PUBLIC HEALTH INFRASTRUCTURE CENTER

STATE • TRIBAL • LOCAL • TERRITORIAL

Leveraging Legal Epidemiology to Strengthen Maternal Mortality Research in State, Tribal, Local, and Territorial Organizations

Panel Discussion | 2023 Public Health Law Conference

2023 PUBLIC HEALTH LAW CONFERENCE People. Policy. Progress.

October 25, 2023

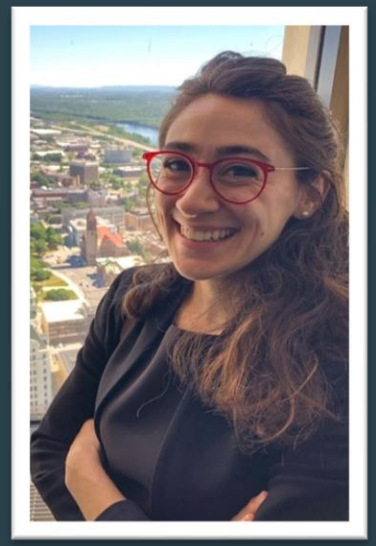
Panel Goals

Discuss:

- The knowledge that can be gained from legal epidemiology research on maternal mortality, and how this kind of research can produce data required for policymaking
- The utility of legal epidemiology research from a practitioner's perspective, featuring perspectives on how state, Tribal, local, and territorial (STLT) practitioners could/are using legal epidemiology info in their maternal health policy solutions
- Existing or remaining gaps in surveillance needs, and other areas apt for legal epidemiology
- Best practices for communicating the utility of this research and associated learning to interested parties in the field

Agenda:

1. Engaging with Legal Epidemiology to Address Pregnancy-Associated Mortality: Opportunities for State, Tribal, Local, and Territorial Stakeholders
   Lauren Tonti, JD MPH
   DRT Strategies/Office of Public Health Law Services, CDC
2. Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (Erase MM)
   Julie Zaharatos, MPH,
   Division of Reproductive Health, CDC
3. Leveraging Legal Epidemiologic Methodology to Understand the Impact of State-Level Substance Use Policies on Maternal and Infant Outcomes
   Kathryn Thomas, Ph.D., JD, *Yale Law School's Justice Collaboratory and Yale School of Medicine's SEICHE Center for Health and Justice*
   Cara Struble, Ph.D., *Dartmouth Geisel School of Medicine*
4. Panel Discussion & Questions



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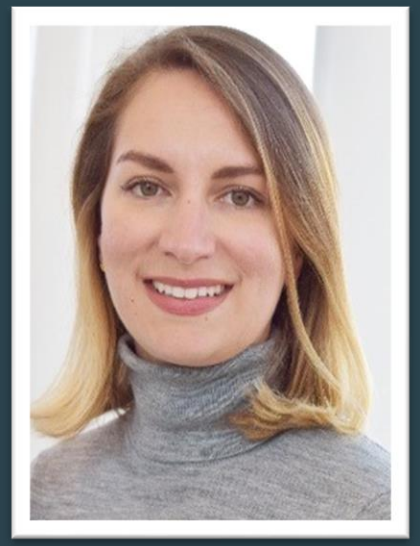
Centers for Disease Control & Prevention (CDC)



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October 25, 2023

CDC's Office of Public Health Law Services (OPHLS)

What we do: Advance the use and understanding of law as a public heath tool

We serve: CDC programs and state, tribal, local, and territorial (STLT) communities, and you!

OPHLS provides technical assistance to STLE jurisdictions and CDC programs through:

- Legal research, legal epidemiology, and translating legal data
- Training, capacity building, and workforce development
- Partnerships and outreach

Disclaimer

The contents of this presentation have not been formally disseminated by the Centers for Disease Control and Prevention. The contents should not be construed to represent any agency/organization determination or policy.

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Exploring Legal Epi in Maternal Health Research today:

- What is the research gap?
- What role can legal epidemiology play?
- Where are the opportunities for STLTs to use legal epi in maternal health?
- How can STLTs build legal epi capacity?

Exploring Legal Epi in Maternal Health Research today:

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Knowns

- ✓ U.S. maternal mortality higher than in other high-income countries
- ✓ Postpartum deaths
- ✓ Inequity and discrimination
- ✓ Negative outcomes have increased over time
- ✓ Preventable outcomes

Causes of Pregnancy-Related Deaths

- Mental & Behavioral health issues
- Cardiac and coronary conditions
- Hemorrhaging
- Cerebrovascular accident
- Embolism
- Cardiomyopathy
- Injury
- Hypertension disorders related to pregnancy
- Infection

Maternal Health Ecosystem

Disparities in morbidity and mortality

Source: CDC Pregnancy Mortality Surveillance System (PMSS), 2017-2019

Research Needs:

- Why?
- How to address the known outcomes?
- Relationship between actions and known outcomes? Are there intermediaries?

Call for Information & Action

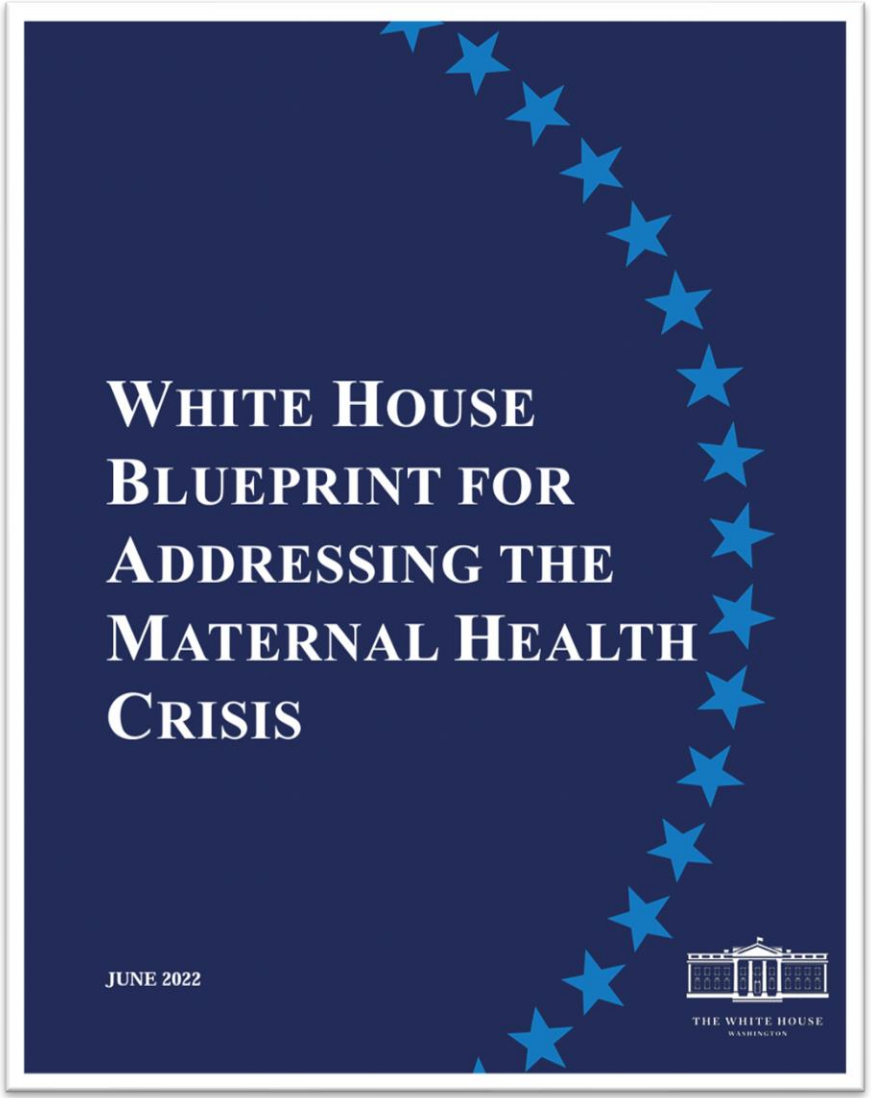

NEWS RELEASES

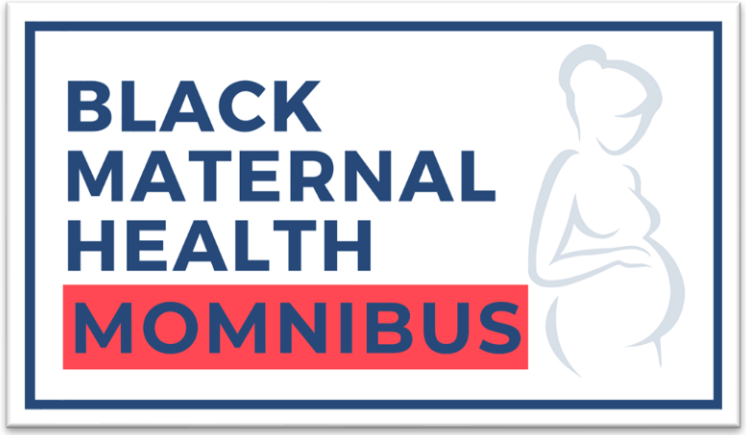
Thursday, August 17, 2023

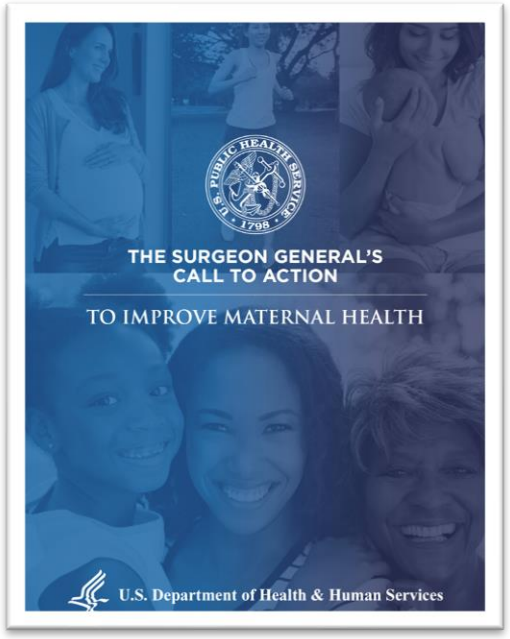
NIH establishes Maternal Health Research Centers of Excellence

Initiative to support research to reduce pregnancy-related complications and deaths and promote maternal health equity.

The National Institutes of Health has awarded $24 million in first-year funding to establish Maternal Health Research Centers of Excellence. Part of NIH's Implementing a Maternal Health and Pregnancy Outcomes Vision for Everyone (IMPROVE) initiative, the centers will develop and evaluate innovative approaches to reduce pregnancy-related complications and deaths and promote maternal health equity. The grants are expected to last seven years and total an estimated $168 million, pending the availability of funds.







State, Tribal, Local, Territorial (STLT) Strategies

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New York State Prioritizes Maternal Health with Expansion of Medicaid Prenatal and Postnatal Benefits

2023-24 Enacted Budget Invests in Health Equity by Adopting Key Evidence-Based Interventions to Better Care for New York Parents and Newborns

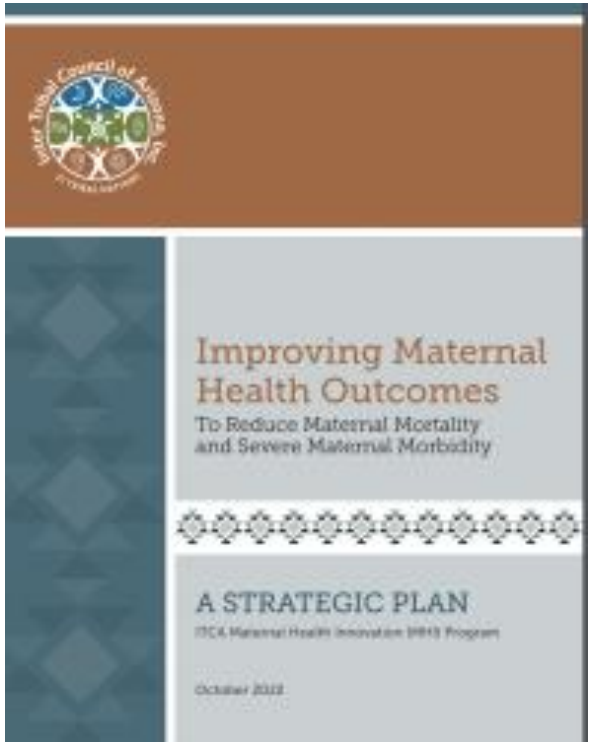
ALBANY, N.Y. (August 24, 2023) – The New York State Department of Health announced several key initiatives aimed at improving maternal and newborn health. Enacted as part of the 2023-24 New York State Budget, the state is committing to multiple Medicaid investments that will expand access to prenatal and postnatal care and support better birth outcomes. This announcement is released on the heels of the State's adoption of the federal option to extend Medicaid and Child Health Plus (CHPlus) postpartum coverage from 60 days to a full year following pregnancy.

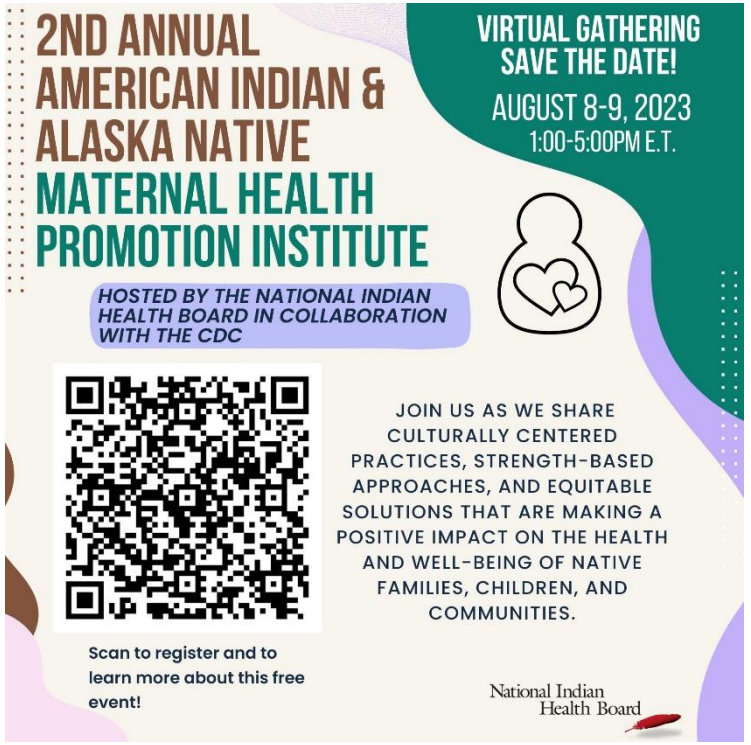
"It's important that all pregnant people are provided access to affirming quality care for safe deliveries, as well as resources that will ensure their babies are healthy and thriving," **State Health Commissioner Dr. James McDonald said.** "These investments will show maternal health as the priority it is, by making sure all families receive support during this important time."

"These initiatives reaffirm New York's commitment to providing high-quality maternal care that is accessible during pregnancy, labor, and postpartum through the Medicaid program," **State Medicaid Director Amir Bassiri said**. "By updating perinatal care standards and significantly expanding benefits, the Medicaid Program is dedicated to ensuring our health care system supports all New York families, regardless of race or circumstance. I want to thank Governor Hochul for making maternal health a top priority and helping New York become a leader in the national fight to combat maternal mortality."

As maternal health remains a top priority, the state is doubling down on protecting pregnant New Yorkers. Key policies in the 2022-23 and 2023-24 enacted New York State Budget include:

- **Doula Coverage:** Effective 2024, Medicaid will establish statewide coverage of doula services for all pregnant, birthing, and postpartum Medicaid-enrolled individuals. A doula is a non-medical provider of physical, emotional, and informational support to pregnant people before, during, and after delivery.
- **Midwifery Services:**Medicaid increased the reimbursement rate for midwifery services from 85 percent to 95 percent of the Physician Fee Schedule as of July 2022, as well as benchmarking the physician fee schedule to 80 percent of Medicare fees in October 2023.
- **Updated Perinatal Care Standards:** Medicaid provided clarifying guidance and requirements on perinatal care for all Medicaid providers serving pregnant and postpartum individuals, with an explicit focus on health equity, health disparities, and racial bias.





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Legal Epidemiology

Scientific study and deployment of law as a factor in the cause, distribution, and prevention of disease and injury in a population.

What role can legal epidemiology play?

- Analyze natural variations to better understand relationships between law/policy and health outcomes
- Translates qualitative into quantitative data
- Generates datasets that:
  - Are Cross-sectional
  - Are Longitudinal
  - Can be paired with health outcome data
- Contribute to the body of evidence

Why is this an apt methodology to apply?

- Scientific
- Provides a way to systematically create data that can be used as evidence for/against local and state action, laws, and policies, etc.
- Incorporates equity considerations
- Areas of maternal health influenced by law
- Laws/Policies in place to try to address maternal mortality crisis– what are their impacts?

