Infant and Maternal Death in Wisconsin: An Overview

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Objectives

- Provide definitions of key terms
- Overview of trends in infant and maternal mortality
- Introduction to related health factors
- Selected prevention strategies

Trends in infant health

What the data tell us

Infant health

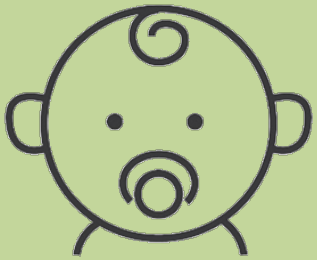
Perinatal

Fetus

Infant

Neonatal:
Birth to 28 days

Postneonatal: 29 days to one year



Infant health

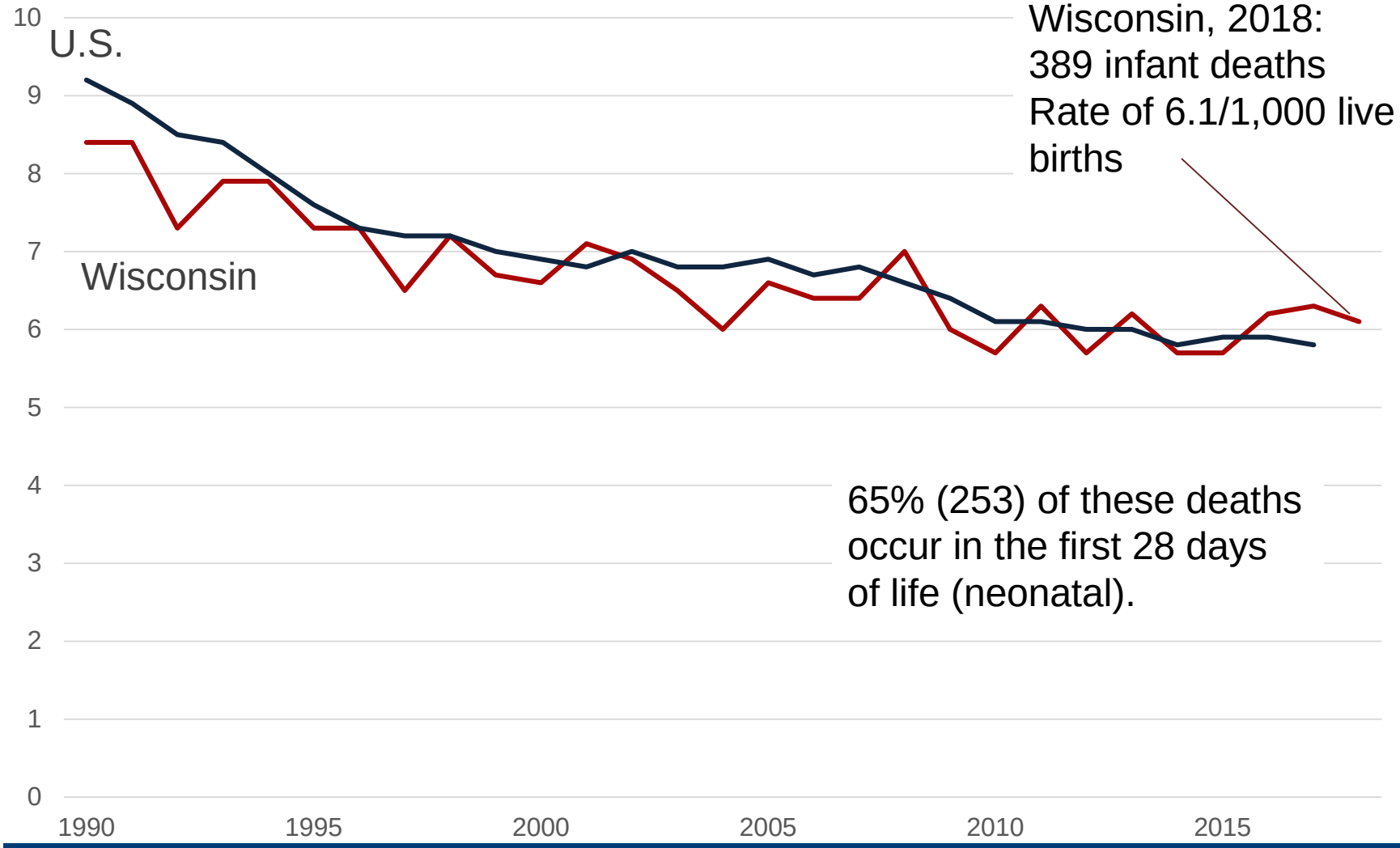
- **Preterm birth—**birth that occurs before completing 37 weeks gestation
- **Low birthweight—**babies that are born weighing less than 2500g (about 5.5 pounds)

In an Average Week in Wisconsin:

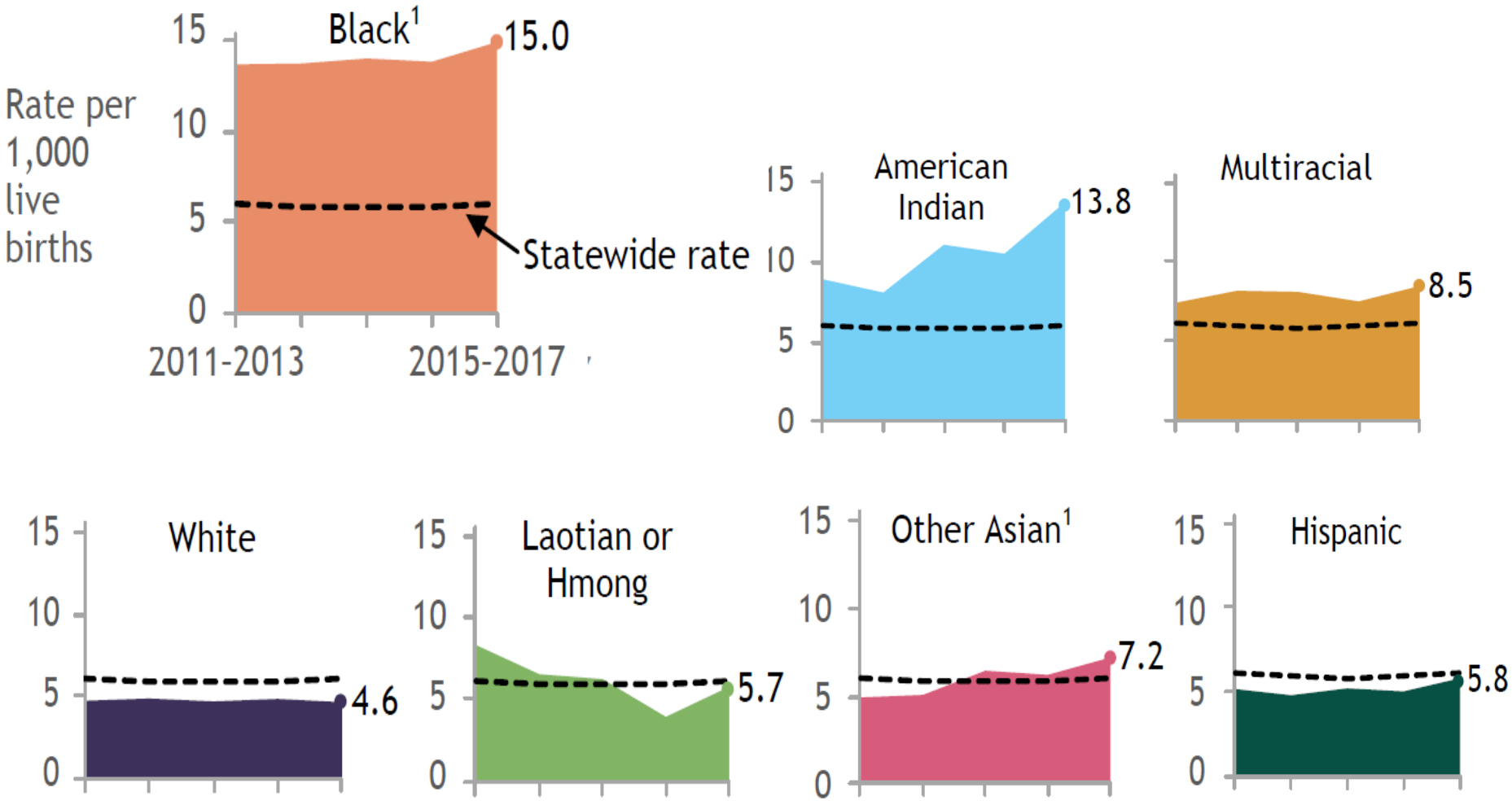
- 1,234 babies are born.
- 122 babies are born preterm.
- 95 babies are born low birth weight.
- 7 to 8 babies die before reaching their first birthday.

