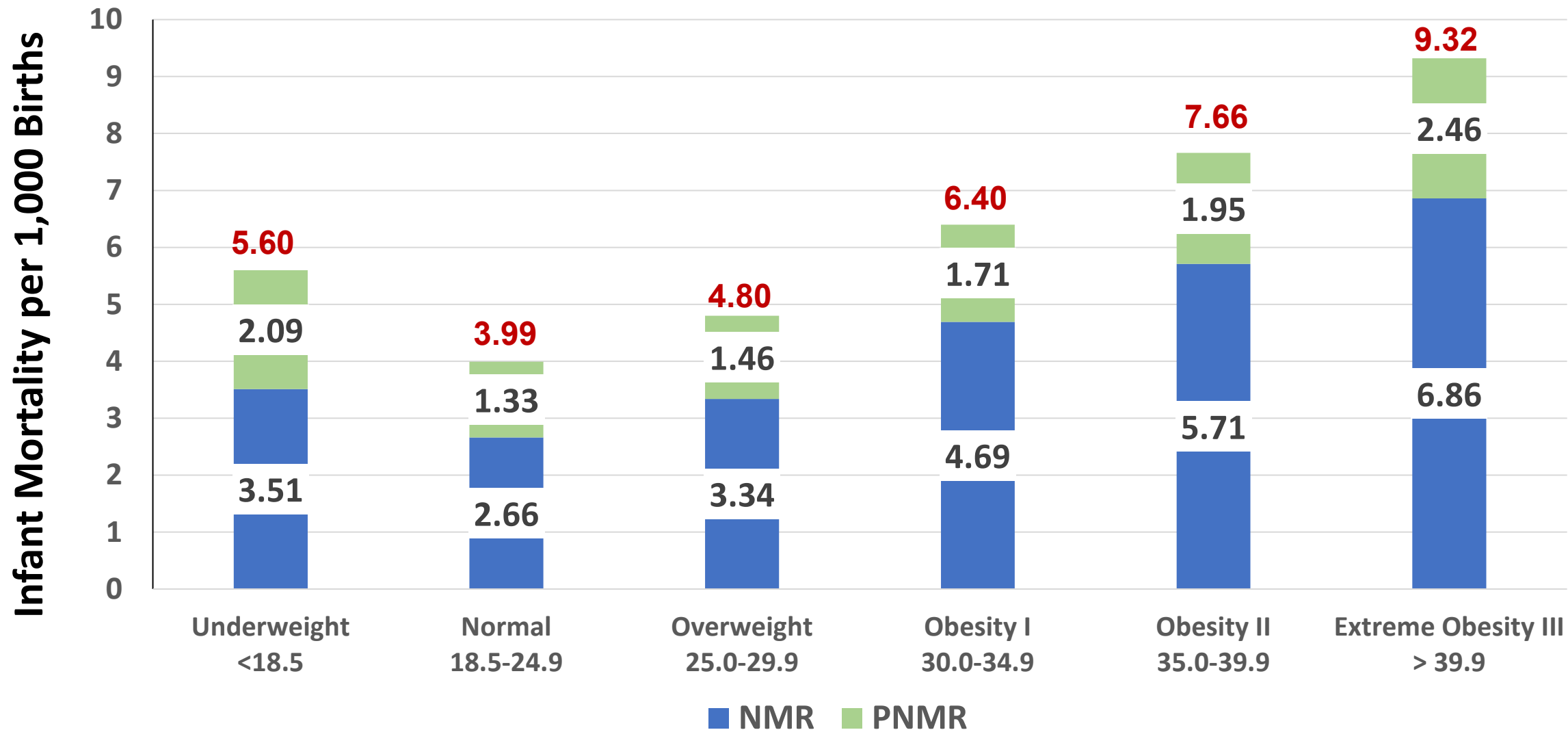


2023 Infant Mortality in First Births by Maternal Age



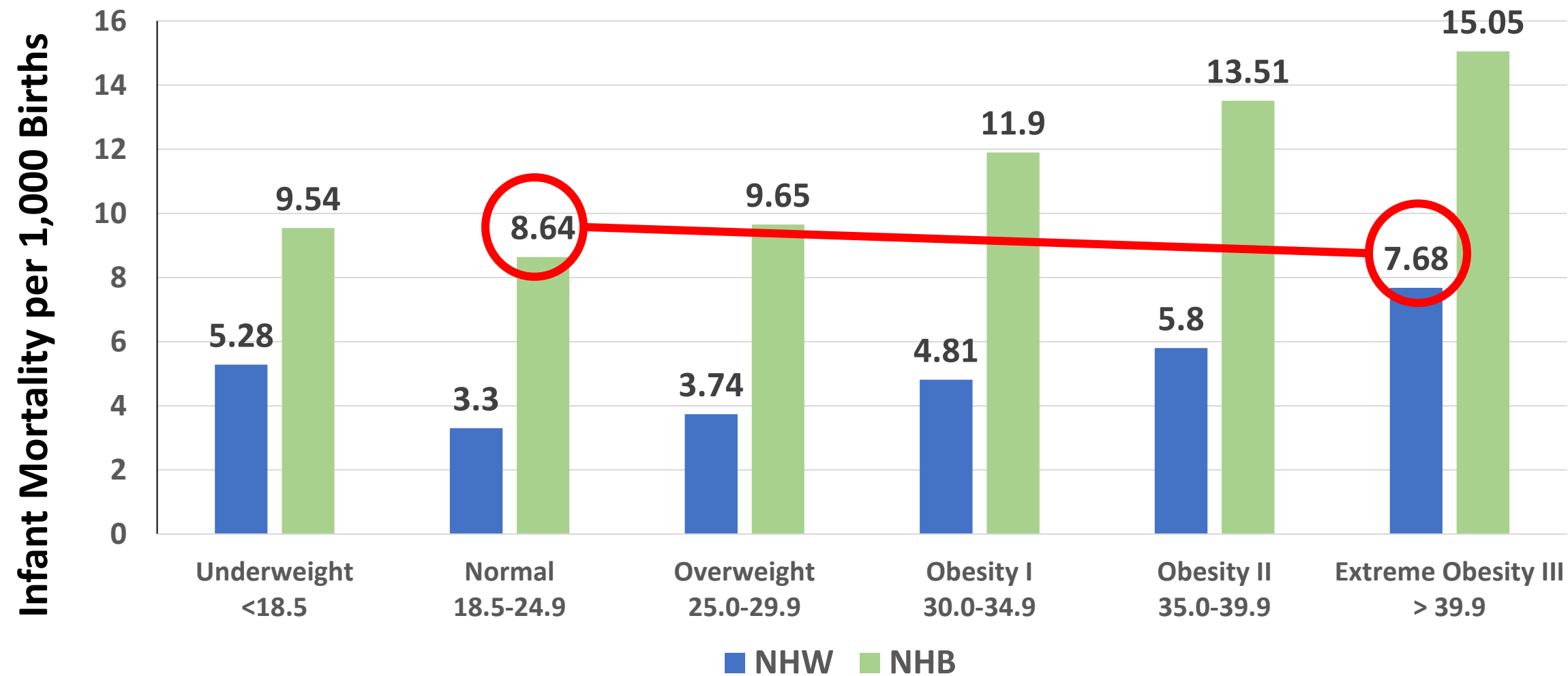


Pre-Pregnancy BMI & Infant Mortality, 2021-2023



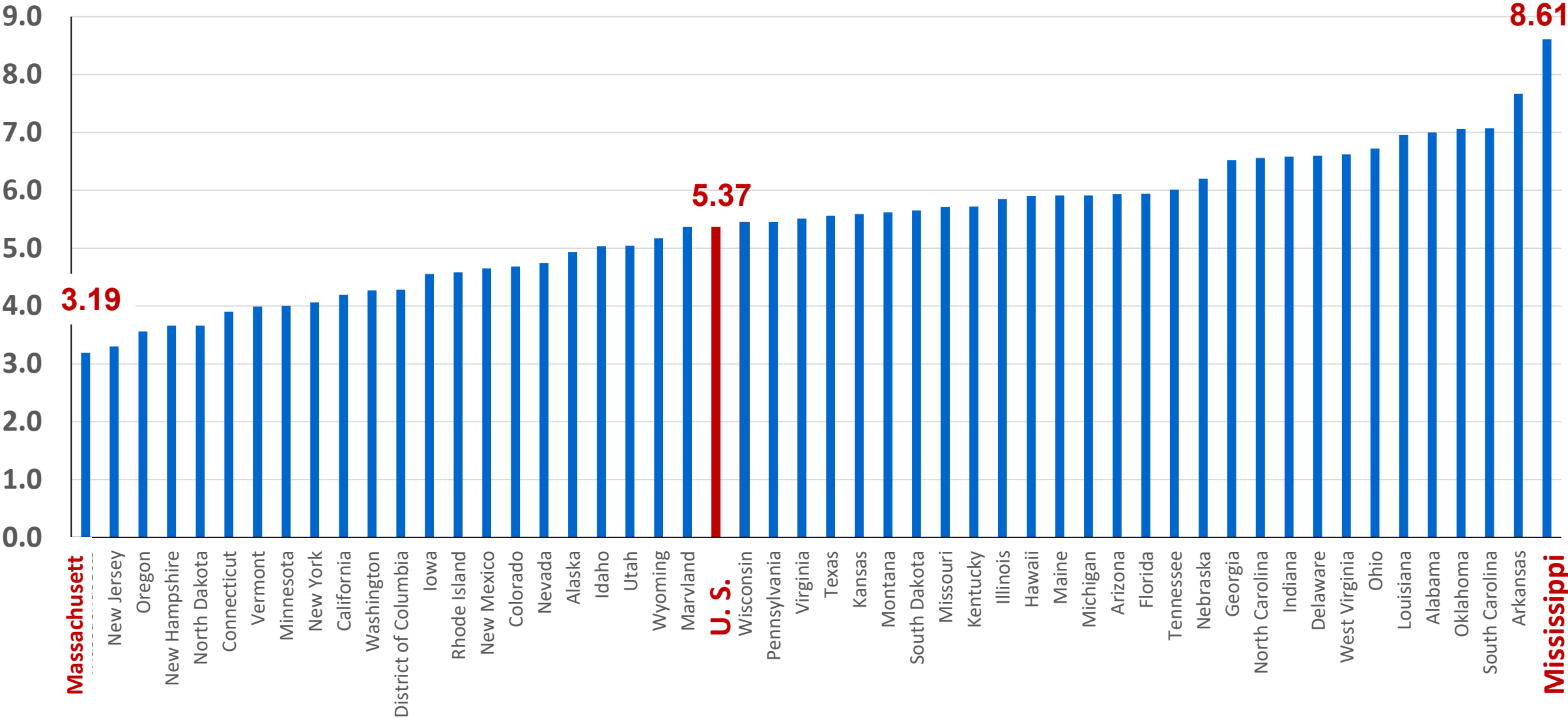


Pre-Pregnancy BMI & Infant Mortality by Race, 2021-2023



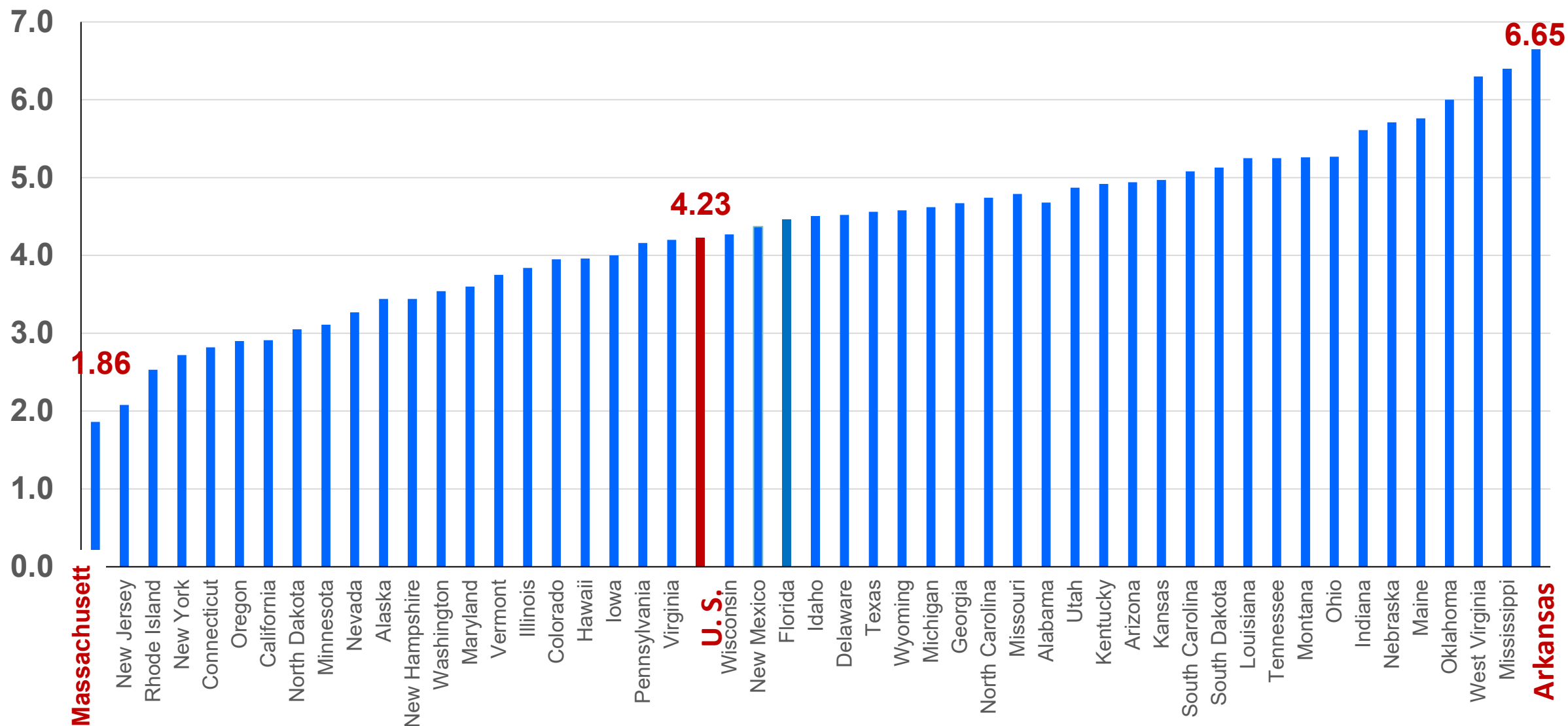


Infant Mortality (per 1,000 births) by State, 2021-23



