

Severe Maternal Morbidity and Mortality in Pennsylvania: Unpacking the new data

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Objectives

1

Understand the scope of severe maternal morbidity and mortality in Pennsylvania

2

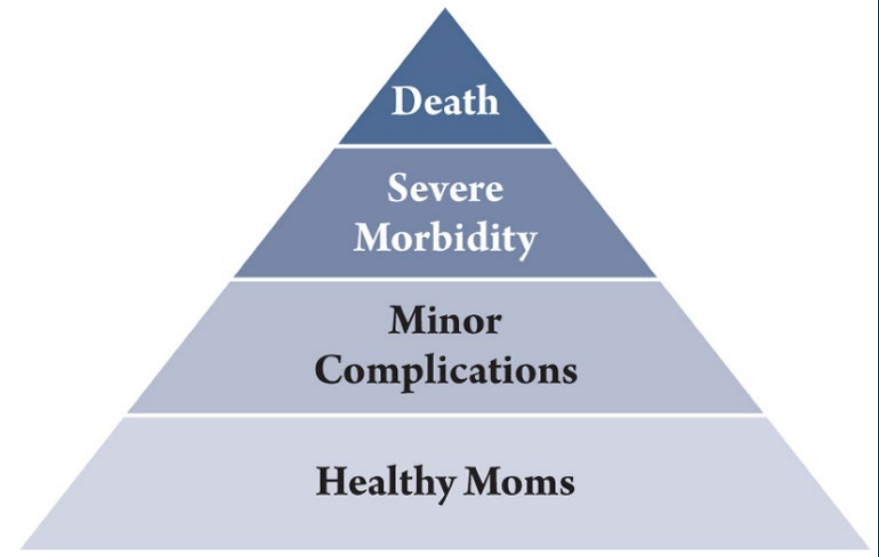
Explore contributing factors and disparities

3

Highlight data-driven solutions and collaborative efforts

Key definitions

- **Pregnancy associated mortality**: A death during or within one year of pregnancy, irrespective of cause
- **Pregnancy related mortality**: A death during or within one year of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy
- **Severe maternal morbidity**: unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman's health



Severe maternal morbidity

SMM's impact on maternal and infant health

- Adverse delivery outcomes
 - Intrauterine fetal death and infant mortality
 - NICU admission
 - preterm birth
- Greater risk of cardiovascular disease after pregnancy, both in the short and long term
- Associated with a negative impact on growth and neurodevelopment aspects of perinatal and infant health
- Higher risk for postpartum mental illness which impacts:
 - mother-child bonding
 - mother's ability to parent
 - associated with behavioral and cognitive development in off-spring

Impact of reducing SMM

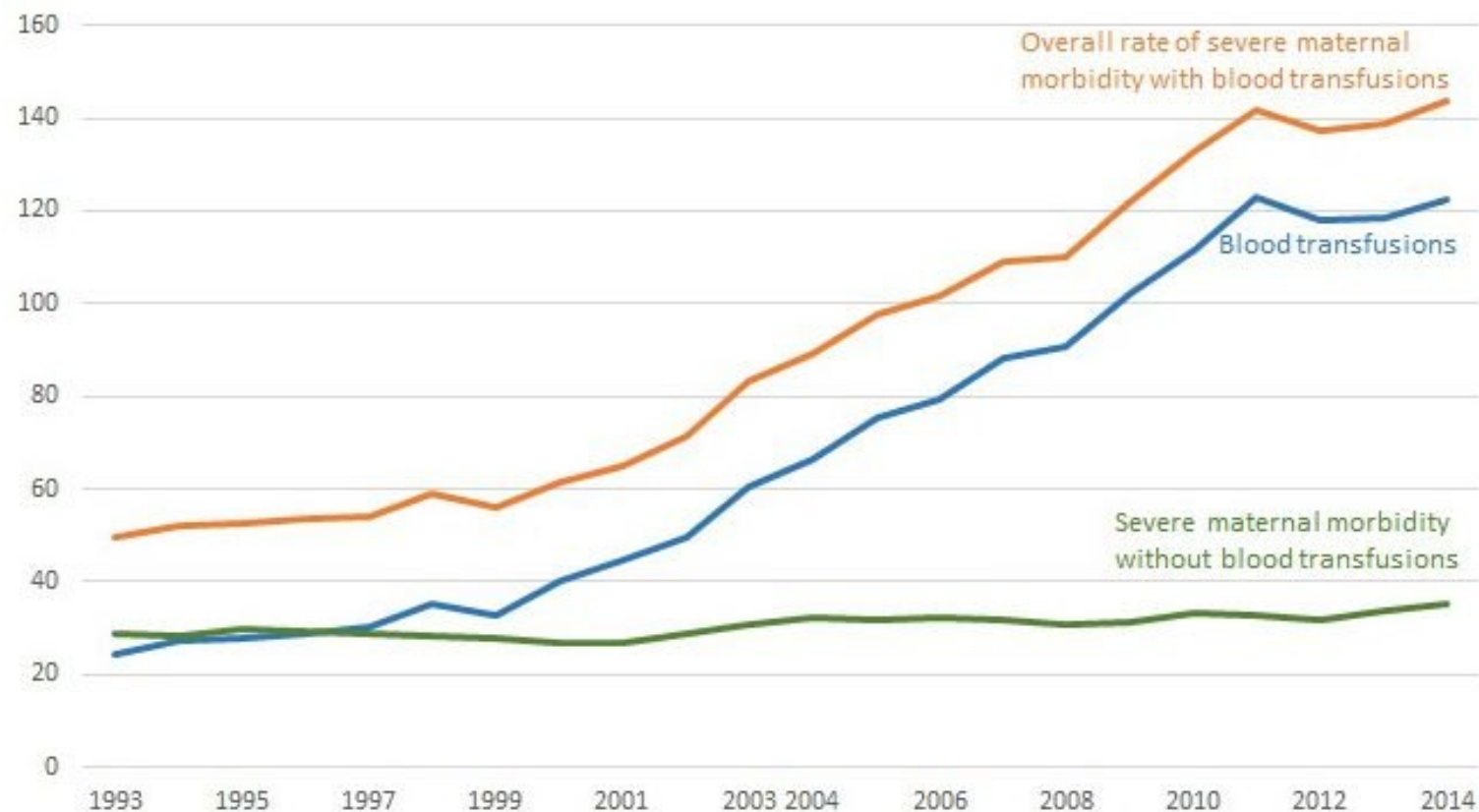
Many cases of severe maternal morbidity are preventable.

Richer understanding of maternal health before, during, and after childbirth is a foundation for developing safer, more effective approaches to maternal health care and is critical to influencing long term health.