2018 Data, Wisconsin Interactive Statistics on Health (WISH)

Infant mortality: infant deaths per 1,000 live births

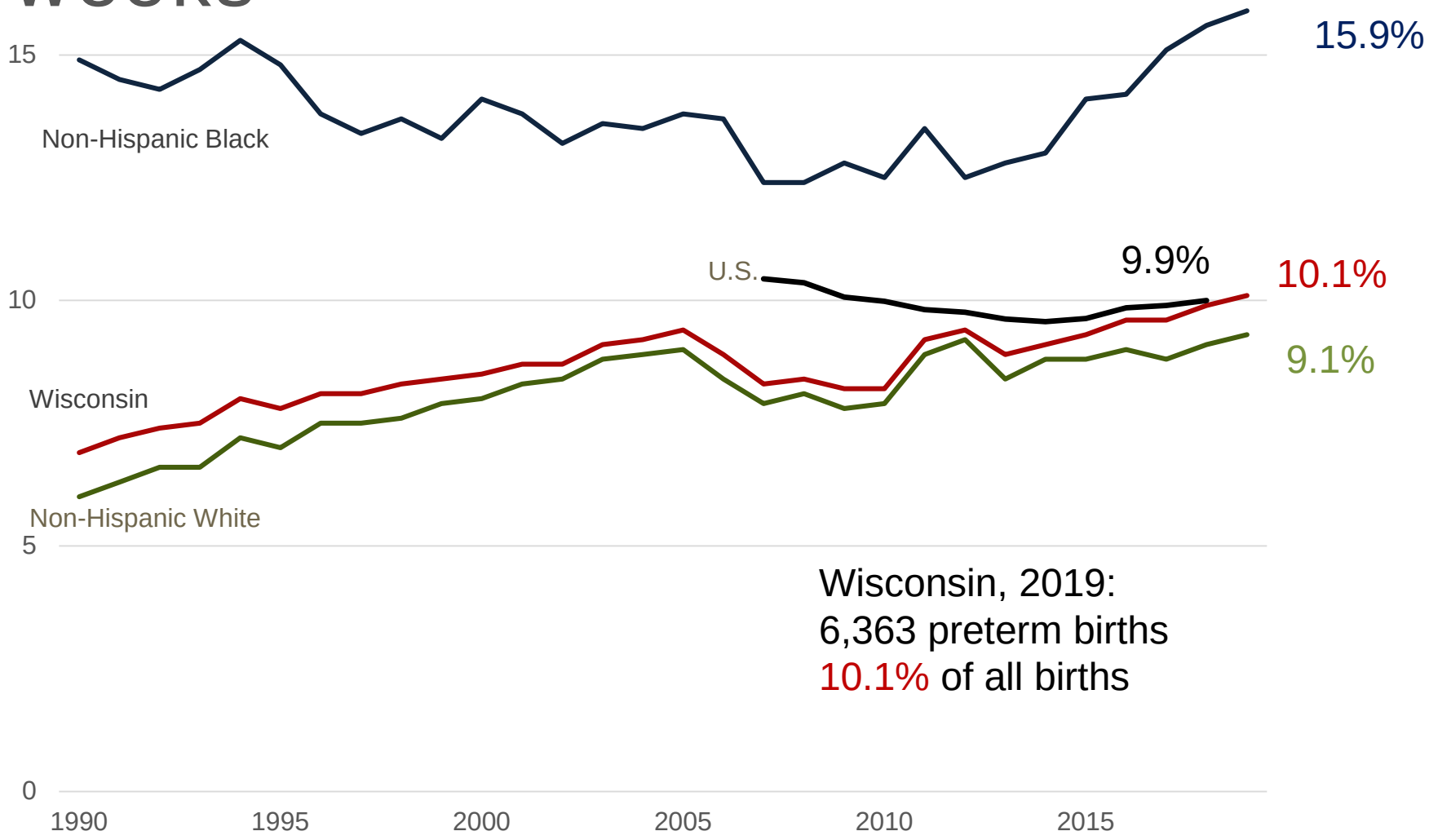


Wisconsin Infant Mortality

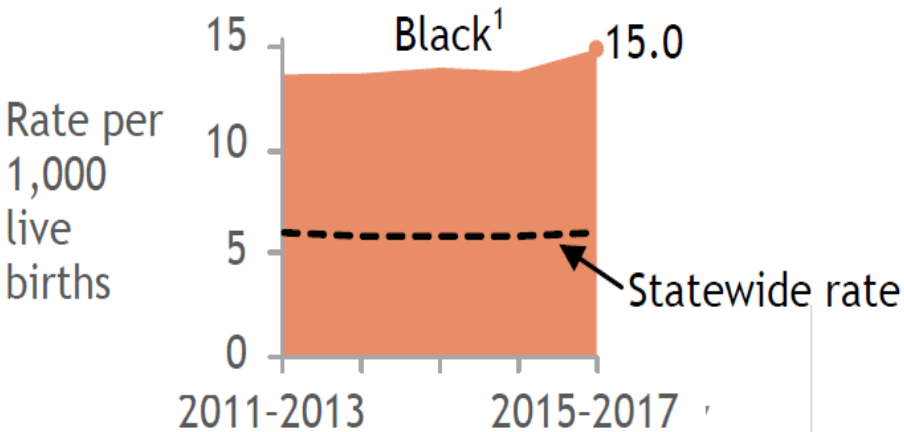


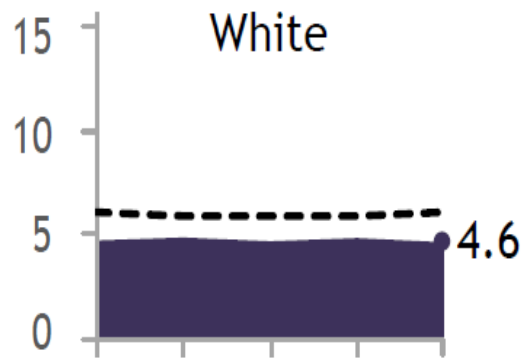
Annual Wisconsin Birth and Infant Mortality Report, 2017, https://www.dhs.wisconsin.gov/publications/p01161-19.pdf

