



# Accelerate, Upstream, Together to Improve Infant and Maternal Health and Achieve Equity

## Advisory Committee on Infant and Maternal Mortality

*June 26, 2024*

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Maternal and Child Health Bureau (MCHB)

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Maternal and Child Health Bureau (MCHB)

**Vision: Healthy Communities, Healthy People**



# Objectives

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- Describe infant and maternal mortality trends and disparities
- Understand proximate and root cause contributors
- Highlight programs and partners to achieve improvement



# Paradigm for Improving Infant and Maternal Health

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## Accelerate

Hasten pace of change, innovate, & build evidence



## Upstream

Promote prevention and a life course approach



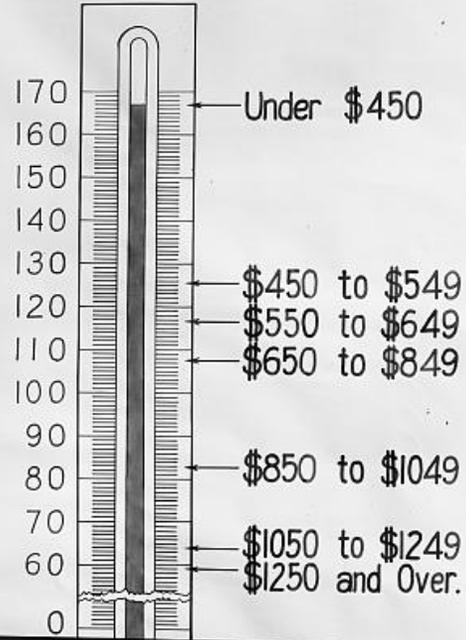
## Together

Collaborate, include voices of partners and people we serve

Learn more at <https://mchb.hrsa.gov>

## INFANT MORTALITY RATES ACCORDING TO FATHERS' EARNINGS

COMBINED FIGURES FROM SEVEN CITIES STUDIED BY U.S. CHILDREN'S BUREAU.



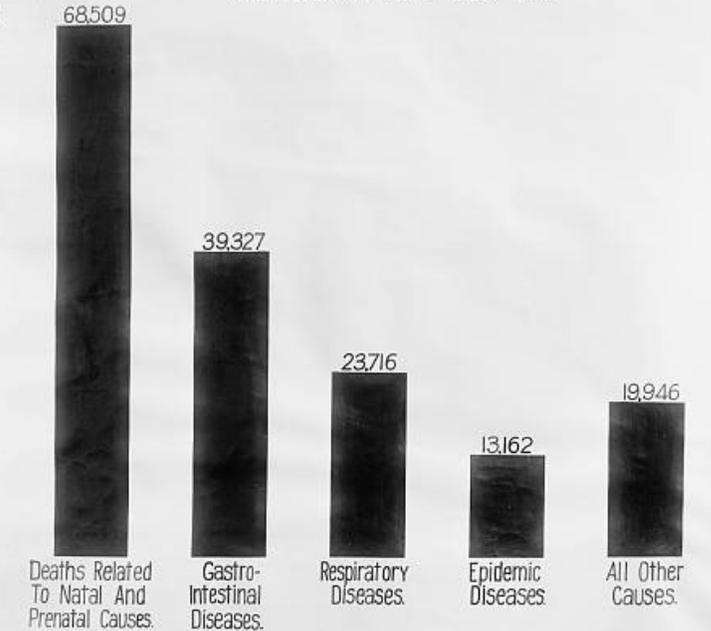
The baby death rate rises  
as the fathers' earnings fall.

*“Infant mortality is the most sensitive index we possess of social welfare”*

First Annual Report of the Chief,  
Children's Bureau, 1913

## DEATHS UNDER ONE YEAR OF AGE, GROUPED BY CAUSES

U.S. REGISTRATION AREA - 1916

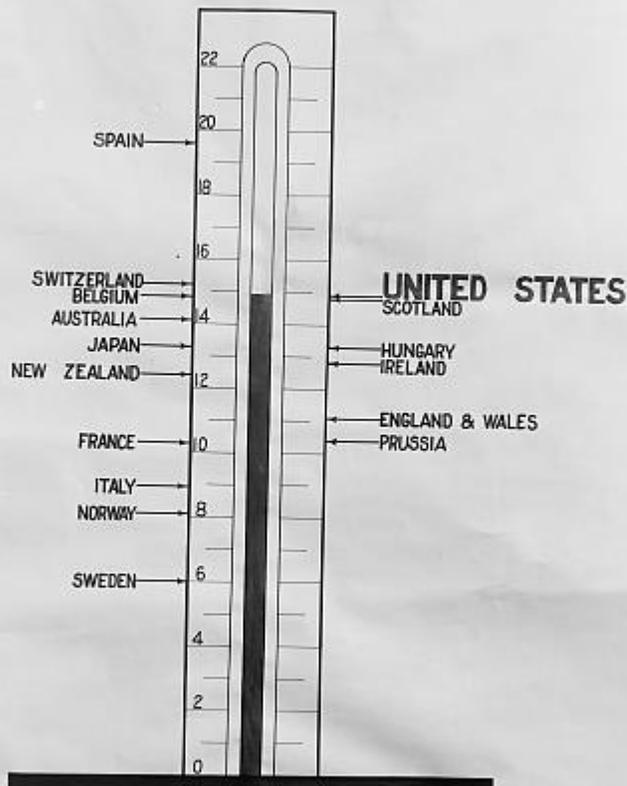


In 1916 more children died from conditions related to the health and care of the mother than from bad care, bad feeding, or infectious diseases.



# MATERNAL MORTALITY THERMOMETER

AVERAGE DEATH RATE PER 100,000 POPULATION FROM CONDITIONS RELATED TO PREGNANCY AND CHILDBIRTH, 1900-1910.



The United States lost over 16,000 women in 1916 from childbirth. We have a higher maternal death rate than any other of the principal countries except Spain or Switzerland.

## LETTER OF TRANSMITTAL.

U. S. DEPARTMENT OF LABOR,  
CHILDREN'S BUREAU,  
Washington, September 25, 1916.

SIR: I transmit herewith a report entitled "Maternal Mortality from all Conditions Connected with Childbirth in the United States and Certain Other Countries," by Dr. Grace L. Meigs, in charge of the hygiene division of this bureau. This report has been prepared because the bureau's studies of infant mortality in towns and rural districts reveal a connection between maternal and infant welfare so close that it becomes plain that infancy can not be protected without the protection of maternity.

In this study Dr. Meigs undertakes to do no more than to assemble and interpret figures already published by the United States Bureau of the Census and by the statistical authorities of various foreign countries, and to state accepted scientific views as to the proper care of maternity. She points out clearly that maternal mortality is in great measure preventable, that no available figures show a decrease in the United States in recent years, and that certain other countries now exhibit more favorable rates. This report reveals an unconscious neglect due to age-long ignorance and fatalism. It is earnestly believed that whenever the public realizes the facts it will awake to action and that adequate provision for maternal and infant welfare will become an integral part of all plans for public health protection.

The generous assistance of the United States Bureau of the Census in the preparation of this report is gratefully acknowledged.

Dr. Meigs desires that special mention be made of the assistance of Miss Emma Duke, head of the statistical division of the Children's Bureau, and of Miss Viola Paradise, research assistant in the division of hygiene.