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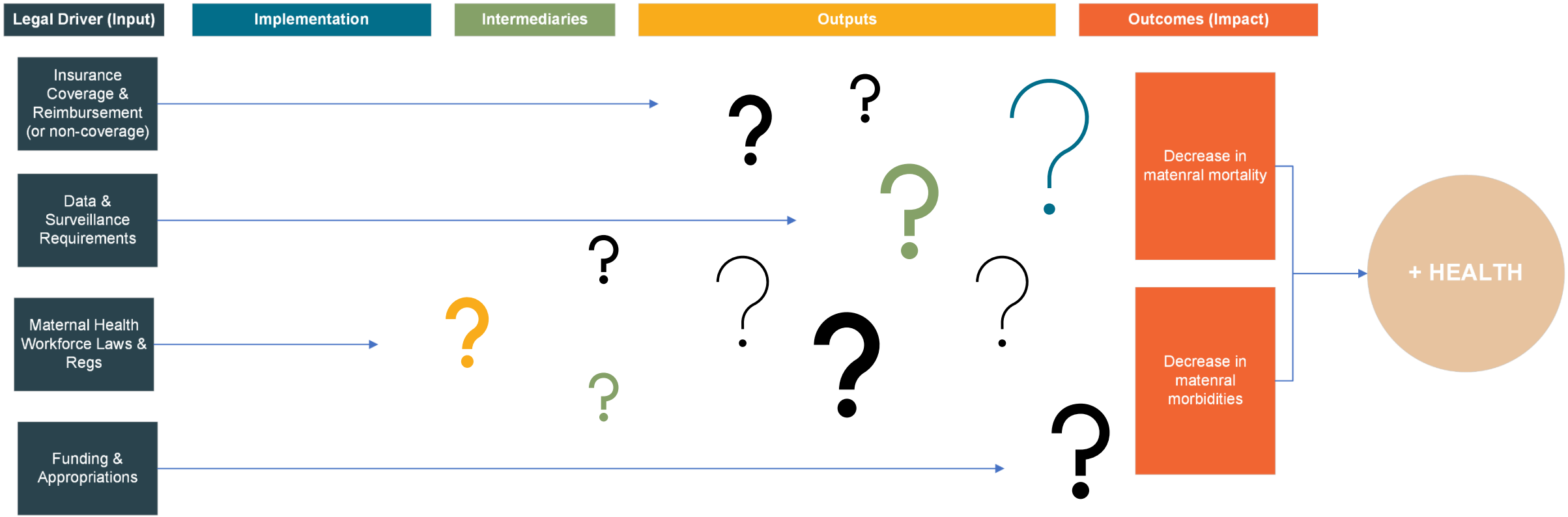
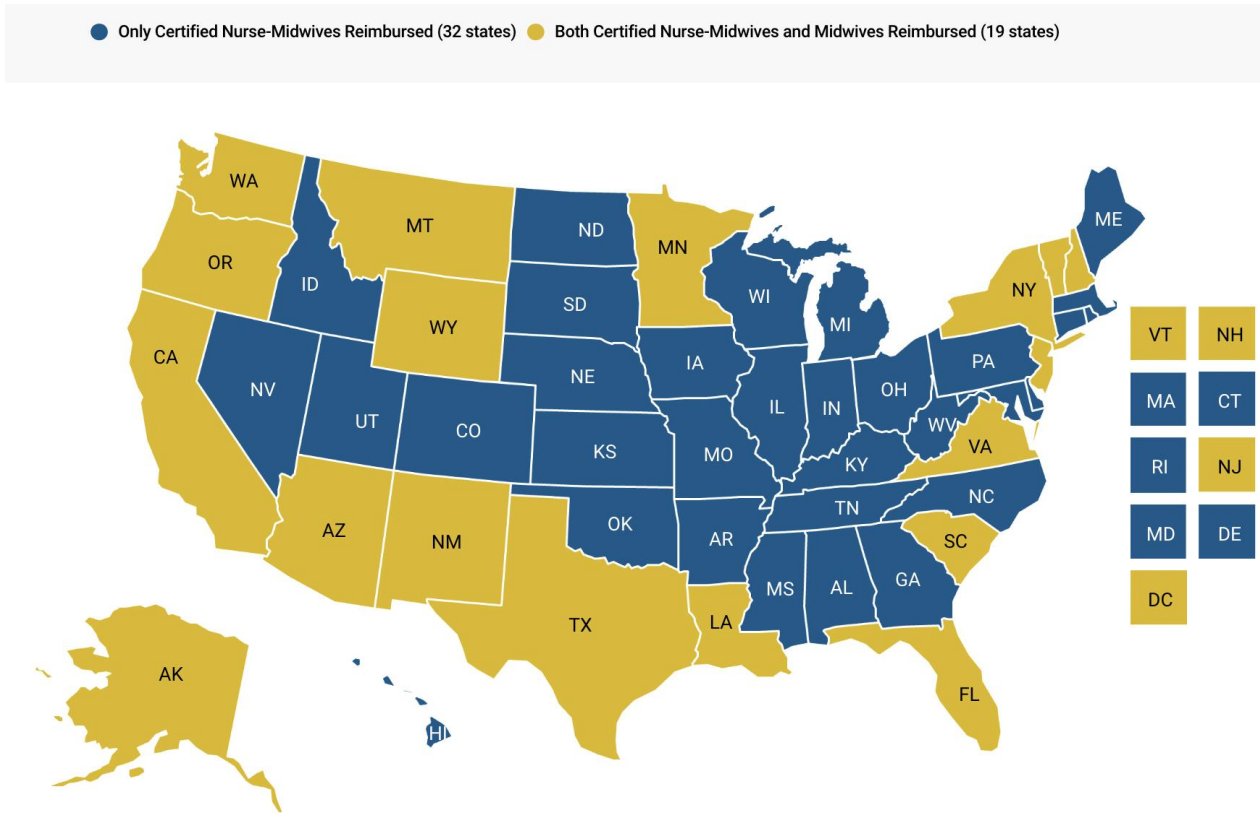
How may legal drivers impact maternal health?



Opportunities
Legal Devices & Variables

- Access to Care
  - Insurance Coverage
- Workforce
  - Scope of Practice, Training Requirements
- Data & Surveillance
- Other
  - Funding & Appropriations
  - Social Determinants of Health
  - Mental & Behavioral Health

Access: Insured Services & Reimbursement



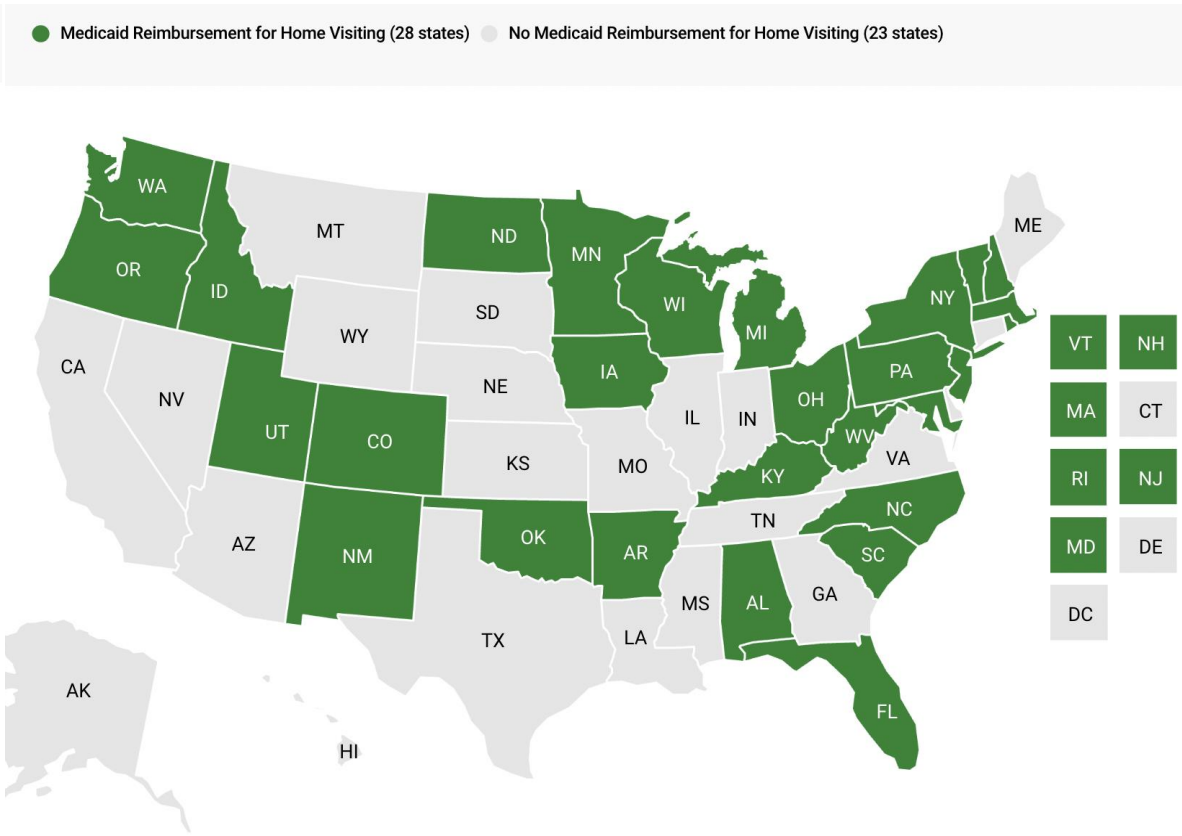
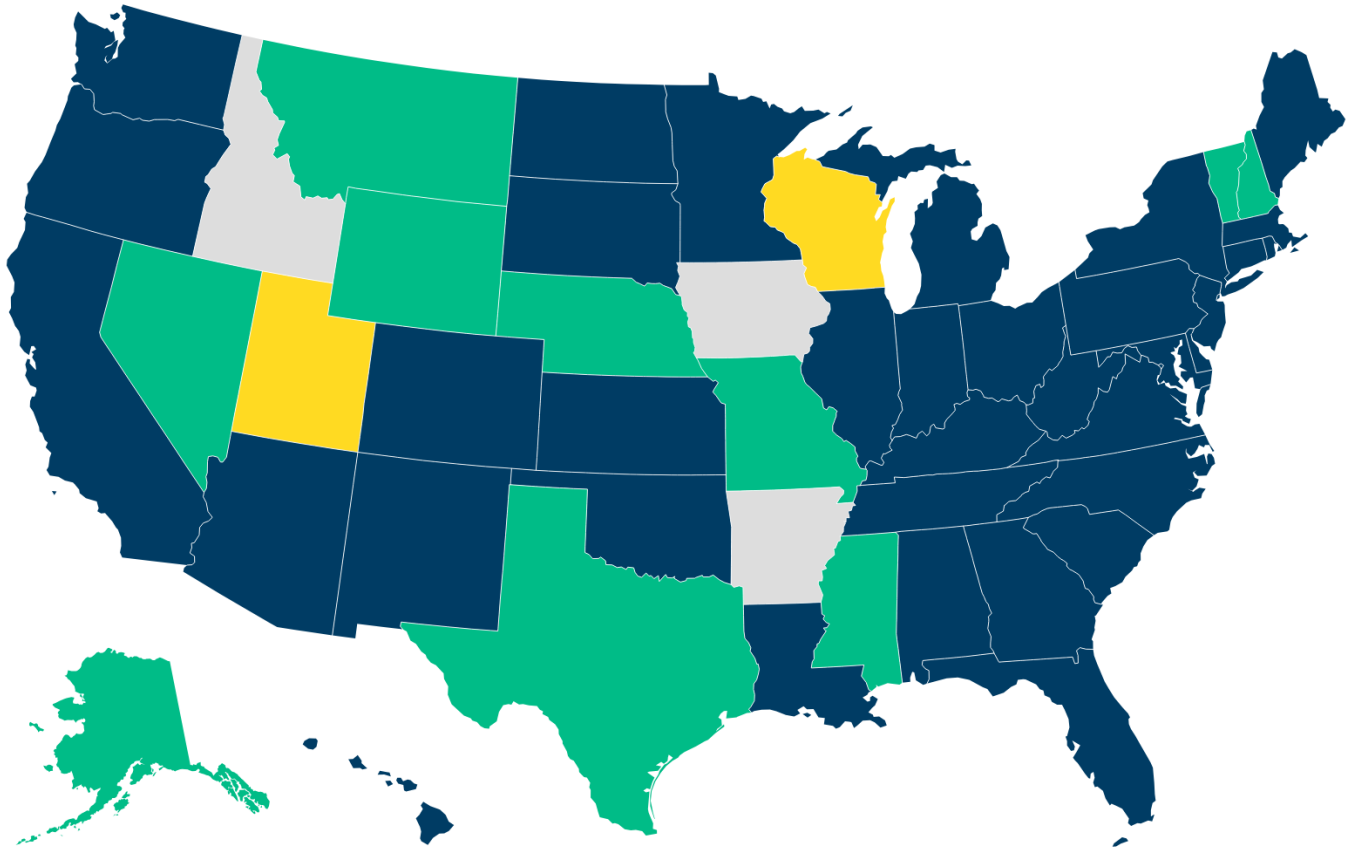


Image source: National Academy for State Health Policy

Access: Medicaid Postpartum Coverage Expansion

Postpartum Coverage Tracker Map

- 12-month extension implemented (36 states including DC)
- Planning to implement a 12-month extension (10 states)
- Limited coverage extension proposed (2 states)



NOTE: CMS approved the U.S. Virgin Island's state plan amendment on 6/23/2023.
SOURCE: **KFF analysis of approved and pending** 1115 waivers, state plan amendments, and state legislation, as of August 3, 2023.

KFF

Workforce: Birth Attendant Scope of Practice

The Network for Public Health Law

Ideas. Experience. Practical answers.

REPRODUCTIVE HEALTH AND EQUITY

50-State Survey: Direct Entry Midwives

Direct Entry Midwives Across the Nation

Background

The United States has the highest maternal mortality rate among developed countries.[1] Alarmingly, the rates of these largely preventable maternal deaths in the US have been increasing since 2000.[2] In many countries, midwives are an important part of the maternal care team, while in the United States, obstetrician-gynecologists make up the majority of the workforce.[3] In 2018, the US had 11 obstetricians and 4 midwives per 1,000 live births.[4] New Zealand, which has the lowest maternal mortality rate of developed countries, had 8 obstetricians and 46 midwives per 1,000 live births.[5] The World Health Organization recommends midwives to reduce maternal mortality.[6]

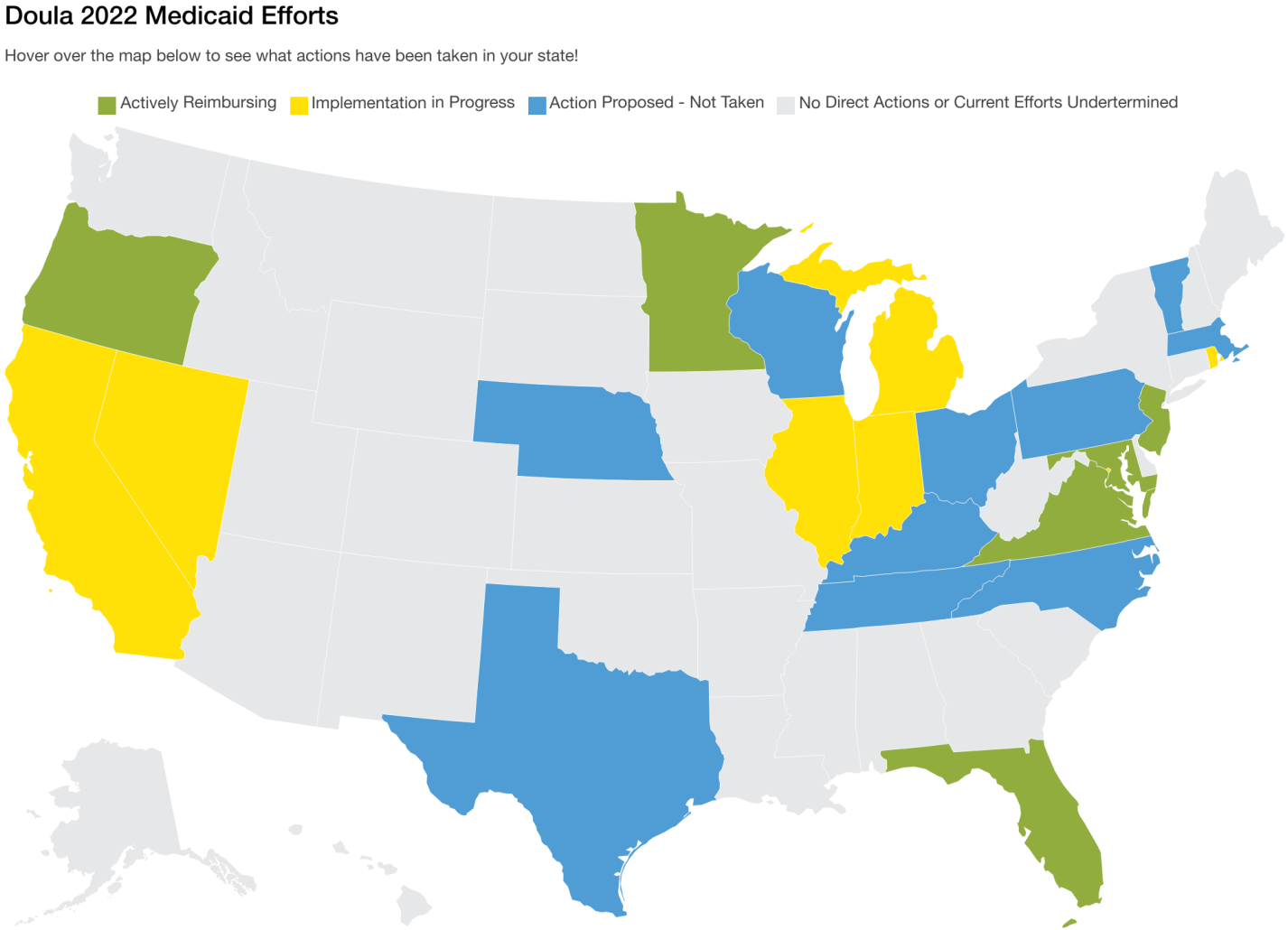
Midwives play an essential role in providing culturally appropriate care in a childbearing setting, including involving a mother in the decision-making of birth choices and birth position during labor. Therefore, striving to increase the number of available midwives is especially important to safeguard the health of communities of color. Disparities are prevalent and well-documented in perinatal outcomes for White women versus women of color and persist even when controlling for factors like socioeconomic status and access to quality prenatal care.[7] Black Americans in particular face substantially higher rates of maternal and neonatal mortality, preterm birth, and low birthweight.[8] Black mothers experience a two to four times elevated risk for both maternal and infant mortality than do White

Summary of State Laws on Direct Entry Midwives

Enacted or adopted as of October 2022

State	Licensure Requirements	Regulating Body	Administration of Medication
Alabama	Must obtain a certified professional midwife credential through a program or pathway accredited by the Midwifery Education Accreditation Council or another accrediting agency recognized by the United States Department of Education. Ala. Code § 34-19-15(a)(3).	Alabama State Board of Midwifery	Licensed midwives in Alabama can administer anti-hemorrhagic medication and oxygen in emergency circumstances. Ala. Midwifery Admin. Code Ch. 582-x-38.09 (a)(13).

Workforce: Birth Attendant Scope of Practice



Source: This graphic was made using NHeLP's tracking "Current State Doula Medicaid Efforts." For more information including implementation timeline and strategy, summary of implementation efforts, available resources, and training, credentialing, and/or certification requirements please visit: https://healthlaw.org/doulamedicaidproject/

Georgetown University Health Policy Institute
CENTER FOR CHILDREN AND FAMILIES

Workforce: Birth Attendant Scope of Practice

§ 36-766.01. Application for certificate; certification; fingerprint clearance card; renewal; continuing education

A. "A person may apply to the director for a certificate to practice as a state-certified doula on a form prescribed by the director and shall furnish the information required by the director.