Preterm birth: percent of births less than 37 weeks

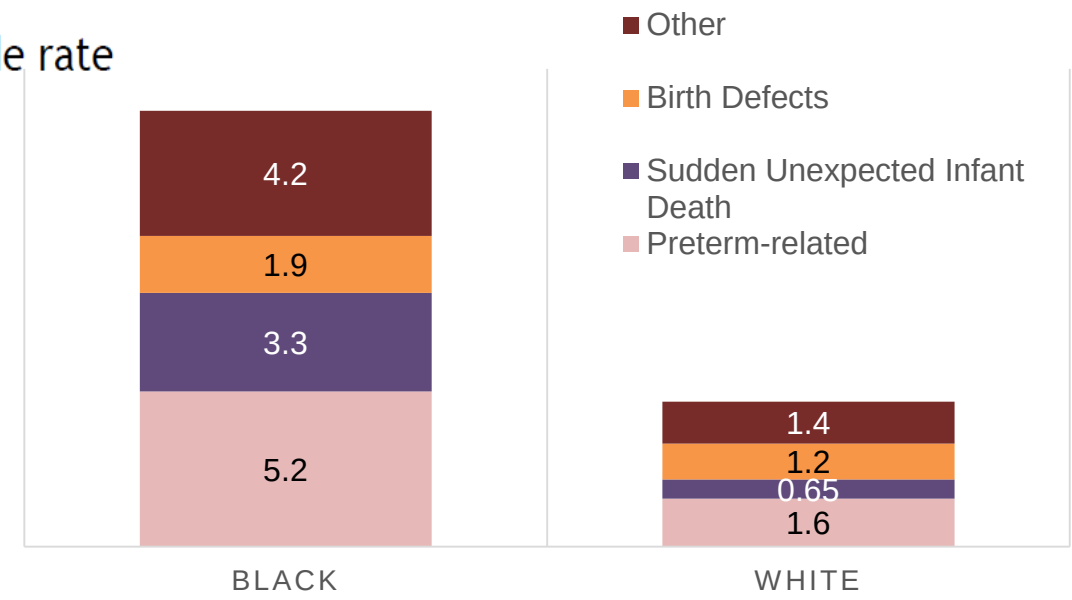


Wisconsin Infant Mortality





Infant deaths per 1,000 live births, by cause of death



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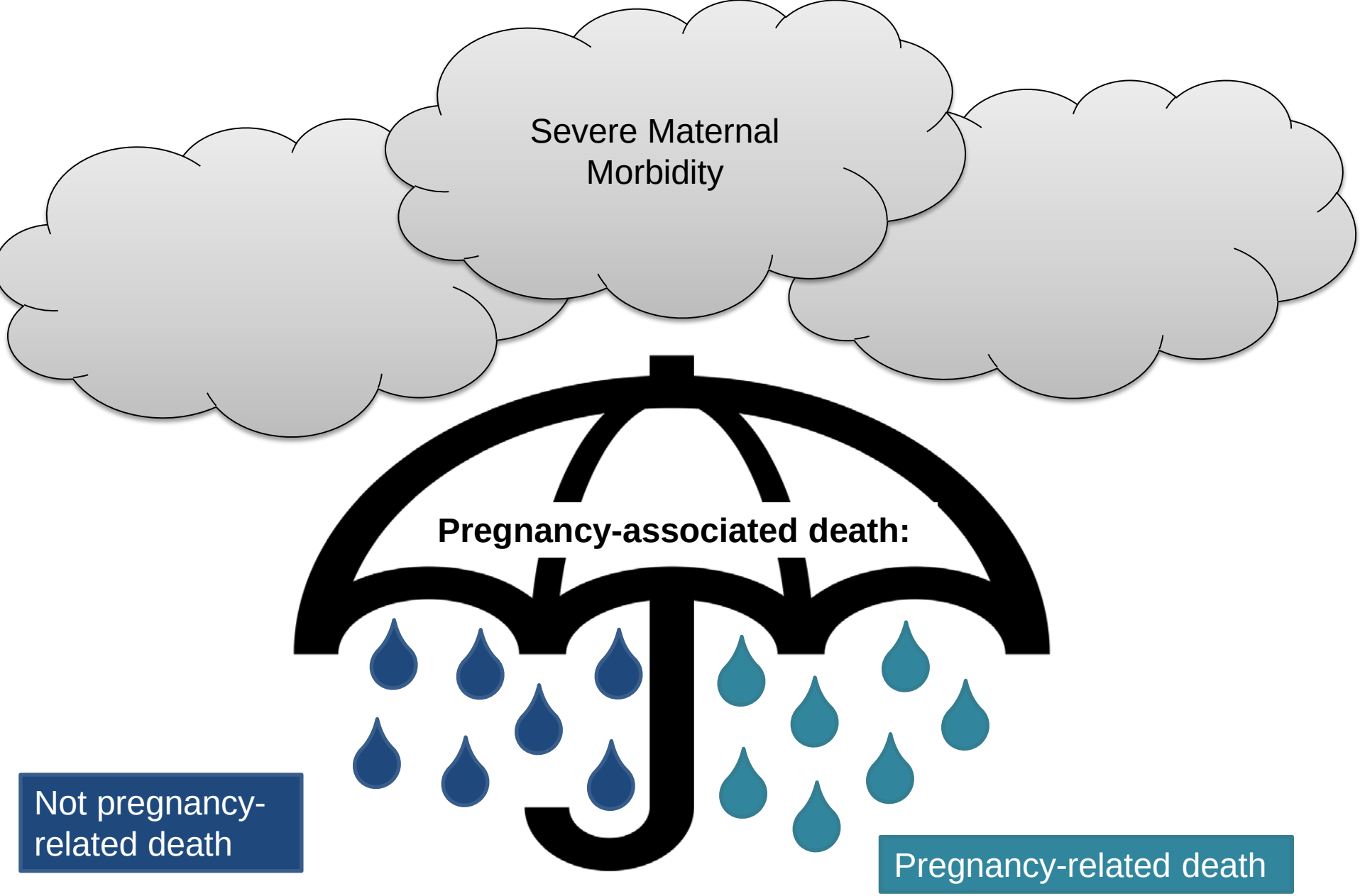
Trends in maternal health