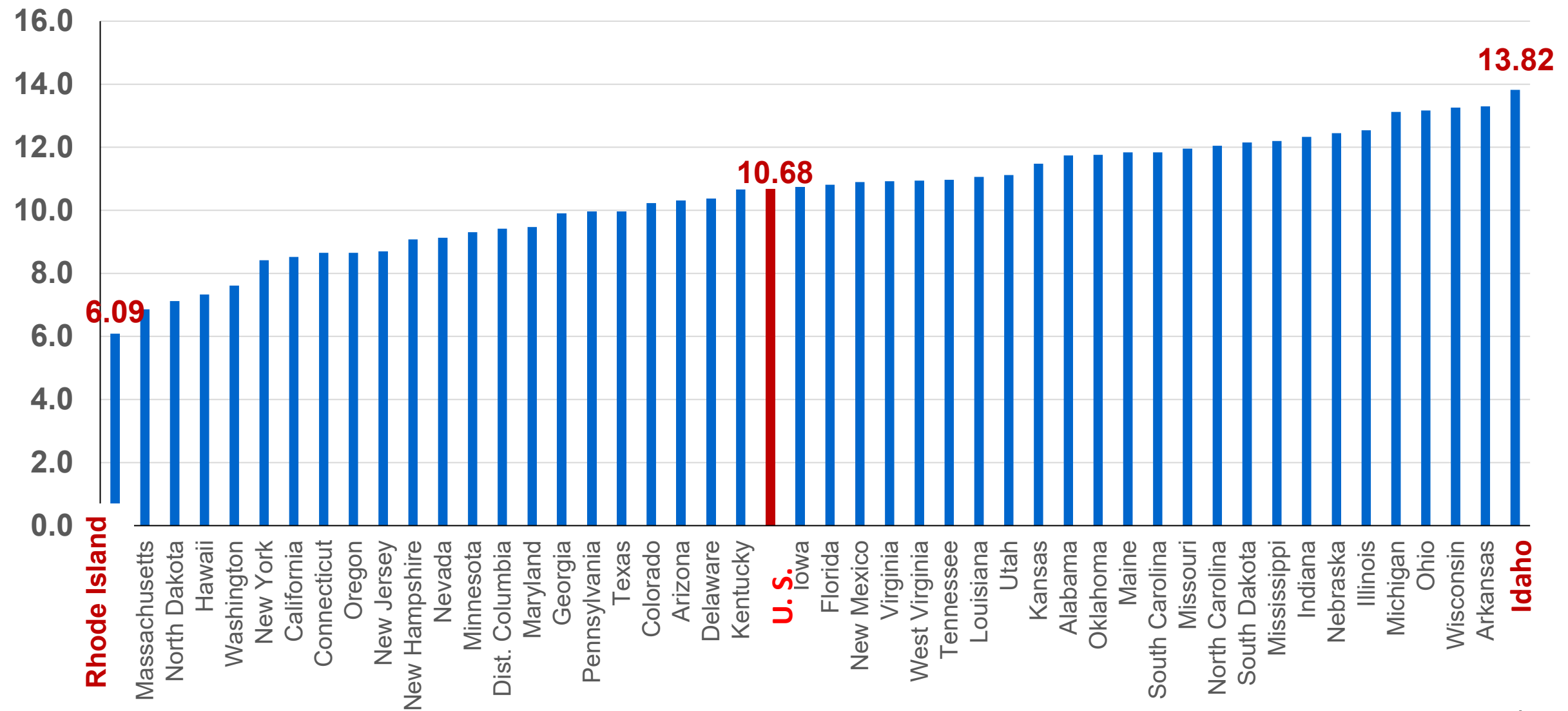


Infant Mortality Non-Hispanic Whites (per 1,000) States, 2021-23





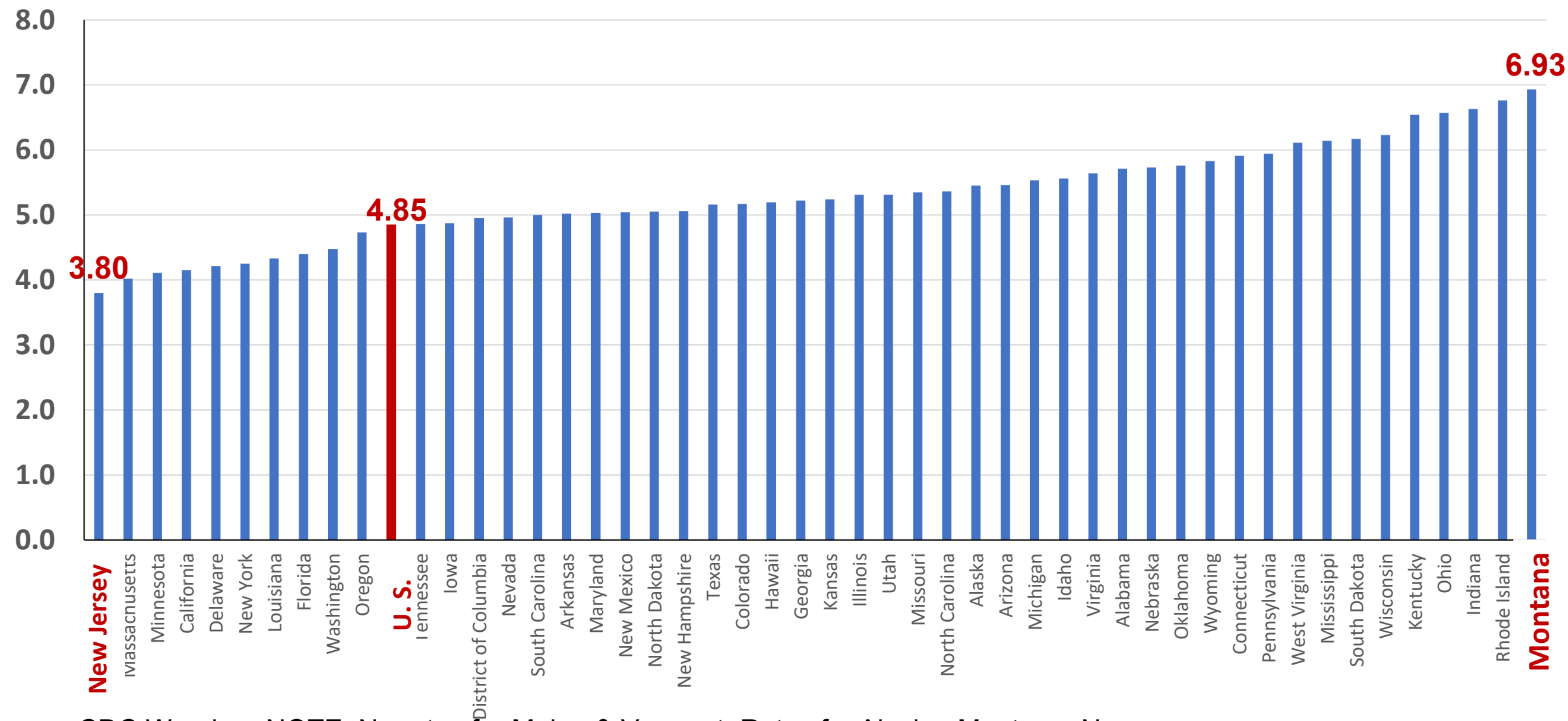
Infant Mortality (per 1,000) by State, 2020-23, non-Hispanic Blacks



Source: CDC Wonder; NOTE: No rates for Alaska, Montana, Vermont, Wyoming, (< 10 infant deaths). Rates for Hawaii, Idaho, New Hampshire,, New Mexico, N. Dakota, S. Dakota based on < 20 deaths,