B. The director shall grant a certificate to a doula who:

1. Meets the qualifications prescribed by this article and rules adopted pursuant to this article.
2. Pays the applicable fees. The director shall prescribe by rule a sliding fee scale for all fees required by this article and rules adopted pursuant to this article.
3. Possesses a valid fingerprint clearance card issued pursuant to title 41, chapter 12, 3.1.

C. A doula certificate is valid for three years and may be renewed every three years by applying to the director and paying the applicable fees.

D. A person shall file an application for renewal at least thirty days and not more than ninety days before the date the current doula certificate expires. A state-certified doula must complete fifteen hours of related continuing education and submit documentation of completion with the renewal application"

Ariz. Rev. Stat. Ann. § 36-766.01

§ 36-766.07. Certification not required

"This article does not require a doula to be certified by the department in order to practice as a doula in this state"

Ariz. Rev. Stat. Ann. § 36-766.07

Workforce: Implicit bias training

43.70.613. Health care professionals--Health equity continuing education

(1) "By January 1, 2024, the rule-making authority for each health profession … subject to continuing education requirements must adopt rules requiring a licensee to complete **health equity continuing education training** at least once every four years. […]

(c) The minimum standards must include instruction on skills to address the structural factors, such as bias, racism, and poverty, that manifest as health inequities. These skills include individual-level and system-level intervention, and self-reflection to assess how the licensee's social position can influence their relationship with patients and their communities. These skills enable a health care professional to care effectively for patients from diverse cultures, groups, and communities, varying in **race, ethnicity, gender identity, sexuality, religion, age, ability, socioeconomic status, and other categories of identity** . The courses must assess the licensee's ability to apply health equity concepts into practice. Course topics may include, but are not limited to:

(i**) Strategies for recognizing patterns of health care disparities** on an individual, institutional, and structural level and eliminating factors that influence them;

(ii) Intercultural communication skills training, including how to work effectively with an interpreter and how communication styles differ across cultures;

(iii) **Implicit bias training to identify strategies** to reduce bias during assessment and diagnosis;

(iv) Methods for addressing the emotional well-being of children and youth of diverse backgrounds;

(v**) Ensuring equity and antiracism in care delivery** pertaining to medical developments and emerging therapies;

(vi) Structural competency training addressing five core competencies:

(A) Recognizing the structures that shape clinical interactions;

(B) Developing an extraclinical language of structure;

(C) Rearticulating "cultural" formulations in structural terms;

(D) Observing and imagining structural interventions; and

(E) Developing structural humility; and

(vii) Cultural safety training."

Wash. Rev. Code Ann. § 43.70.613 (West)

Workforce: Implicit Bias Training

§ 123630.3. Implicit bias prevention training; curriculum; continuing education

(a) **A hospital … that provides perinatal care, and an alternative birth center or primary care clinic subject to Section 1204.3, shall implement an evidence-based implicit bias program for all health care providers** involved in the perinatal care of patients within those facilities.

(b) An implicit bias program implemented pursuant to subdivision (a) shall include all of the following:

(1) Identification of previous or current unconscious biases and misinformation.
(2) Identification of personal, interpersonal, institutional, structural, and cultural barriers to inclusion.
(3) Corrective measures to decrease implicit bias at the interpersonal and institutional levels, including ongoing policies and practices for that purpose.
(4) Information on the effects, including, but not limited to, ongoing personal effects, of historical and contemporary exclusion and oppression of minority communities.
(5) Information about cultural identity across racial or ethnic groups.
(6) Information about communicating more effectively across identities, including racial, ethnic, religious, and gender identities.
(7) Discussion on power dynamics and organizational decision making.
(8) Discussion on health inequities within the perinatal care field, including information on how implicit bias impacts maternal and infant health outcomes.
(9) Perspectives of diverse, local constituency groups and experts on particular racial, identity, cultural, and provider-community relations issues in the community.
(10) Information on reproductive justice.

(c)(1) A health care provider described in subdivision (a) shall complete initial basic training through the implicit bias program based on the components described in subdivision (b).

(2) Upon completion of the initial basic training, a health care provider shall complete a refresher course under the implicit bias program every two years thereafter, or on a more frequent basis if deemed necessary by the facility, in order to keep current with changing racial, identity, and cultural trends and best practices in decreasing interpersonal and institutional implicit bias.

Cal. Health & Safety Code § 123630.3 (West)

Data & Surveillance: Reporting Requirements

§ 123630.4. Data collection and publication

a) "The **State Department of Public Health shall track data on severe maternal morbidity**, including, but not limited to, all of the following health conditions:

(1) Obstetric hemorrhage.

(2) Hypertension.

(3) Preeclampsia and eclampsia.

(4) Venous thromboembolism.

(5) Sepsis.

(6) Cerebrovascular accident.

(7) Amniotic fluid embolism.

(1) The data has been aggregated by state regions, as defined by the State Department of Public Health, to ensure data reflects how regionalized care systems are or should be collaborating to improve maternal health outcomes, or other smaller regional sorting based on standard statistical methods for accurate dissemination of public health data without risking a confidentiality or other disclosure breach.

(2) The data has been disaggregated by racial and ethnic identity

(c) The State Department of Public Health shall track data on pregnancy-related deaths, including, but not limited to, all of the conditions listed in subdivision (a), indirect obstetric deaths, and other maternal disorders predominantly related to pregnancy and complications predominantly related to the puerperium"

Cal. Health & Safety Code § 123630.4 (West)

Data & Surveillance: Maternal Mortality Review Committees (MMRCs)

432.600. Maternal Mortality and Morbidity Review Committee

(2) The Maternal Mortality and Morbidity Review Committee is established in the Oregon Health Authority to conduct studies and reviews of the incidence of maternal mortality and severe maternal morbidity and to make policy and budget recommendations to reduce the incidence of maternal mortality and severe maternal morbidity in this state

(3) The committee shall consist of at least 11 but not more than 15 members appointed by the Governor. The Governor shall consider for membership the following individuals:

(a) A physician …who specializes in family medicine and whose practice includes maternity care and delivery;

(b) A physician …who specializes in obstetrics and gynecology;

(c) A physician …who specializes in maternal fetal medicine;

(d) A licensed registered nurse who specializes in labor and delivery;

(e) A licensed registered nurse who is …a nurse practitioner specializing in nurse midwifery;

(f) A direct entry midwife [….]

(g) An individual who meets criteria for a doula [….]

(h) A traditional health worker;

(i) An individual who represents a community-based organization that represents communities of color and focuses on reducing racial and ethnic health disparities;

(j) An individual who represents a community-based organization that focuses on treatment of mental health;

(k) An individual who represents the authority with an expertise in the field of maternal and child health;

(L) An individual who is an expert in the field of public health; and

(m) A medical examiner.

(4) In appointing members under subsection (3) of this section, the Governor shall consider whether the composition of the committee is reasonably representative of this state's geographic, ethnic and economic diversity.

Or. Rev. Stat. Ann. § 432.600 (West)

Other

- Funding & Appropriations
- Social Determinants of Health
- Mental & Behavioral Health

Example: Social Determinants of Health

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Effects of State-Level Earned Income Tax Credit Laws in the U.S. on Maternal Health Behaviors and Infant Health Outcomes

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Abstract

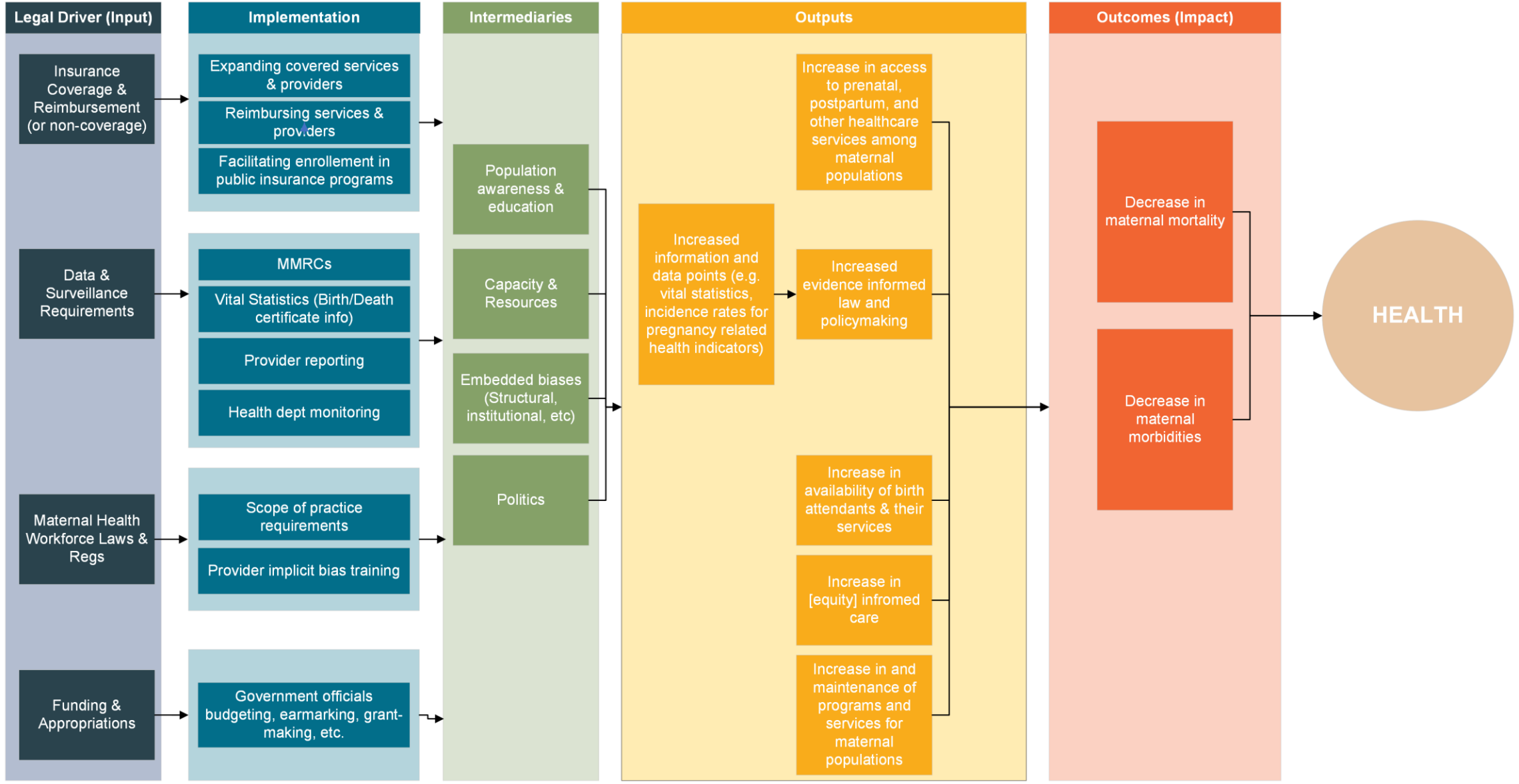
The purpose of this paper is to investigate the effects of state-level Earned Income Tax Credit (EITC) laws in the U.S. on maternal health behaviors and infant health outcomes. Using multi-state, multi-year difference-in-differences analyses, we estimated effects of state EITC generosity on maternal health behaviors, birth weight and gestation weeks. We find little difference in maternal health behaviors associated with state-level EITC. In contrast, results for key infant health outcomes of birth weight and gestation weeks show small improvements in states with EITCs, with larger effects seen among states with more generous EITCs. Our results provide evidence for important health benefits of state-level EITC policies.

Markowitz S, Komro KA, Livingston MD, Lenhart O, Wagenaar AC. Effects of state-level Earned Income Tax Credit laws in the U.S. on maternal health behaviors and infant health outcomes. Soc Sci Med. 2017 Dec;194:67-75. doi: 10.1016/j.socscimed.2017.10.016. Epub 2017 Oct 16. PMID: 29073507; PMCID: PMC5696026.

Natural Experiments

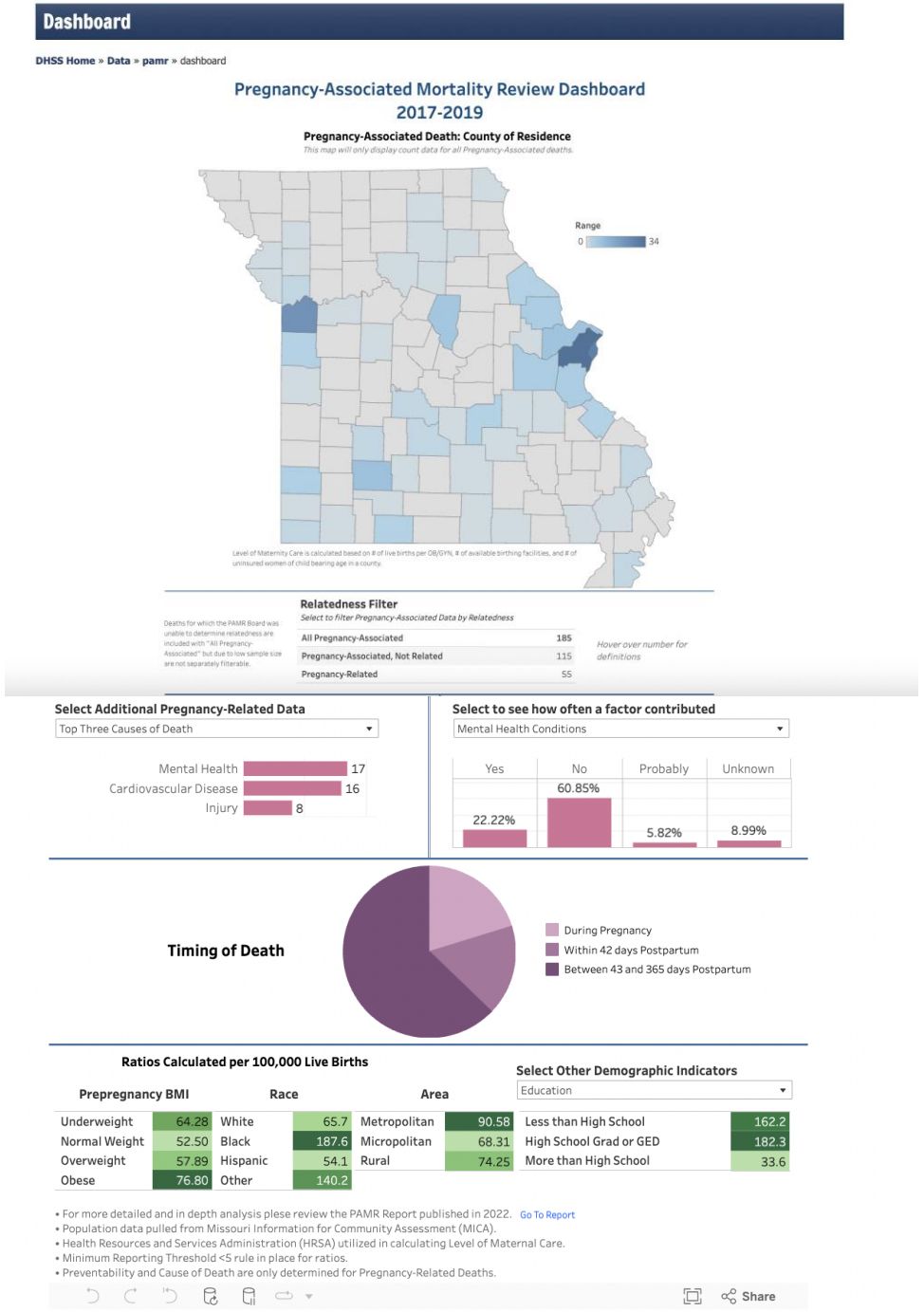
- Jurisdiction comparison
  - With/without
    - E.g. Extent of Medicaid coverage for maternal care services coverage across states
- Time Period
  - E.g. Time before versus after laws expanding post-partum Medicaid coverage went into effect

How may legal drivers impact maternal health?



STLT Advantages:

- Have the data
- Have the pulse on activities in the ecosystem
- Can become equipped to generate datasets or partner with others to do so



Source: Missouri Department of Health & Senior Services Pregnancy-Associated Mortality Review (PAMR) Program

Exploring Legal Epi in Maternal Health Research today:

- What's the research need?
- What role can legal epidemiology play?
- Where are the opportunities for STLTs to use legal epi in maternal health?
- How can STLTs build legal epi capacity?

Resources & Training Opportunities

- Office of Public Health Law Services: Research, Education, Technical Assistance
- Online Learning
  - Public Health Law Academy
  - CDC Train
- Legal Epidemiology Learning Cohort
- Public Health Law Fellowship
- and more!