Respectfully submitted,

JULIA C. LATHROP,  
*Chief of Bureau.*

HON. WILLIAM B. WILSON,  
*Secretary of Labor.*

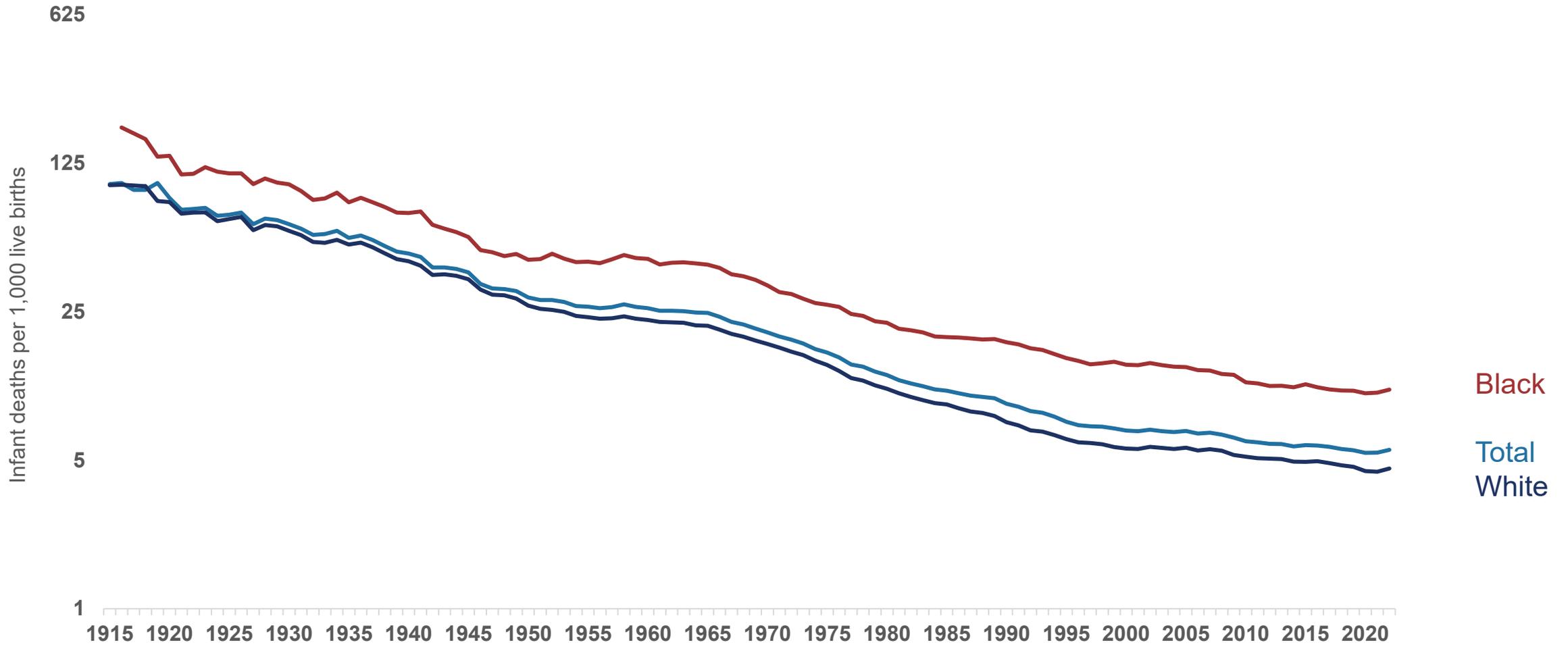
# Accelerate

Learn more at <https://mchb.hrsa.gov>

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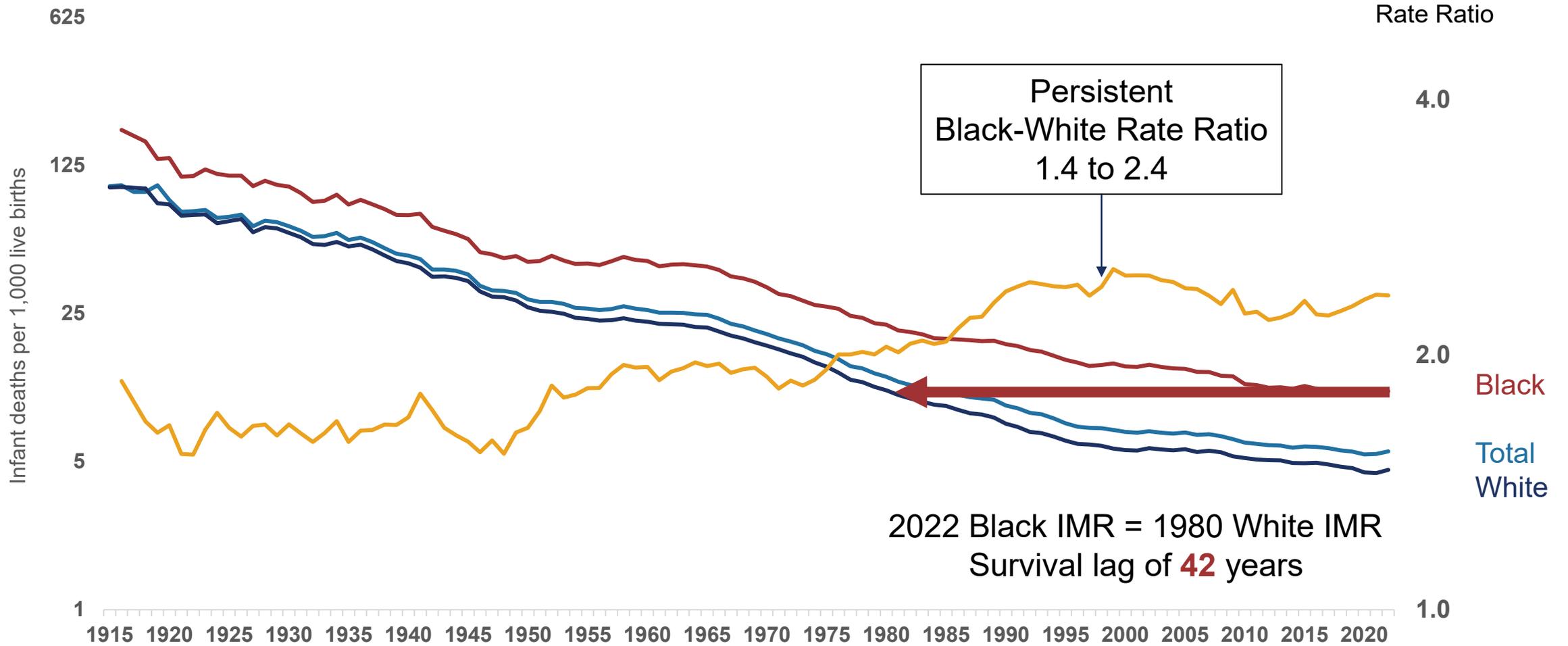
# Infant Mortality Trends and Disparities, 1915-2022



SOURCE: National Vital Statistics System; data from 1915-1932 are a subset from states with birth registration, which became 100% by 1933



# Infant Mortality Trends and Disparities, 1915-2022

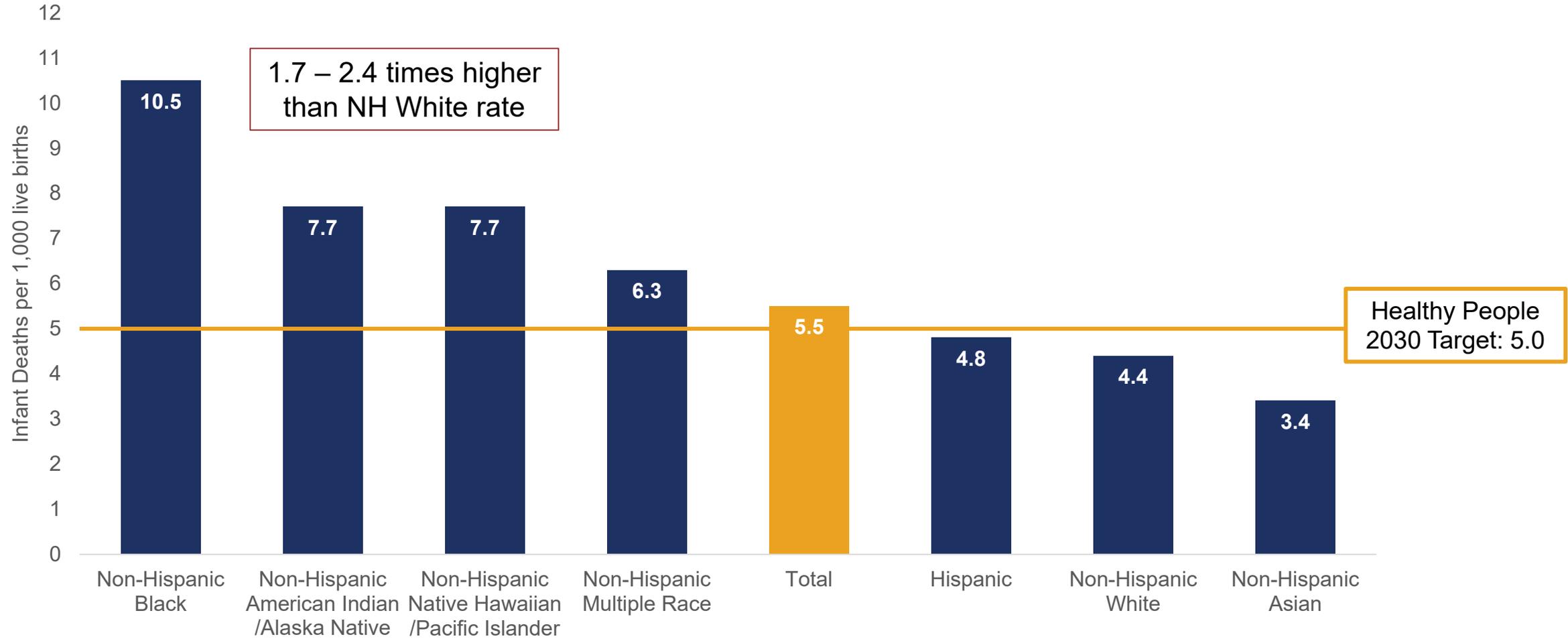


SOURCE: National Vital Statistics System; data from 1915-1932 are a subset from states with birth registration, which became 100% by 1933





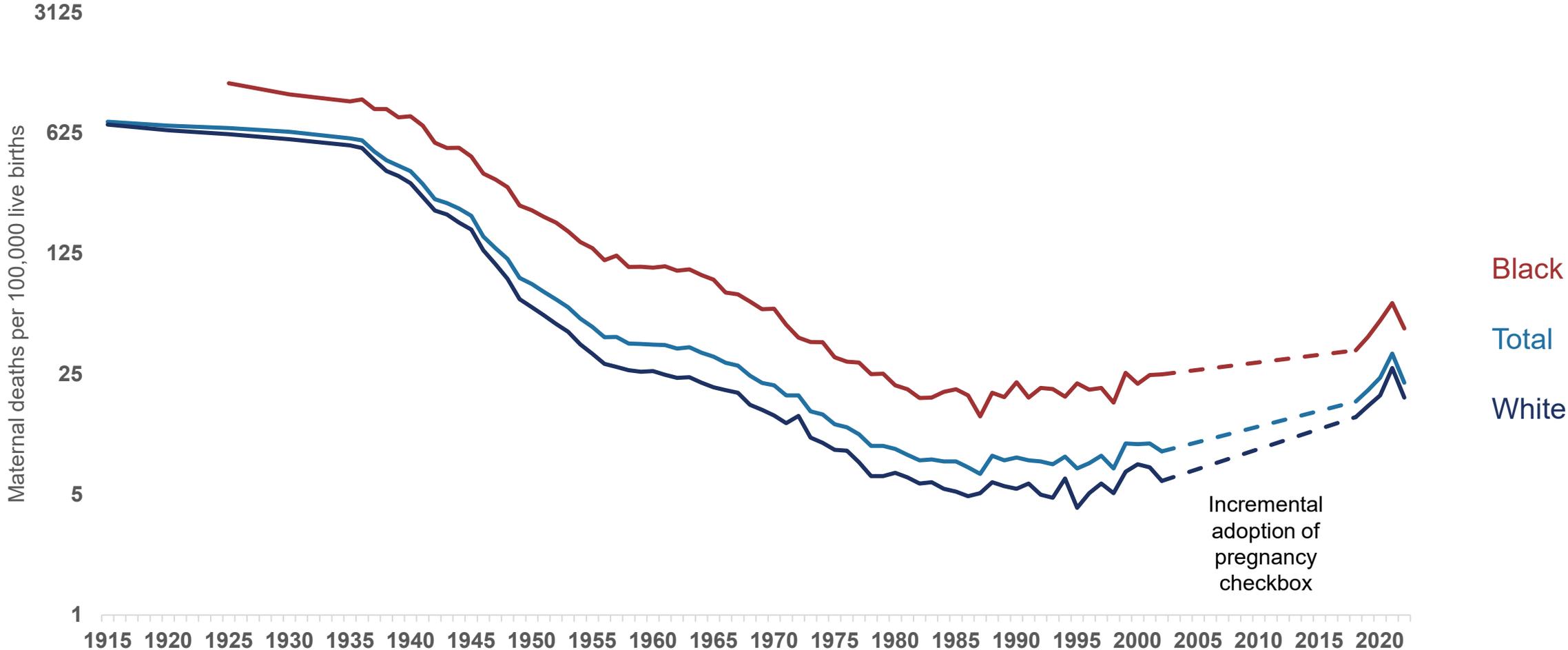
# Infant Mortality Disparities, 2019-2021