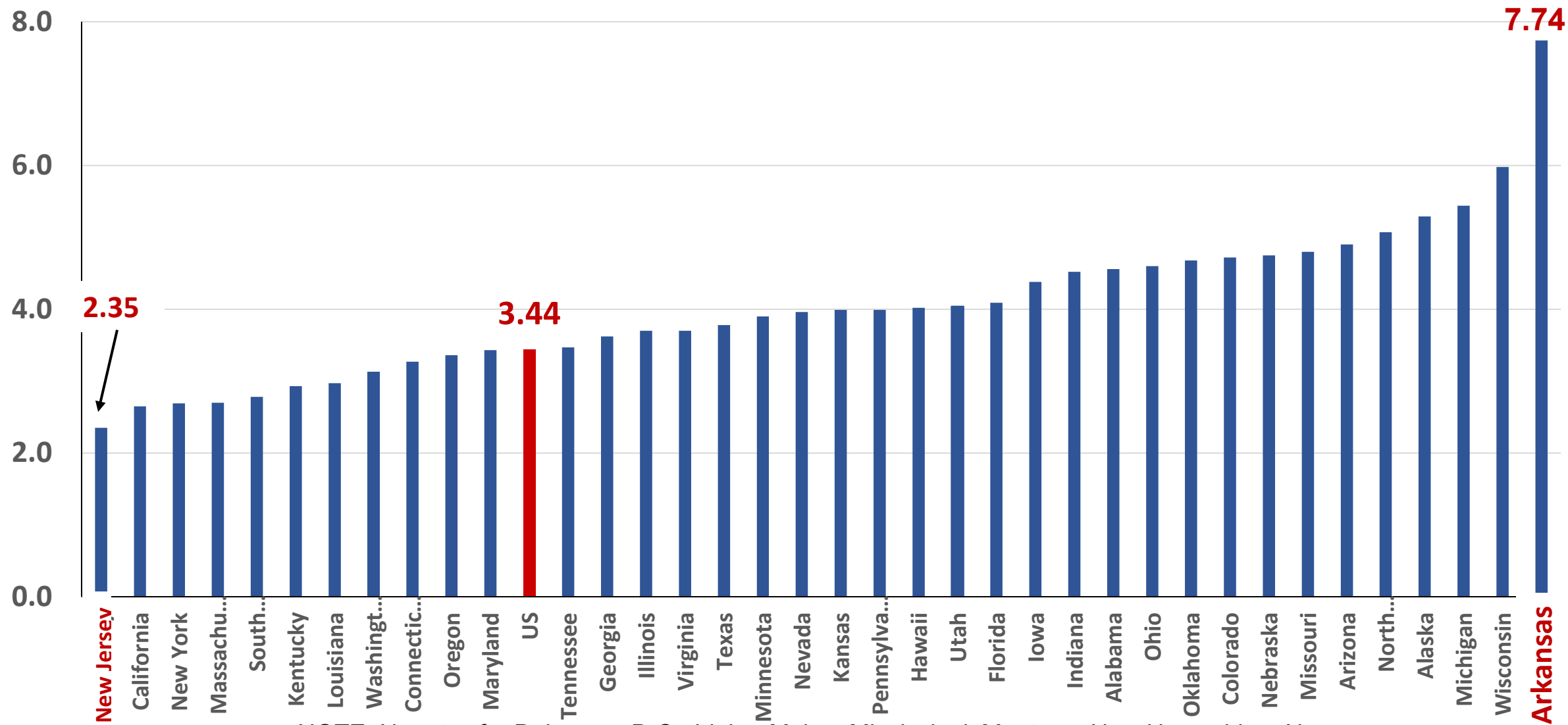
Infant Mortality (per 1,000 births) by State, 2020-23, Hispanics



Source: CDC Wonder; NOTE: No rates for Maine & Vermont; Rates for Alaska, Montana, New Hamp., N. Dakota, S. Dakota, W. Virginia, Wyoming based on <20 deaths.



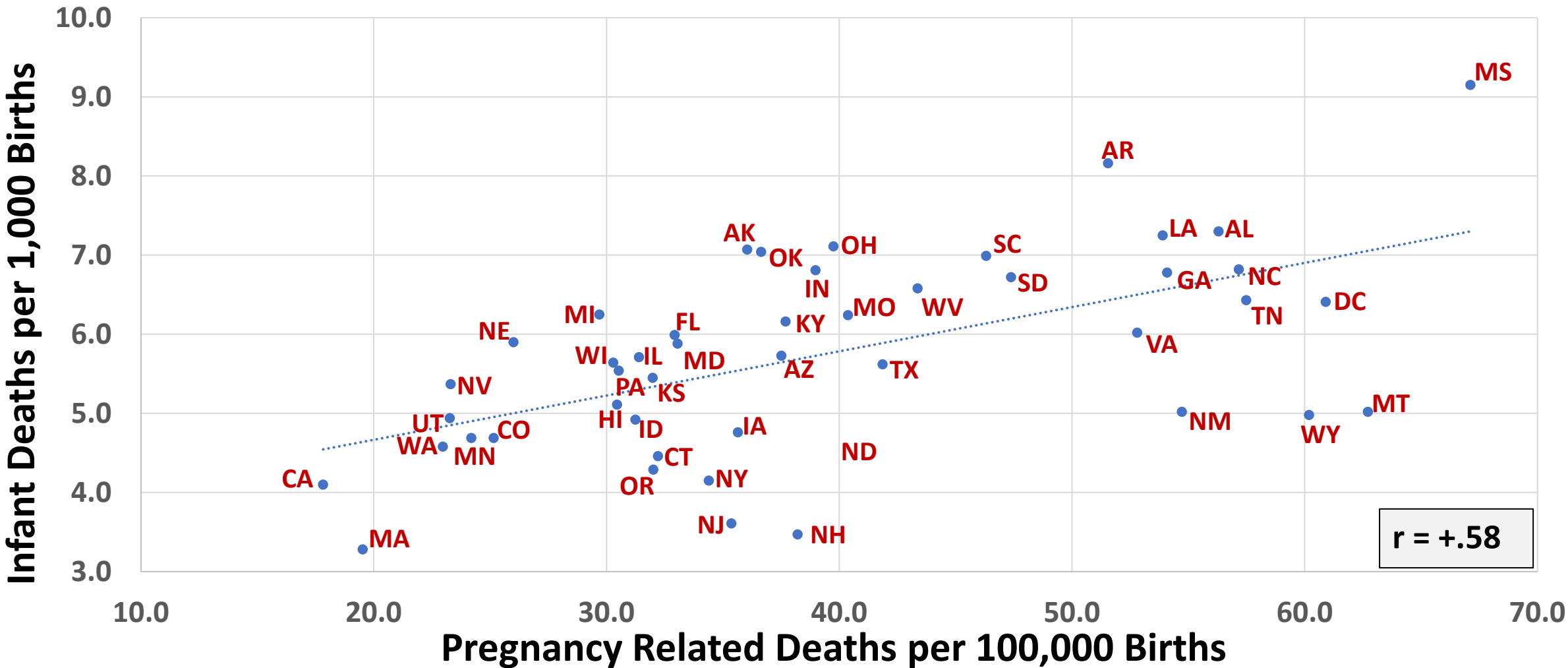
Infant Mortality non-Hispanic Asians (per 1,000 births) by State, 2020-23



NOTE: No rates for Delaware, D.C., Idaho, Maine, Mississippi, Montana, New Hampshire,, New Mexico,, N. Dakota, Rhode Island, S. Dakota, Vermont, W. Virginia, Wyoming, (< 10 infant deaths)



Pregnancy Related Maternal Deaths* and Infant Deaths, U.S. States, 2021-2023.

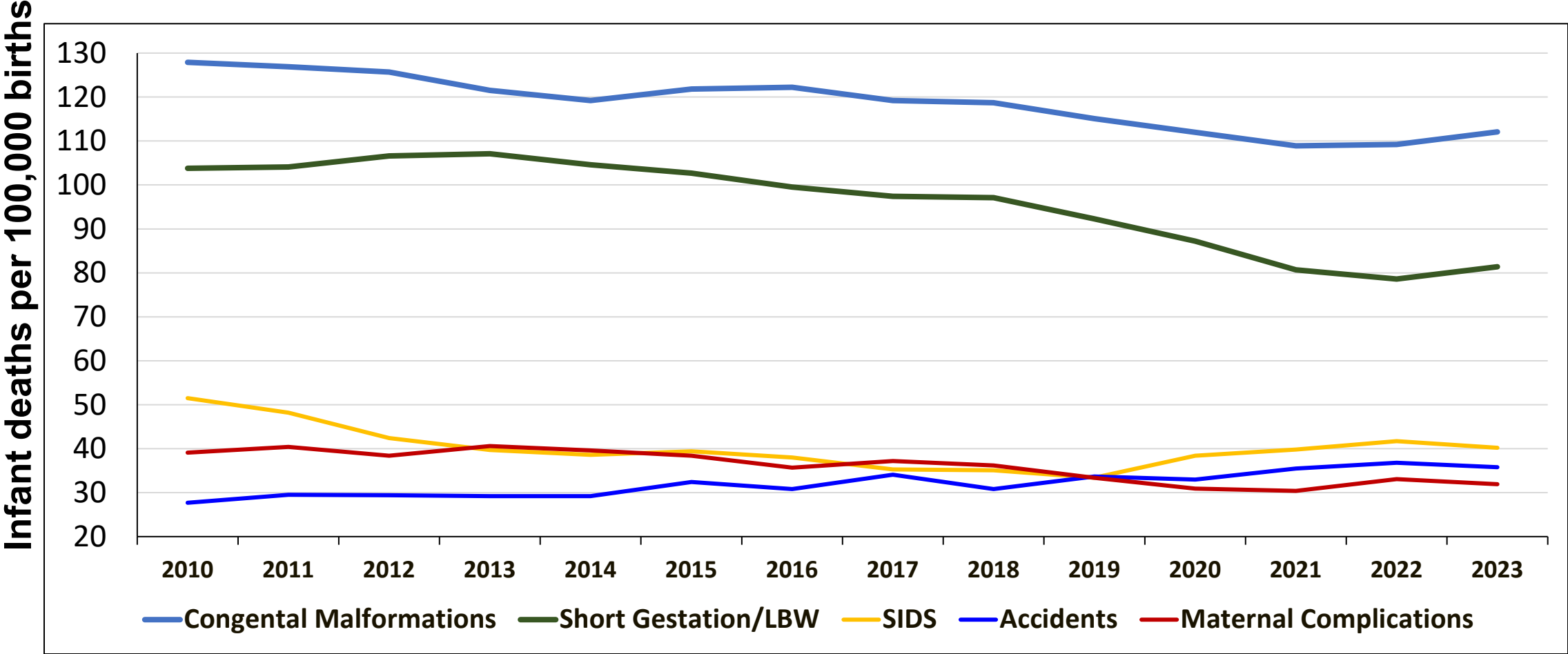


* States with at least 10 pregnancy related deaths. Excludes: Delaware, Maine, N. Dakota, Rhode Island & Vermont