National SMM Data



Rate of severe maternal morbidity per 10,000 delivery hospitalizations



Severe Maternal Morbidity in Pennsylvania, 2016-2022:

Individual level & Regional Factors

**Bureau of Epidemiology &
Bureau of Family Health**

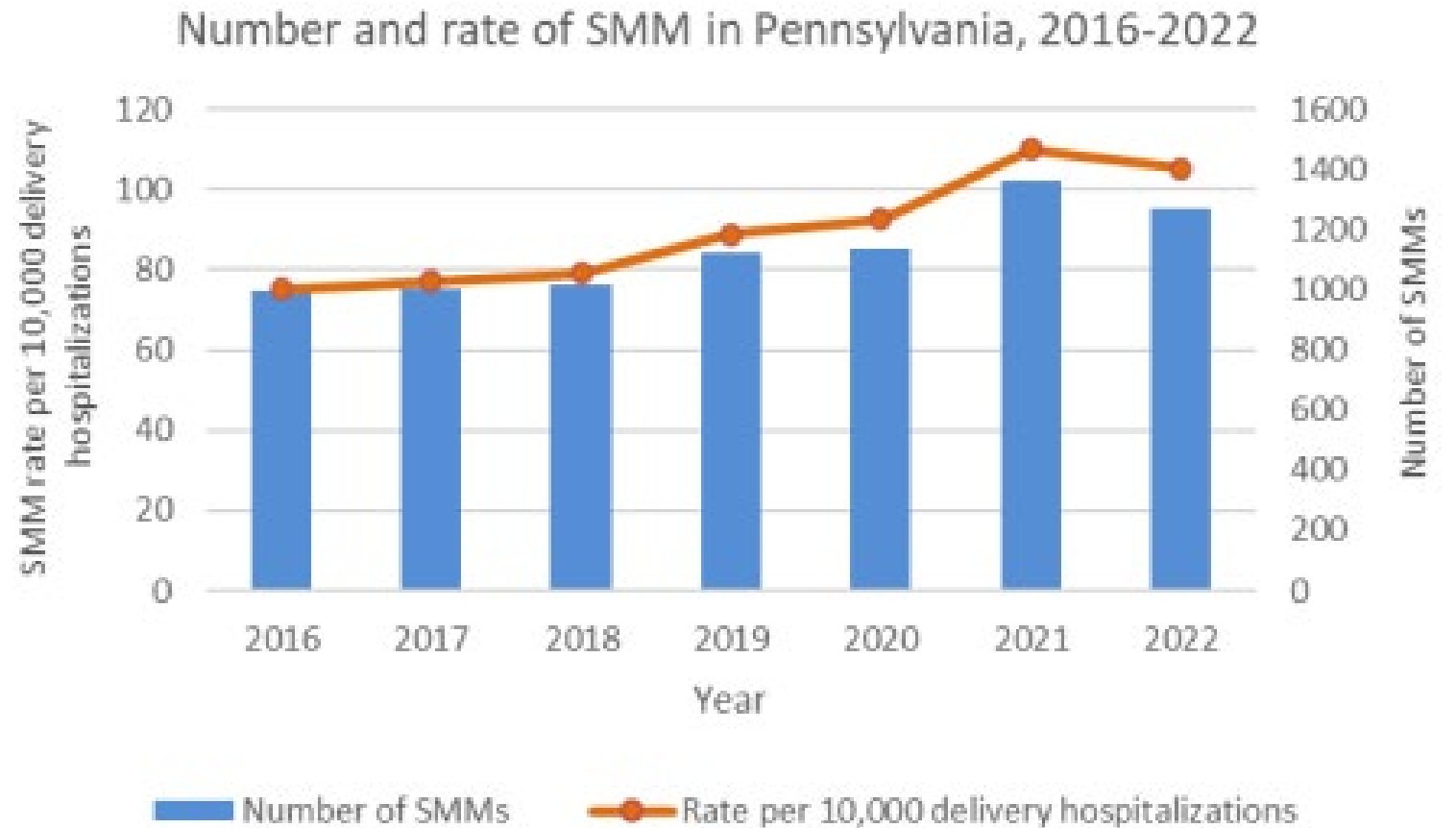
April 2024

How is this data captured?

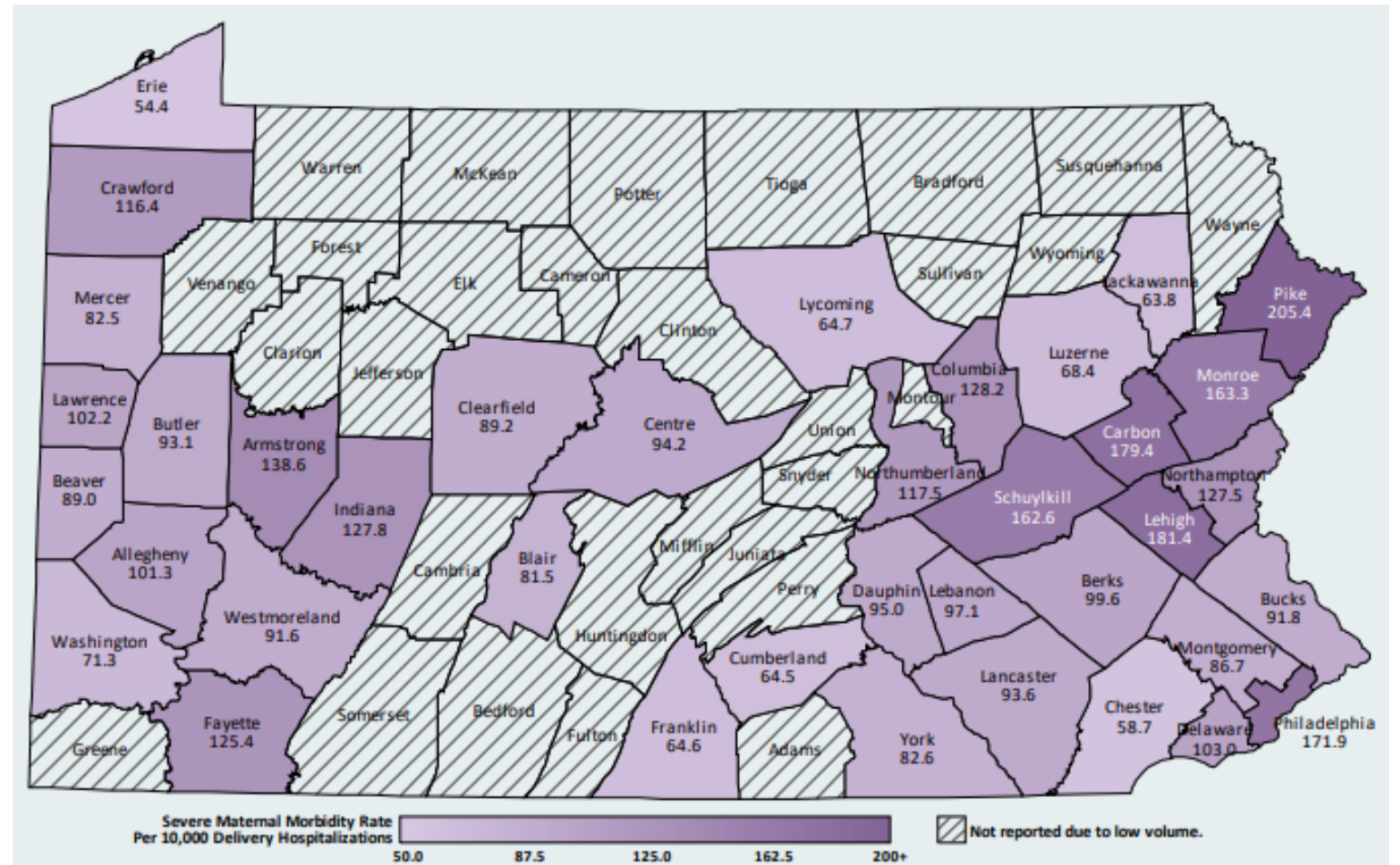
- Pennsylvania Health Care Cost Containment Council (PHC-4)
 - Inpatient diagnosis and procedure codes
 - Patient county of residence
- CDC: algorithm to identify SMM events during hospitalization
 - 16 diagnosis codes
 - 5 procedural codes