What the data tell us

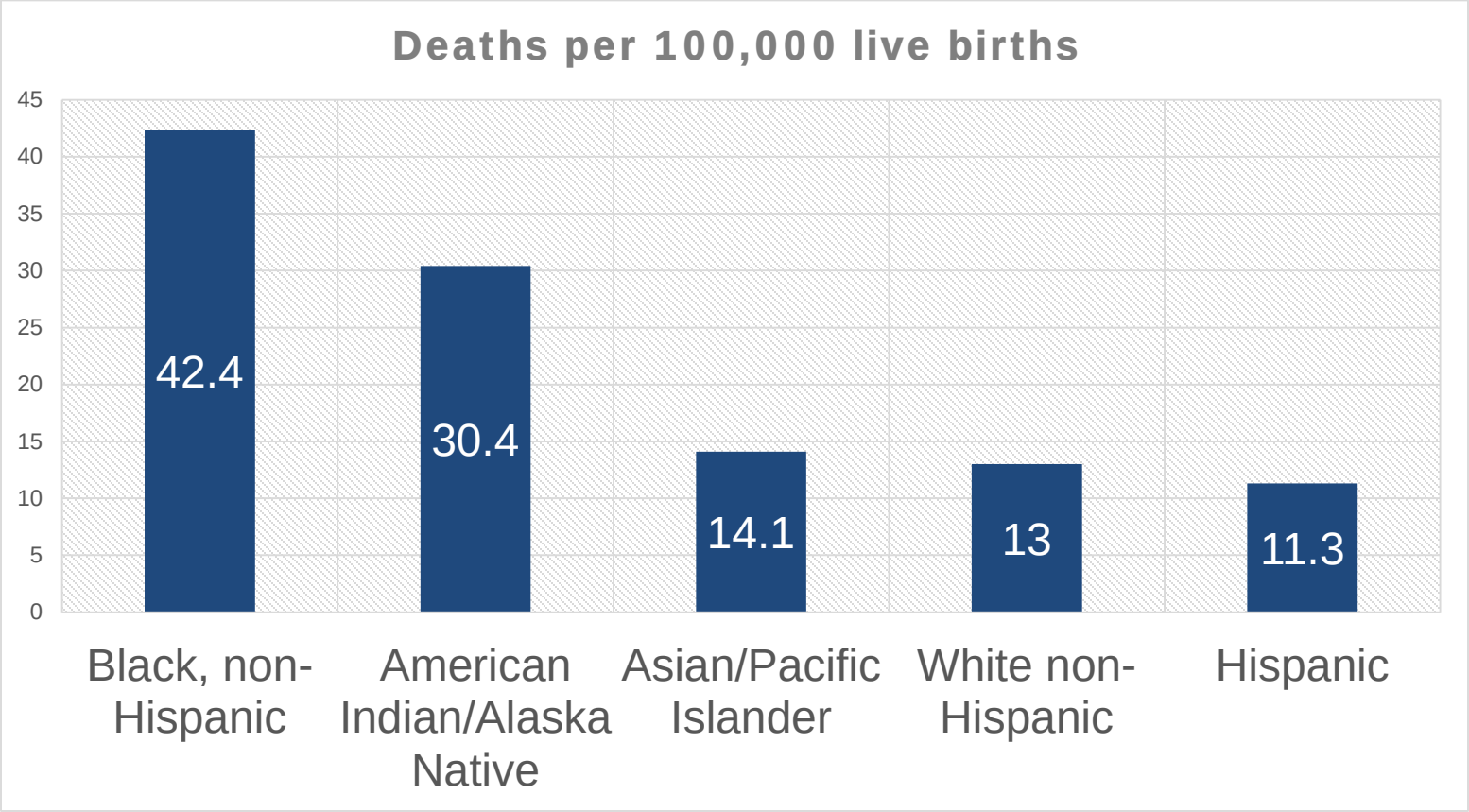

Severe Maternal Morbidity
Pregnancy-associated death:
Not pregnancy-related death
Pregnancy-related death

Severe Maternal Morbidity

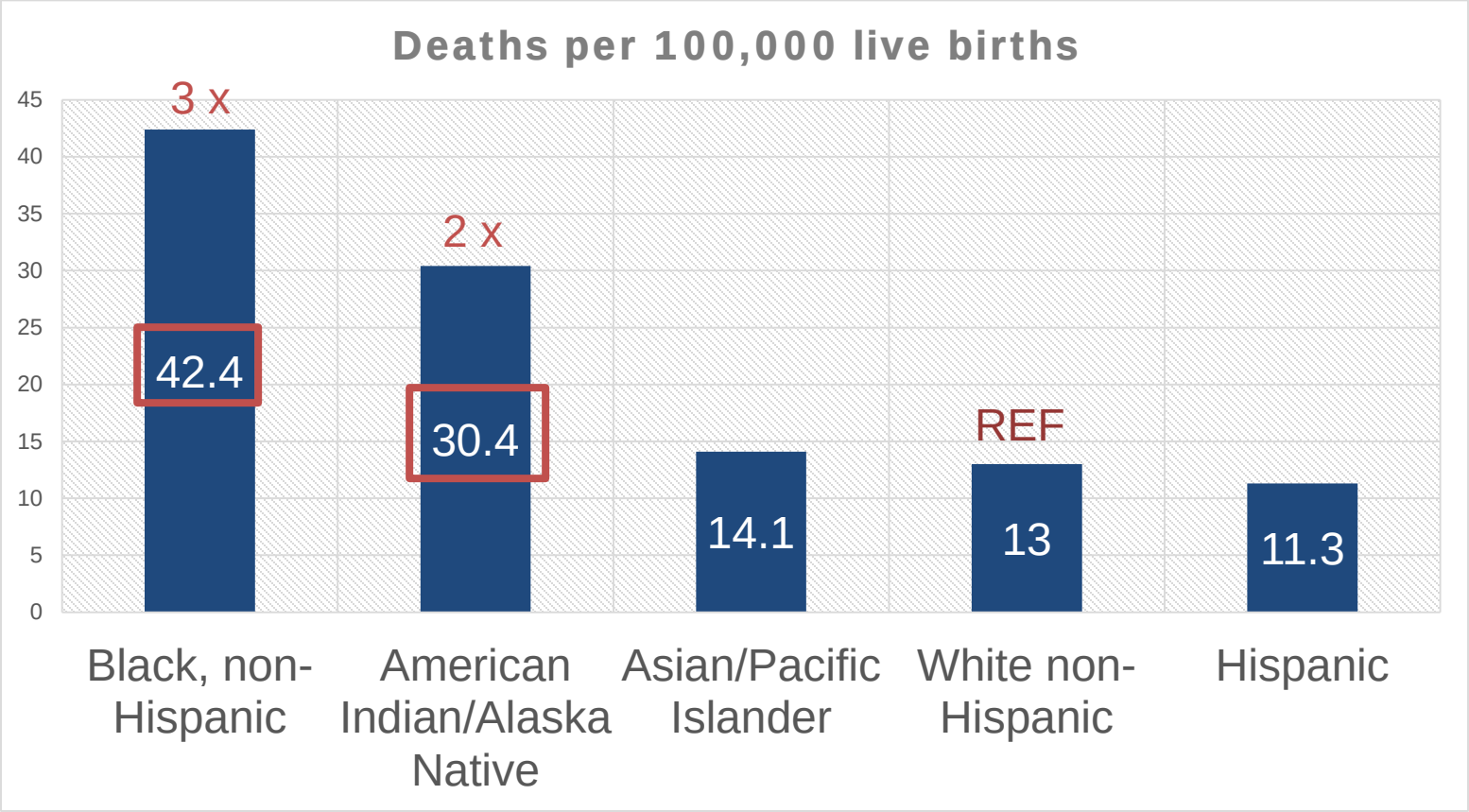
Includes:
Blood Transfusion
Excessive bleeding
Hysterectomy
Blood clots
Heart failure
Kidney failure

Occurred at a rate of **1,000 events during delivery** and **250 events postpartum** per 100,000 delivery hospitalizations