SOURCE: National Vital Statistics System, Linked Birth / Infant Death File



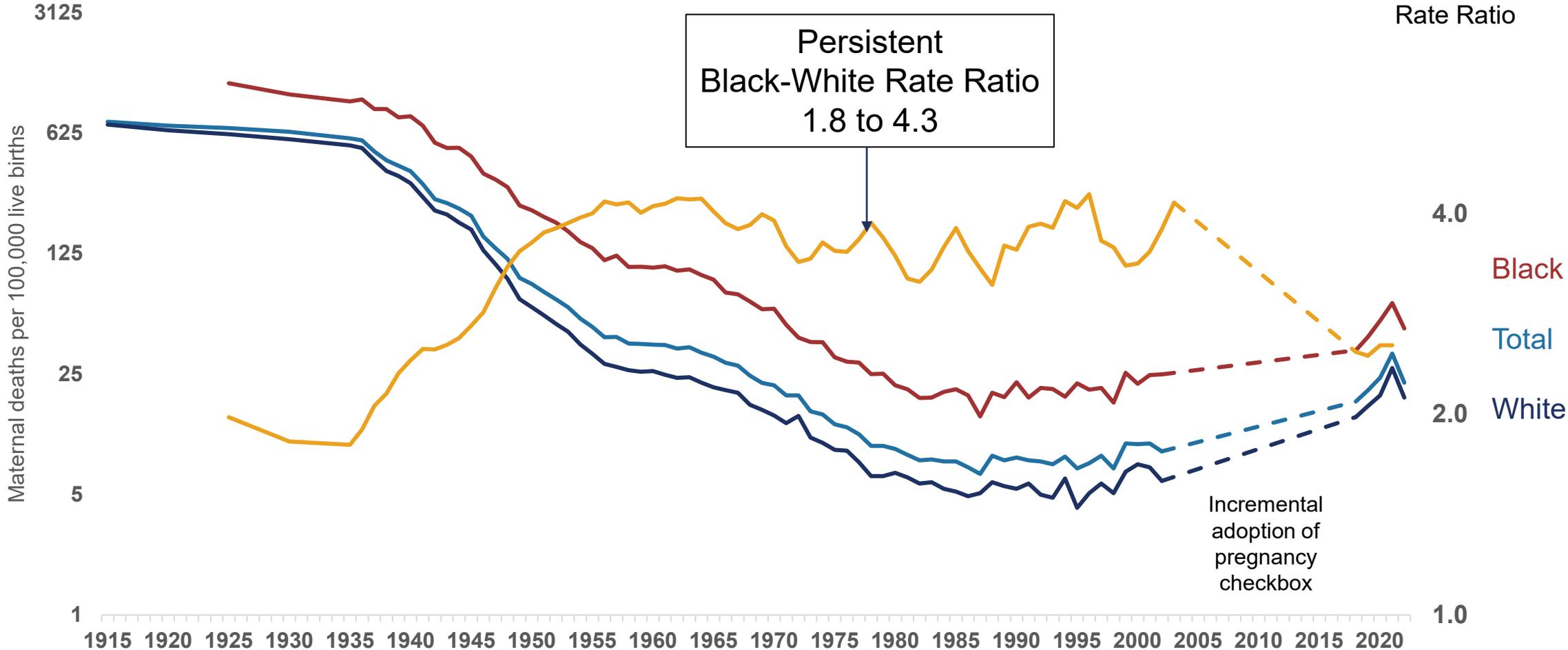
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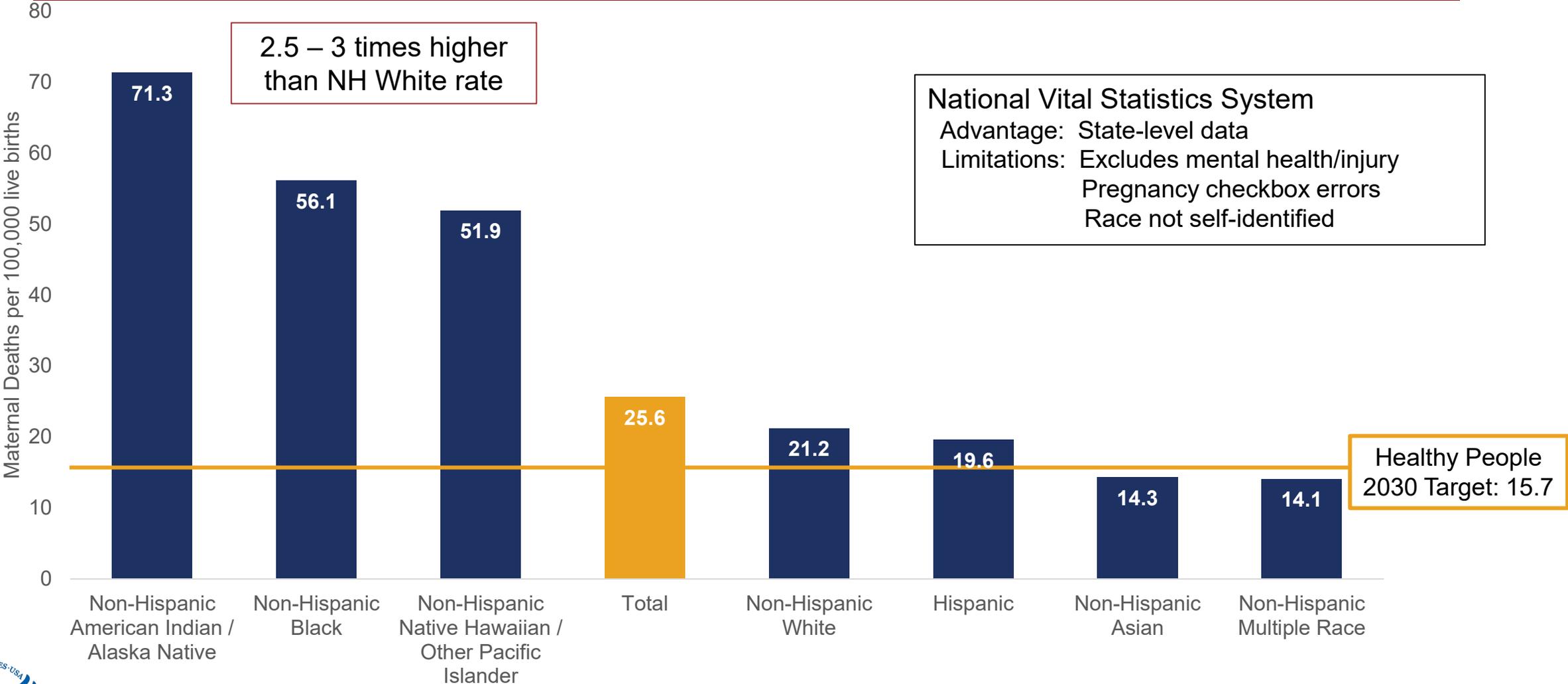
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# Maternal Mortality Disparities, 2019-2021



# Where Do We Go From Here?

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## Improve overall outcomes

*Ultimately, we want to prevent every infant and maternal death possible.*

&

## Reduce disparities

*Given the large and persistent racial disparities, we need to accelerate efforts to achieve equity now.*

# Infant Mortality

## What Would It Take to Reach HP Target and Achieve Equity?

We need to make policy and system changes that make it possible for an additional...

Infant Mortality Rate (per 1,000)	Reduction to Reach HP Target (Subtract 5.0)	Annual Infant Deaths Needed to Prevent (Multiply by Births/1,000)
5.5	0.5	1,768

**HP Target: 1,768** babies to reach their first birthday.  
That's **~5 babies/day**

Population	Infant Mortality Rate (per 1,000)	Reduction to Achieve Equity (Subtract 4.4)	Annual Infant Deaths Needed to Prevent (Multiply by Births/1,000)
NH Black	10.5	6.1	3,244
NH AI/AN	7.7	3.3	89
NH NHPI	7.7	3.3	31

**Equity: 3,364** babies to reach their first birthday.  
That's **~10 babies/day**



# Maternal Mortality

## What Would It Take Reach HP Target and Achieve Equity?

We need to make policy and system changes that make it possible for an additional...

Maternal Mortality Rate (per 100,000)	Reduction to Reach HP Target (Subtract 15.7)	Annual Maternal Deaths Needed to Prevent (Multiply by Births/100,000)
25.6	9.9	363

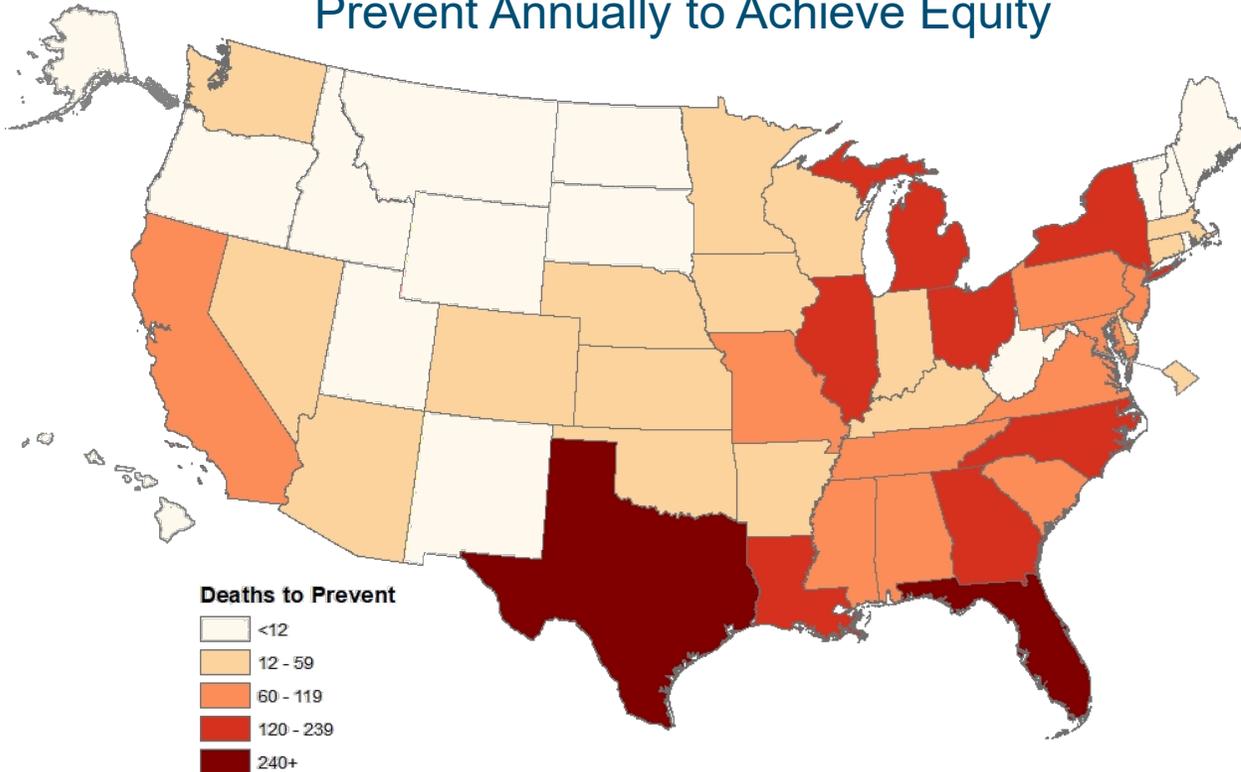
**HP Target: 363** moms to survive every year.  
That's **~1 mom/day**