Takeaways

- Look upstream
- Legal Epidemiology is a methodology that can translate qualitative data into quantitative datasets
- Data from legal epidemiology can be used to influence change in public health issues such as maternal mortality and mobility.
- STLTs can create legal and health outcome datasets
- Recognize opportunities to contribute to body of evidence

CONTACT US:

THANK YOU

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For more information, contact CDC

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ENHANCING REVIEWS AND SURVEILLANCE TO ELIMINATE MATERNAL MORTALITY (ERASE MM)

OCTOBER 24, 2023

ERASE MM

Enhancing Reviews and Surveillance to Eliminate Maternal Mortality

CDC Maternal Mortality Prevention Team

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Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion

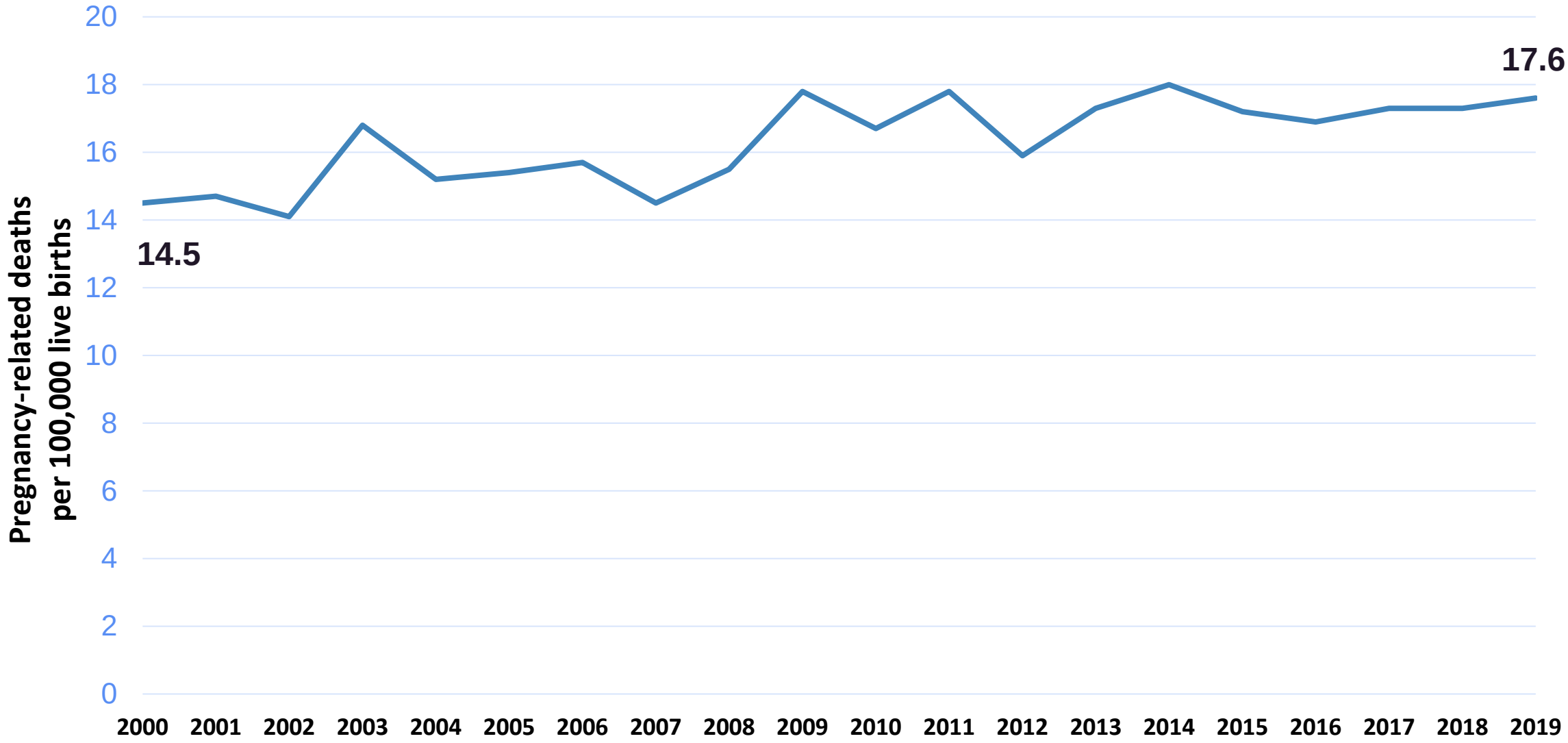
Division of Reproductive Health, Maternal Mortality Prevention Team

PRESENTATION OVERVIEW

- National Data on Pregnancy-Related Deaths
- What is a Maternal Mortality Review Committee (MMRC)?
  - Data from MMRCs in 36 US States, 2017–2019
- What strategies can decisionmakers implement to prevent maternal mortality and reduce racial disparities?
- How have states used their MMRC data?
- Questions & Discussion

WE ARE HERE BECAUSE…

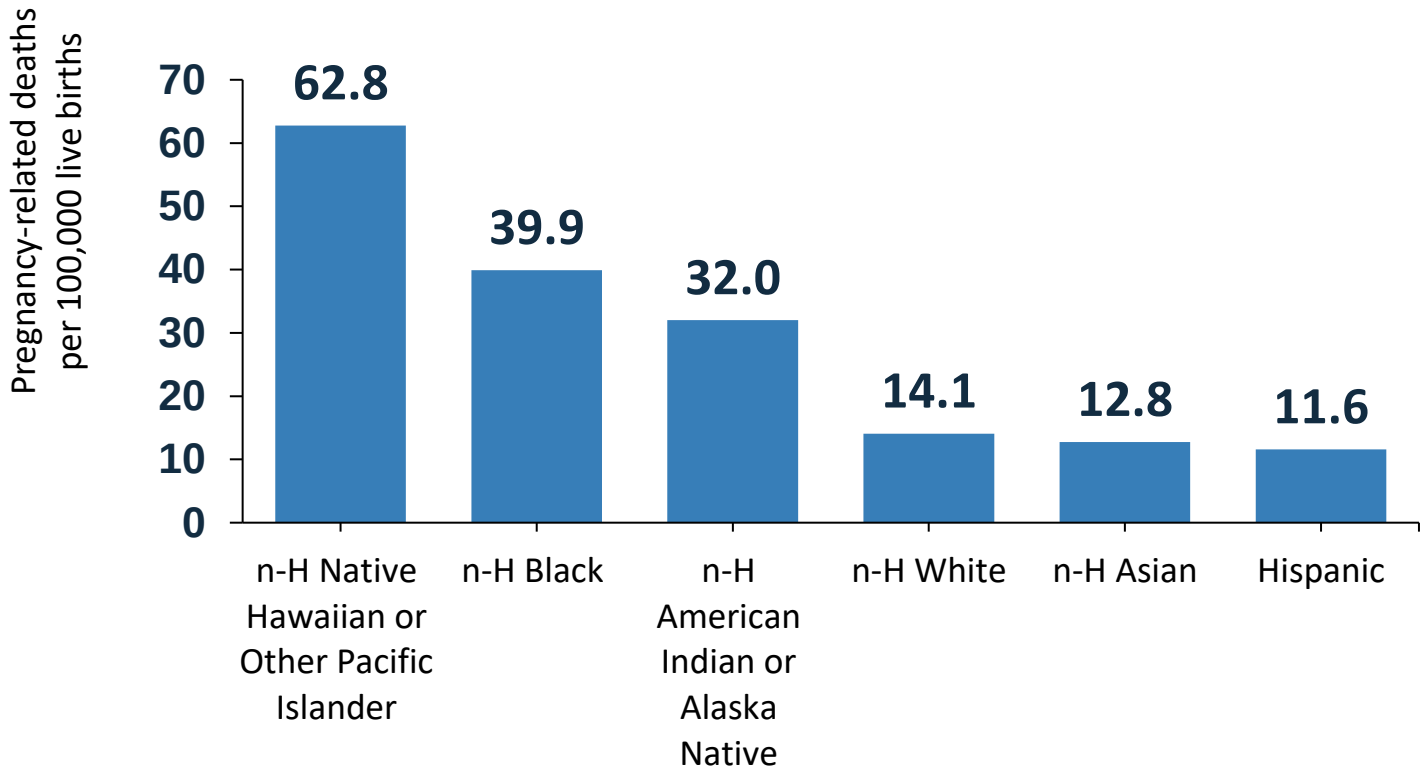
Pregnancy-related Mortality Ratio by Year: 2000-2019, PMSS*



*CDC Pregnancy Mortality Surveillance System. https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm

In the US, Native Hawaiian and other Pacific Islander, Black, and American Indian Alaska Native people are **two to four times as likely to die** from a pregnancy-related death than white people.

PREGNANCY-RELATED MORTALITY RATIO: 2017-2019, PMSS*



*https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm

Pregnancy Mortality Surveillance System

WHAT IS A MATERNAL MORTALITY REVIEW COMMITTEE (MMRC)?

MMRCs are multidisciplinary teams. They offer an ongoing anonymous and confidential process of data collection, analysis, interpretation, and action. Their systematic process is guided by policies, statutes, rules to publish quantitative and qualitative data that can guide prevention activities.

MMRCs are not a mechanism for assigning blame or responsibility for any death, a research study, a peer or institutional review, nor are they a substitute for existing mortality and morbidity inquiries.

Contact your area MMRC for local data:
www.reviewtoaction.org/tools/networking-map

MMRC AUTHORITIES AND PROTECTIONS

MMRCs need authority that protects the integrity of the review process. MMRCs seek to identify what led to a pregnancy-related death and what can be done to prevent other deaths in the future.

MMRC AUTHORITIES AND PROTECTIONS

Key component:
Authority to access data

https://www.reviewtoaction.org/national-resource/key-components-mmrc-authorities-and-protections

MMRC AUTHORITIES AND PROTECTIONS

Key component:

Authority to access data

WASHINGTON Title 70 > Chapter 70.54 > Section 70.54.450:

(5) The department of health shall review department available data to identify maternal deaths. To aid in determining whether a maternal death was related to or aggravated by the pregnancy, and whether it was preventable, the department of health has the authority to: (a) Request and receive data for specific maternal deaths including, but not limited to, all medical records, autopsy reports, medical examiner reports, coroner reports, and social service records; and (b) Request and receive data as described in (a) of this subsection from health care providers, health care facilities, clinics, laboratories, medical examiners, coroners, professions and facilities licensed by the department of health, local health jurisdictions, the health care authority and its licensees and providers, and the department of social and health services and its licensees and providers.

https://app.leg.wa.gov/RCW/default.aspx?cite=70.54.450

MMRC AUTHORITIES AND PROTECTIONS

Key component:
Confidentiality and protection of collected data, proceedings, and activities

https://www.reviewtoaction.org/national-resource/key-components-mmrc-authorities-and-protections

MMRC AUTHORITIES AND PROTECTIONS

Key component:

Confidentiality and protection of collected data, proceedings, and activities

GEORGIA Senate Bill 273:

(e)(1) Information, records, reports, statements, notes, memoranda, or other data collected pursuant to this Code section shall not be admissible as evidence in any action of any kind in any court or before any other tribunal, board, agency, or person. Such information, records, reports, statements, notes, memoranda, or other data shall not be exhibited nor their contents disclosed in any way, in whole or in part, by any officer or representative of the department or any other person, except as may be necessary for the purpose of furthering the review of the committee of the case to which they relate. No person participating in such review shall disclose, in any manner, the information so obtained except in strict conformity with such review project.

https://www.legis.ga.gov/api/legislation/document/20132014/142581

MMRC AUTHORITIES AND PROTECTIONS

Key component:
Immunity for committee members

https://www.reviewtoaction.org/national-resource/key-components-mmrc-authorities-and-protections

MMRC AUTHORITIES AND PROTECTIONS

Key component:

Immunity for committee members

GEORGIA Senate Bill 273:

…Members of the committee shall not be questioned in any civil or criminal proceeding regarding the information presented in or opinions formed as a result of a meeting or communication of the committee; provided, however, that nothing in this Code section shall be construed to prevent a member of the committee from testifying to information obtained independently of the committee or which is public information.

https://www.legis.ga.gov/api/legislation/document/20132014/142581

MMRC AUTHORITIES AND PROTECTIONS

Key component:
Regular reporting and dissemination of findings

https://www.reviewtoaction.org/national-resource/key-components-mmrc-authorities-and-protections

MMRC AUTHORITIES AND PROTECTIONS

Key component:

Regular reporting and dissemination of findings

GEORGIA Senate Bill 273:

(g) Reports of aggregated non-individually identifiable data shall be compiled on a routine basis for distribution in an effort to further study the causes and problems associated with maternal deaths. Reports shall be distributed to the General Assembly, health care providers and facilities, key government agencies, and others necessary to reduce the maternal death rate.

https://www.legis.ga.gov/api/legislation/document/20132014/142581

MMRC AUTHORITIES AND PROTECTIONS

Key component:
Multidisciplinary committee with local input

https://www.reviewtoaction.org/national-resource/key-components-mmrc-authorities-and-protections

MMRC AUTHORITIES AND PROTECTIONS

Key component:

Multidisciplinary committee with local input

TEXAS Senate Bill 495:

In appointing members to the task force, the commissioner shall 1. include members: a) working in and representing communities that are diverse with regard to race, ethnicity, immigration status, and English proficiency; and b) from differing geographic regions in the state, including both rural and urban areas; 2. endeavor to include members who are working in and representing communities that are affected by pregnancy-related deaths and severe maternal morbidity and by a lack of access to relevant perinatal and intrapartum care services; and 3. ensure that the composition of the task force reflects the racial, ethnic, and linguistic diversity of this state..

https://legiscan.com/TX/bill/SB495/2013

MMRC AUTHORITIES AND PROTECTIONS

Key component:
Ability to share de-identified data and findings locally and regionally

https://www.reviewtoaction.org/national-resource/key-components-mmrc-authorities-and-protections

MMRC AUTHORITIES AND PROTECTIONS

Key component:

Ability to share de-identified data and findings locally and regionally

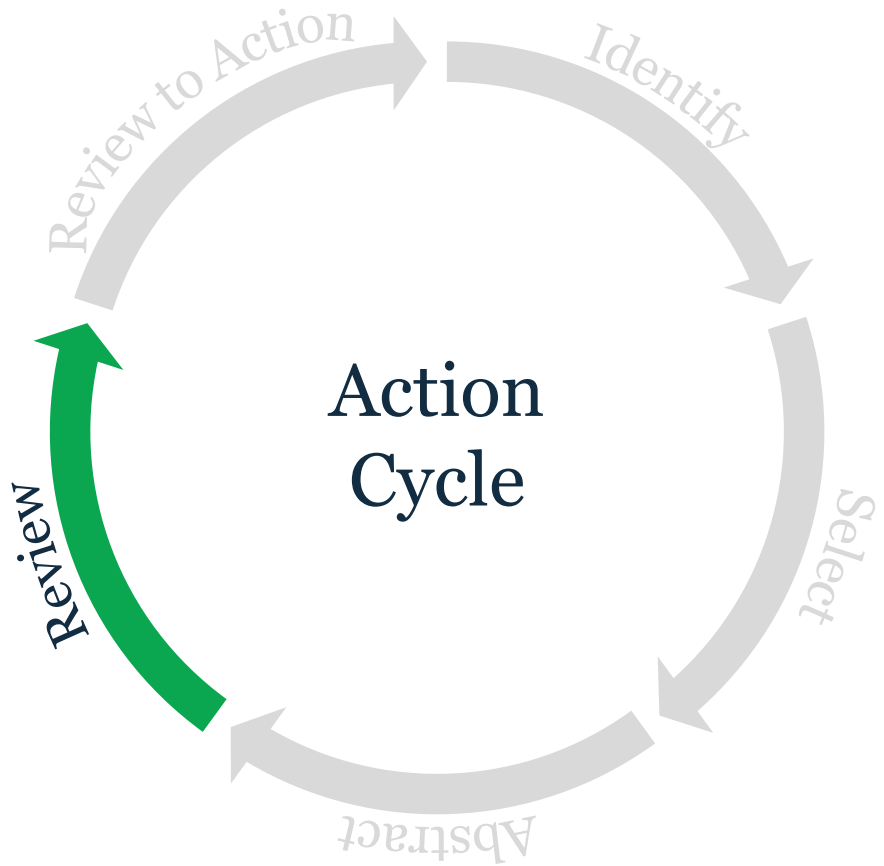
CONNECTICUT Substitute Senate Bill No. 304, Public Act No. 18-150:

…the committee shall make recommendations regarding the prevention of maternal deaths [and] report to the Commissioner of Public Health any recommendations and findings of the committee…

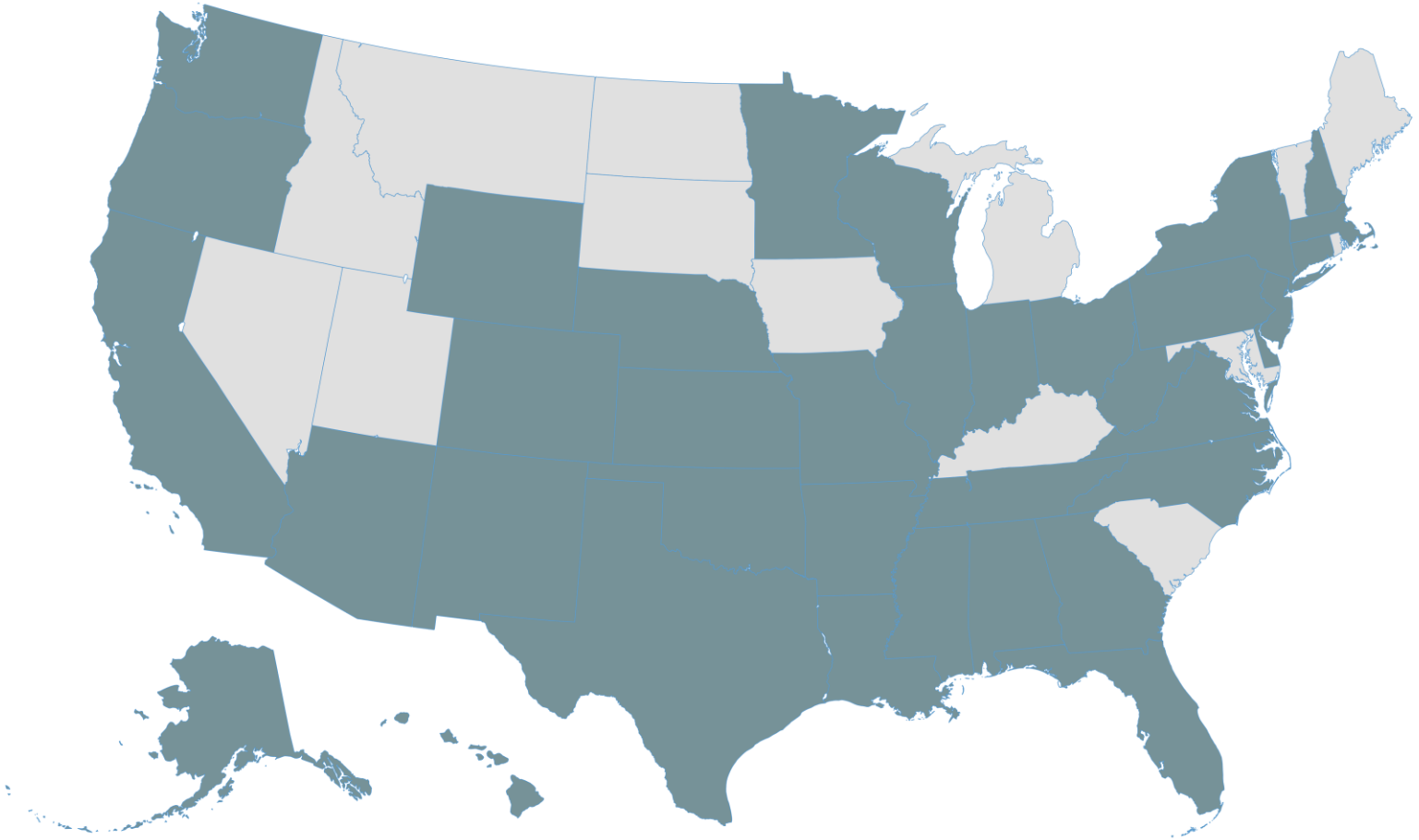
https://www.cga.ct.gov/2018/ACT/pa/2018PA-00150-R00SB-00304-PA.htm

Guiding Questions for Review Committees

- Was the death pregnancy-related?
- What was the underlying cause of death?
- Was the death preventable?
- What are the contributing factors to the death?
- What specific and feasible actions might have changed the course of events?