The causes of infant deaths

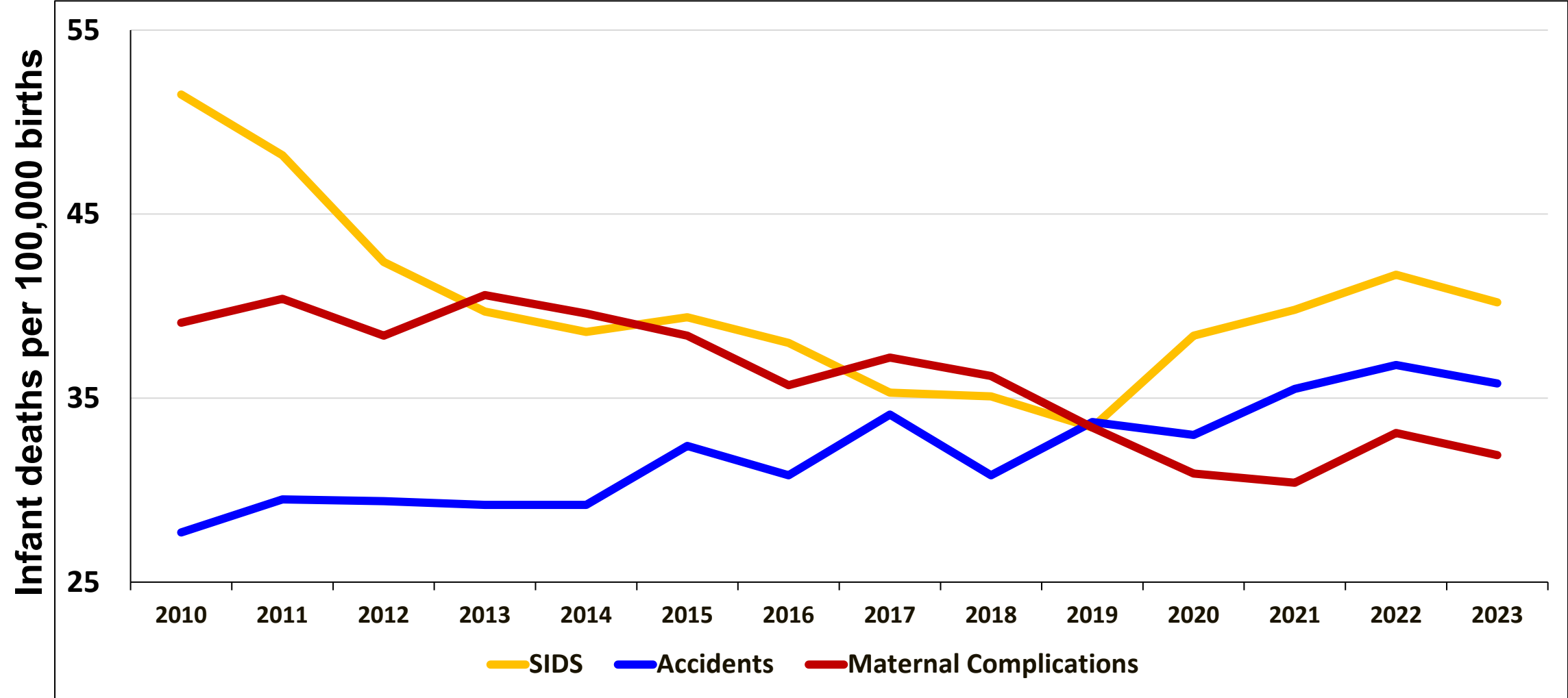


Infant mortality rate (per 100K) , by five leading causes of infant death: United States, 2010–2023



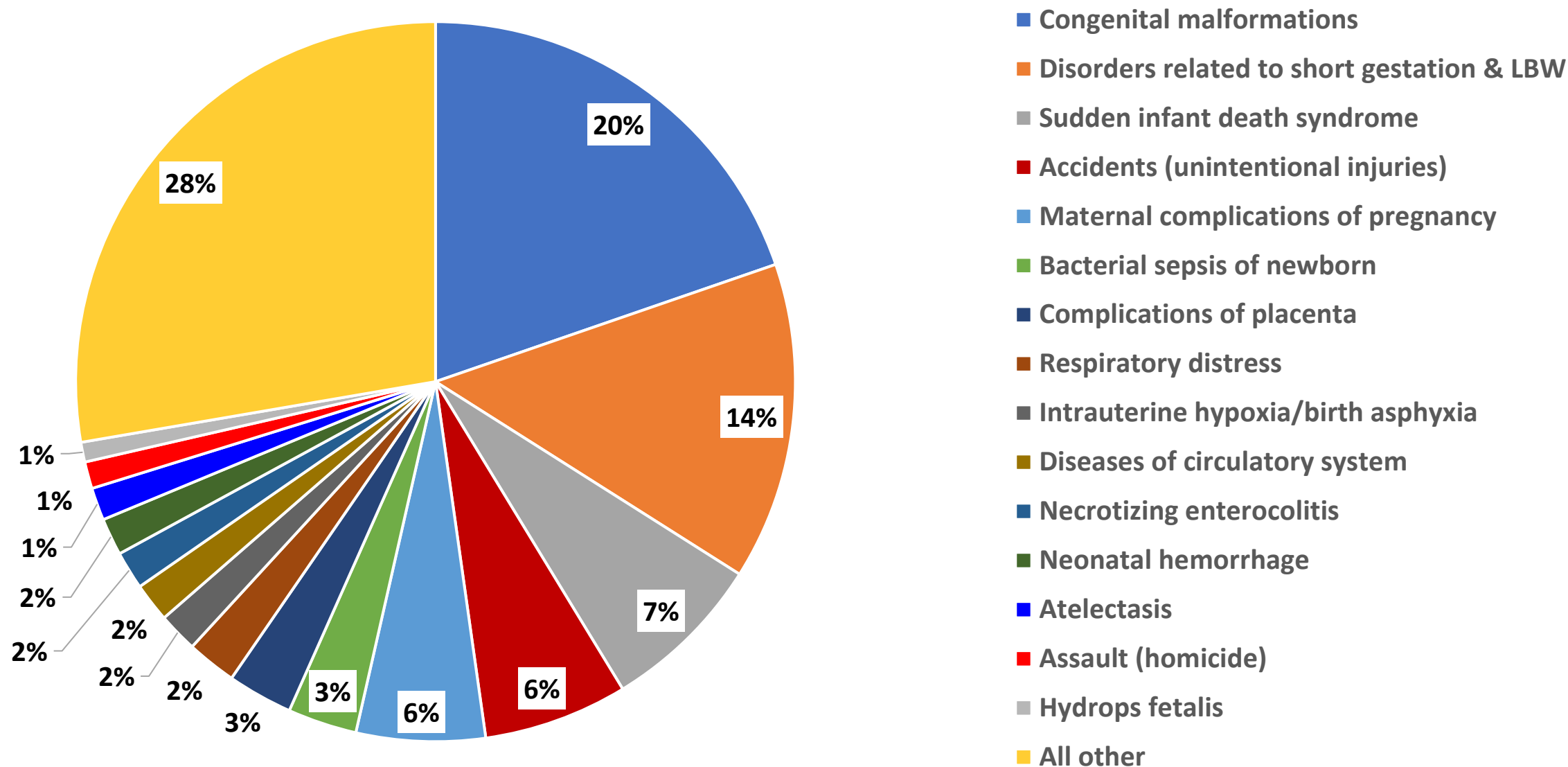


Infant mortality rate (per 100K) , by three leading causes of infant death: United States, 2010–2023





15 Leading Causes of Infant Death, U.S., 2022-2023



Summary

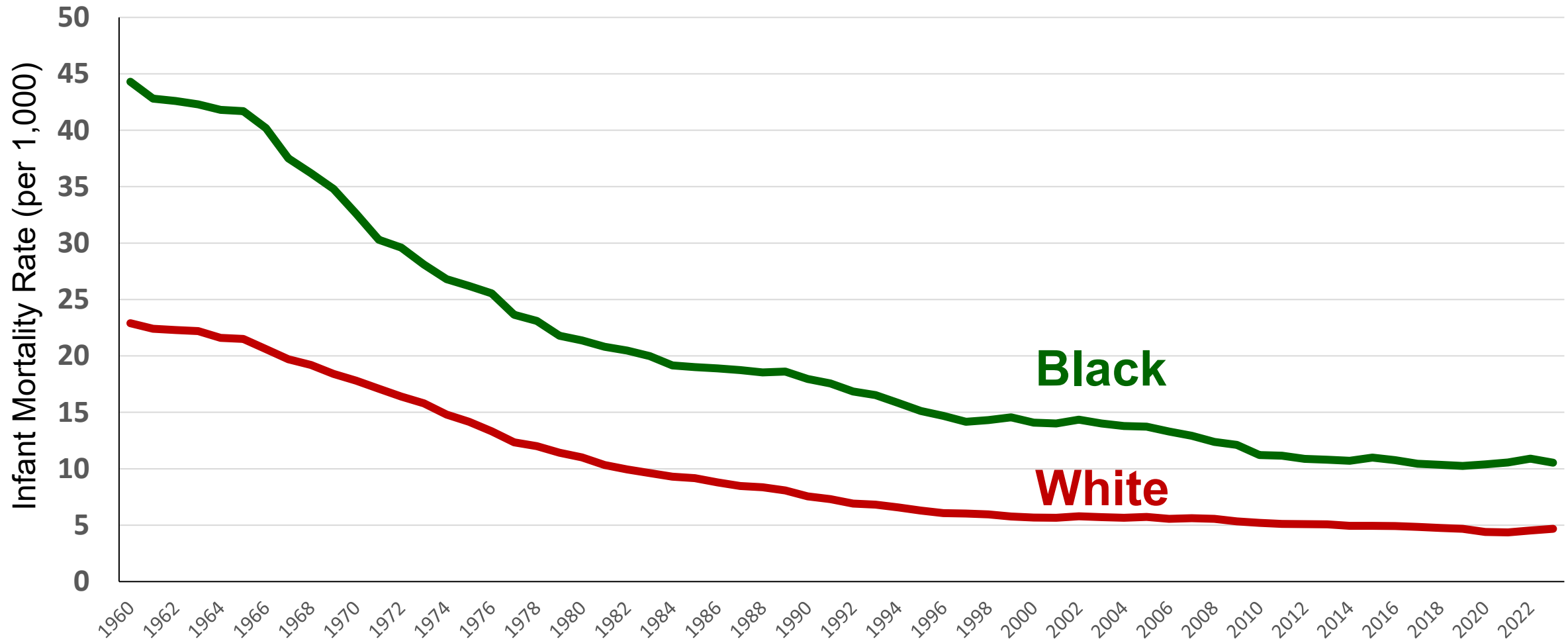
- Historically, there's been greater success in lowering the more clinically related neonatal death rate than and postneonatal rates, which more likely involve both hospital and community care.
- U.S. outcomes regarding infant mortality have improved in recent years with a steady decline (25% since 2000), though that's a smaller decline than that experienced by comparable countries over the same period, widening the gap in outcomes.
- The U.S. ranks at or near the bottom of infant outcomes compared to other large, wealthy countries and the gap has widened in recent years.

Summary

- Wide, persistent racial gaps exist in infant outcomes between racial subgroups with births to Asian and White mothers faring best.
- Huge differences in outcomes between states with some states having infant death rates several times that of the best performing states overall.
- Population differences do not completely explain state variance with states with high infant mortality rates generally doing so across racial groups.
- Infant death rates are strongly correlated with maternal death rates.