Population	Maternal Mortality Rate (per 100,000)	Reduction to Achieve Equity (Subtract 21.2)	Annual Maternal Deaths Needed to Prevent (Multiply by Births/100,000)
NH Black	56.1	34.9	186
NH AI/AN	71.3	50.0	14
NH NHPI	51.9	30.6	3

**Equity: 203** moms to survive every year.  
That's **<1 mom/day**

# What Can States Do to Achieve Infant Health Equity?

Number of Black Infant Deaths to Prevent Annually to Achieve Equity



To Achieve Equity		
Black Infant Deaths to Prevent Annually	# States	% of Total Black Infant Deaths to Prevent
<12	18	1%
12-59	17	14%
60-119	10	30%
120-297	9	54%

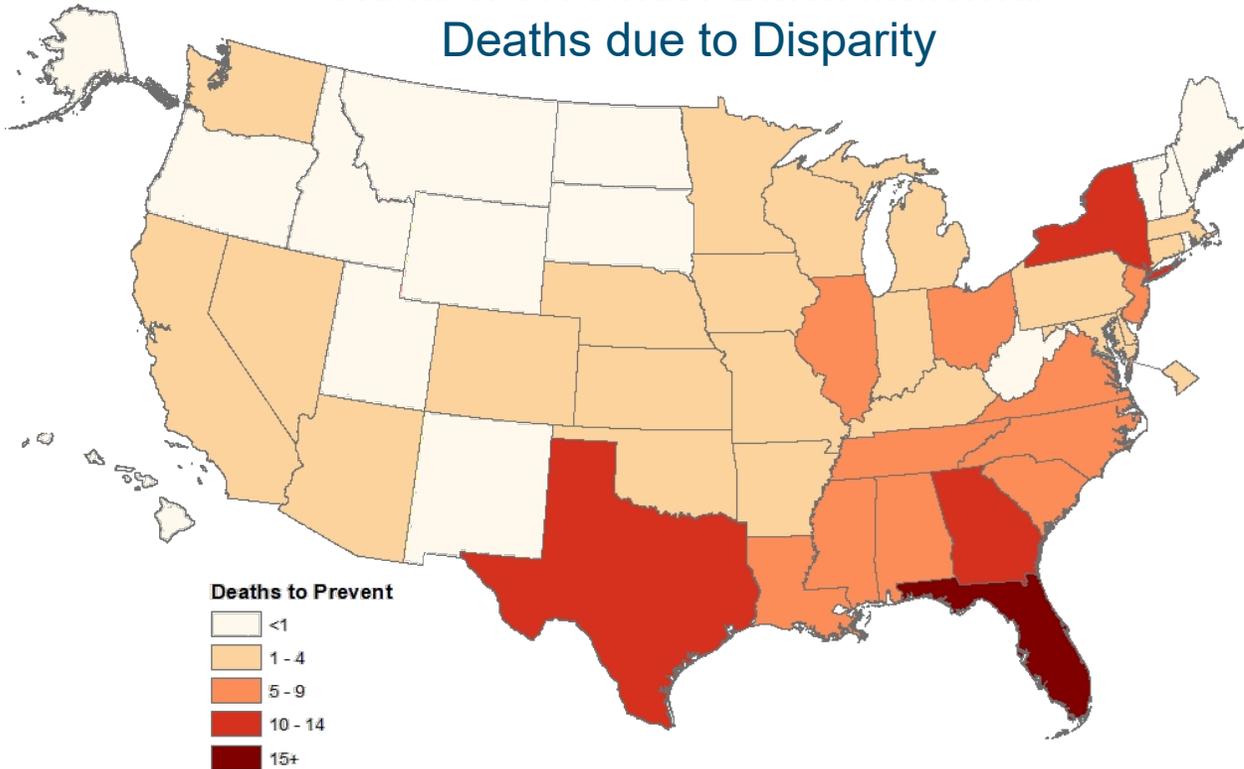
SOURCE: National Vital Statistics System (2019-2021) with spatial smoothing to enable estimation of rates based on small numbers

Learn more at <https://mchb.hrsa.gov>



# What Can States Do to Achieve Maternal Health Equity?

Number of Annual Black Maternal Deaths due to Disparity



To Achieve Equity		
Black Maternal Deaths to Prevent Annually	# States	% of Total Black Maternal Deaths to Prevent
1-4	22	25%
5-9	10	39%
10-15	4	34%

SOURCE: National Vital Statistics System (2018-2021) with spatial smoothing to enable estimation of rates based on small numbers

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# Upstream

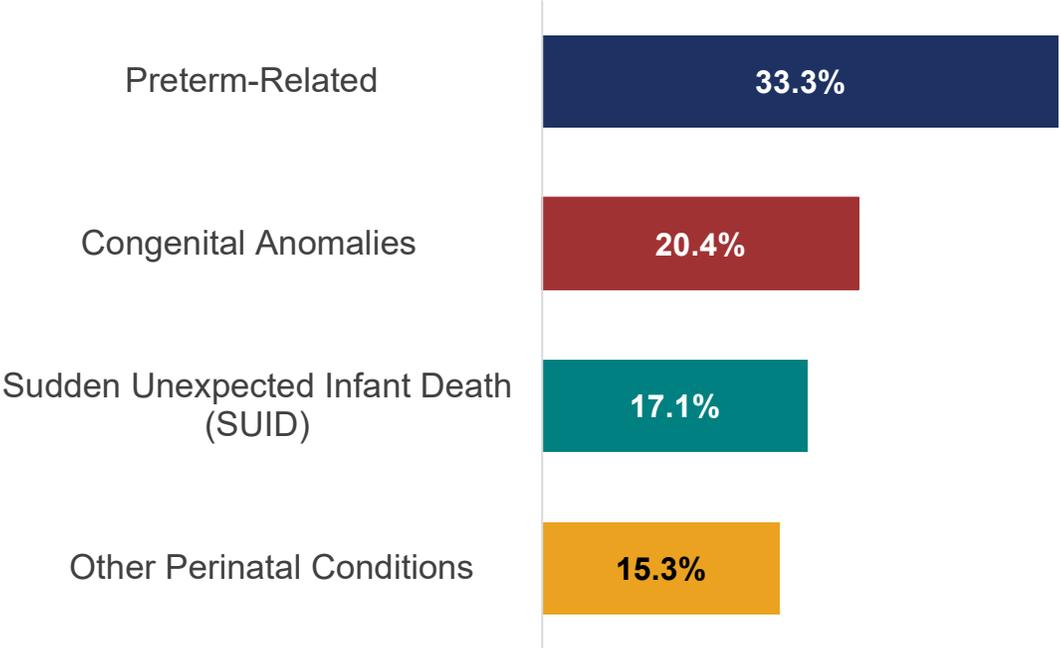
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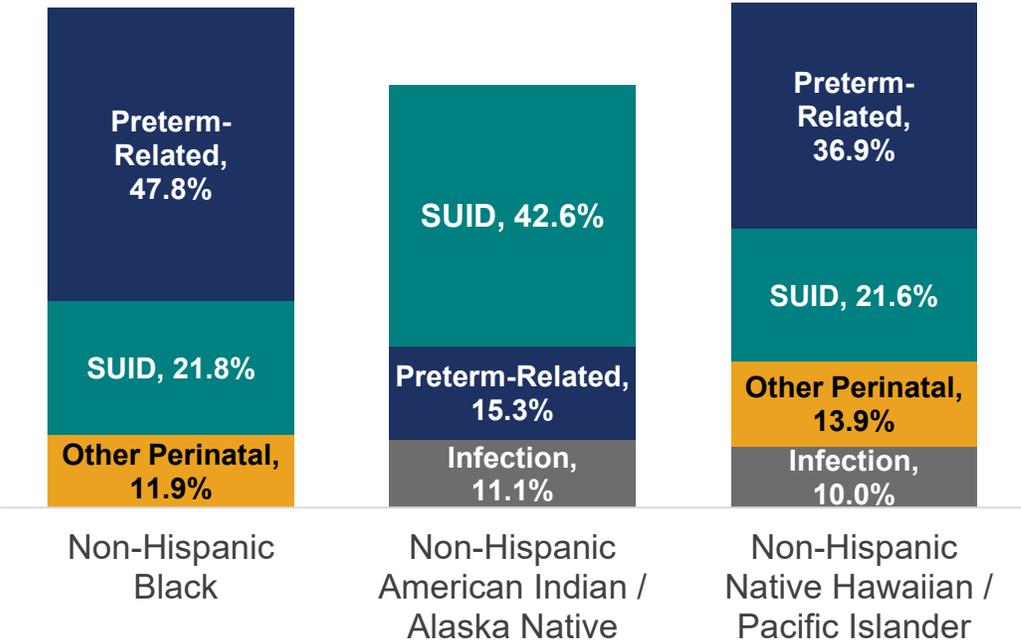