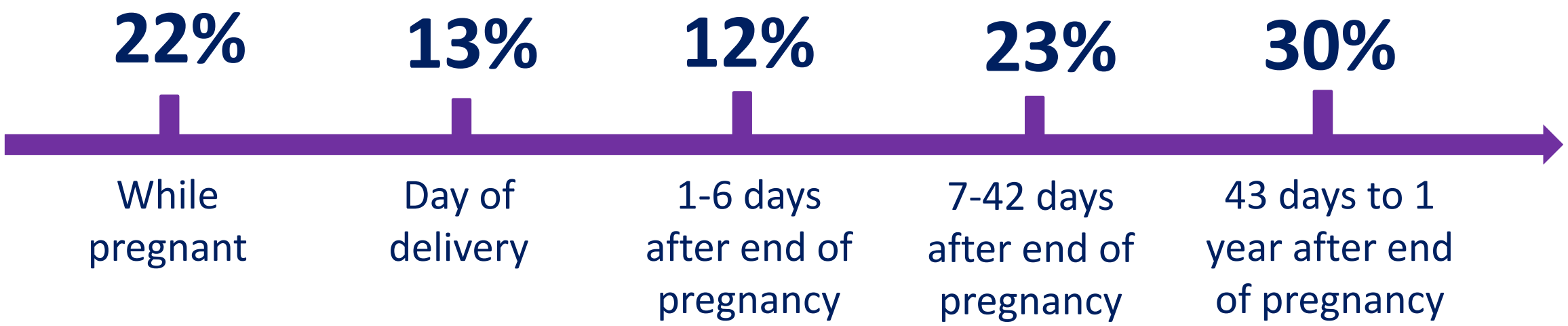
MMRCs in 36 states contributed data on 1,018 pregnancy-related deaths among their residents from 2017 – 2019



MMRIA
MATERNAL MORTALITY REVIEW
INFORMATION APP

www.cdc.gov/erasemm

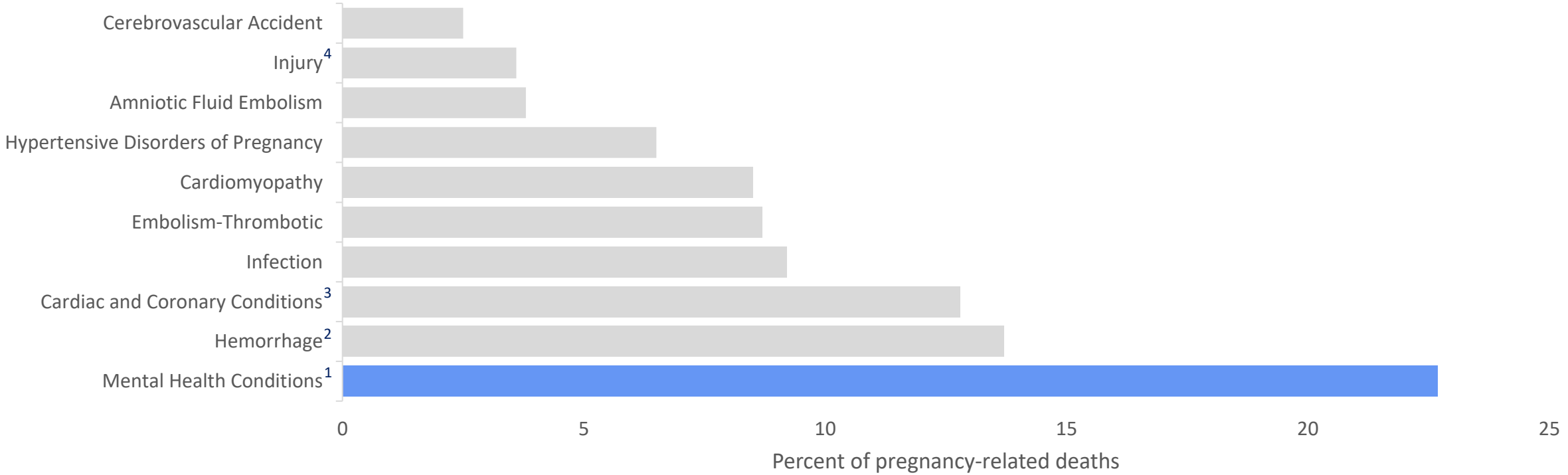
TIMING OF PREGNANCY-RELATED DEATHS



Timing was missing (n=2) or unknown (n=14) for 16 (1.6%) pregnancy-related deaths.

https://www.cdc.gov/reproductivehealth/maternal-mortality/erase-mm/data-mmrc.html

MOST FREQUENT UNDERLYING CAUSES OF PREGNANCY-RELATED DEATHS*



[1] Mental health conditions include deaths to suicide, unintentional or unknown intent overdose/poisoning related to substance use disorder, and other deaths determined by the MMRC to be related to a mental health condition, including substance use disorder

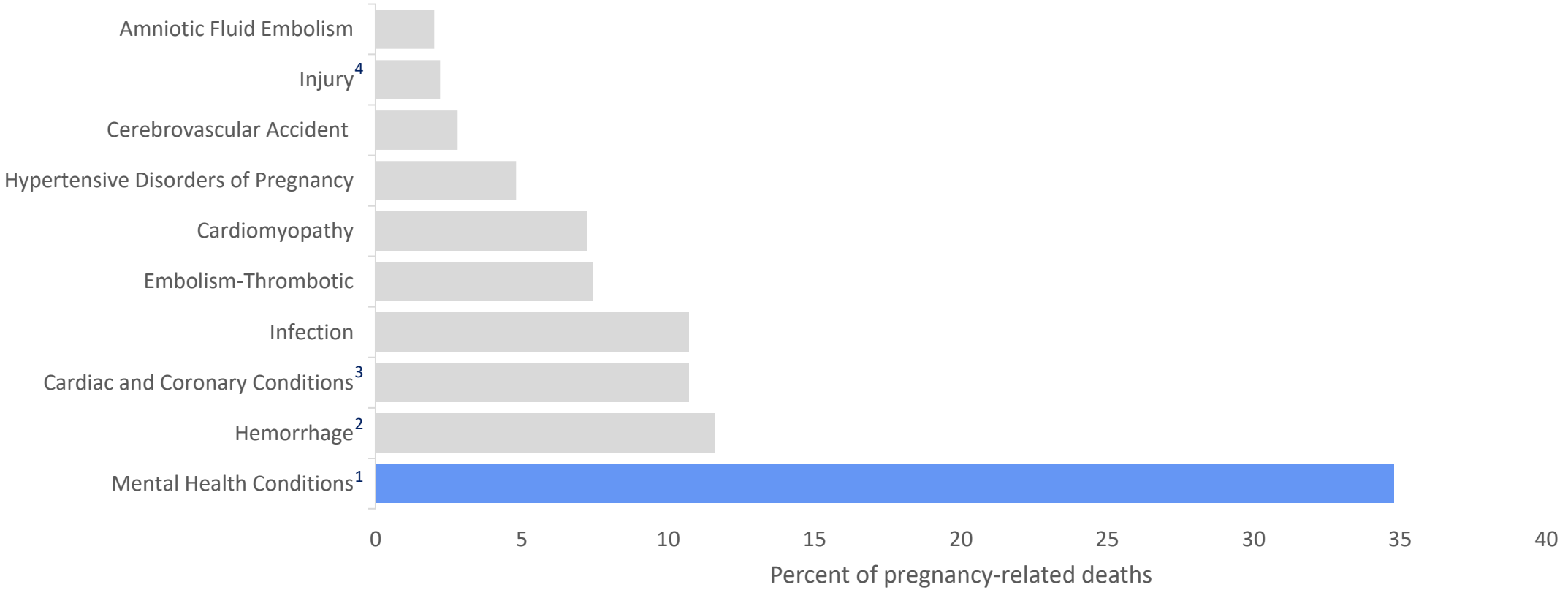
[2] Excludes aneurysms or cerebrovascular accident (CVA)

[3] Cardiac and coronary conditions include deaths to coronary artery disease, pulmonary hypertension, acquired and congenital valvular heart disease, vascular aneurysm, hypertensive cardiovascular disease, Marfan Syndrome, conduction defects, vascular malformations, and other cardiovascular disease; and excludes cardiomyopathy and hypertensive disorders of pregnancy.

[4] Injury includes intentional injury (homicide), unintentional injury, including overdose/poisoning deaths not related to substance use disorder, and injury of unknown intent or not otherwise specified.

*Only 10 most frequent underlying causes of death are shown; underlying cause of death was missing (n=10) or unknown (n=21) for 31 (3.0%) pregnancy-related deaths

Most Frequent Underlying Causes of Pregnancy-related Deaths Among non-Hispanic White Persons*



[1] Mental health conditions include deaths to suicide, unintentional or unknown intent overdose/poisoning related to substance use disorder, and other deaths determined by the MMRC to be related to a mental health condition, including substance use disorder

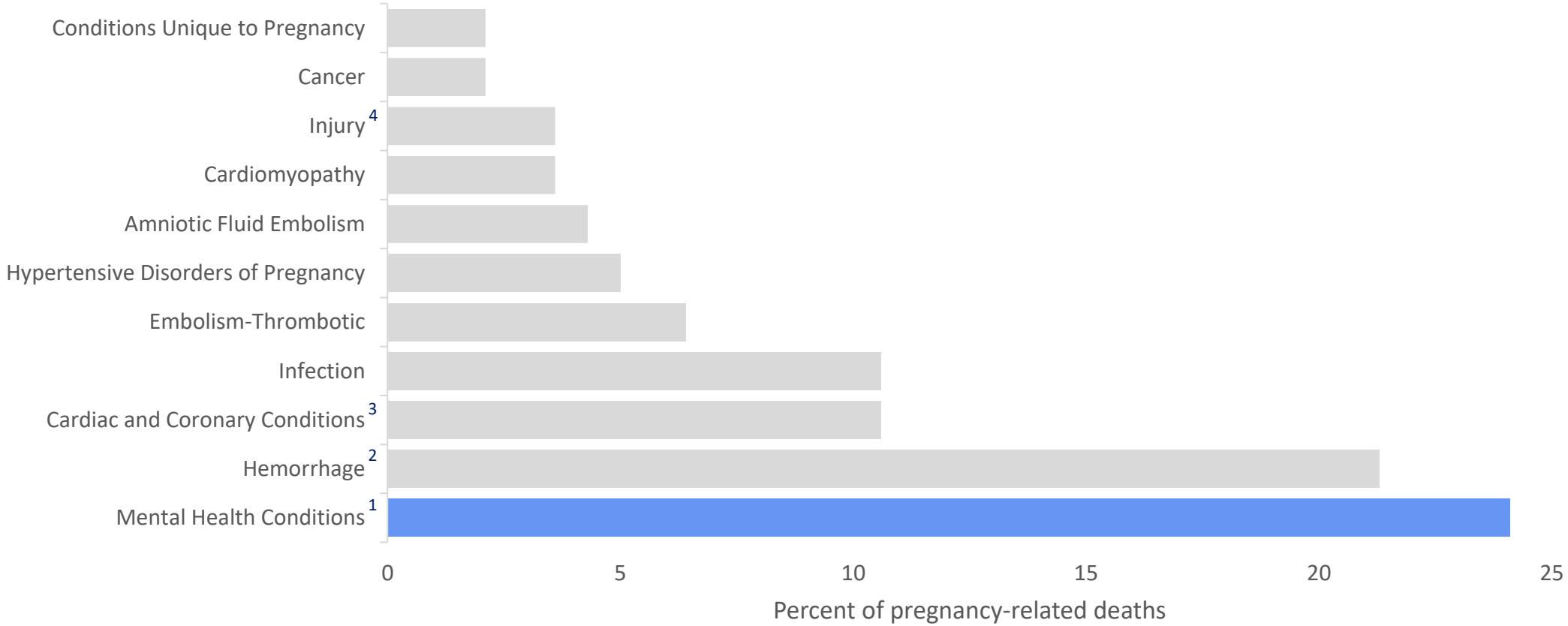
[2] Excludes aneurysms or CVA

[3] Cardiac and coronary conditions include deaths to coronary artery disease, pulmonary hypertension, acquired and congenital valvular heart disease, vascular aneurysm, hypertensive cardiovascular disease, Marfan Syndrome, conduction defects, vascular malformations, and other cardiovascular disease; and excludes cardiomyopathy and hypertensive disorders of pregnancy.

[4] Injury includes intentional injury (homicide), unintentional injury, including overdose/poisoning deaths not related to substance use disorder, and injury of unknown intent or not otherwise specified.

*Only 10 most frequent underlying causes of death are shown; underlying cause of death was missing (n=4) or unknown (n=6) for 10 (2.1%) pregnancy-related deaths.

Most Frequent Underlying Causes of Pregnancy-related Deaths Among Hispanic Persons*



[1] Mental health conditions include deaths to suicide, unintentional or unknown intent overdose/poisoning related to substance use disorder, and other deaths determined by the MMRC to be related to a mental health condition, including substance use disorder

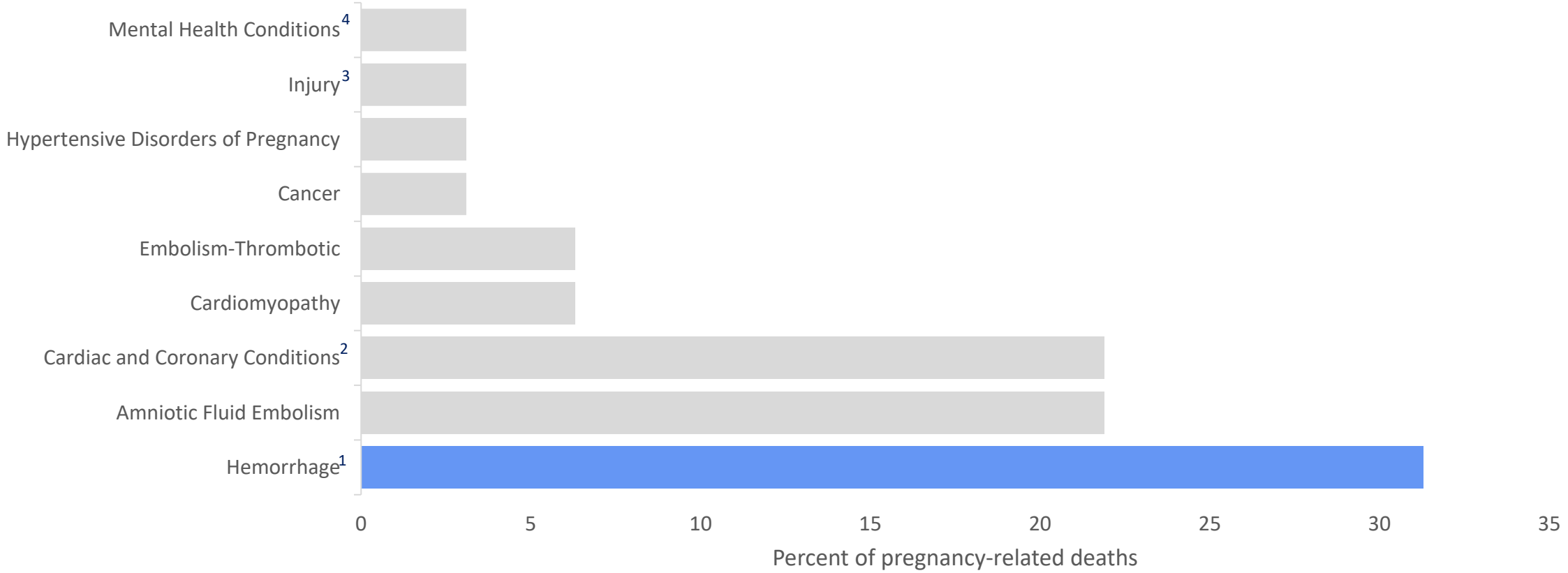
[2] Excludes aneurysms or cerebrovascular accident (CVA)

[3] Cardiac and coronary conditions include deaths to coronary artery disease, pulmonary hypertension, acquired and congenital valvular heart disease, vascular aneurysm, hypertensive cardiovascular disease, Marfan Syndrome, conduction defects, vascular malformations, and other cardiovascular disease; and excludes cardiomyopathy and hypertensive disorders of pregnancy.

[4] Injury includes intentional injury (homicide), unintentional injury, including overdose/poisoning deaths not related to substance use disorder, and injury of unknown intent or not otherwise specified.

*Only 10 most frequent underlying causes of death are shown. More than 10 are shown because the frequency was the same for the 10th cause for 2 causes; underlying cause of death was unknown for 3 (2.1%) pregnancy-related deaths.