***In case the above
wasn't enough,
the following are figures
from prior sets.***

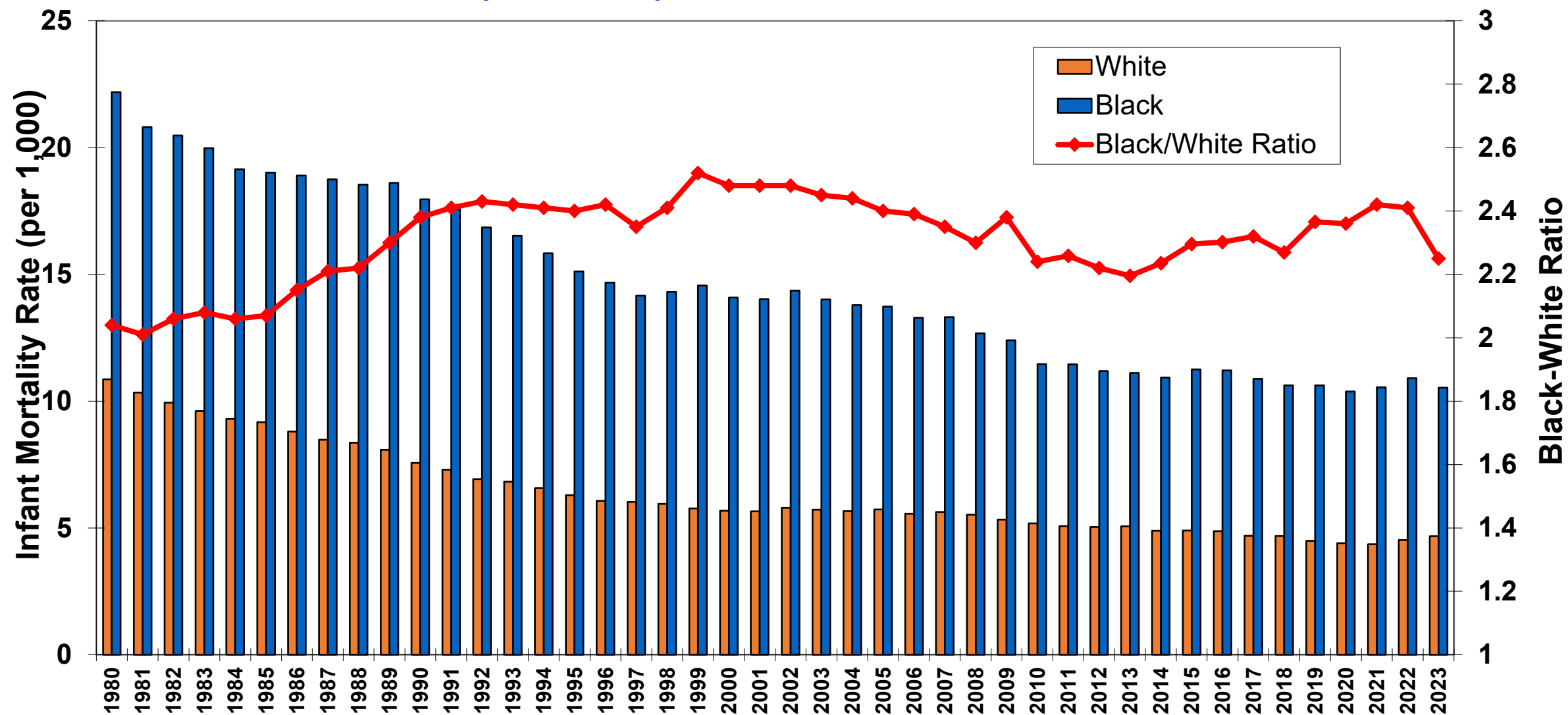
Infant Mortality US by Race, 1960-2023



Source: **1960-1988**: MacDorman MF, Rosenberg HM. Trends in infant mortality by cause of death and other characteristics, 1960-88. NCHS. Vital Health Stat 20(20).1993.**1989-2022**: CDC Wonder Infant Mortality

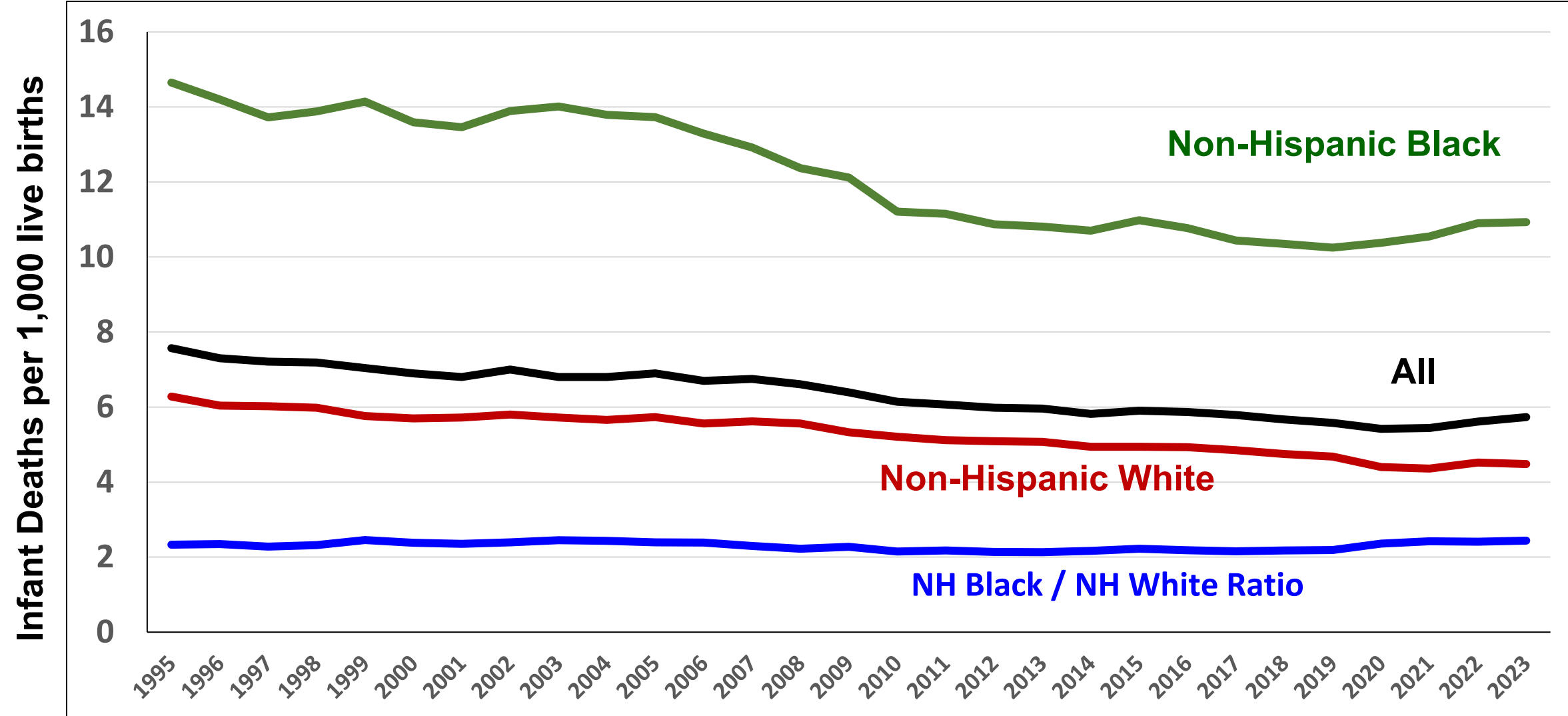


Infant Mortality US by Race, 1980-2023

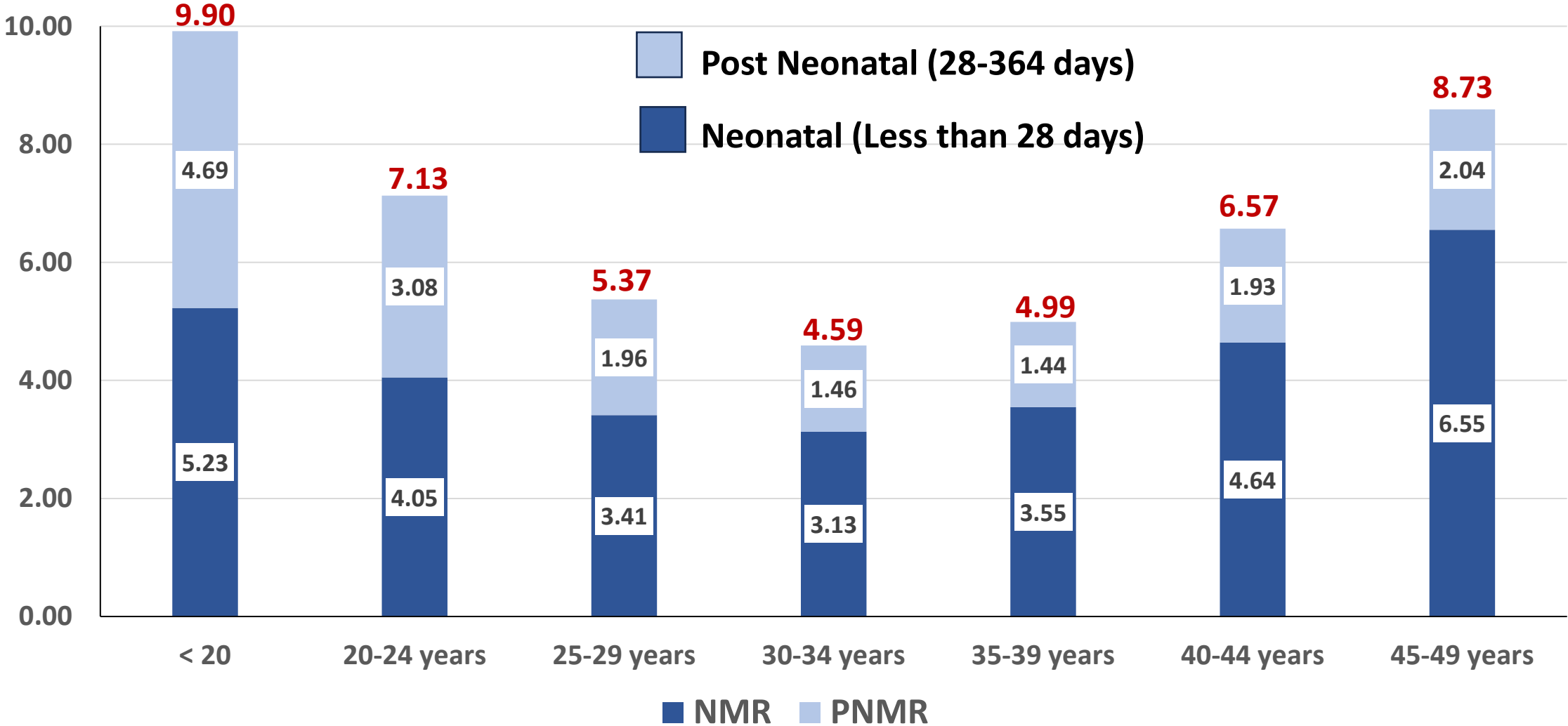


Source: NCHS. Maternal Mortality and Related Concepts. Vital & Health Statistics. Series 33; #3. & annual data reports. 1915-1960 data from NCHS. *Vital Statistics Rates In The United States 1940-1960*. NOTE: Shifts in measurement (e.g. not all states were part of registration system prior to 1933; infant race was based on race of the child until 1980 & then race of the mother post 1980) accounts for some of the variation over time. 2007-2020 CDC Wonder