# Infant Mortality Proximate Causes Overall and of Disparities

Overall Summary Cause



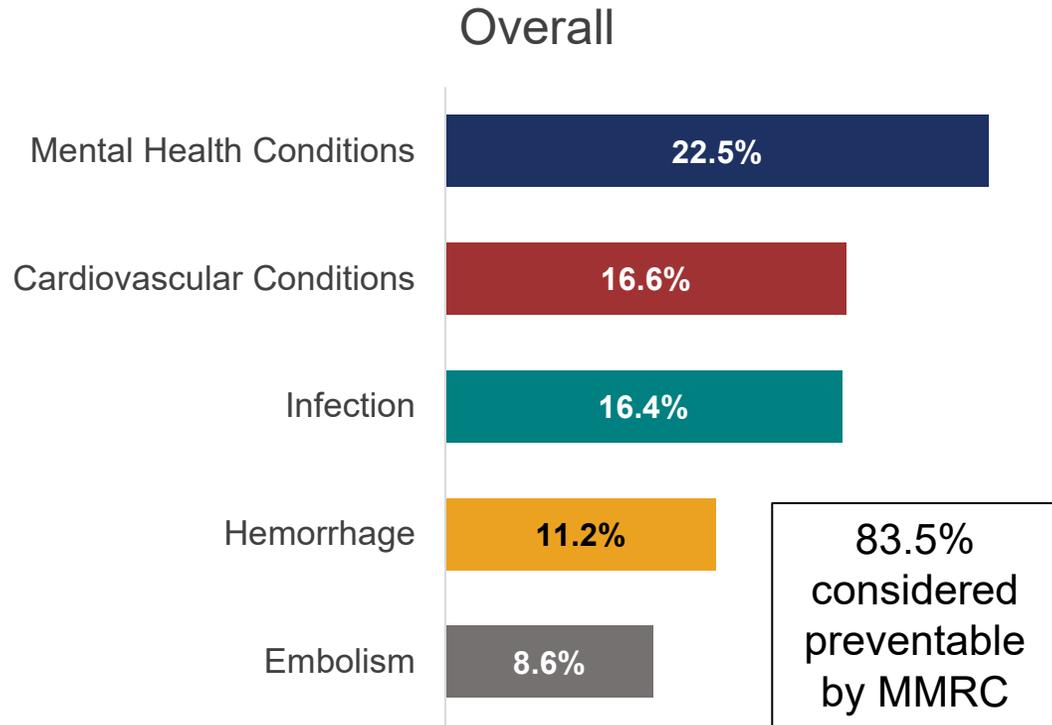
Disparity Components (≥10%) vs. Non-Hispanic White



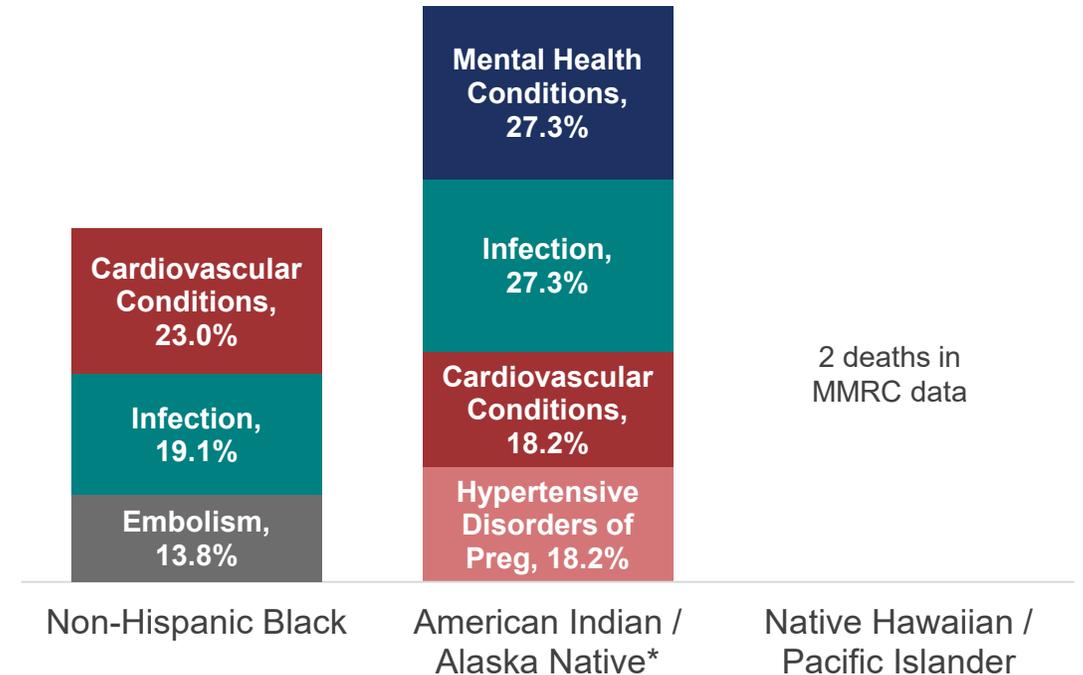
Source: Linked Birth / Infant Death File 2019-2021  
 Preterm-related CDC definition of underlying causes where 75% or more of total infant deaths attributed to that cause were deaths of infants born preterm (<37 weeks of gestation) and the cause of death was a direct consequence of preterm birth based on a clinical evaluation and review of the literature  
 SUID includes SIDS, unknown cause, and accidental suffocation and strangulation in bed



# Pregnancy-Related Mortality Proximate Causes Overall and by Race/Ethnicity



## Top Causes for Black and Indigenous Peoples (≥10%)



Source: Maternal Mortality Review Committees in 38 States, 2020

Mental health conditions include deaths of suicide, overdose/poisoning related to substance use disorder, and other deaths determined by the MMRC to be related to a mental health condition

Cardiovascular conditions include deaths of coronary artery disease, pulmonary hypertension, acquired and congenital valvular heart disease, vascular aneurysm, hypertensive cardiovascular disease, Marfan Syndrome, conduction defects, vascular malformations, other cardiovascular disease, and cardiomyopathy

Infection includes COVID-19

\* Interpret with caution; n≤3 for all causes



# Structural and Social Determinants of Health

**STRUCTURAL DETERMINANTS**

- GOVERNING PROCESSES
- ECONOMIC AND SOCIAL POLICIES
- RACISM, DISCRIMINATION, BIAS, AND SEGREGATION



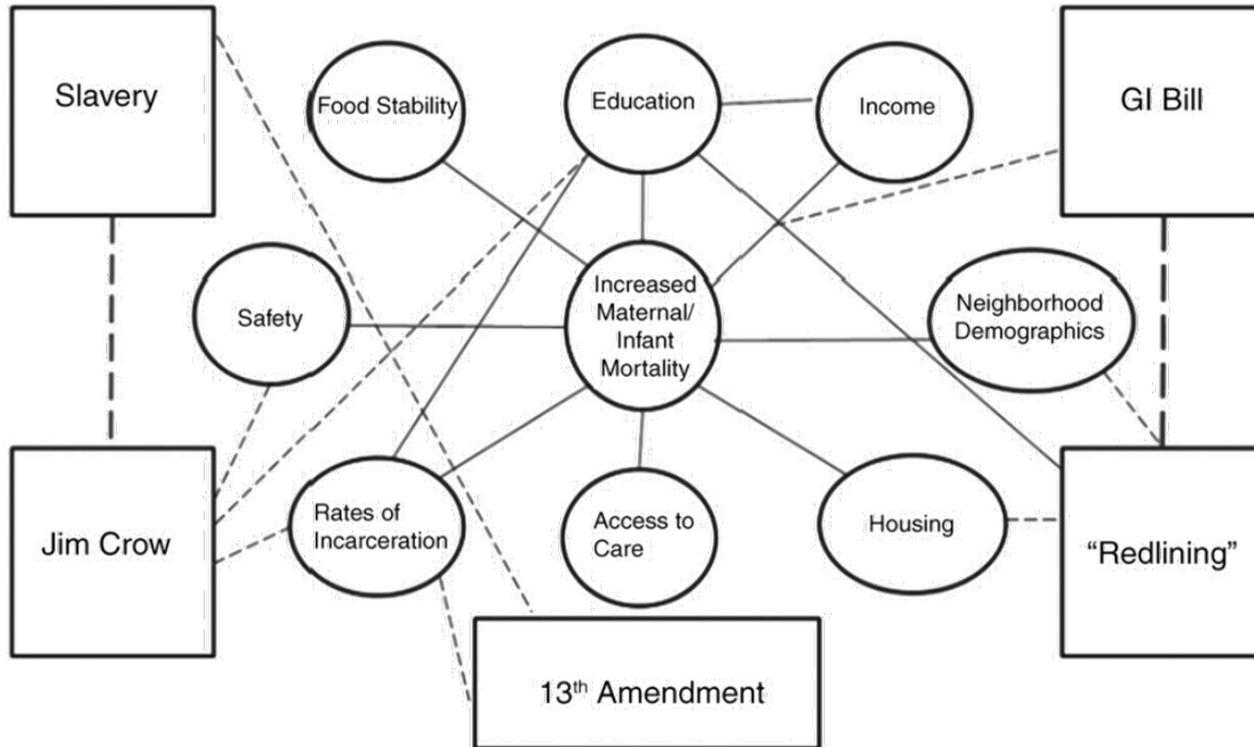
**EXPERIENCE OF SOCIAL DETERMINANTS**

- INCOME/POVERTY/WEALTH
- EDUCATION
- EMPLOYMENT
- TRANSPORTATION
- HOUSING
- FOOD SECURITY
- EXPOSURE TO TOXINS
- HEALTH INSURANCE
- DISTANCE TO SERVICES



# Frameworks and Drivers of Perinatal Inequity

## WEB OF CAUSATION STRUCTURAL and SOCIAL DETERMINANTS: IMPACT ON HEALTH



Crear-Perry J, Correa-de-Araujo R, Lewis Johnson T, McLemore MR, Neilson E, Wallace M. Social and Structural Determinants of Health Inequities in Maternal Health. *J Womens Health*. 2021 Feb;30(2):230-235.

Zephyrin LC. Changing the Narrative and Accelerating Action to Reduce Racial Inequities in Maternal Mortality. *Am J Public Health*. 2021 Sep;111(9):1575-1577.

### 1. WHY are Black people experiencing higher rates of maternal mortality?

- Eclampsia/preeclampsia (PEC)
- Postpartum cardiomyopathy (CV)
- Obstetric (OB) embolism

### 2. WHY do Black pregnant and birthing people have higher death rates of from PEC, CV, OB embolism (despite being 60%–70% preventable)?