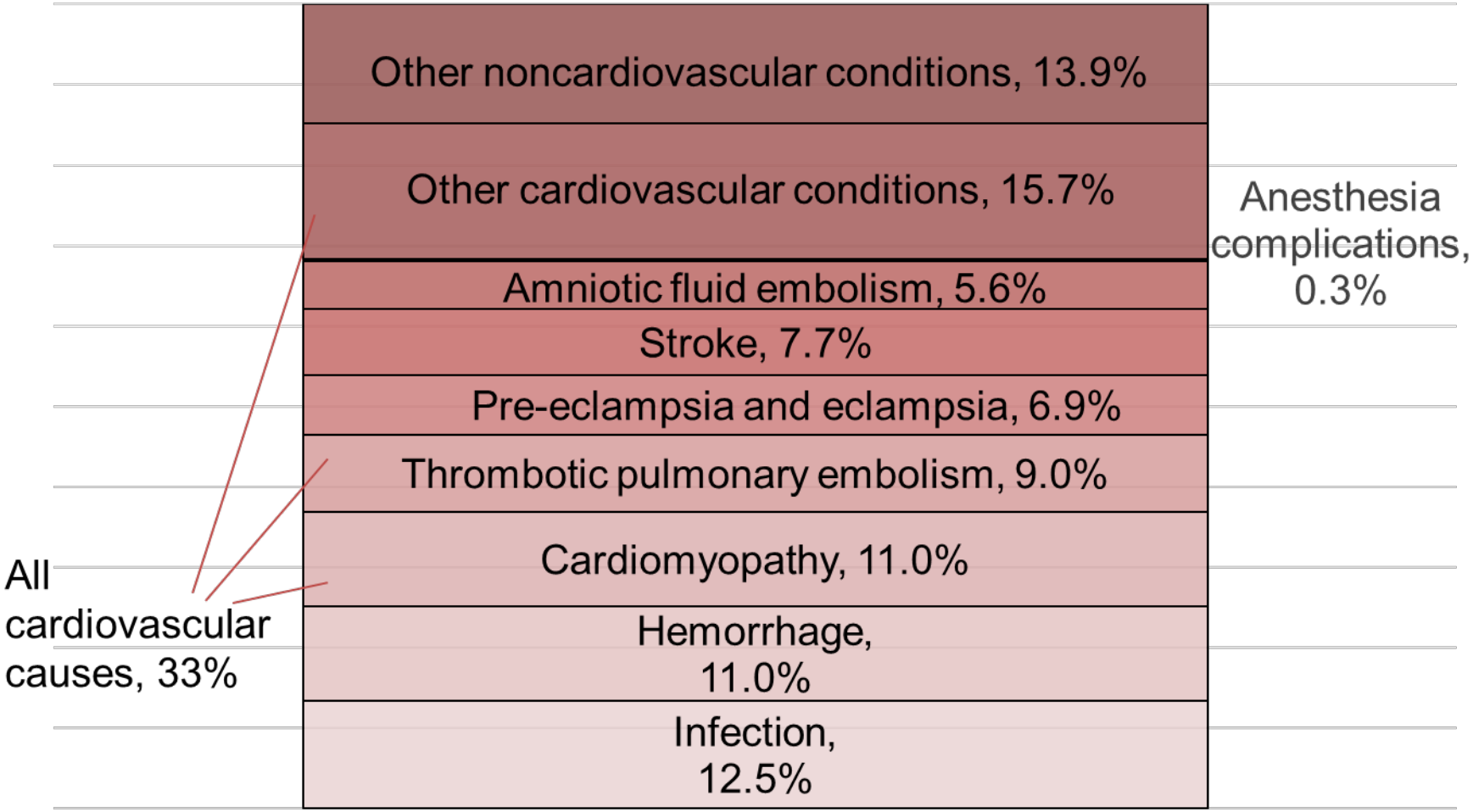
U.S. Pregnancy-Related Mortality



U.S. Pregnancy-Related Mortality



PERCENT OF PREGNANCY-RELATED DEATHS, BY CAUSE 2011-2016

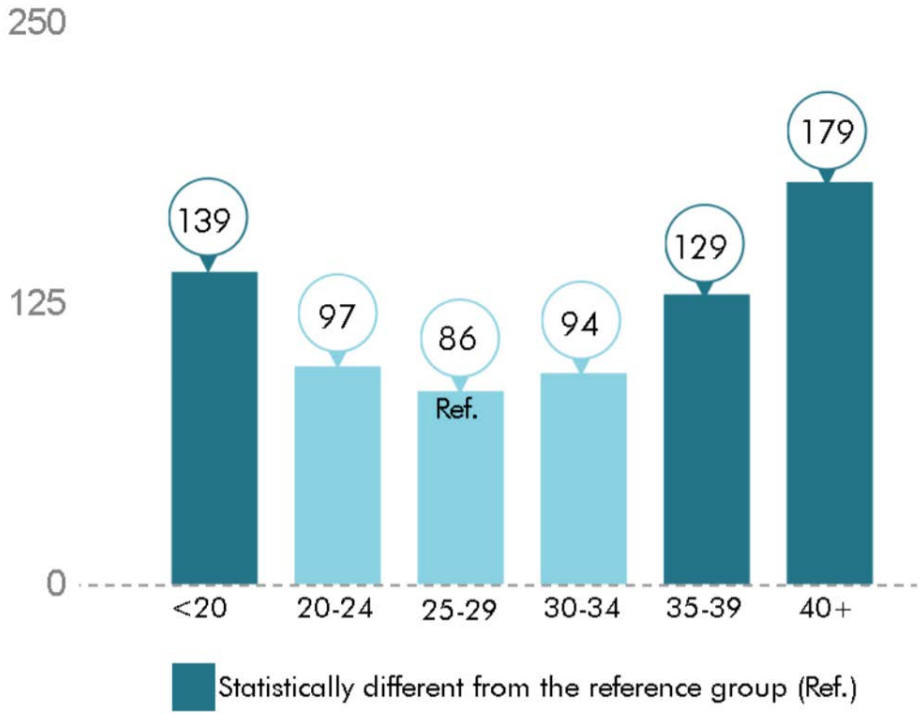


Other leading causes of pregnancy-associated death

- Mental health crisis
  - Suicide
  - Drug overdose
- Intimate partner homicide

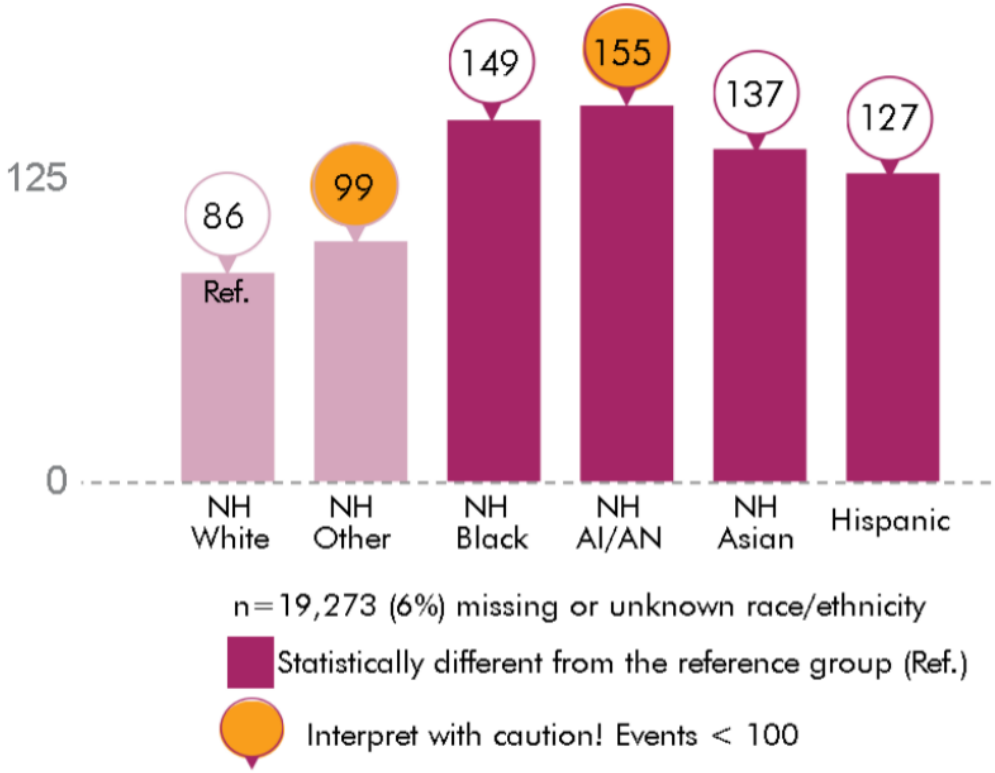
Severe maternal morbidity (SMM) is higher among youngest and oldest moms