SMM Indicator Groups	SMM Indicators
Hemorrhage Complications	Disseminated intravascular coagulation Shock Hysterectomy
Respiratory Complications	Adult respiratory distress syndrome Temporary tracheostomy Ventilation
Cardiac Complications	Acute myocardial infarction Aneurysm Cardiac arrest/ventricular fibrillation Conversion of cardiac rhythm Heart failure/arrest during surgery or procedure Pulmonary edema/acute heart failure
Renal Complications	Acute renal failure
Sepsis Complications	Sepsis
Other Obstetric Complications	Amniotic fluid embolism Eclampsia Severe anesthesia complications Air and thrombotic embolism
Other Medical Complications	Puerperal cerebrovascular disorders Sickle cell disease with crisis

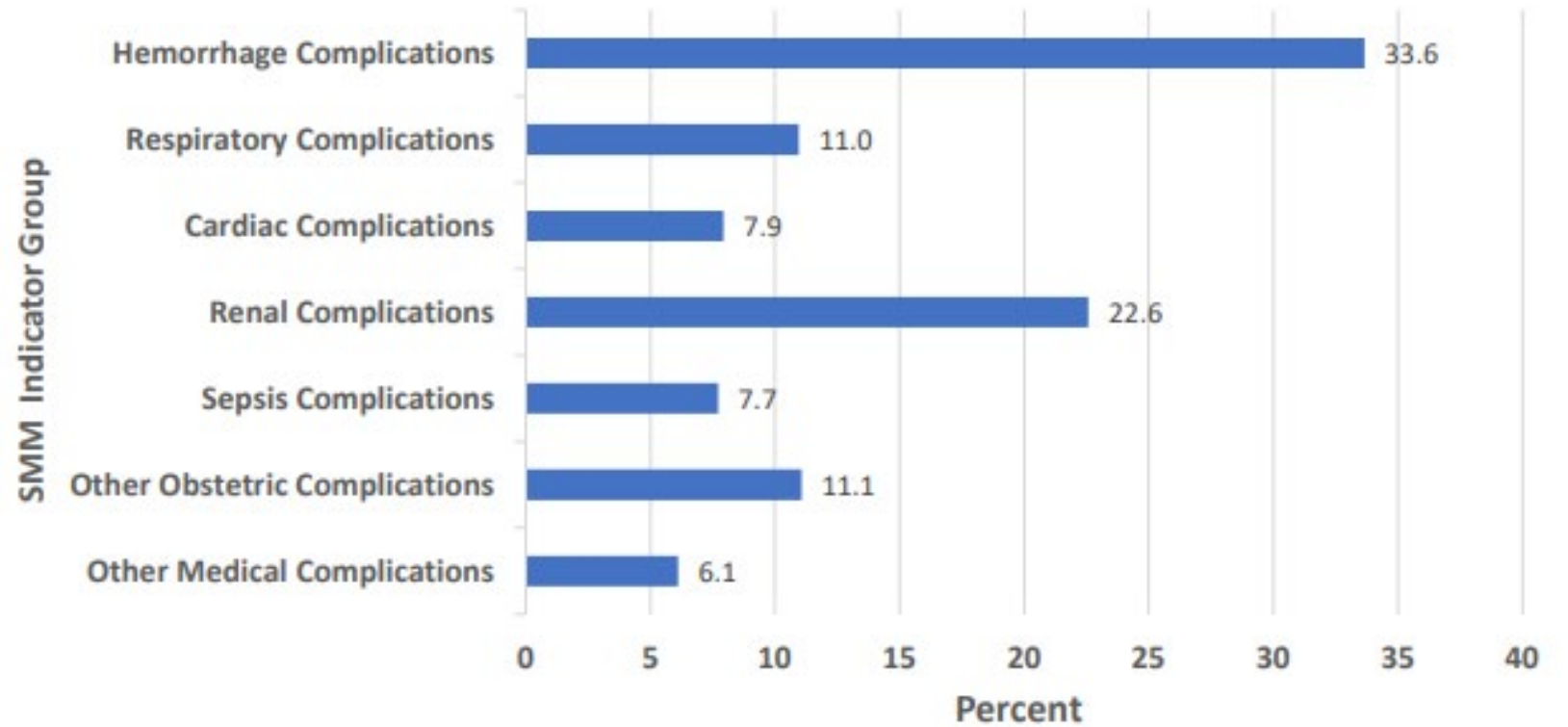
SMM in PA: 2016-2022



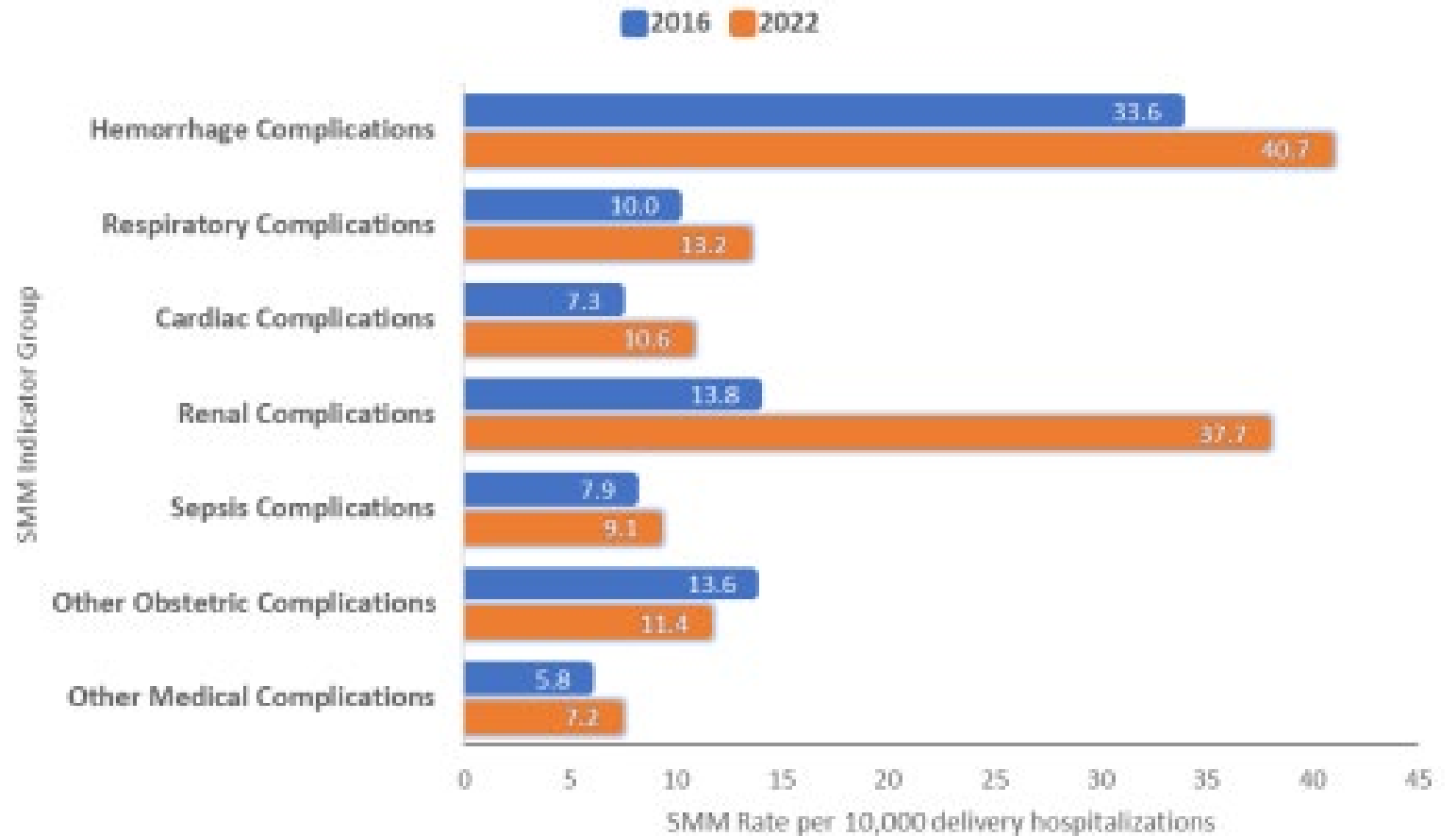
Rates by county of residence



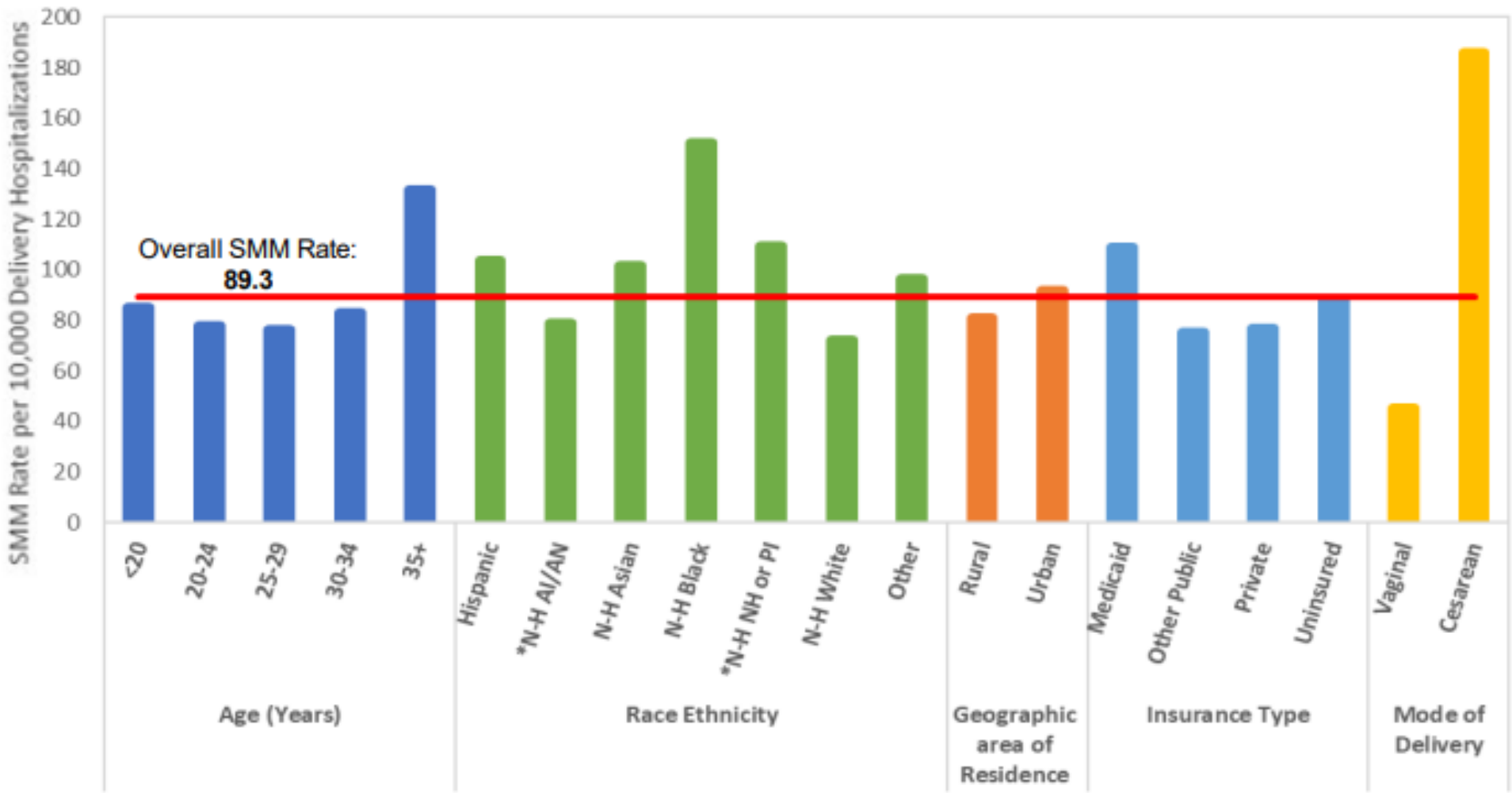
SMM by Indicator, 2016-2022



Change in rate of SMM by Indicator



SMM Rate by Patient Characteristics, 2016-2022



*N-H AI/AN: Non-Hispanic American Indian/Alaska Native; *N-H NH or PI: Non-Hispanic Native Hawaiian or Pacific Islander