- Increased co-morbidities and stress
- Delays in reaching and accessing care and diagnosis
- More severe symptoms and more advanced disease

### 3. WHY do Black pregnant and birthing people not receive risk appropriate care based on standards?

- Less access to care overall (including primary care)
- Concentrated use of hospitals with poorer quality indicators
- Not listened to by providers

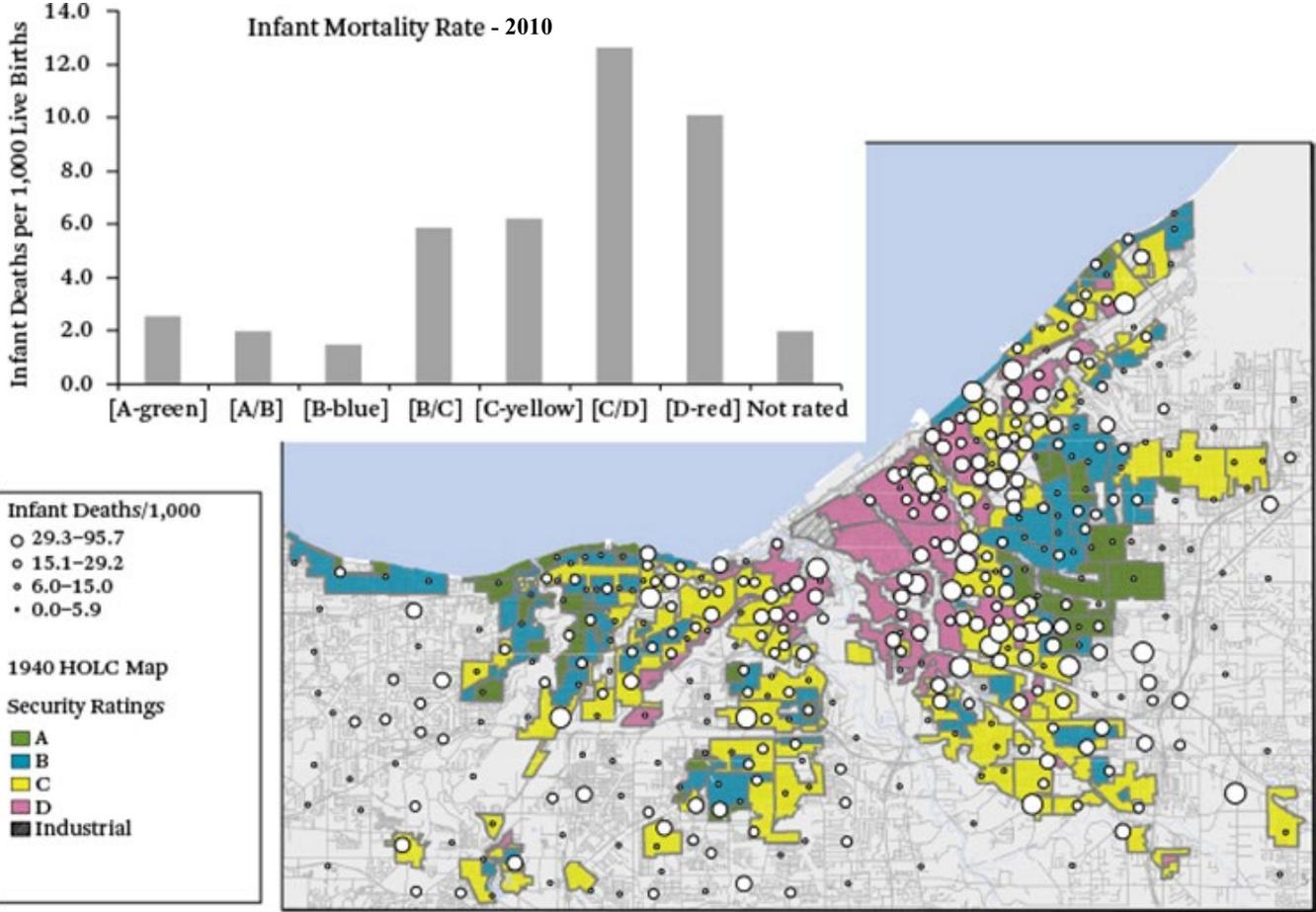
### 4. WHY do these factors (decreased access, etc.) disproportionately affect Black birthing people?

- Structural/internalized racism - intersectionality
- Residential segregation - access to poorer quality hospitals, insurance coverage disparities
- Implicit and explicit bias of providers
- Disproportionate impact of social determinants of health (SDOH)

### 5. Why?

- Legacy of systemic racism, hierarchy of human value entrenched in policies and practices affecting health and health care

# Redlining and Infant Mortality – Cleveland Example

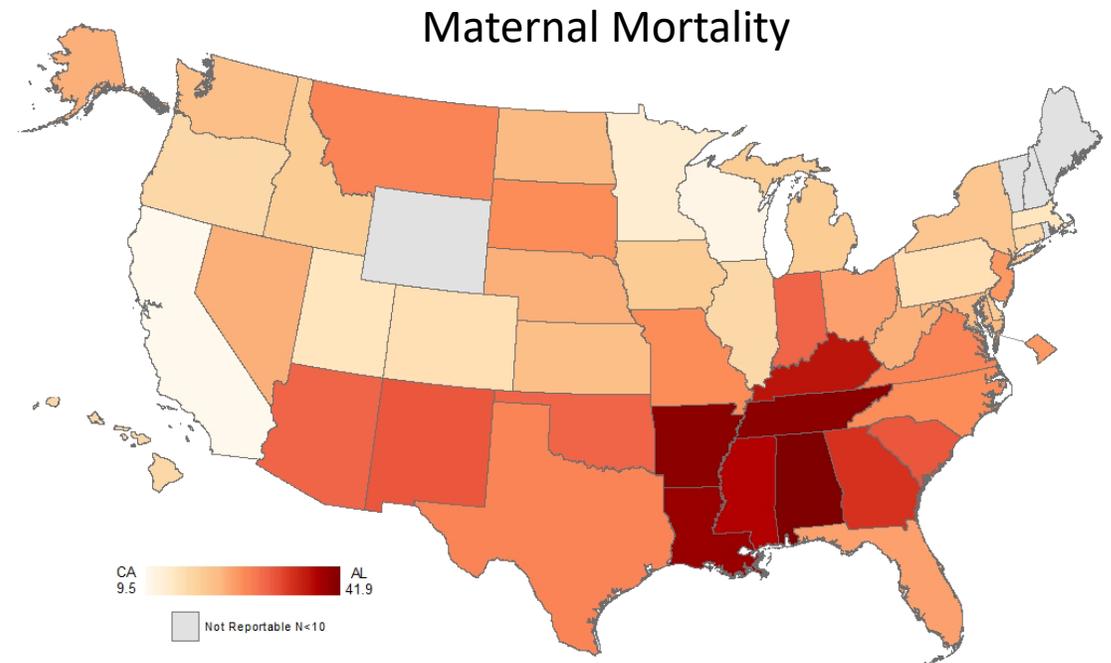
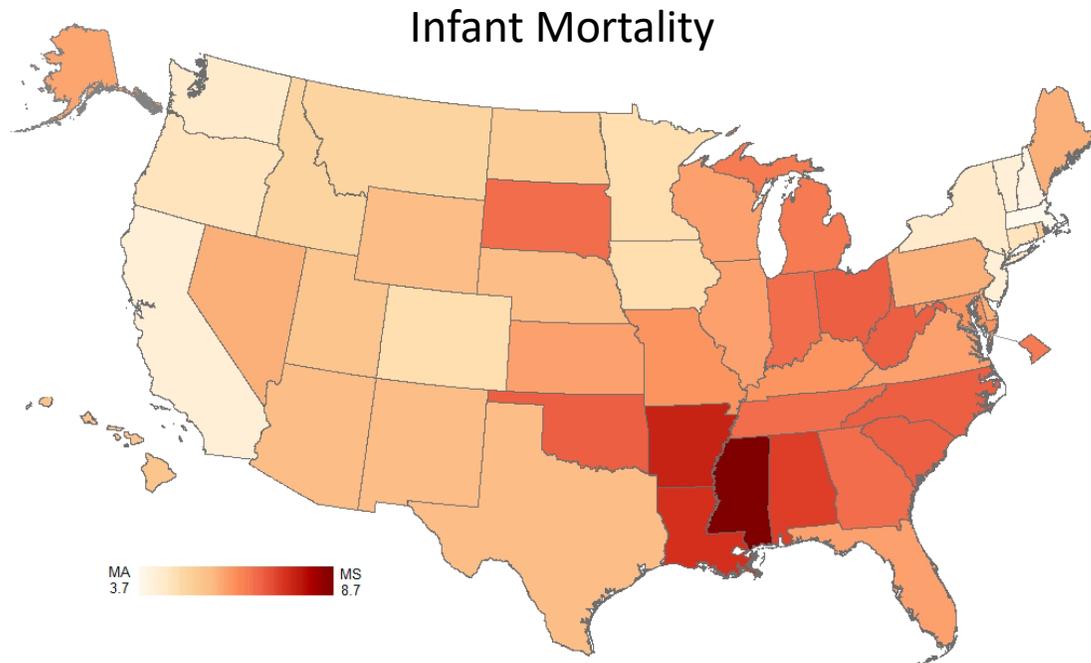


SOURCE: Reece, Jason. “Confronting the Legacy of ‘Separate but Equal’: Can the History of Race, Real Estate, and Discrimination Engage and Inform Contemporary Policy?” *RSF: Russell Sage Foundation journal of the social sciences* 7.1 (2021): 110–133.