Most Frequent Underlying Causes of Pregnancy-related Deaths Among non-Hispanic Asian Persons*



[1]Excludes aneurysms or cerebrovascular accident (CVA)

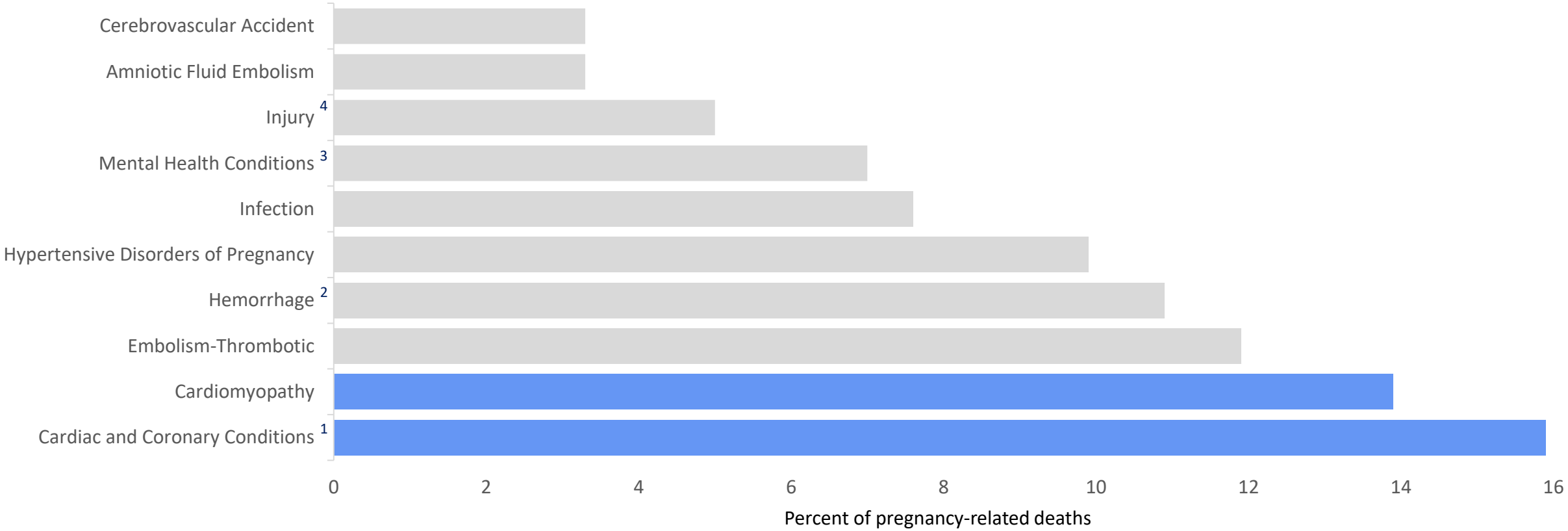
[2]Cardiac and coronary conditions include deaths to coronary artery disease, pulmonary hypertension, acquired and congenital valvular heart disease, vascular aneurysm, hypertensive cardiovascular disease, Marfan Syndrome, conduction defects, vascular malformations, and other cardiovascular disease; and excludes cardiomyopathy and hypertensive disorders of pregnancy.

[3]Injury includes intentional injury (homicide), unintentional injury, including overdose/poisoning deaths not related to substance use disorder, and injury of unknown intent or not otherwise specified.

[4]Mental health conditions include deaths to suicide, unintentional or unknown intent overdose/poisoning related to substance use disorder, and other deaths determined by the MMRC to be related to a mental health condition, including substance use disorder

*Underlying cause was unknown for 2 (5.9%) pregnancy-related deaths

Most Frequent Underlying Causes of Pregnancy-related Deaths Among non-Hispanic Black Persons*



[1] Cardiac and coronary conditions include deaths to coronary artery disease, pulmonary hypertension, acquired and congenital valvular heart disease, vascular aneurysm, hypertensive cardiovascular disease, Marfan Syndrome, conduction defects, vascular malformations, and other cardiovascular disease; and excludes cardiomyopathy and hypertensive disorders of pregnancy.

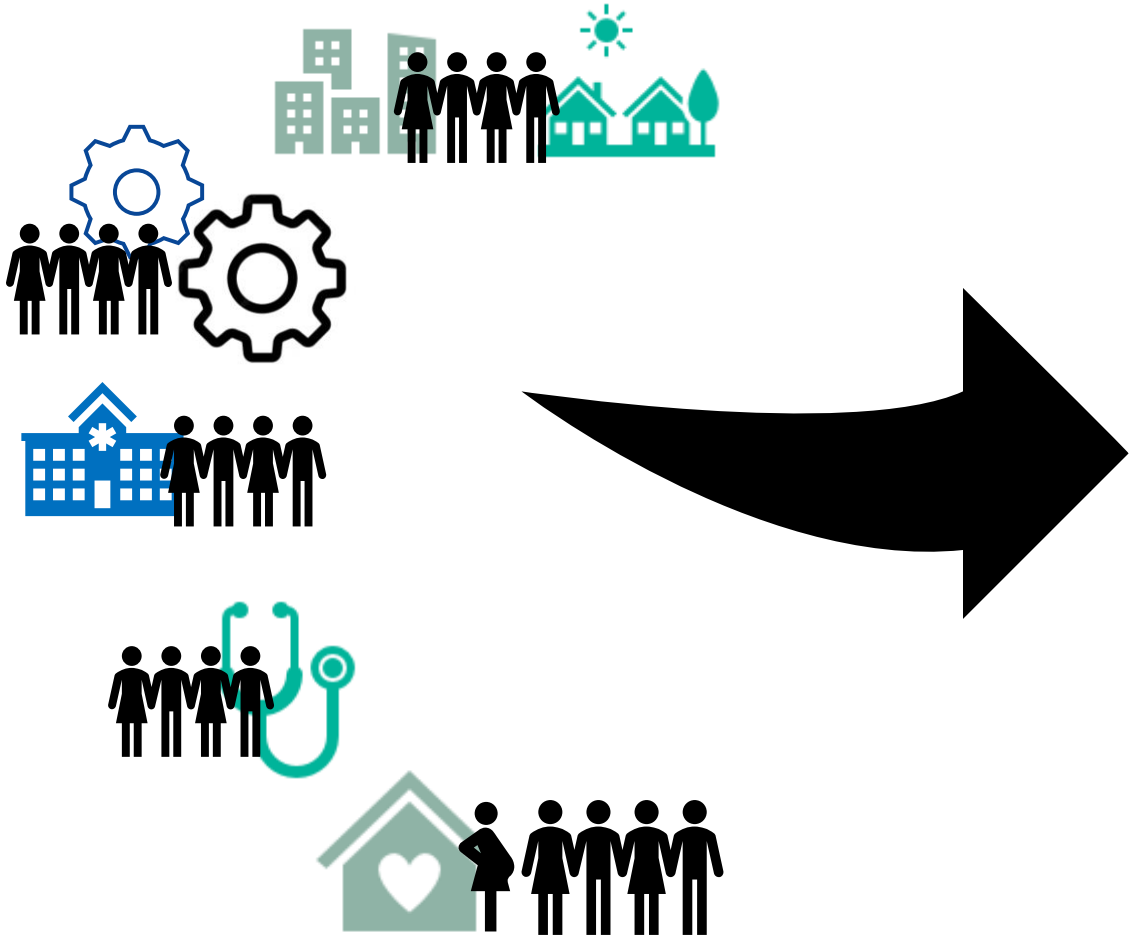
[2] Excludes aneurysms or cerebrovascular accident (CVA)

[3] Mental health conditions include deaths to suicide, unintentional or unknown intent overdose/poisoning related to substance use disorder, and other deaths determined by the MMRC to be related to a mental health condition, including substance use disorder

[4] Injury includes intentional injury (homicide), unintentional injury, including overdose/poisoning deaths not related to substance use disorder, and injury of unknown intent or not otherwise specified.

*Only 10 most frequent underlying causes of death are shown; underlying cause of death was missing (n=6) or unknown (n=7) for 13 (4.1%) pregnancy-related deaths

MMRCs Determined:



84% of pregnancy-related deaths were determined to be preventable

https://www.cdc.gov/reproductivehealth/maternal-mortality/erase-mm/data-mmrc.html

MMRIA MATERNAL MORTALITY REVIEW INFORMATION APP

ERASE MM

REVIEW to ACTION

Circumstances Surrounding Death

COMMITTEE DETERMINATIONS ON CIRCUMSTANCES SURROUNDING DEATH				
DID **OBESITY** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **DISCRIMINATION**** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **MENTAL HEALTH CONDITIONS** *OTHER THAN SUBSTANCE USE DISORDER* CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **SUBSTANCE USE DISORDER** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN

MMRIA MATERNAL MORTALITY REVIEW INFORMATION APP

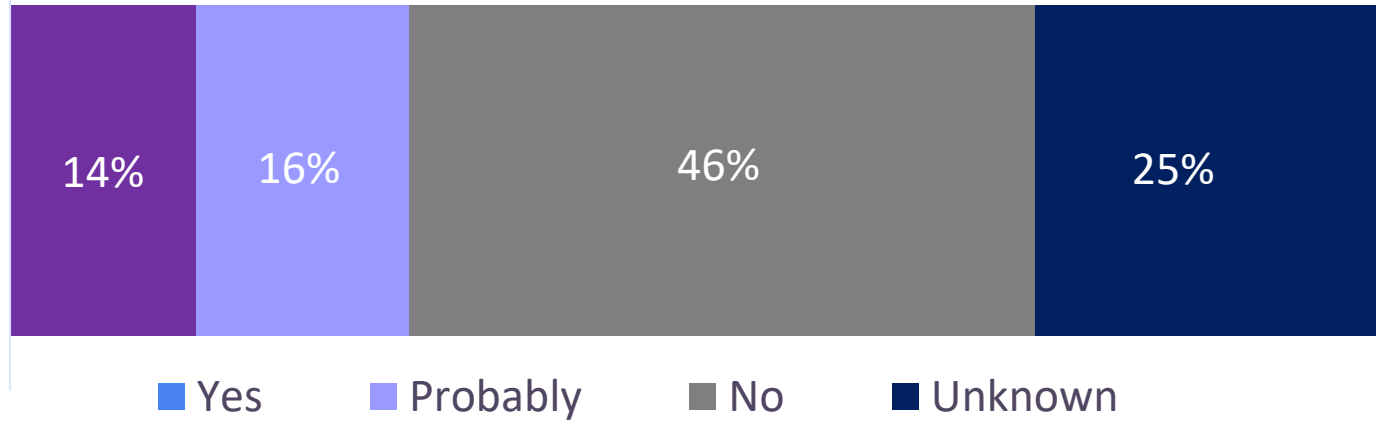
ERASE MM

REVIEW to ACTION

Committee Determinations on Circumstances Surrounding Death, Discrimination

- Discrimination is defined as treating someone less or more favorably based on the group, class or category they belong to resulting from biases, prejudices, and stereotyping. It can manifest as differences in care, clinical communication and shared decision-making.[1]
- This question was added to the MMRIA Committee Decisions Form in May 2020, and so we only report on the **663 deaths** that occurred between 2017-2019 and were reviewed after May 29, 2020.
- Circumstances surrounding the death for discrimination was missing for 61 (9%) pregnancy-related deaths, and are excluded from the percentage represented in the below graph.

Committee determination on circumstances surrounding death: Did discrimination contribute to the death?



Provisional results

[1] Hardeman RR, et al. Developing Tools to Report Racism in Maternal Health for the CDC Maternal Mortality Review Information Application (MMRIA): Findings from the MMRIA Racism & Discrimination Working Group. Matern Child Health J. 2022.

MATERNAL MORTALITY REVIEW COMMITTEE ATTENTION TO KEY WORDS, PHRASES, AND SITUATIONS IN RECORDS

- **symptoms** attributed to substance use that **do not correspond** to recognized symptoms of **substance use or withdrawa**l
- **drug use** repeatedly mentioned
- **multiple** emergency department, urgent care, or primary care provider **visits for similar complaints in a short period**

WHAT STRATEGIES CAN DECISIONMAKERS IMPLEMENT TO PREVENT MATERNAL MORTALITY AND REDUCE RACIAL AND ETHNIC DISPARITIES?

Decisionmakers need tools and resources to understand maternal mortality disparities and the systems, structures, policies, and practices that drive them.

WHAT STRATEGIES CAN DECISIONMAKERS IMPLEMENT TO PREVENT MATERNAL MORTALITY AND REDUCE RACIAL AND ETHNIC DISPARITIES?

Using a CDC Policy Academy approach, the following *a priori* change levers were explored using aggregated MMRC data:

1. Access to Care (includes insurance, transportation, supporting childcare)

2. Quality of Care (includes provider capacity, standards of care, levels of maternal care i.e., right place, right time care)

Two levers to address contributors* to pregnancy-related deaths:

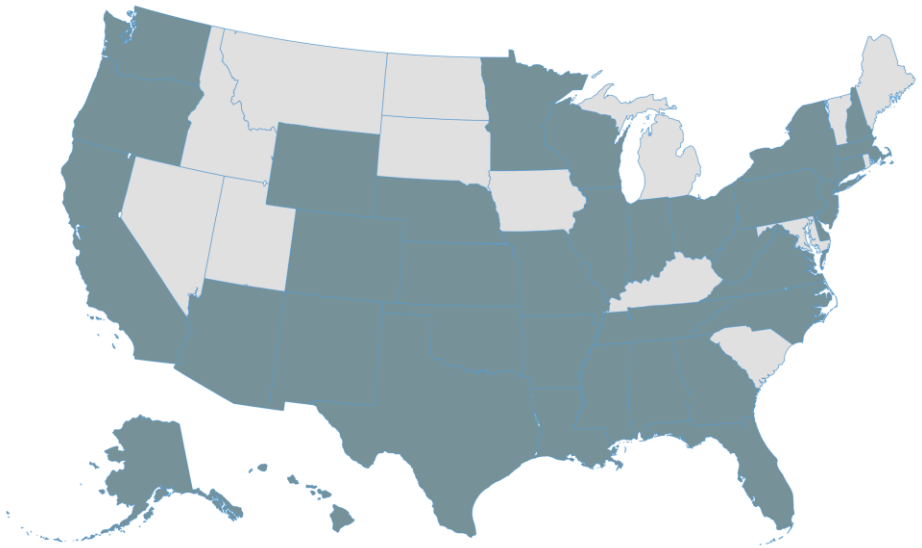
1. Ensure access to care

*Insurance barriers
*Limited access to transportation
*Low quality of care

2. Ensure quality care

*Delayed Care
*Lack or inability to complete referral
*Racism

- ❑ Use storytelling to demonstrate the importance of levers



Provisional results

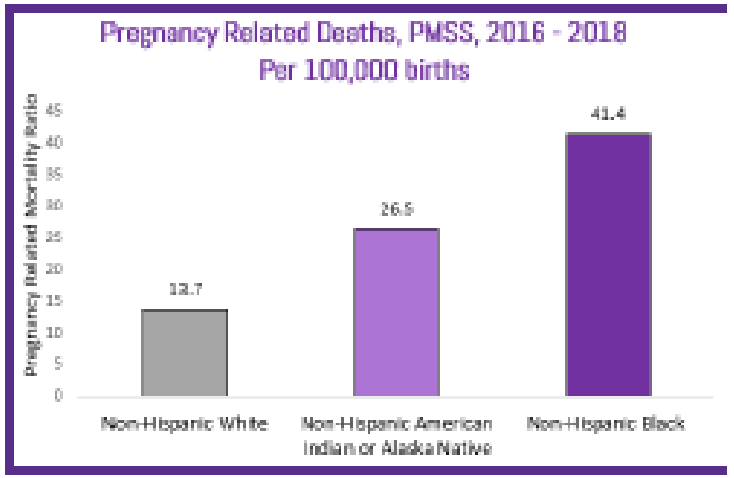

lack
tertiary
acuity
level
staff
discrimination
employer
uninsured
childcare
knowledge
refer
support
transfer
representation
delay
workforce
access
medicaid
transport
insurance
bias
racism
quality
capacity
hour
standard
diversity

Policy Brief:
Understanding and reducing disparities in maternal mortality

Overview

Pregnancy-related mortality has not improved in the United States for more than a decade.[1] More than 80% of pregnancy-related deaths are preventable, according to 2017–2019 data from Maternal Mortality Review Committees (MMRCs) in 36 US states. MMRCs comprise people of diverse clinical and nonclinical backgrounds who review the circumstances around pregnancy-related deaths and identify recommendations to prevent future deaths.[2] MMRC recommendations to address contributing factors to deaths among Black and American Indian/Alaska Native people can be used to prioritize interventions that can save lives and reduce health disparities.[a,b]

Every pregnant and postpartum person deserves the opportunity for a safe and healthy pregnancy, delivery, and postpartum year. There are clear and persistent maternal mortality disparities by race. With collaboration from both public and private partners, it is possible to close the disparities gap, reduce maternal deaths, and improve overall maternal health in the United States. Decisionmakers and partners can take action to ensure that *all* pregnant and postpartum Americans are healthy and thriving.



Two key opportunities exist to decrease disparities in maternal deaths and improve outcomes:

1. Ensure access to care for all pregnant and postpartum people.
2. Ensure quality care for all pregnant and postpartum people.

Policy Brief:
Understanding and reducing disparities in maternal mortality

CONTRIBUTOR

Limited access to transportation. Pregnant and postpartum people may not have access to reliable transportation.

MMRC RECOMMENDATION

The analysis[a] identified opportunities to work with Medicaid and health systems to provide taxi or rideshare vouchers for transport to medical appointments in communities with high levels of transportation insecurity.

CONTRIBUTOR

Lack of comprehensive and easily accessible insurance coverage among people of reproductive age limits the ability to receive pre- and inter-conception care.

MMRC RECOMMENDATIONS

The analysis[a] identified opportunities to work with Medicaid to 1) extend coverage to 1 year from the end of pregnancy, 2) increase practitioner incentives to accept Medicaid and 3) increase access to and ease of applying for Medicaid and incentivize health care teams to make the first prenatal care appointment upon positive pregnancy test at clinic. In addition, all health plan payers could increase access to covered home health visits for patients at high risk during pregnancy and the year postpartum.

CONTRIBUTOR

Limited access to care, which includes incomplete documentation of health conditions and insufficient or delayed communication with patients and fellow practitioners.

MMRC RECOMMENDATION

Using prevention of cardiac deaths as an example, the analysis[a] identified opportunities to work with state decisionmakers and health plan payers to build capacity for health teams, facilities, and systems to implement national cardiovascular standards. The analysis also recommended insurance coverage for home blood pressure cuffs that patients could get during office visits, along with training on use, as well as practitioner reimbursement for remote monitoring in pregnancy and postpartum.

Policy Brief:
Understanding and reducing disparities in maternal mortality

CONTRIBUTOR

Delayed care due to missed diagnosis.

MMRC RECOMMENDATION

The analysis[a] identified opportunities to work with educators of urgent care center (UCC) and emergency department (ED) practitioners and emergency medical technicians (EMTs) to ensure they are trained according to standards for the care of pregnant and postpartum patients—for example, to treat them within 1 hour of UCC, ED, or EMT arrival. Blood pressure thresholds for emergency treatment are lower in pregnant and postpartum people than they are for the general population and additional treatment may be necessary. These cases call for an obstetrics consult.