Key takeaways

What we do know:

- SMM incidence increases with age
- Black birthing individuals are more likely to have an SMM event than all other races
- Incidence similar in both rural and urban settings
- Increased incidence of SMM in the Medicaid population

Gaps in what we know:

- Current data derived only from administrative data:
 - Inter-institutional coding variability
 - May not reflect most clinically significant cases
 - Can only determine correlation, not causation
 - Does not include hospital readmissions
 - Unable to ascertain clinical risk factors, only standard demographics
- Are we seeing a true trend upwards or are we just capturing this information better?

Philadelphia SMM Surveillance

- Philadelphia BOH passed regulation in 2023 mandating reporting of SMM to Philadelphia Department of Public Health
 - >4 units PRBC transfusion
 - ICU admission
 - Postpartum hospital stay >5 days
 - Postpartum hospital readmission (within 30 days)
- Goal:
 - Accurately understand true SMM cases in Philadelphia Hospitals in real time
 - Correlate SMM incidence with clinical diagnosis and individual risk factors

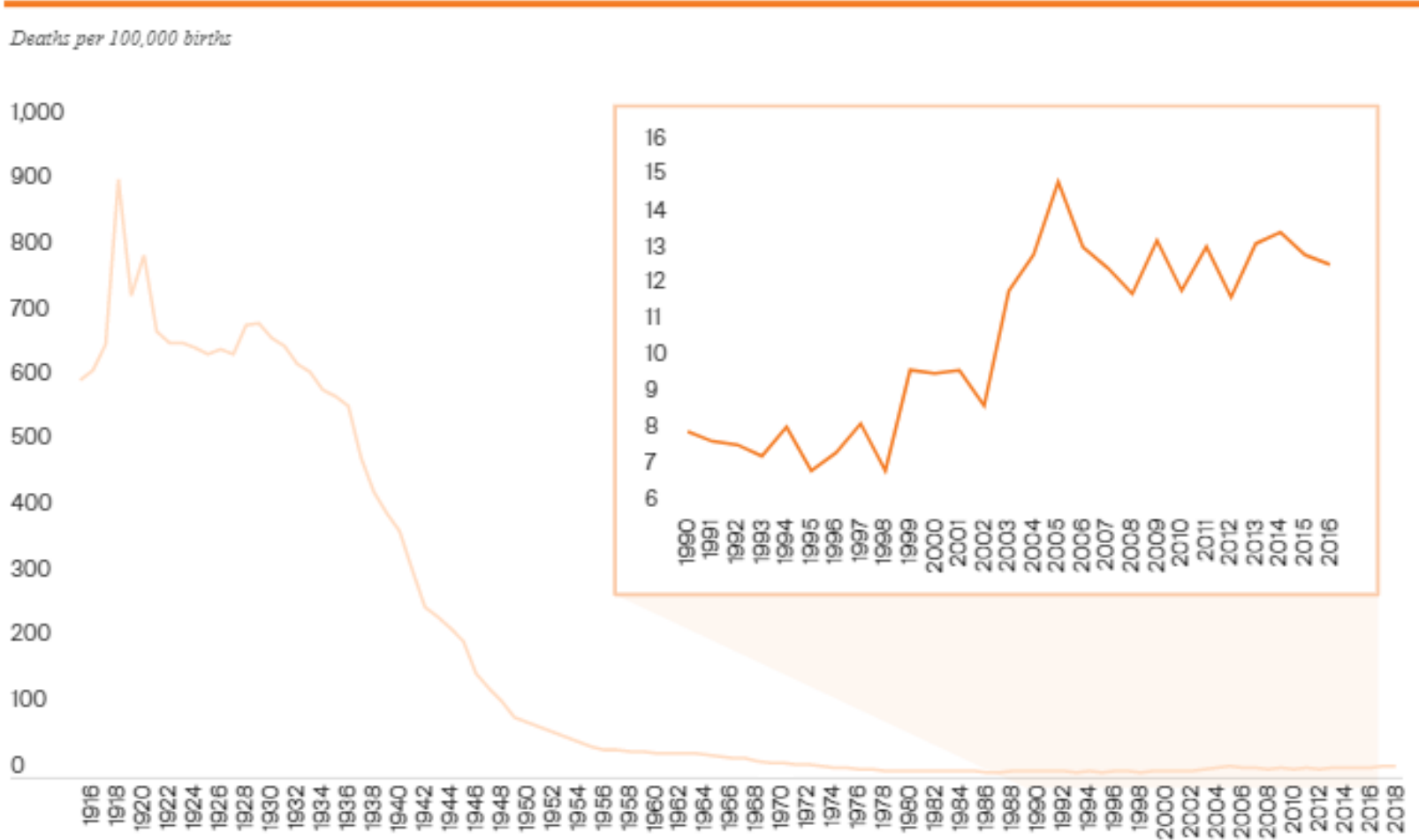


Maternal mortality

The significance

- Infrequent and relatively small number, but an important one
- Reflects the quality and effectiveness of our healthcare system
- Beyond healthcare, it's a measure of societal well-being and care
- Societal implications are vast:
 - The loss of a mother deprives families of a key pillar.
 - We lose significant productive years and societal contributions.
 - Most heartbreakingly, children are left without their mothers.