Learn more at <https://mchb.hrsa.gov>



# State Variation in Infant and Maternal Mortality



Correlation of 0.70

Source: National Vital Statistics System, 2017-2021

Learn more at <https://mchb.hrsa.gov>

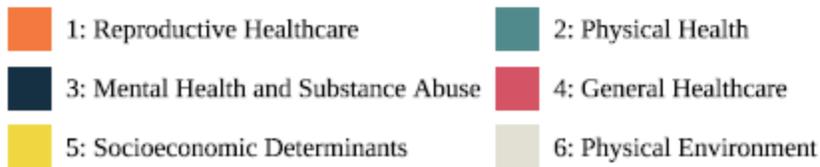
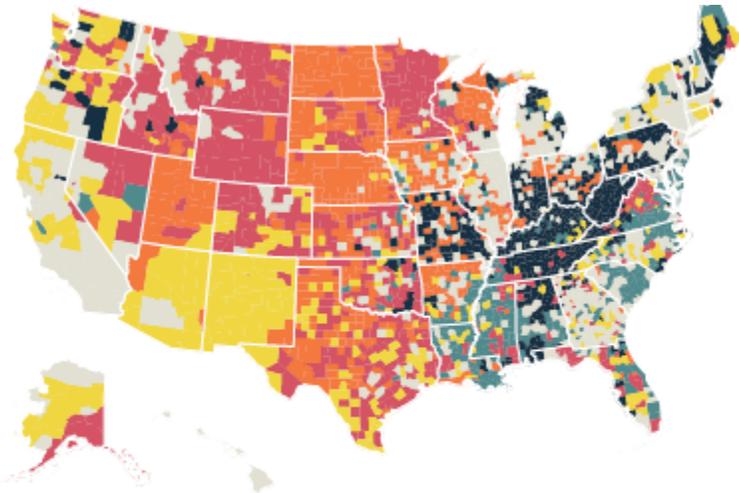




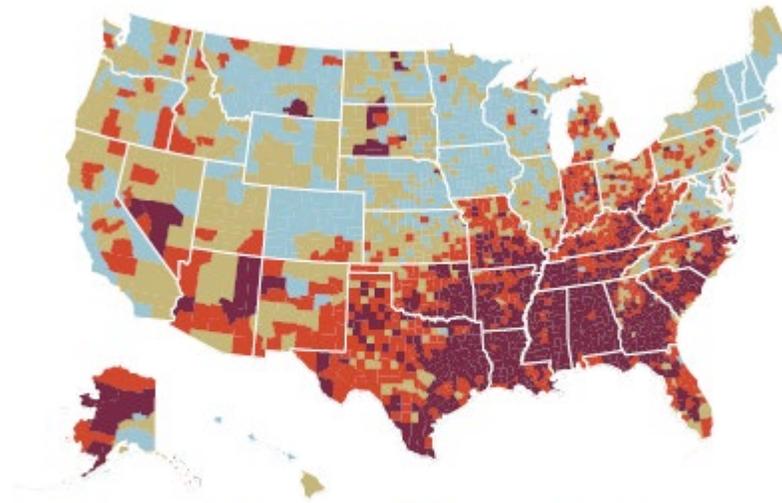
# Maternal Vulnerability Index

QR Code: <https://mvi.surgoventures.org/>

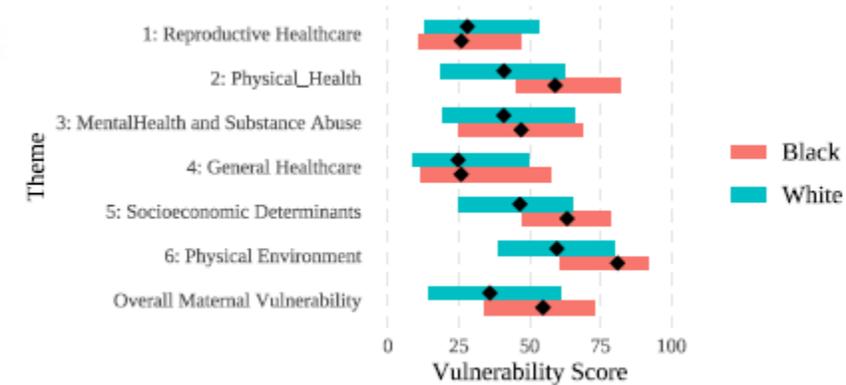
## Dominant Theme by County



## Quartiles of MVI



## Disparities in MVI



## Impact on Maternal Mortality

	Maternal death (n = 12,956,998)
Intercept	$1.26 \times 10^{-4}$ *** ( $1.07 \times 10^{-4}$ , $1.48 \times 10^{-4}$ )
US MVI: quartile 1 (lowest vulnerability)	Reference
US MVI: quartile 2	1.30*** (1.09, 1.53)
US MVI: quartile 3	1.38*** (1.17, 1.61)
US MVI: quartile 4 (highest vulnerability)	1.43*** (1.20, 1.71)

Valerio VC, Downey J, Sgaier SK, Callaghan WM, Hammer B, Smittenaar P. Black-White disparities in maternal vulnerability and adverse pregnancy outcomes: an ecological population study in the United States, 2014-2018. *Lancet Reg Health Am.* 2023 Apr 3;20:100456.

<https://doi.org/10.1016/j.lana.2023.100456>

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# Together

Learn more at <https://mchb.hrsa.gov>

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# MCHB Maternal and Infant Health Programs



QR Code: <https://mchb.hrsa.gov/programs-impact/focus-areas/maternal-health>

- Healthy Start
- Maternal, Infant, and Early Childhood Home Visiting
- National Maternal Mental Health Hotline
- Title V MCH Block Grant
- Women's Preventive Services Initiative
- Bright Futures

Promotes  
**access** to health  
care services



- Alliance for Innovation on Maternal Health (AIM)
- AIM Capacity Program
- Integrated Maternal Health Services
- State Maternal Health Innovation Program
- Newborn Screening

Improves **quality**  
of care



- Healthy Start: Community-Based Doulas
- Minority Serving Institutions Research Collaborative
- Screening and Treatment for Maternal Mental Health and Substance Use Disorders (MMHSUD)

Strengthens the  
**workforce**



# MCH Block Grant to States 2021-2026 State Priority Needs



## MATERNAL HEALTH

- Reducing maternal morbidity and/or mortality (N=16)
- Reducing disparities in maternal morbidity and mortality (N=6)



## INFANT HEALTH

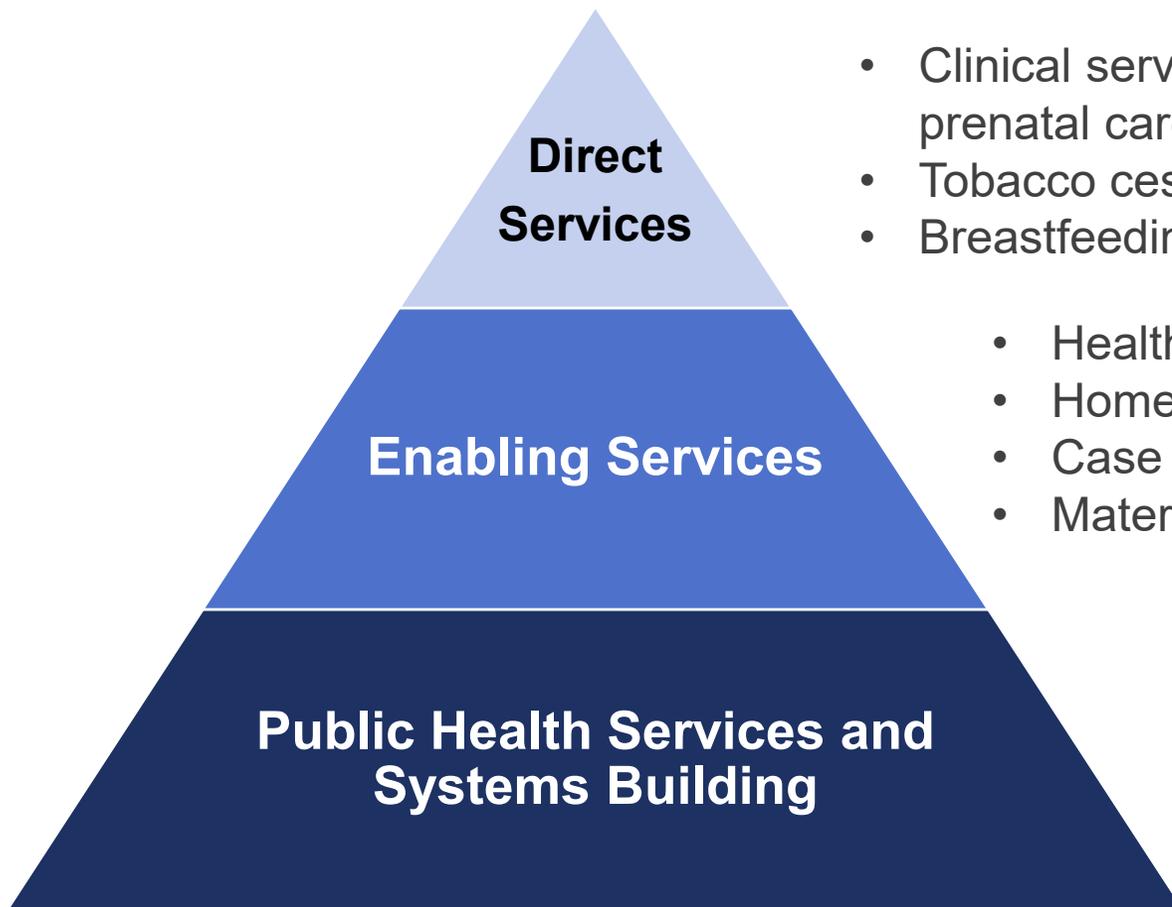
- Reducing infant mortality (N=23)
- Improving perinatal/birth outcomes (N=12)
- Reducing disparities in birth/infant outcomes (N=8)

N=number of states/jurisdictions (out of 59) who receive Block Grant

# MCH Block Grant to States

## Pyramid of Services: Maternal/Infant Health Examples

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- Clinical services provided through local health departments (e.g. prenatal care, immunizations, well visits, oral health)
- Tobacco cessation programs
- Breastfeeding hotline

- Health education
- Home visiting programs
- Case management
- Maternal and/or neonatal transports

- Implement newborn screening program
- Engage hospitals on safe sleep policies
- Maintain systems for risk-appropriate care
- Partner with Medicaid on policy/procedural change
- Partner with PQC to implement QI initiatives

# Title V MCH Block Grant

## New Maternal and Infant Health National Performance Measures

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### Clinical Health Systems

- Postpartum Visit Access & Quality
- Postpartum Depression/Anxiety Screening
- Risk-Appropriate Perinatal Care

### Health Behavior

- Postpartum Contraceptive Use
- Breastfeeding
- Safe Sleep

### Social Determinants of Health

- Discrimination in Perinatal Care
- Housing Instability in 12 months before delivery

Data Sources: PRAMS, NVSS, NSCH  
<https://mchb.tvisdata.hrsa.gov/Home/Resources>