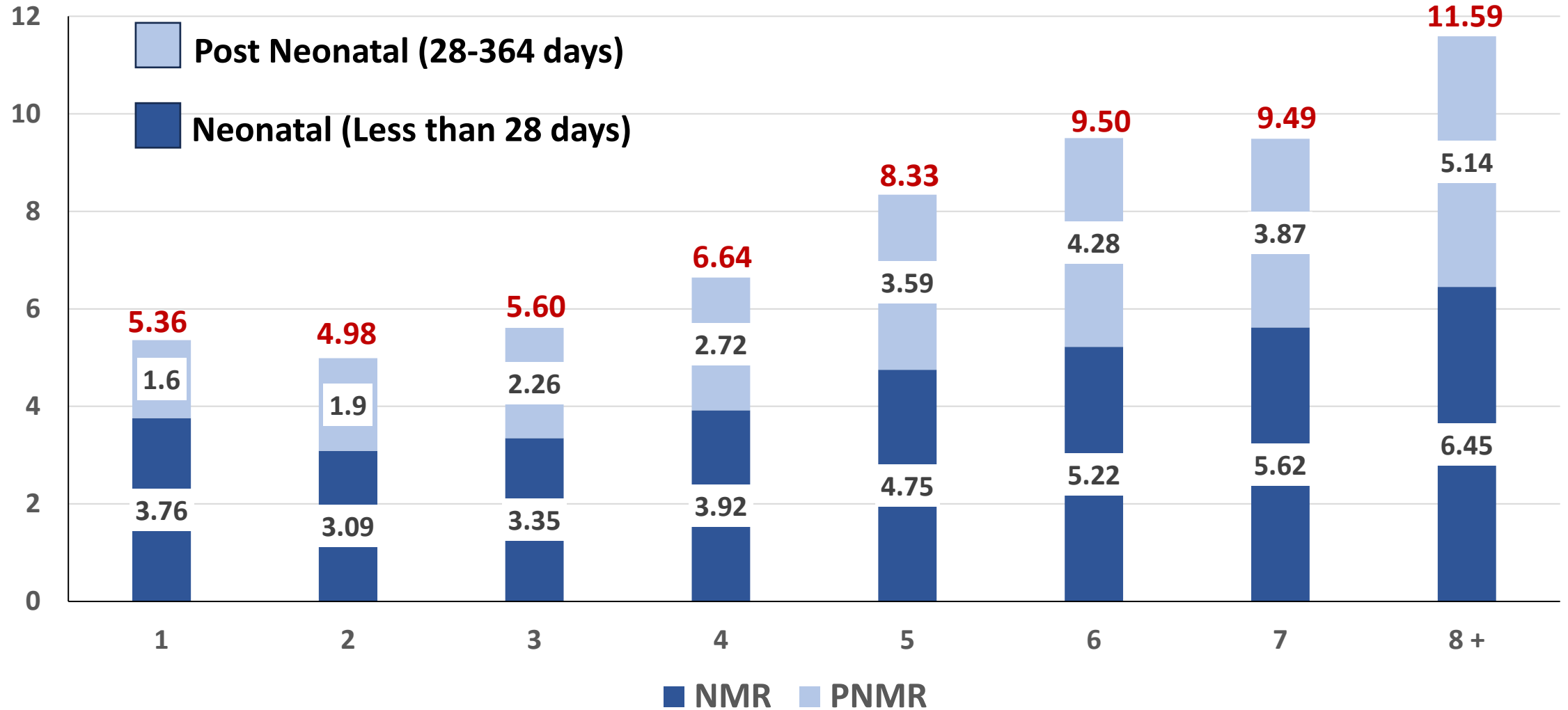
U.S. Infant Mortality (per 1,000 births), 2000-2023