Maternal mortality has been gradually declining before recently rising

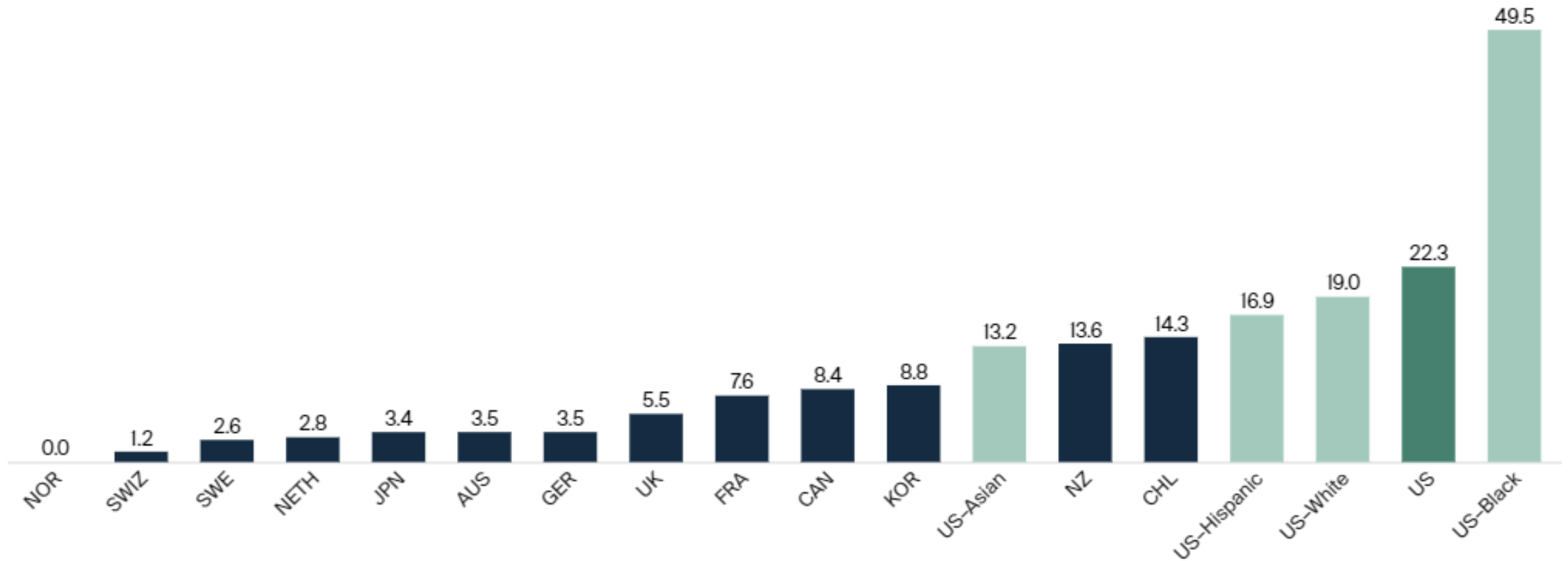


Data: NCHS, Maternal Mortality and Related Concepts, Vital & Health Statistics, Series 33, #3. & annual data reports. 1915–1960 data from NCHS, Vital Statistics Rates in the United States, 1940–1960.

Source: Eugene Declercq and Laurie Zephyrin, *Maternal Mortality in the United States: A Primer* (Commonwealth Fund, Dec. 2020). <https://doi.org/10.26099/ta1q-mw24>

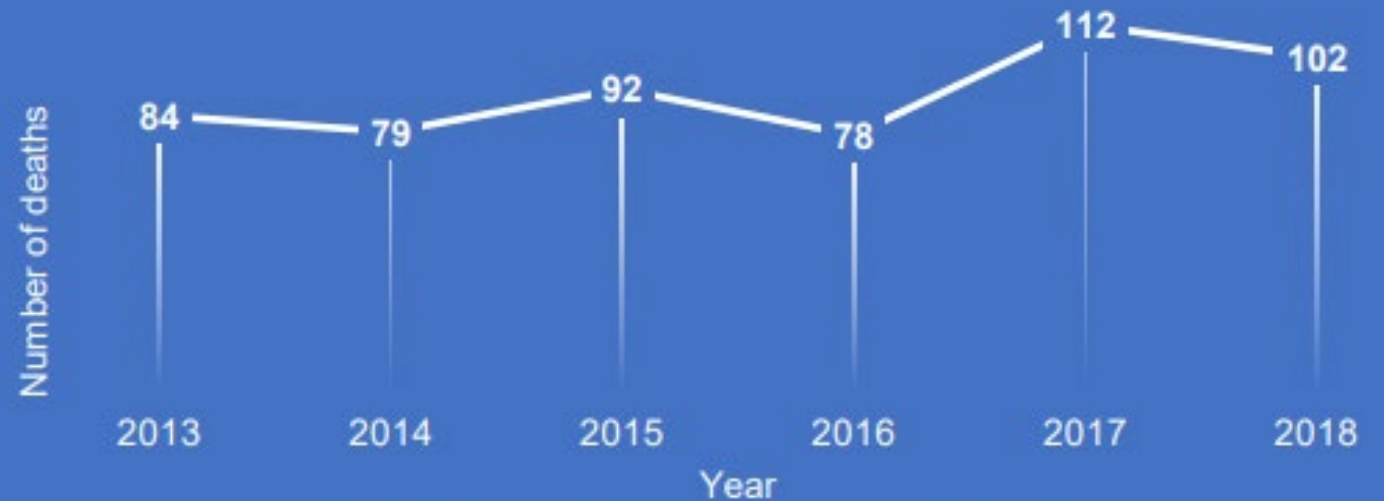
The United States vs. everyone else

Maternal deaths per 100,000 live births



PA Pregnancy Associated deaths: 2013-2018

Figure 1. Trend in Pregnancy-Associated Deaths in Pennsylvania, 2013 – 2018 (N=547)



Data source: DOH Bureau of Health Statistics & Registries

Pennsylvania Maternal Mortality Review Committee

- Established in 2018
- Led by PA Department of Health
- Review all pregnancy associated deaths of PA residents
- Multidisciplinary membership