CONTRIBUTOR

Lack of referrals or inability to complete referrals, limiting continuity of care.

MMRC RECOMMENDATION

The analysis[a] identified opportunities to work with Medicaid to ensure patients identified as high risk for complications have a care coordinator throughout pregnancy and the postpartum period to help them navigate appointments and referrals, and promote understanding of medical guidance.

CONTRIBUTOR

Racism and bias in clinical and nonclinical settings, resulting in the health concerns, complaints, and questions of racial and ethnic minority patients being taken less seriously.

MMRC RECOMMENDATION

The analysis[a] identified opportunities to work with educators of practitioners to ensure review of resources that discuss the impact of racism on outcomes and assess how their own unconscious biases influence their treatment of patients.

Policy Brief:
Understanding and reducing disparities in maternal mortality

Sarah's Story*

Sarah became pregnant in her late 20s and had a history of high blood pressure and diabetes. She visited a clinic for prenatal care and saw several specialists over the course of 15 visits, including hospital visits for swelling and shortness of breath. The health care team characterized these symptoms as "normal for her." Although cardiovascular abnormalities were identified, she never received appropriate care such as an electrocardiogram, blood tests, and referral to a cardiologist. She would often end up back in the hospital when the abnormal symptoms returned. Sarah shared that lack of transportation and childcare options prevented her from going to appointments or staying overnight at the hospital, but she was not referred for available supportive services. When Sarah was 9 months pregnant, she was admitted to the hospital. She had no one to care for her children, who were home alone, so she left the hospital against medical advice. She returned, in labor, and delivered a stillborn baby. To compound this tragedy, a few hours after delivery, Sarah was found unresponsive. Her heart had stopped beating, and she died of cardiovascular disease in the hospital.

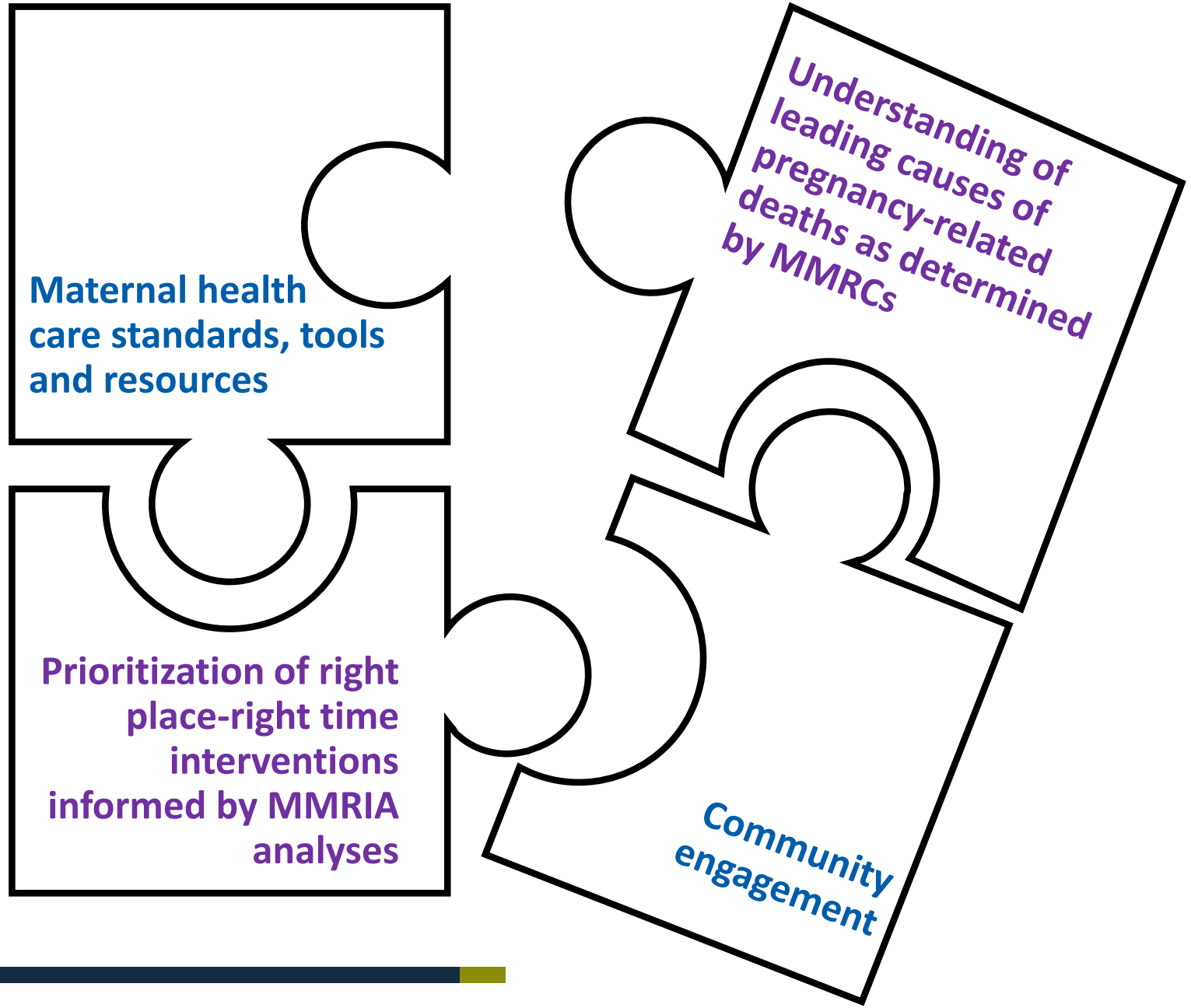
Policy Brief:
Understanding and reducing disparities in maternal mortality

How Did Sarah's Story Happen?

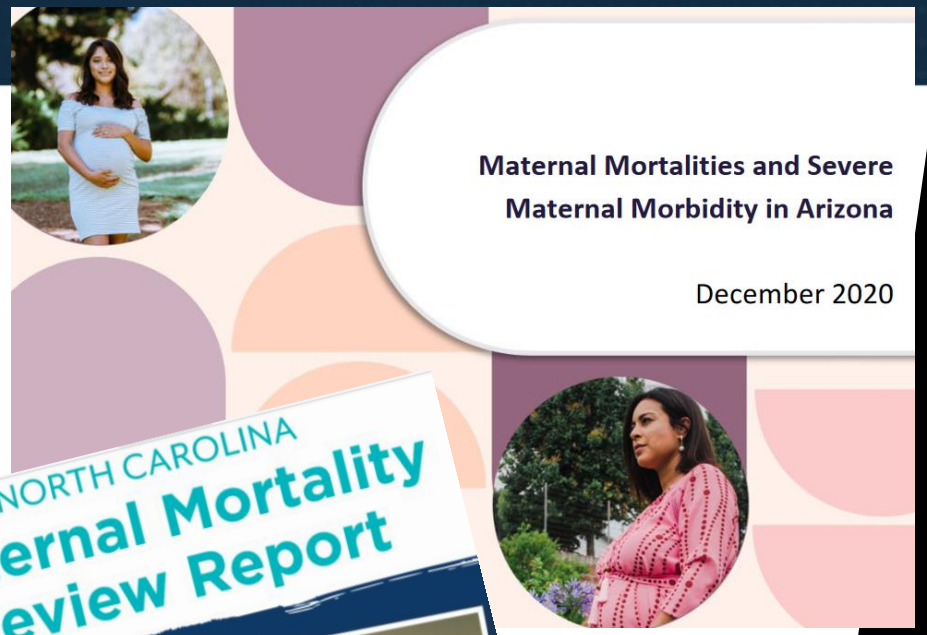
While Sarah's story is unique, it is not uncommon. Pregnant and postpartum people—especially pregnant and postpartum people who are Black and Native—often seek medical attention only to have their symptoms diminished or dismissed altogether. Despite frequent visits for health concerns, Sarah did not receive necessary care or resources. Sarah was a Black woman enrolled in Medicaid who complained of issues that were noted as "normal for her," but these were warning signs of worsening cardiac health. Her need for transportation and childcare were ignored. Without childcare options, Sarah may have feared a report to Child Protective Services that would jeopardize custody of her children. Her labor could have been induced before her condition worsened. Sarah did not receive the standard of care for her health conditions. If Sarah's needs had been recognized and addressed with quality medical care and social support, she and her infant might both be alive today.

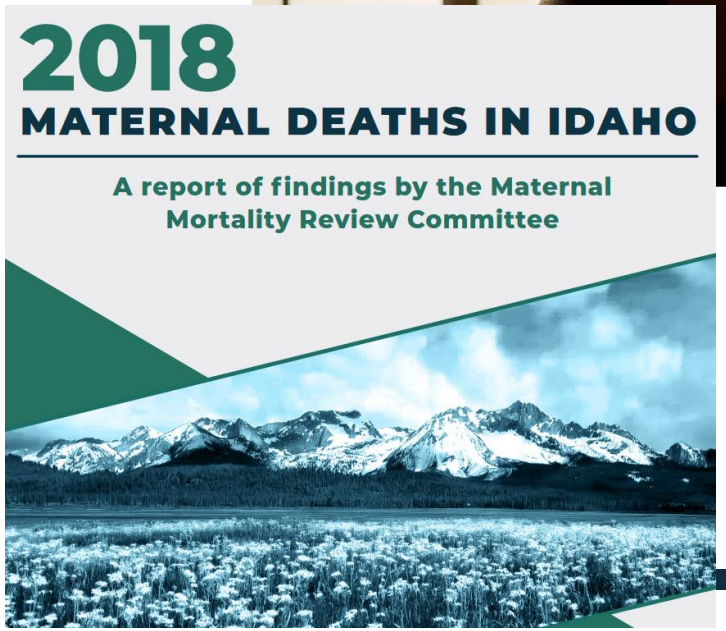
*This story is based on a real death within a year of pregnancy that occurred between 2017 and 2019. Details are de-identified and certain circumstances changed to protect the identity of the patient. Important lessons can be learned from every death to prevent future deaths. This brief summary presents key themes identified by Maternal Mortality Review Committees. The summary includes key points but does not encompass the complexity of Sarah's experience.

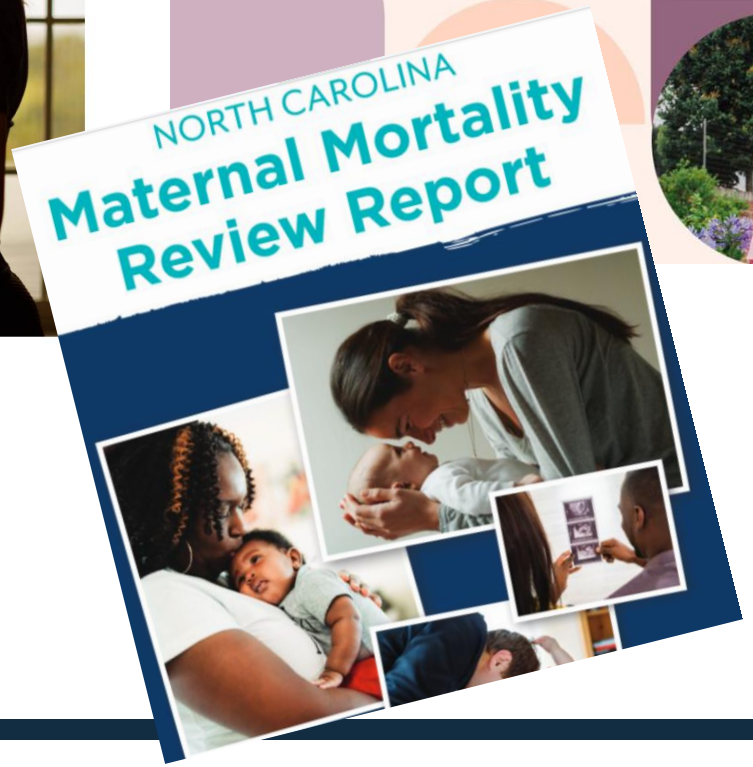
DATA INFORMING ACTION

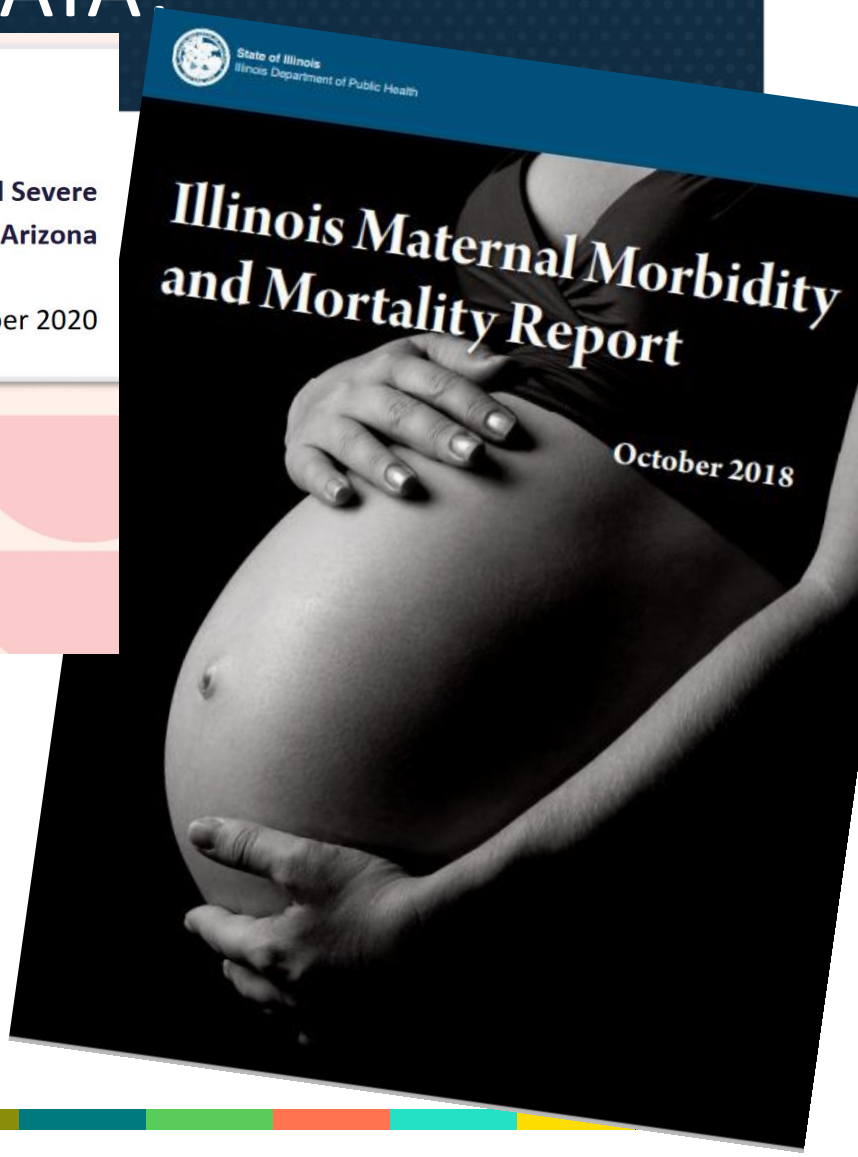


HOW HAVE STATES USED THEIR MMRC DATA?