Figure 1. Rates of SMM, delivery hospitalizations 2010-2014, by race and ethnicity and age



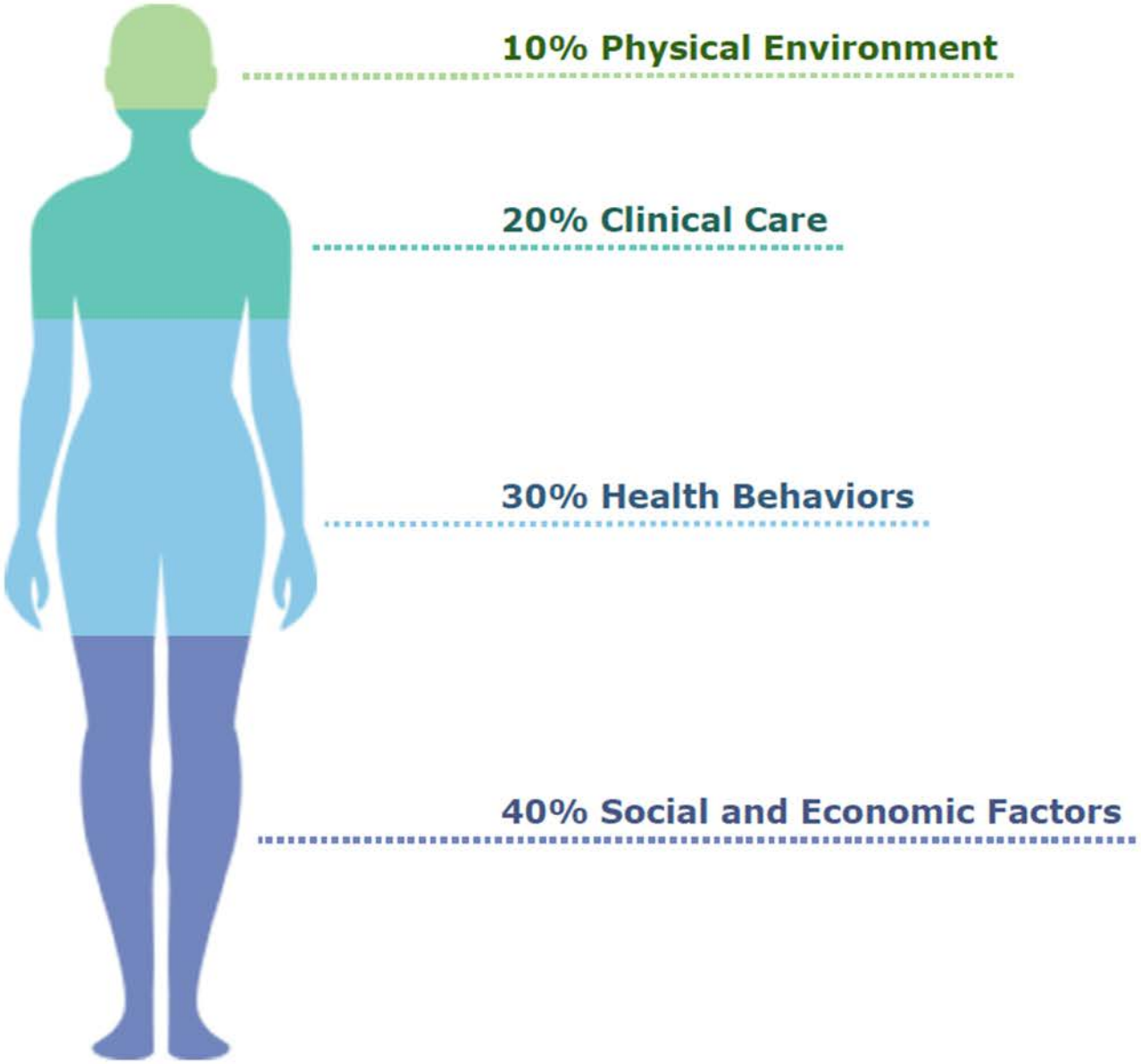
Severe maternal morbidity (SMM) is higher among racial minority moms

Figure 1. Rates of SMM, delivery hospitalizations 2010-2014, by race and ethnicity and age

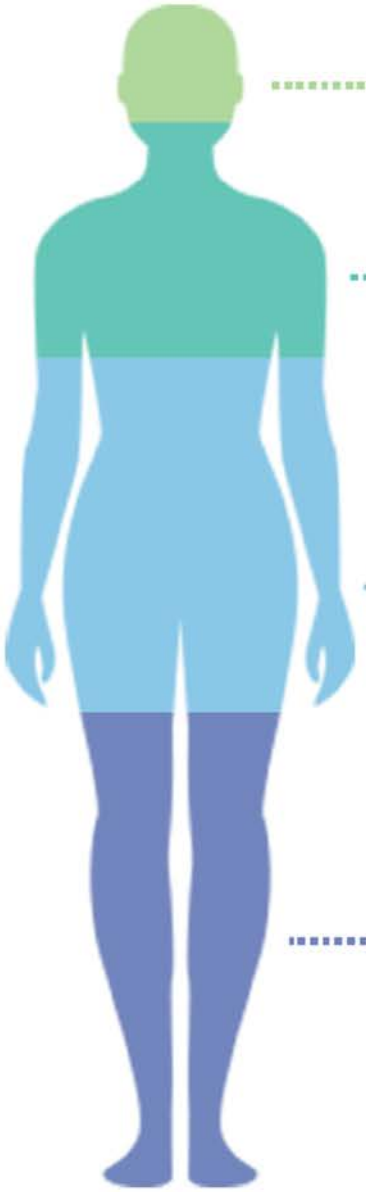


What makes us healthy?

And contributes to early death?



County Health Rankings Model. (2014) University of Wisconsin Population Health Institute.



10% Physical Environment

20% Clinical Care

30% Health Behaviors

40% Social and Economic Factors

Racism

County Health Rankings Model. (2014) University of Wisconsin Population Health Institute.

Selected factors associated with poor birth outcomes

- Lack of access to high-quality prenatal (and preconception) care
- Stress on mothers and families
- Smoking
- Maternal health conditions
- Pregnancy history and birth spacing