2024 Pennsylvania Maternal Mortality Review Annual Report

Deaths occurring in 2020

**Pennsylvania
Department of Health**

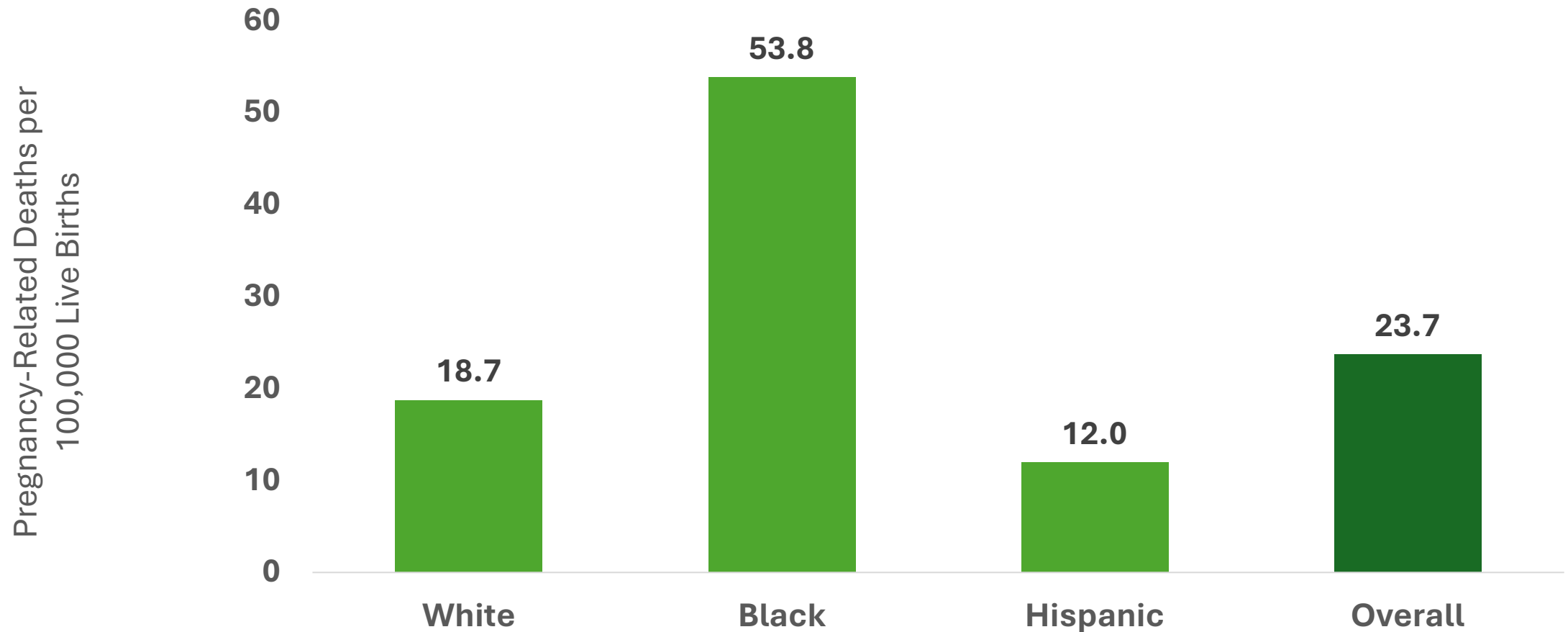
April 2024

Causes of death

Table 2: Categories of Leading Causes of Death for 2020 Pregnancy-Related Deaths in Pennsylvania (n=31)

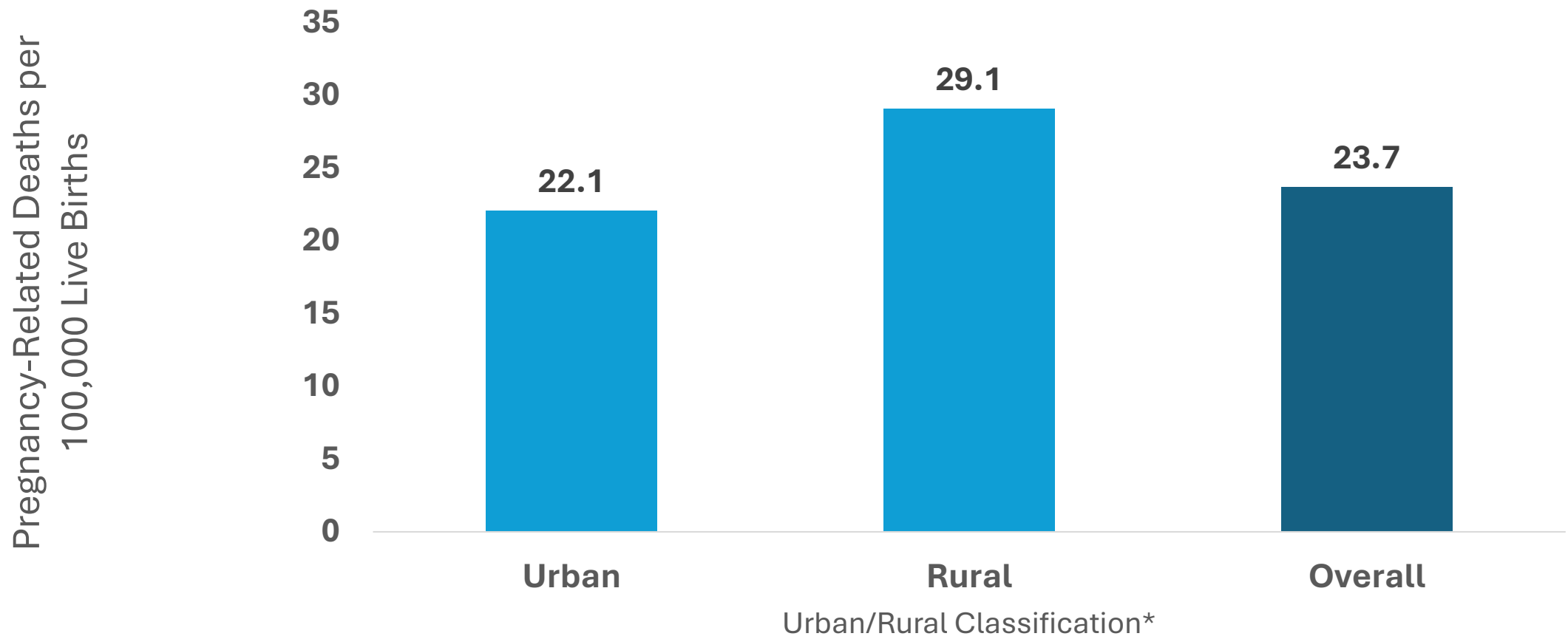
Category	n (%)
Mental health conditions	14 (45%)
Embolism	5 (16%)
Cardiac and coronary conditions	4 (13%)
Hemorrhage	2 (7%)
Pulmonary conditions	2 (7%)
Cancer	1 (3%)
Cerebrovascular accidents	1 (3%)
Injury	1 (3%)
Undetermined	1 (3%)

Pregnancy-Related Mortality Ratio by Race in Pennsylvania, 2020



Includes individuals who identify as Hispanic/Latine ethnicity and White or Black race.