# Maternal, Infant, and Early Childhood Home Visiting (MIECHV)

- Supports pregnant people and parents of young children in communities that face greater barriers to achieving positive maternal and child health outcomes
- Evidence-based, voluntary home visiting that connects families to health and social services
- In 2023 MIECHV served:
  - 50 states, D.C., and 5 U.S. territories
  - 919,456 home visits
  - 139,000 parents and children
  - 600+ rural counties



# MIECHV Matching Grant Opportunity

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- **New:** Opportunity for states and territories to apply for matching funds
- Matching funds will be available beginning in FY24, with increasing amounts through FY27
- Federal government will contribute \$3 for every \$1 contributed by states and territories in non-federal funds, up to a funding ceiling amount
- Non-federal funds can include:
  - State general appropriations or other state funds
  - City or county funds
  - Private/philanthropic funds
  - In-kind services

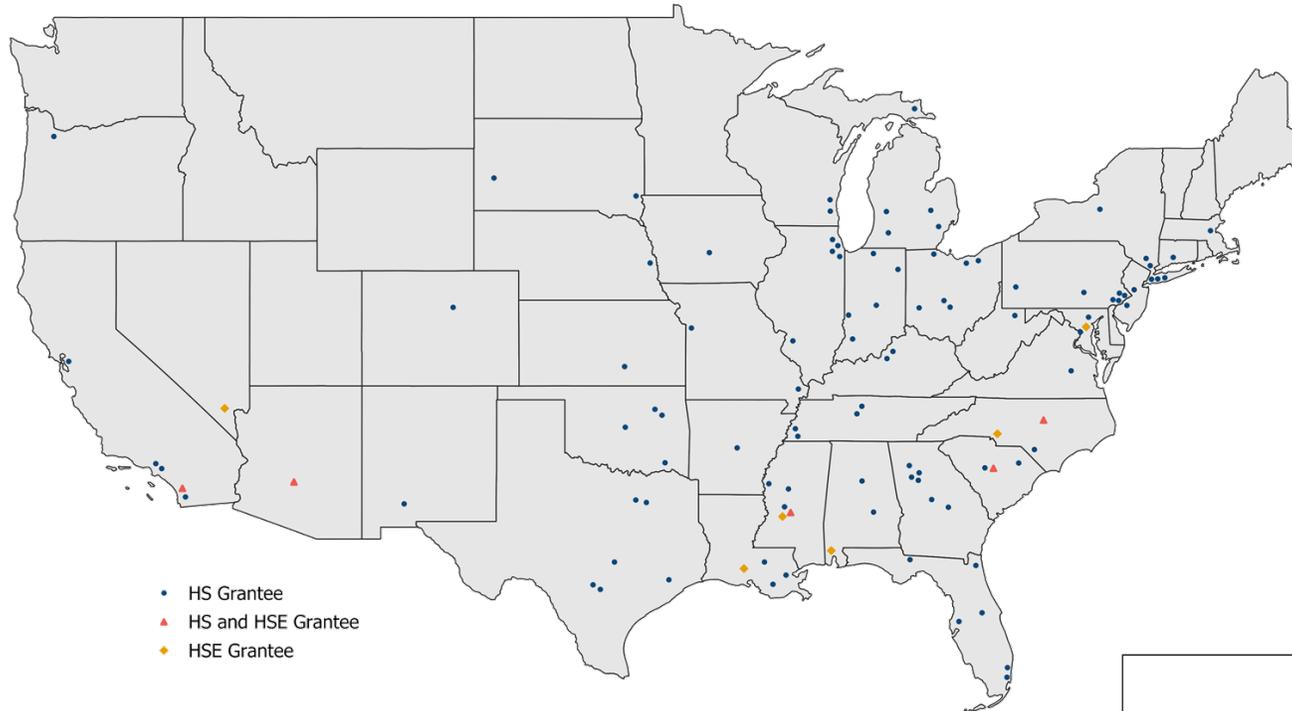


QR Code: <https://mchb.hrsa.gov/programs-impact/programs/miechv-reauthorization>



# Healthy Start 2024

## Healthy Start Grantees



- HS Grantee
- ▲ HS and HSE Grantee
- ◆ HSE Grantee

The point locations displayed on this map have been adjusted to prevent overlap. While efforts have been made to maintain accuracy, these adjusted positions may not reflect exact geographic coordinates. Please use this map for general reference purposes only.

\* Operating in Buffalo, NY  
 \*\* Operating in Mississippi Delta

New Award Recipients	City	State
ARHealth Ventures	Little Rock	AR
Volunteers of America	San Diego	CA
Cinq Care	Washington	DC*
Mary's Center for Maternal & Child Care	Washington	DC
North Broward Hospital Center	Fort Lauderdale	FL
Georgia State University Research Foundation	Atlanta	GA
Southside Medical Center	Atlanta	GA
Wellstar Health System	Marietta	GA
Memorial Hospital of South Bend	South Bend	IN
Black Birth Justice	Louisville	KY
Start Corp	Houma	LA
Plan A Health	New York	NY**
Lorain County	Elyria	OH
Research Institute a Nationwide Children's Hospital	Columbus	OH
Grupo Nexos	San Juan	PR
Avera Mckennan	Sioux Falls	SD
Shelby County Health Care Corporation	Memphis	TN
Shelby County Government	Memphis	TN
Black Mamas Community Collective	Austin	TX
Dallas County	Dallas	TX
Harris County	Houston	TX
UniteMKE	Milwaukee	WI

# Catalyst for Infant Health Equity – Housing Examples

County	State	Annual Black Infant Deaths due to Disparity
Broward	FL	39
Duval	FL	32
Orange	FL	27
Marion	IN	19
Orleans	LA	13
Baltimore City	MD	26
Essex	NJ	21
Franklin	OH	40
Allegheny	PA	22

- The Catalyst program seeks to move beyond direct services to **implement targeted policy and systems changes** that are focused on one or more specific SDOH domains contributing to IM disparities in a particular county/jurisdiction



- Housing Truths Project - Baltimore, MD**
  - Improve access to safe and healthy housing through workshops, individualized counseling, and eviction prevention grants.
- Housing Equity for Infant Health Initiative - Bloomington, IN**
  - Launch of two evidence-based programs to make sustainable systems change in housing policies: 1) Healthy Beginnings at Home (HBAH), and 2) Health-Justice Partnership

# Examples of AIM Impacts

OUD = opioid use disorder  
SUD = substance use disorder

\*Among facilities participating in AIM safety bundle implementation



**Alaska**

**22% increase in timely care** for pregnant people with severe hypertension



**Georgia**

**96% increase** in hemorrhage carts



**Illinois**

Pregnant or postpartum people with OUD connected to medication for OUD by delivery discharge **increased from 41% to 76%**



**New York**

Participating facilities with a universal screening protocol for SUD **increased from 33% to 86%**

# National Maternal Mental Health Hotline



For support, understanding, and resources, CALL  
OR TEXT 1-833-852-6262 (1-833-TLC-MAMA)



Free Promotional Material Available





# Maternal and Infant Health Mapping Tool



## Maternal and Infant Health Mapping Tool

[User Guide](#)  
[Contact Us](#)

All Layers Health Indicators Infant Health Equity Health Resources Demographic Characteristics

Health Indicators

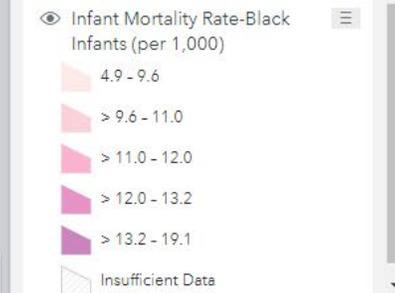
Infant Health Equity

- Black-White Infant Mortality Rate Ratio
- Deaths due to Disparity - Black Infants
- Infant Mortality Rate-Black Infants (per 1,000)
- Infant Mortality Rate-Black-White Difference (per 1,000)
- Infant Mortality Rate-White Infants (per 1,000)

Health Resources

Demographic Characteristics

Geographic Areas



KFF Health News Article:  
[Dangers and Deaths Around Black Pregnancies Seen as a 'Completely Preventable' Health Crisis | KFF Health News](#)

Infant Mortality Rate-Black Infants (per 1,000)

1 - 3270 of 3270 records

Export To: PDF Export



# Black Infant Deaths Due to Disparity Top 60 Counties

- Account for half of all Black infant deaths due to disparity (each with 12+ annually)
- Located in 27 states
- All have at least one key HRSA investment
  - 100% have FQHCs (n=60)
  - 76% have MIECHV (n=46)
  - 72% have Healthy Start (n=43)
- Over half have all 3 investments (n=36)

County, State	Annual Black Deaths	Annual Black Infant Deaths due to Disparity	# of Federally Qualified Health Center Delivery Sites	Home Visiting Coverage Area	Includes Healthy Start Service Area
Cook County, IL	13,370	103	251	YES	YES
Wayne County, MI	9,504	88	56	YES	YES
Harris County, TX	12,403	79	117	-	YES
Philadelphia County, PA	7,528	48	91	YES	YES
Dallas County, TX	7,956	45	30	YES	YES
Cuyahoga County, OH	4,881	44	47	YES	YES
Shelby County, TN	7,272	42	21	YES	YES
Franklin County, OH	5,327	40	52	YES	YES
Broward County, FL	7,538	39	27	YES	YES
Kings County, NY	7,293	38	148	YES	YES
Milwaukee County, WI	4,470	38	42	YES	YES
Fulton County, GA	6,012	34	33	-	YES
Los Angeles County, CA	7,259	33	636	YES	YES
Miami-Dade County, FL	4,943	33	240	YES	YES
Duval County, FL	4,490	32	11	YES	YES
Tarrant County, TX	5,399	31	3	-	-
Hillsborough County, FL	3,647	29	38	YES	YES
Maricopa County, AZ	3,677	27	109	YES	YES
Orange County, FL	4,230	27	22	YES	YES
DeKalb County, GA	4,919	27	18	YES	YES
Prince George's County, MD	5,818	27	20	YES	YES
Mecklenburg County, NC	4,496	27	15	-	YES
Baltimore City, MD	4,117	26	29	YES	YES
Bronx County, NY	5,081	26	145	YES	YES



Learn more at <https://mchb.hrsa.gov>

# Paradigm for Improving Infant and Maternal Health

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## Accelerate

Hasten pace of change, innovate, & build evidence



## Upstream

Promote prevention and a life course approach



## Together

Collaborate, include voices of partners and people we serve

# Contact Information

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