2022 Neonatal & Post Neonatal Mortality by Maternal Age

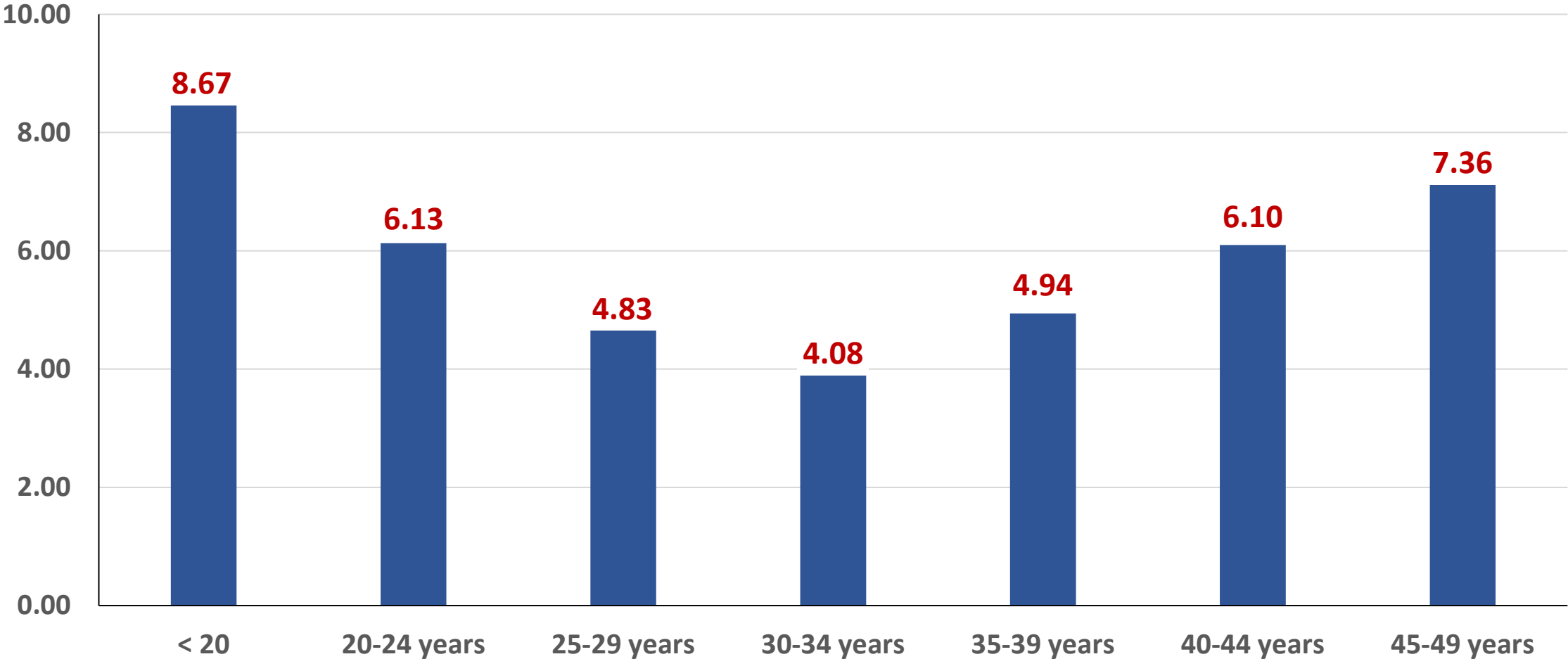


2022 Neonatal & Post Neonatal Mortality by Parity

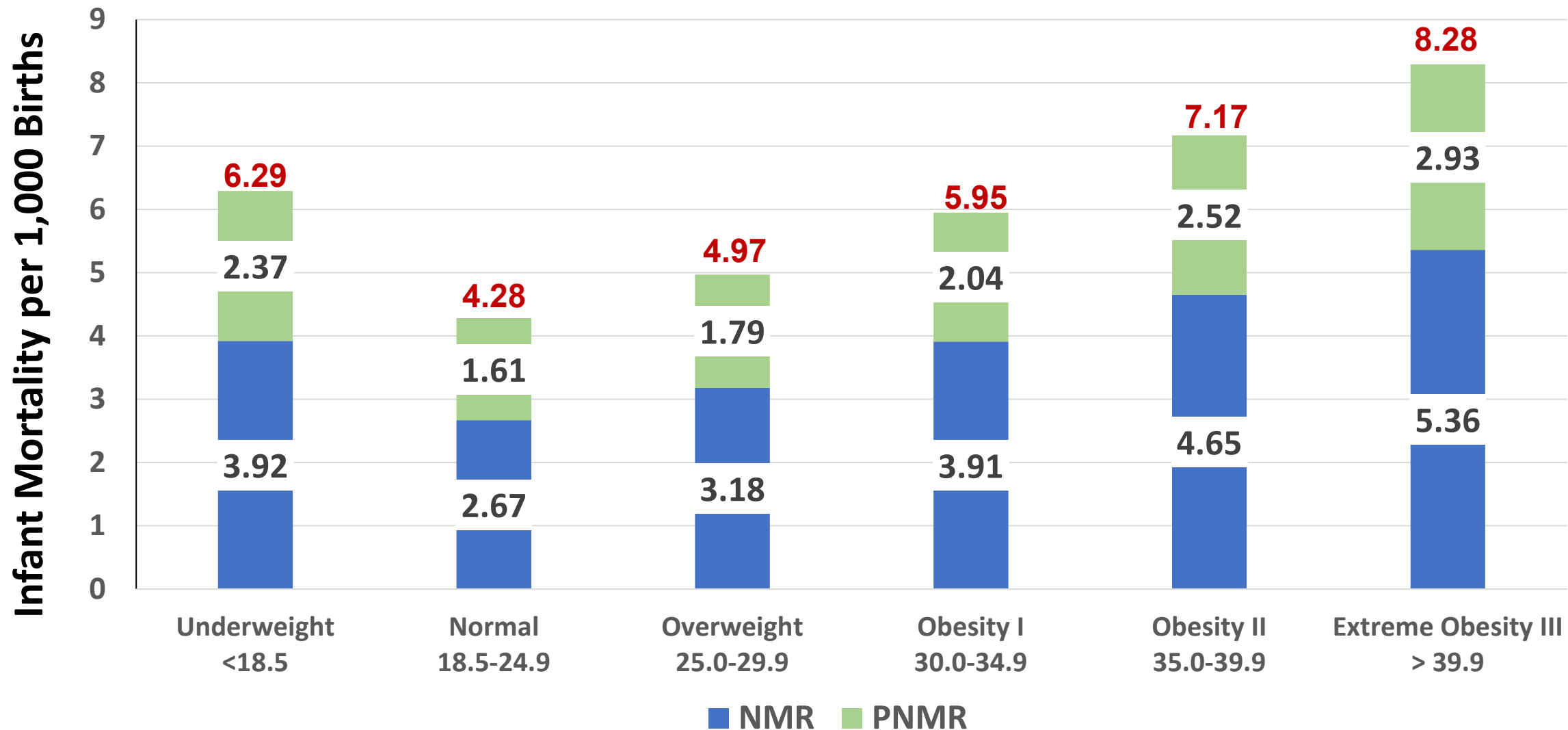




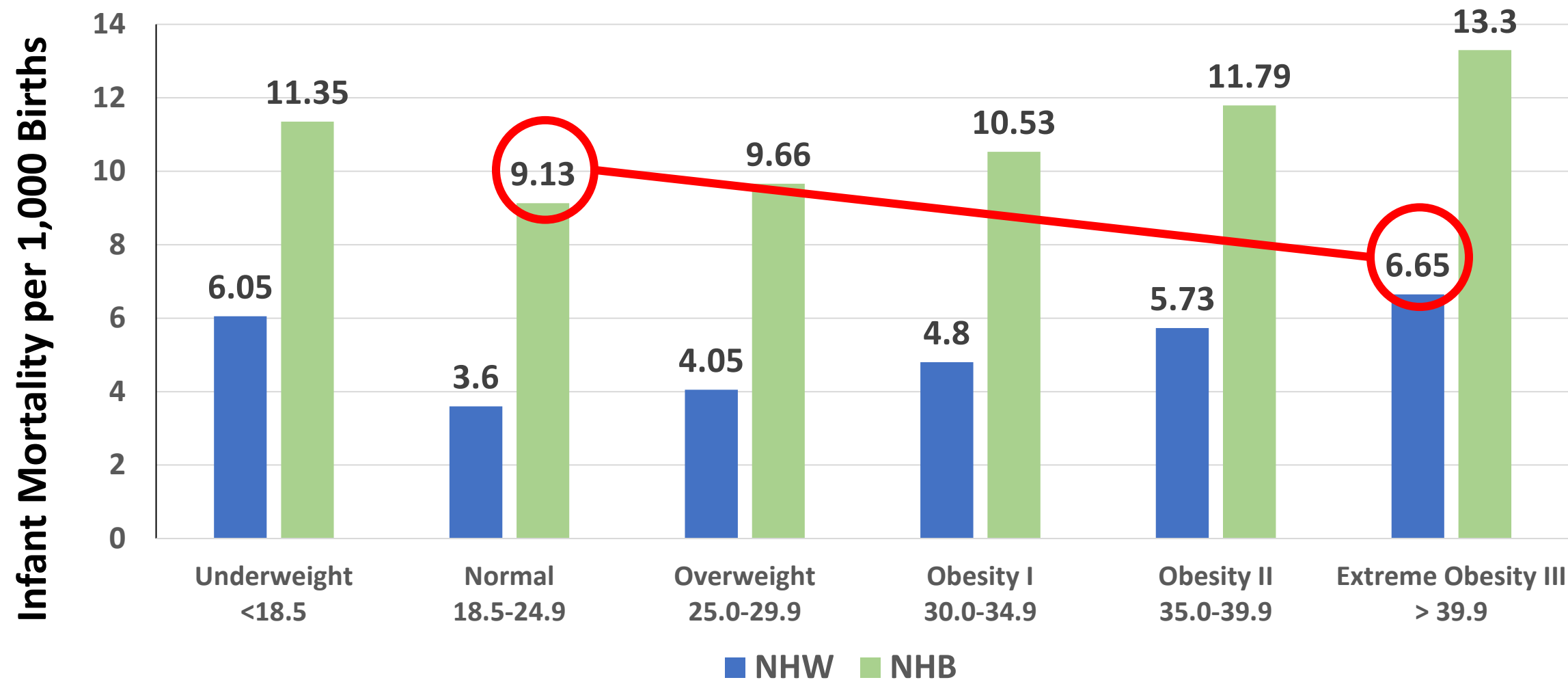
2022 Infant Mortality in First Births by Maternal Age



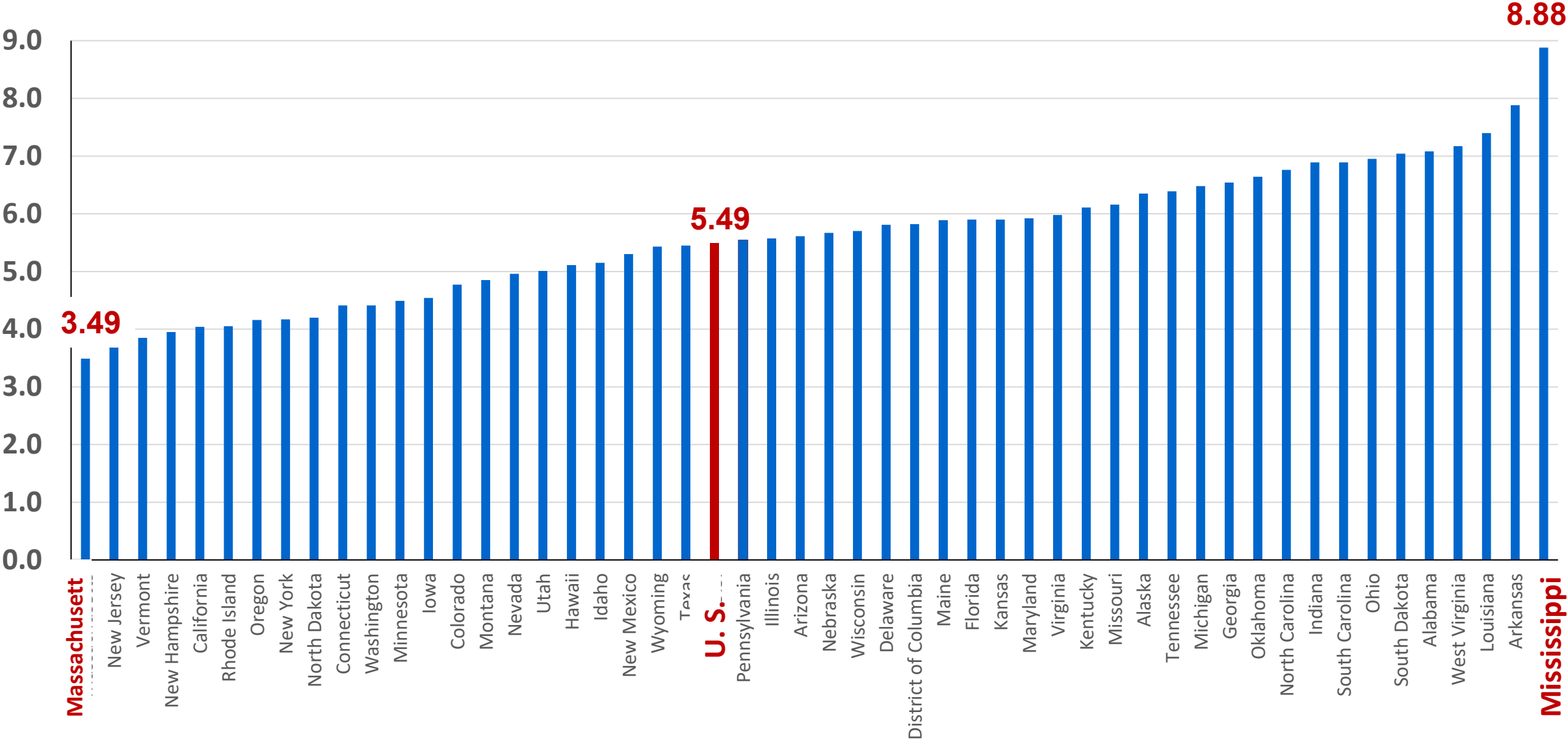
Pre-Pregnancy BMI & Infant Mortality, 2020-2022



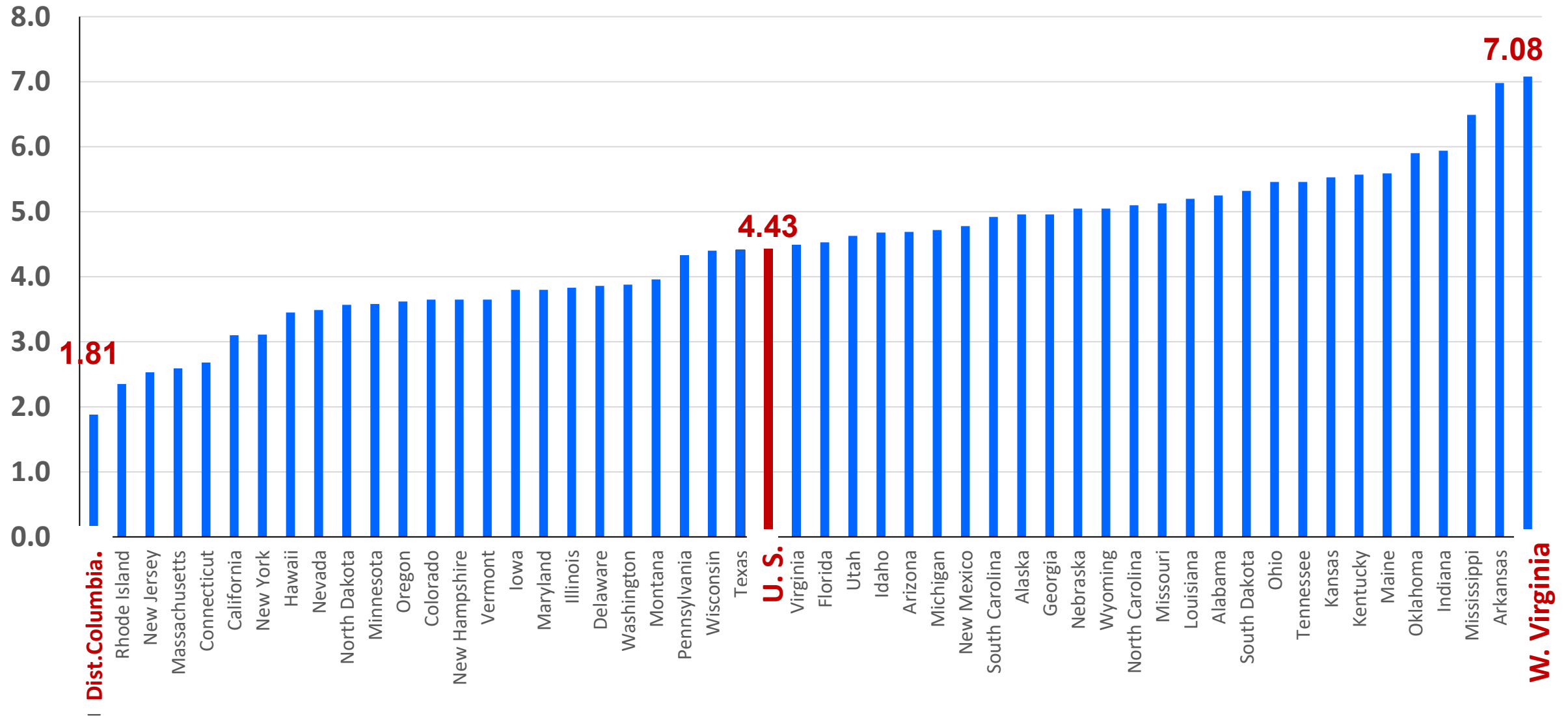
Pre-Pregnancy BMI & Infant Mortality by Race, 2021-2022