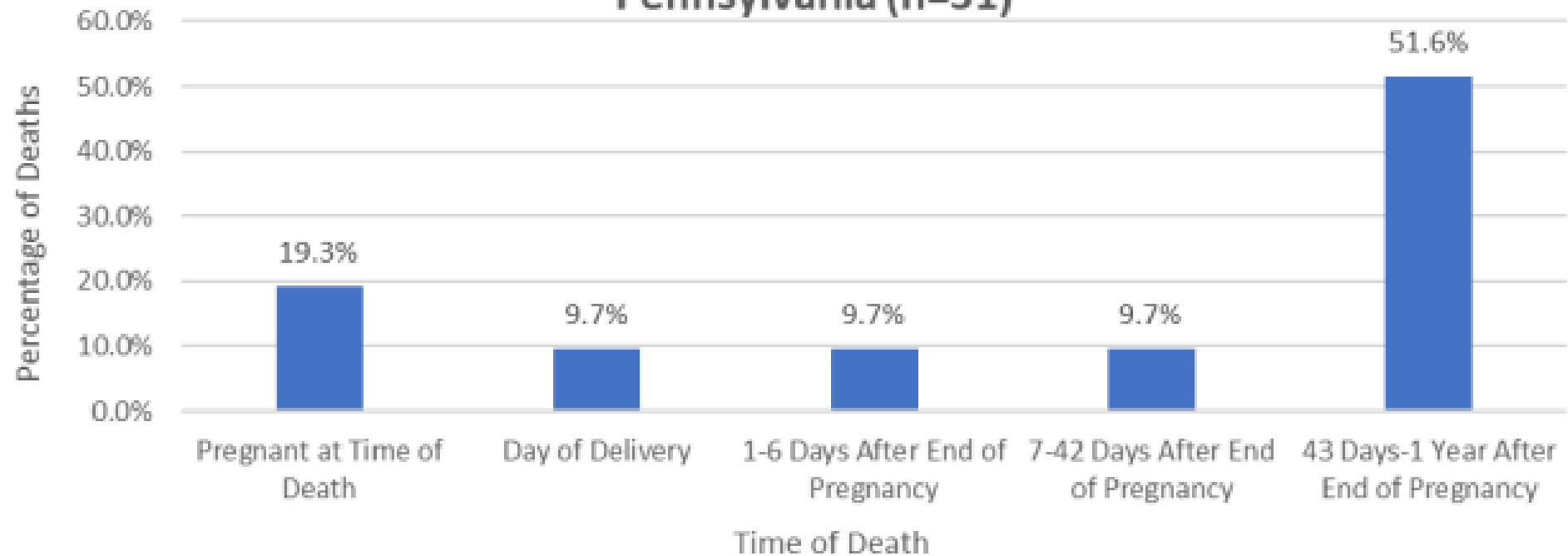
Pregnancy-Related Mortality Ratio by Urban/Rural Classification, Pennsylvania, 2020



**Urban/Rural Classification designated at the county level by the Center for Rural Pennsylvania*

Timing

Figure 14: Timing of 2020 Pregnancy-Related Deaths in Pennsylvania (n=31)



Preventability

CDC: death that may have been “averted by one or more reasonable changes to patient, community, provider, facility, and/or systems”

93% of pregnancy related deaths in PA are thought to be preventable

Themes

Implement strategies to combat medical mistrust	Douglas, CHWs, CRSs Workforce diversity Implicit bias training AIM bundle on reducing health disparities
Enhance care transitions	Health system/community Obstetric providers/primary care, mental health, and other subspecialties Hospitals/outpatient providers
Investing in strategies to make people's lives better	Guaranteed income Paid family leave Safe, affordable housing Healthy meals Education
Community awareness of pregnancy risks/complications	Public health campaigns Targeted education for partners/support people/families

What's going on in PA?



**DOH Selects Recipients of
Regional Maternal Health
Coalition Grants**



<https://www.papqc.org/about/hospitals>

- Established in 2019
- Membership: 75 hospitals representing 90.4% of Live Births in PA
- Current initiatives:
 - Maternal Substance Use
 - Maternal Sepsis
 - Substance Exposed Newborns
 - Safe Sleep



Caucus chairs:

State Reps. Gina Curry, La'Tasha Mayes, and Morgan Cephas

Pennsylvania MOMNIBUS

PABLACKMATERNALHEALTH.COM

- HB 1608** Extends Medicaid coverage for doula services and establishes a **Doula Advisory Board** to set standards and accreditation requirements for doulas.
- HB 1618** Requires **health insurance to cover doula services.**
- HB 2097** Requires **Medicaid to cover blood pressure monitors** for pregnant and postpartum enrollees.
- HB 2138** Requires **health insurance to cover blood pressure monitors** for pregnant and postpartum enrollees.
- HB 2136** **Designates maternal health deserts** to target investments in maternal health care services.
- HB 2127** Enhances access to **mental health care services** for pregnant and postpartum patients.
- HB 2178** Requires health-related boards within the Department of State to complete **implicit bias training** as part of continuing education requirements.
- HB 2137** Establishes the Maternal and Newborn Supply Kit Program **to distribute essential resources to new moms and parents.**

DOH Selects Recipients of Regional Maternal Health Coalition Grants

Goal: Address maternal health issues at the local level through collaboration

Regions:

- South Central: The Pennsylvania State University
 - Central: Family Health Council of Central PA
 - Northeast: Maternal and Family Health Services
 - Southeast (minus Philadelphia): Maternity Care Coalition
- Initiative is part of PA DOH's new launched Division of Maternal Health Services



Ask your pregnant and postpartum patients, "How are you really doing?"

REMEMBER TO A.C.T

A **ASK:** Ask your pregnant and postpartum patients if they're struggling with **unexpected feelings** like: **sadness, inadequacy, anxiety, guilt.** Especially beyond two weeks after giving birth.

C **CONNECT:** Connect them to free resources that can help. Scan the QR code or visit phillylovesfamilies.com/mental-emotional-support

T **TELL:** Tell your pregnant and postpartum patients that you're there to support them.



• Esta
Actividad
costa \$4.1 Million

SAVE YOUR LIFE: Get Care for These **POST-BIRTH Warning Signs**

Most women who give birth recover without problems. But some women can have complications after the birth of a baby. Learning to recognize these POST-BIRTH warning signs and knowing what to do can save your life.

<p>Call 911 if you have:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pain in chest <input type="checkbox"/> Obstructed breathing or shortness of breath <input type="checkbox"/> Seizures <input type="checkbox"/> Thoughts of hurting yourself or your baby 	<p>POST-BIRTH WARNING SIGNS</p>

Philadelphia
new



YOUR SHORT WALK TO DAYCARE

MIGHT BE THE ONLY TIME THEY FEEL SAFE TODAY.

This Innovative Program from a Philly Hospital Is Saving Lives of New Mothers Throughout the City—and Beyond



presented by: **PENN MEDICINE**

Bringing it all together

- Issues are a result of systemic failures spanning generations.
- We may not see the fruits of our labor for decades.
- It's about what you do AND how you do it. Centering needs and voices of Black birthing people is vital.
- We need to innovate! The same old interventions are just that—old!
- Take the harm reduction approach—fix the things you can right now through thoughtful investment and program planning while also working methodically and strategically on the upstream issues.
- The system is perfectly designed for the outcomes it achieves—LET'S START DISRUPTING!!

Do not be daunted by the enormity of the world's grief.
Walk humbly now.
Do justly now.
Love mercy now.
You are not expected to complete the work,
but neither are you free to abandon it.

RABBI RAMI SHAPIRO



Thank you!

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www.Birthjusticephilly.com