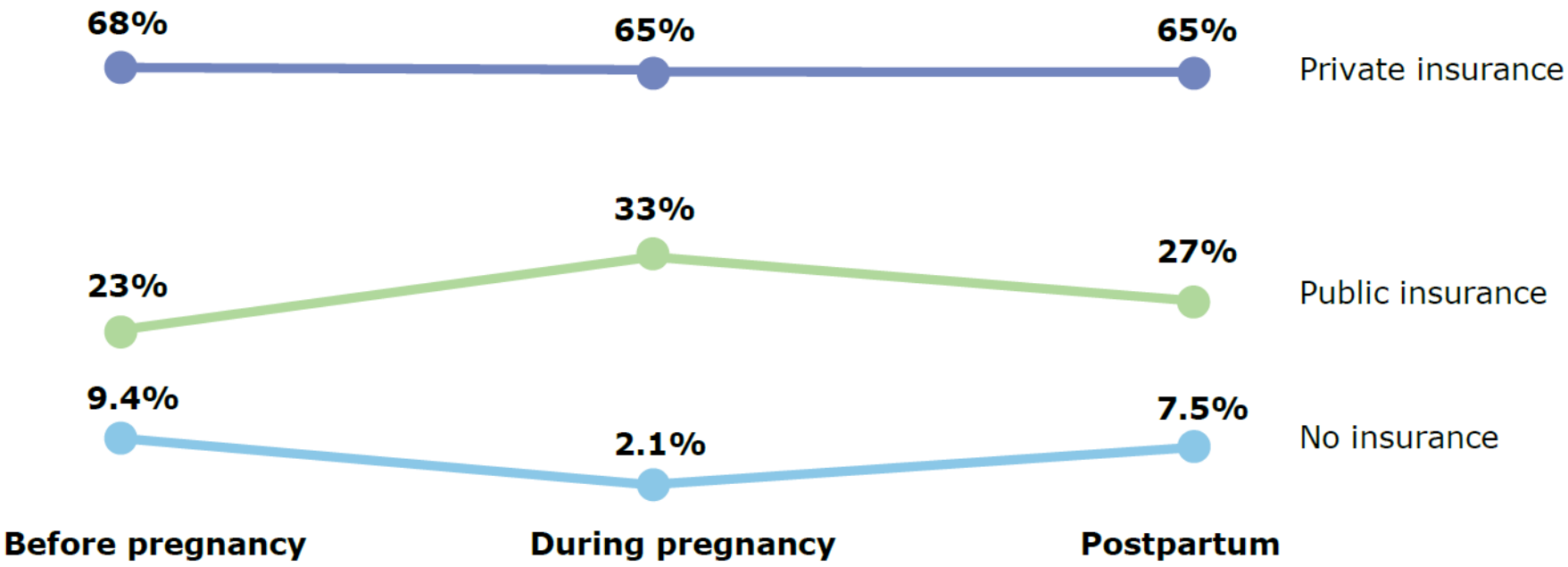
Data presented from the 2016-2017 Wisconsin Pregnancy Risk Assessment Monitoring System.

Consistent access to high-quality healthcare

1 in 10 Wisconsin mothers **do not** have health insurance in the month prior to becoming pregnant.

Prior to pregnancy, Wisconsin mothers are more likely to be **uninsured** than the general adult population age 18-44 in the state (7%).[4]

Consistent access to high-quality healthcare



"I'm grateful that I was able to get prenatal visits because it was helpful and knowledgeable. If I wouldn't had those visits I would have not learned so much and I don't think my baby would have been healthy. So I'm very appreciative of my experiences!

- PRAMS mom

Stressful life events in the year prior to giving birth

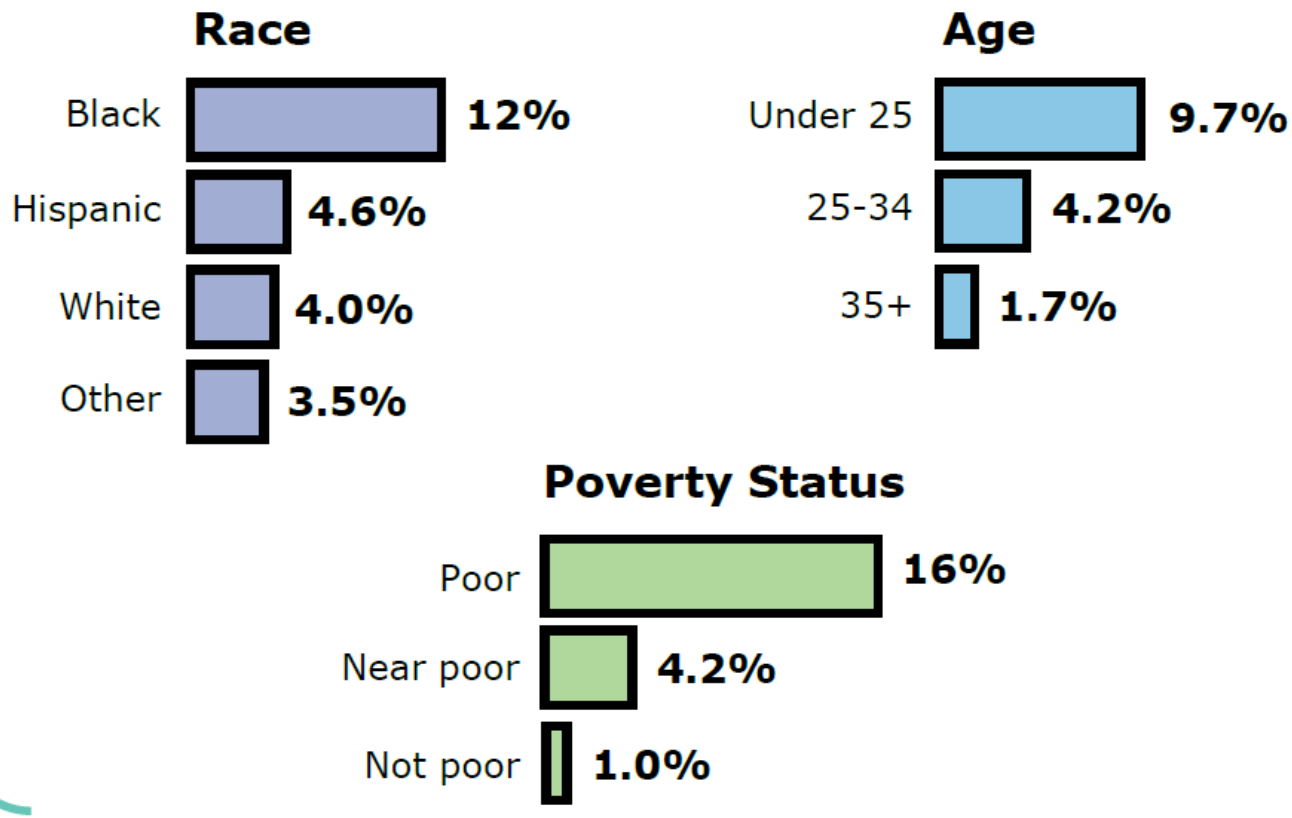
66 % experienced at least one stressful life event

"My last pregnancy was hard on me because I lost my job and car so I am currently struggling and trying to make ends meet.

- PRAMS mom

Stressful life events

Black, young, and poor mothers are more likely to report experiencing six or more stressful life events.



Smoking

12% of Wisconsin mothers smoke cigarettes during the last three months of pregnancy.

1.4% of Wisconsin mothers smoke e-cigarettes during the last three months of pregnancy.

4.5% of Wisconsin mothers smoke marijuana during pregnancy.

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smoking and stress

Of mothers who experience six or more stressful life events,

75%

smoke cigarettes in the three months before their most recent pregnancy.

Maternal Health Conditions

24% of Wisconsin mothers have anxiety, and
16% of Wisconsin mothers have depression.

14% of all Wisconsin mothers have anemia or low iron in their blood prior to pregnancy, while 33% of black mothers have anemia.

13% of all Wisconsin mothers have asthma prior to pregnancy, while 21% of black mothers have asthma.

6.9% of Wisconsin mothers have thyroid problems prior to pregnancy.

5.5% of all Wisconsin mothers have high blood pressure prior to pregnancy, while 11% of black mothers have high blood pressure.

Maternal Health Conditions

of Wisconsin mothers report eating less in the 12 months before the birth of their new baby because of not having enough money to buy food.