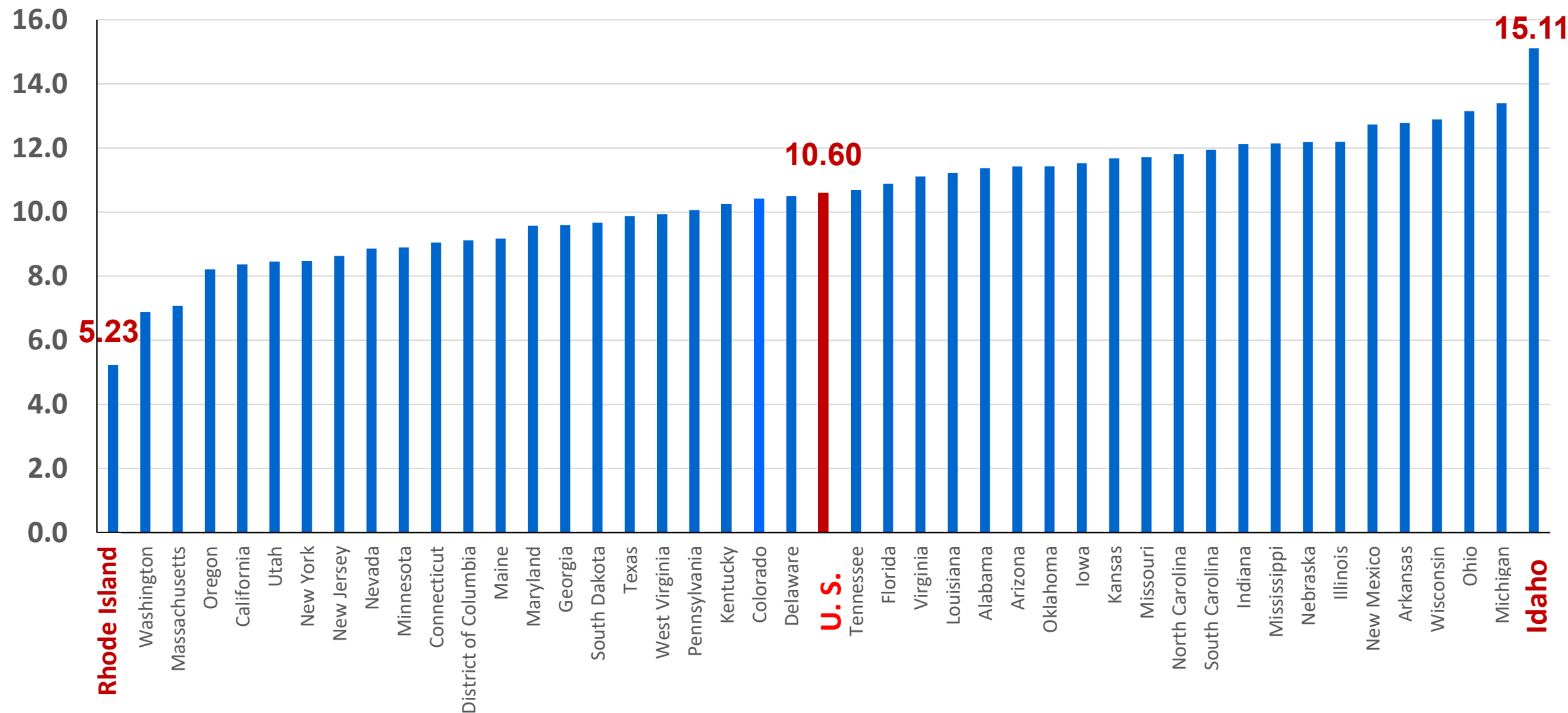
Infant Mortality (per 1,000 births) by State, 2020-22



Infant Mortality Non-Hispanic Whites (per 1,000) States, 2020-22

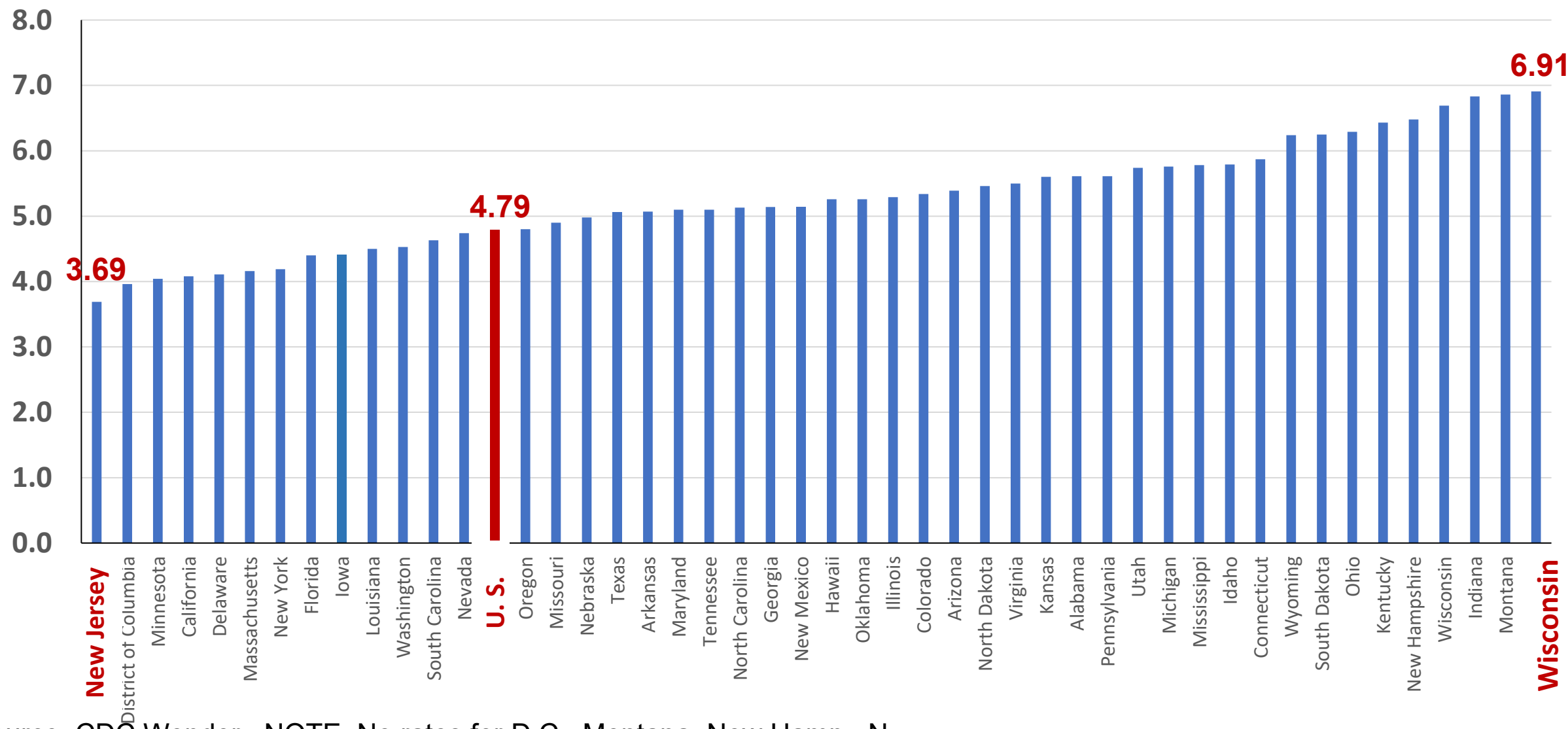


Infant Mortality (per 1,000) by State, 2020-22, non-Hispanic Blacks



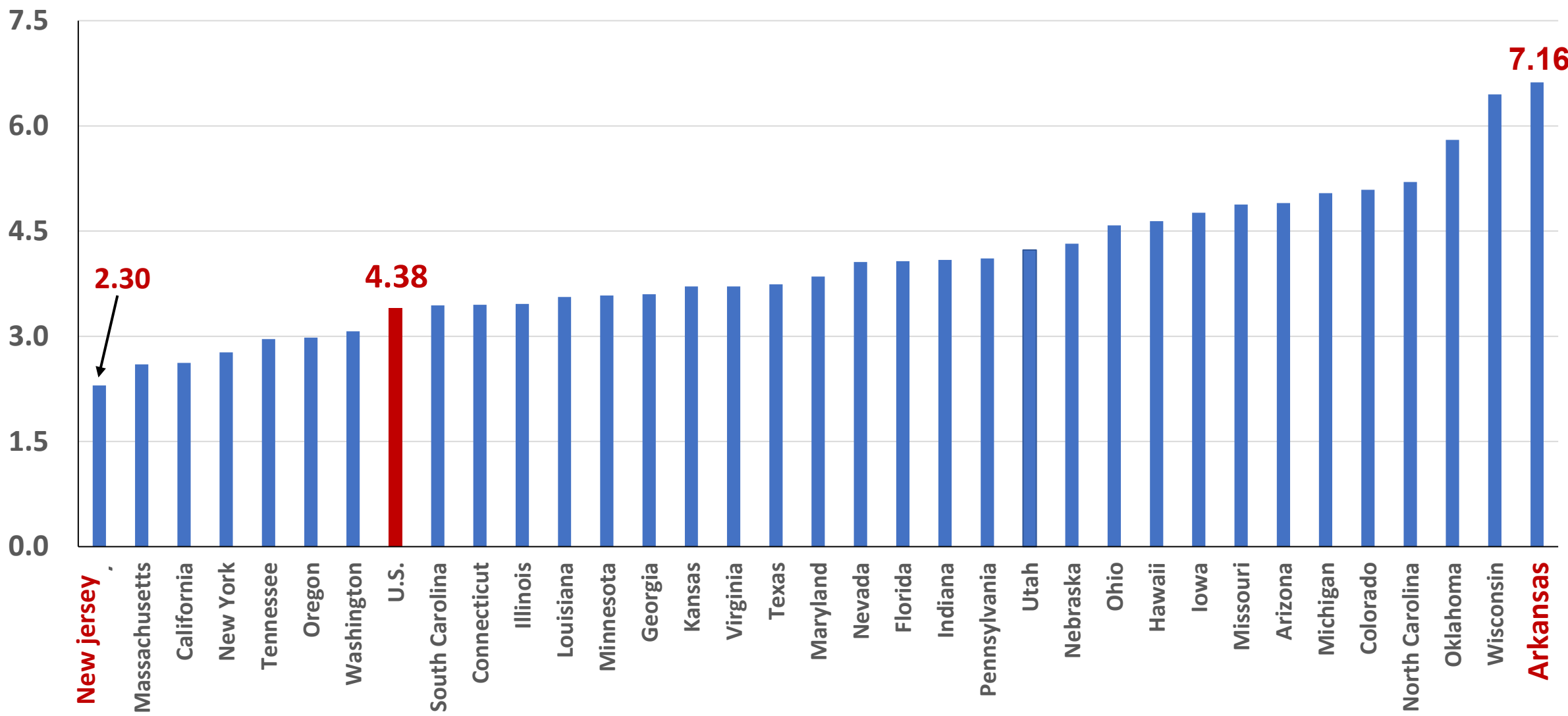
Source: CDC Wonder; NOTE: No rates for Idaho, New Mexico, New Hampshire, W. Virginia, S. Dakota, Maine, Utah, Rhode Island (< 20 infant deaths)

Infant Mortality (per 1,000 births) by State, 2020-22, Hispanics



Source: CDC Wonder; NOTE: No rates for D.C., Montana, New Hamp., N. Dakota, S. Dakota, Wyoming unreliable (<20 deaths)

Infant Mortality non-Hispanic Asians (per 1,000 births) by State, 2020-22



Pregnancy Related Maternal Deaths* and Infant Deaths, U.S. States, 2020-2022.