Maternal Health Conditions

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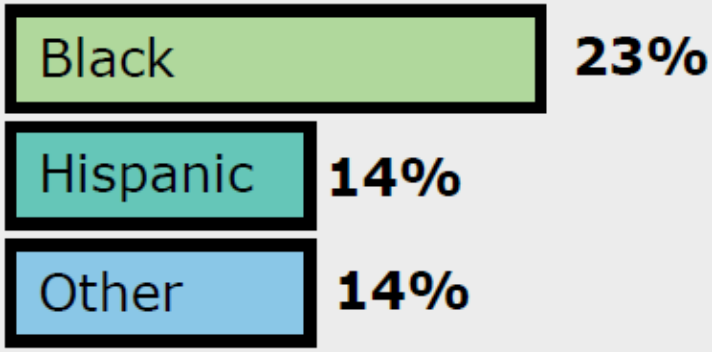
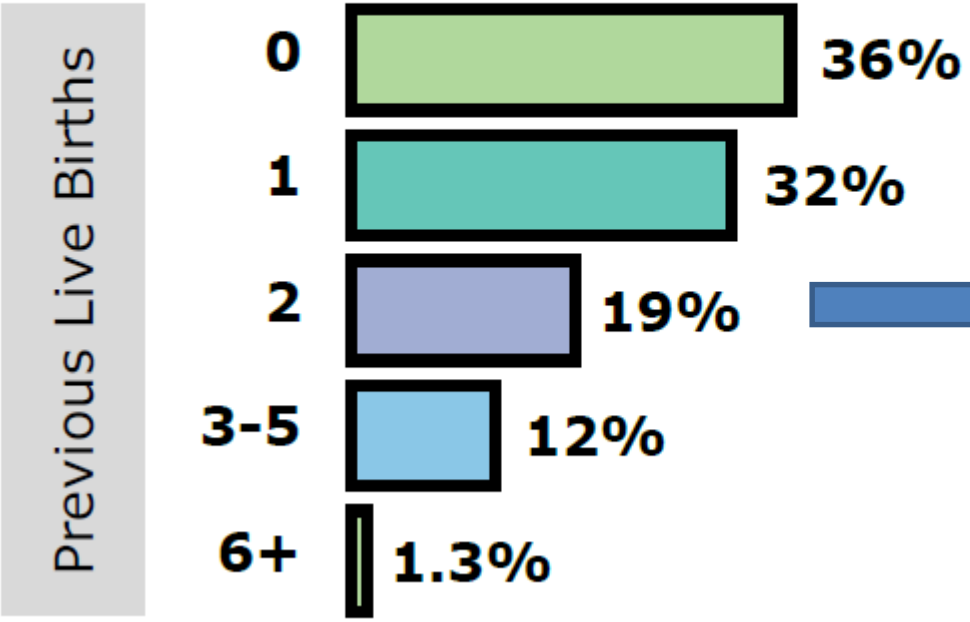
Approximately **one fifth** of non-white mothers experience interpersonal racism in the 12 months before their baby is born.



Pregnancy History and Birth Spacing

Almost two-thirds of Wisconsin women who gave birth in 2016-2017 have had a previous live birth.



9.3% of repeat pregnancies followed at least one previous preterm birth.

30% of repeat pregnancies begin less than 18 months after the previous birth.

Current and future prevention efforts

Selected examples

Fetal and Infant, Maternal Mortality Reviews

Interdisciplinary reviews of deaths to identify recommendations to improve policy and practice:

- Maternal Mortality Review: Statewide
- Child, Fetal and Infant Mortality Review: Local review teams

Fetal and Infant, Maternal Mortality Reviews

1. Address social needs of families
2. Provide patient-centered healthcare
3. Use best practices for promoting health across the life span

1. Chronic disease management
2. Continuity of care
3. Screening and referral for mental health and substance use

DHS efforts to prevent poor birth outcomes and reduce disparities

- Obstetric Medical Home Initiative
- Maternal and Child Health Program areas supporting protective factors
  - ABCs (alone, on back, in crib, smoke-free environment) of safe sleep
  - Breastfeeding
  - Immunizations and other preventive services
  - Social support networks
- Opioid harm prevention

Related efforts affecting healthy births

- WIC
- Tobacco Prevention Program
- Medicaid
- Maternal, Infant, and Early Childhood Home Visiting Program (MIECHV)
- Oral health
- Best Babies Zone- Milwaukee neighborhood of Westlawn

Recent efforts

Wisconsin Joins Alliance for Innovation in Maternal Health (AIM)

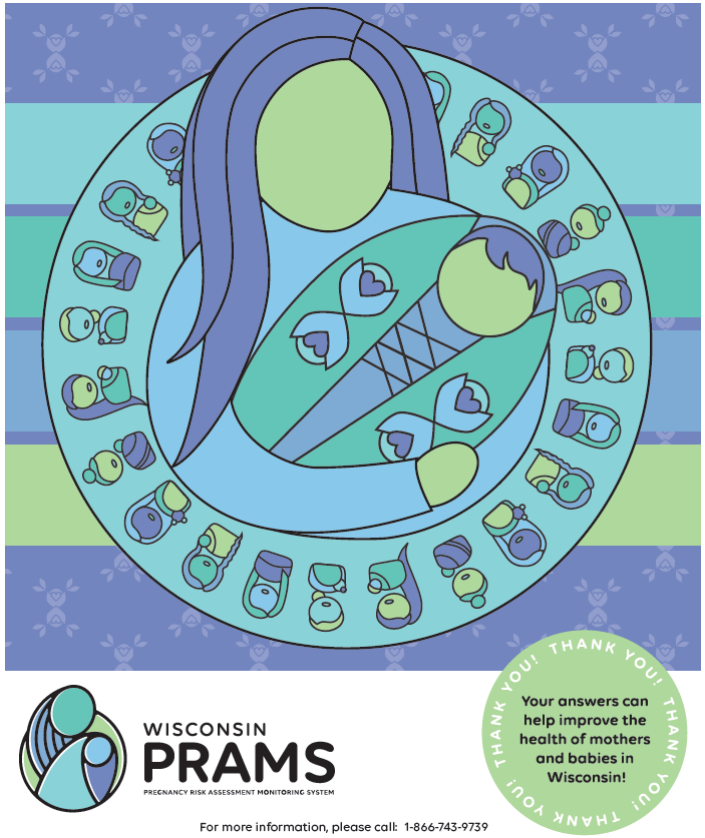
- Includes patient safety bundles for preventing maternal mortality
- Wisconsin AIM effort to launch March 17
- Implemented by the Wisconsin Perinatal Quality Collaborative (WisPQC)

ALLIANCE FOR INNOVATION ON MATERNAL HEALTH AIM

Enhancements to the WI Pregnancy Risk Assessment Monitoring System (PRAMS)

2020 data collection will include:

- 100% sample of Native American women
- Supplemental questions on
  - Housing stability and adequacy
  - Access to healthy and affordable food
  - Labor and delivery care



NEW: Infant and Maternal Health Unit

Staff:

- Infant mortality prevention director
- Community partnership specialists (2)
- Outreach and Communication Specialist
- Maternal Mortality Program Coordinator
- Maternal Mortality Epidemiologist
- Maternal Mortality Records Abstractor

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Additional Resources

Perinatal Periods of Risk Assessment: https://www.dhs.wisconsin.gov/publications/p01079.pdf

Wisconsin PRAMS Surveillance Report: https://www.dhs.wisconsin.gov/publications/p02500.pdf

Severe Maternal Morbidity Report: https://www.dhs.wisconsin.gov/publications/p01125.pdf

2017 Wisconsin Birth and Infant Mortality Report https://www.dhs.wisconsin.gov/publications/p01161-19.pdf

Acknowledgements

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