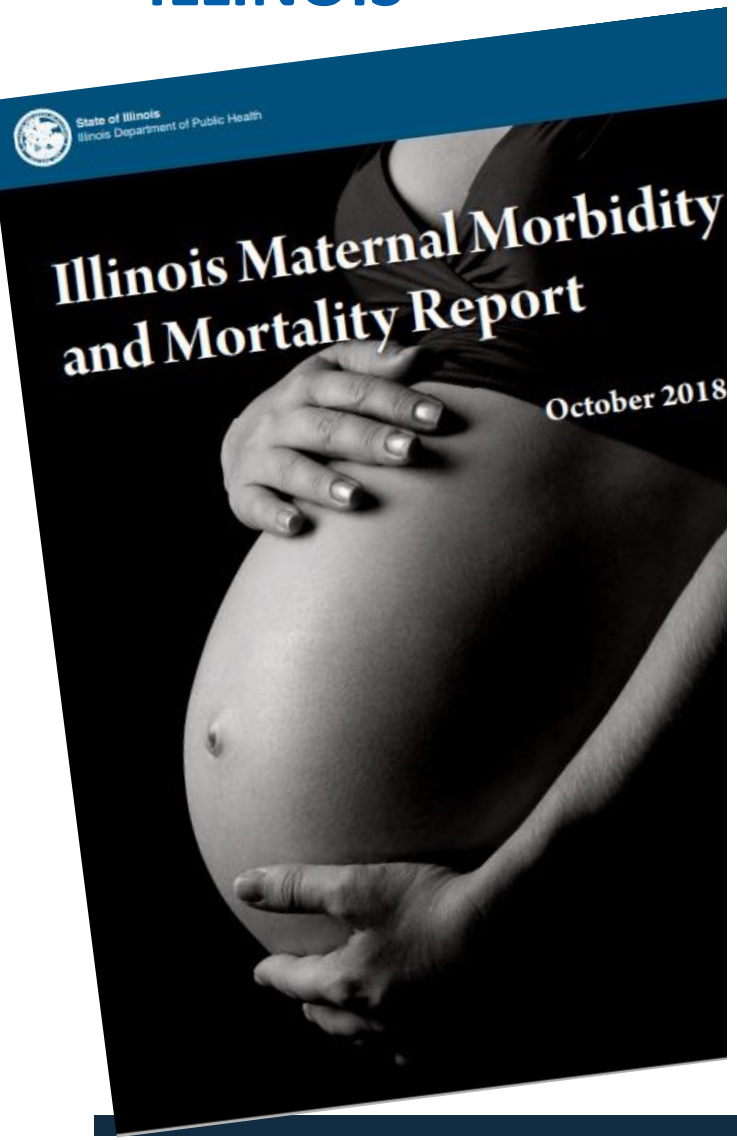


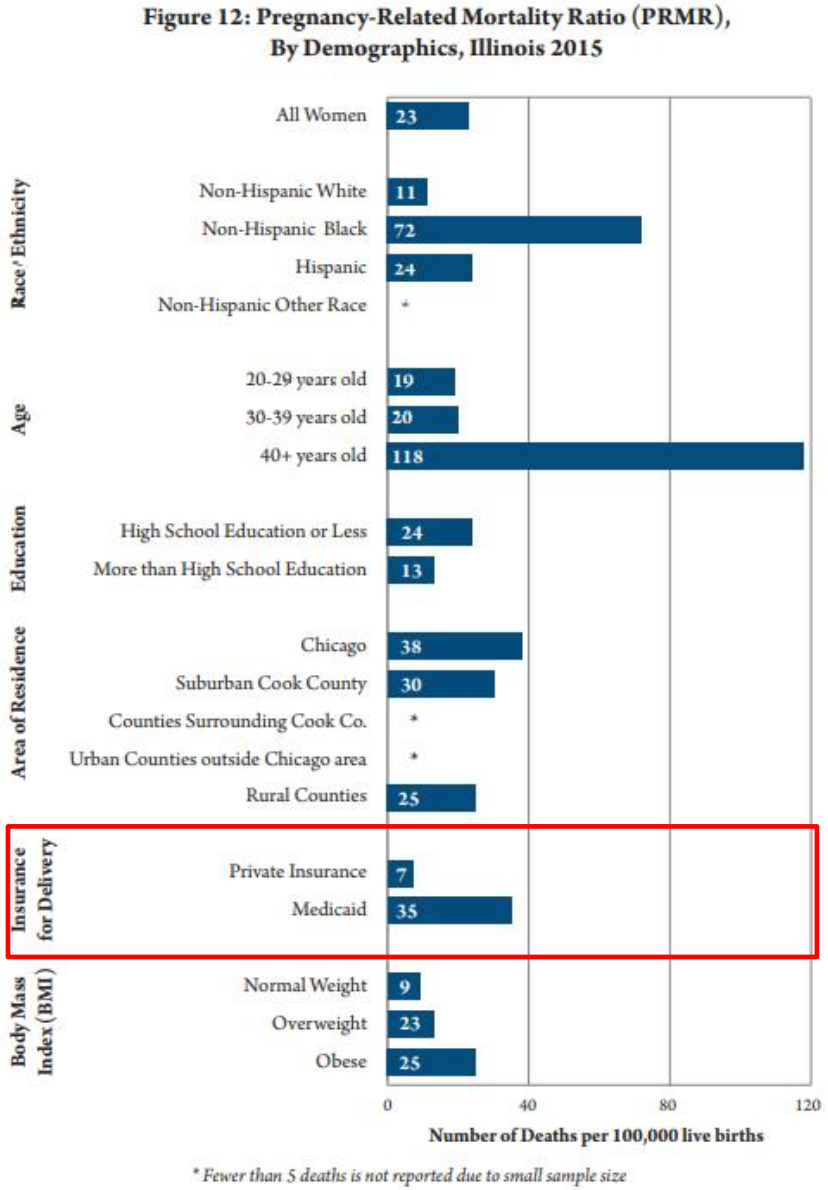






DATA TO ACTION – ILLINOIS



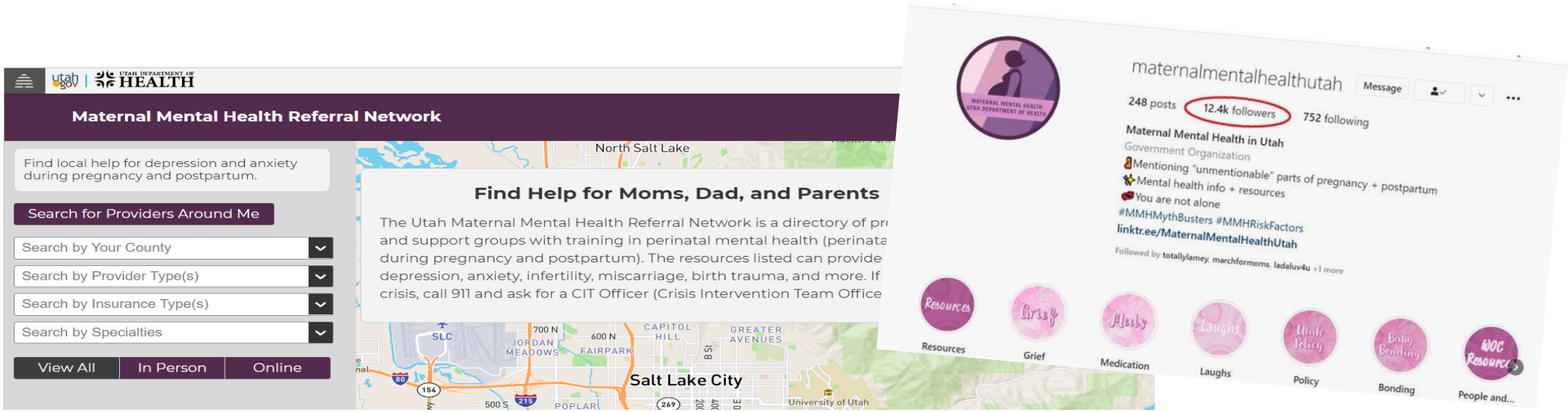


- 15 bills addressing maternal morbidity and mortality introduced in the State Legislature
- Extended Medicaid coverage for postpartum women out to 1 year

Source: Illinois Maternal Morbidity and Mortality Report. Illinois Department of Public Health. (October 2018)

DATA TO ACTION –
UTAH MATERNAL MENTAL HEALTH RESOURCES

- The UT MMRC prioritized a recommendation to ‘educate providers on available mental health resources and specialists they can refer patients to in the perinatal period’
- In response, the UT Department of Health launched the Utah Maternal Mental Health Resource Network



Source: https://maternalmentalhealth.utah.gov/

DATA TO ACTION – TENNESSEE

REDUCING PREVENTABLE MATERNAL DEATHS

WHAT HEALTH CARE PROVIDERS CAN DO

- Develop protocols for interpersonal violence screening
- Implement systems of care for mental health disorders
- Implement education on implicit bias for staff
- Provide consistent screening, assessment and treatment for cardiac conditions
- Increase access to naloxone

81%

OF DEATHS

were determined to be preventable with **37%** having a good chance and **44%** having some chance of being prevented

*Total of pregnancy-related and not-related deaths does not add up to the total deaths because relatedness could not be determined in some cases.

Tennesee Department of Health, Authorization No. XXXXXX, XXXX copies, August 2020. This public document was promulgated at a cost of $0.06 per copy.

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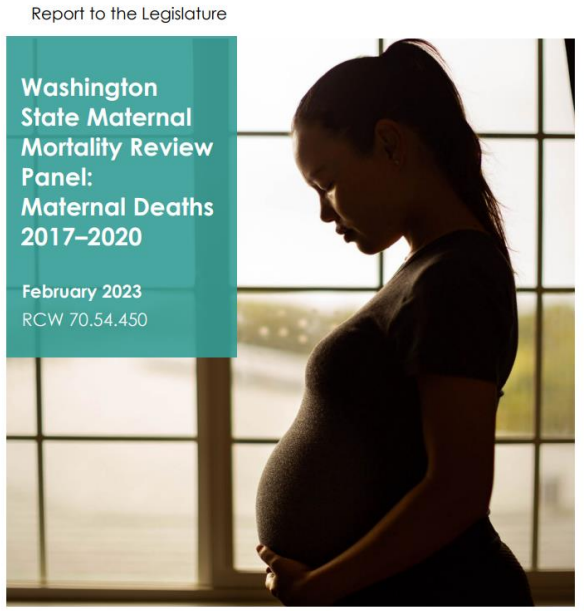
TN Department of Health

Visit the Tennessee maternal mortality review program webpage at https://www.tn.gov/health/health-program-areas/fhw/maternal-mortality-review.html

DATA TO ACTION – WASHINGTON

- Washington State Department of Health Maternal Mortality Review Panel found:
  - Pregnancy-related deaths were not always referred to local coroner and medical examiner offices;
  - Even when deaths were referred, autopsies were not always performed;
  - Autopsy quality varied.

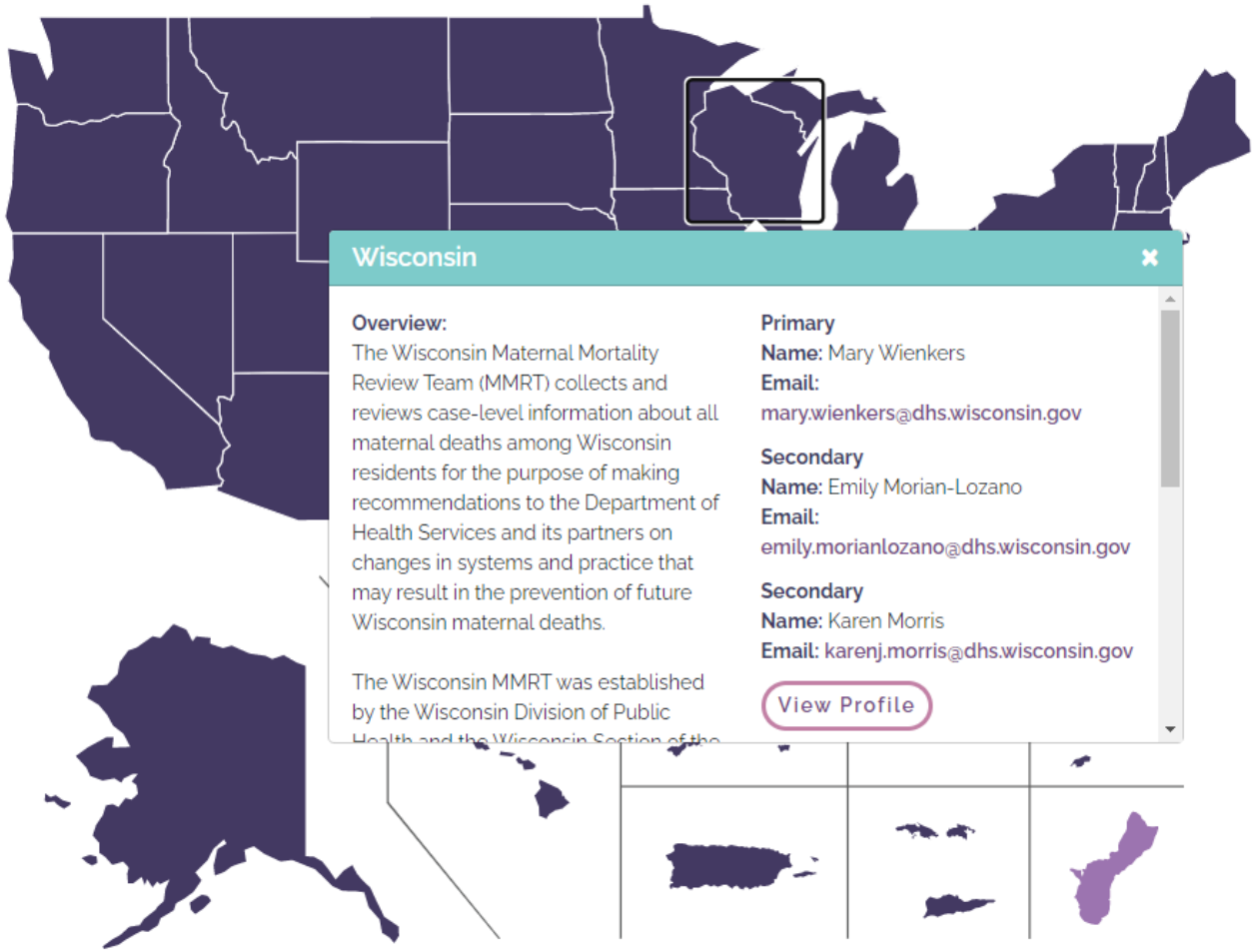


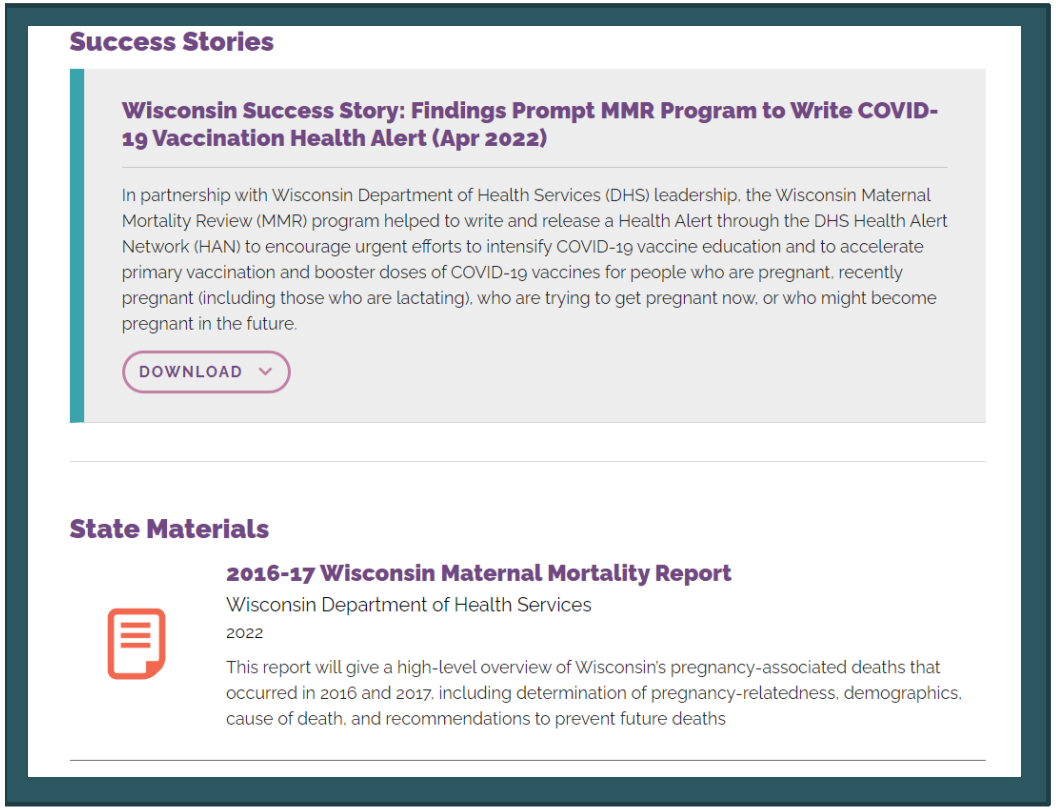
- Washington passed a law requiring birthing hospitals and centers to refer deaths of women who are pregnant, or have been pregnant within 42 days of death, to the local coroner or medical examiner's office; and provided a funding source for these autopsies.

Source: Maternal mortality review panel—Duties—Confidentiality, testimonial privilege, and liability—Identification of maternal deaths—Reports—Data-sharing agreements, RCW 70.54.450 (2016).

MATERNAL MORTALITY REVIEW COMMITTEE NETWORKING SITE:

HTTPS://WWW.REVIEWTOACTION.ORG/TOOLS/NETWORKING-MAP





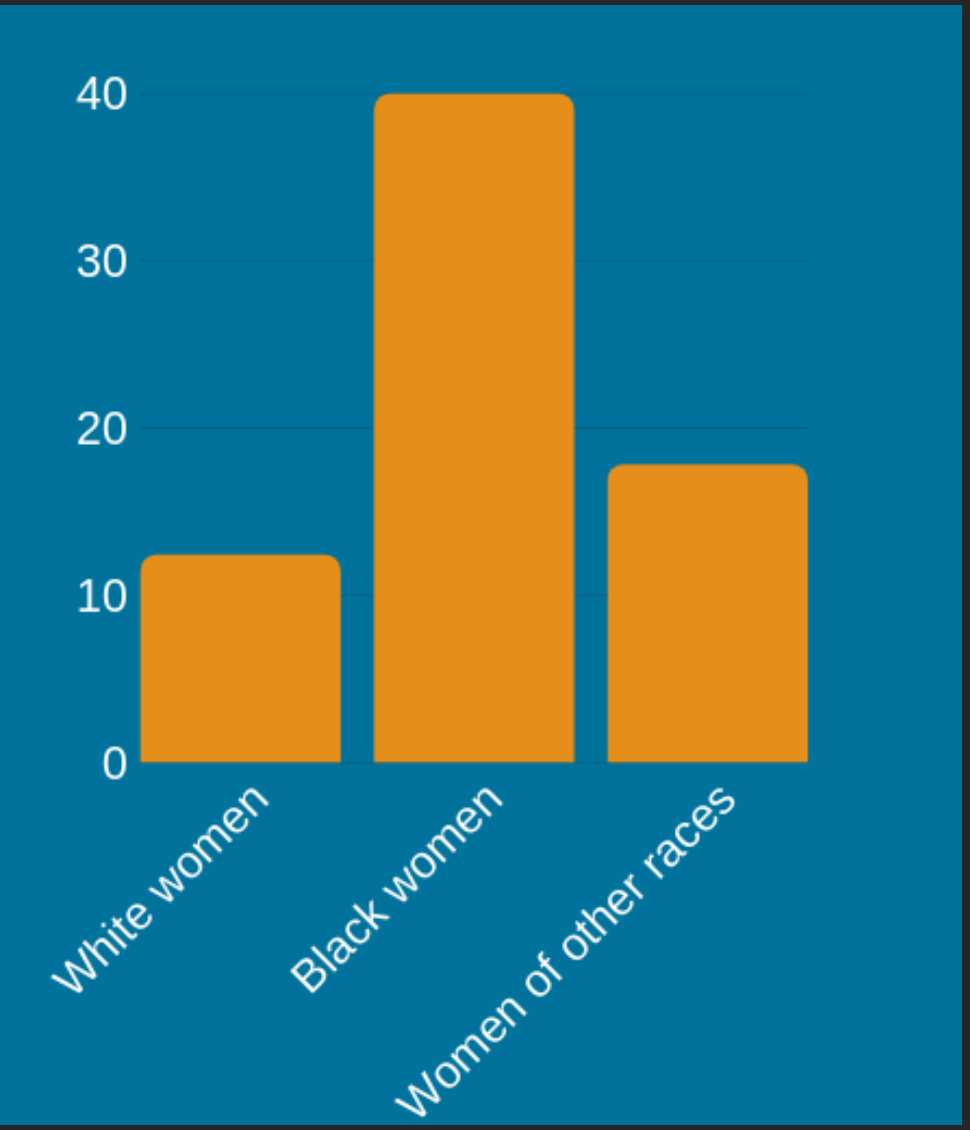
Thank you!

For more information, contact:
erasemm@cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

The Relationship Between State-Level Prenatal Substance Use Policies and Maternal and Infant Mortality in the U.S.

KATHRYN THOMAS, PHD, JD & CARA STRUBLE, PHD



Maternal Mortality in the United States

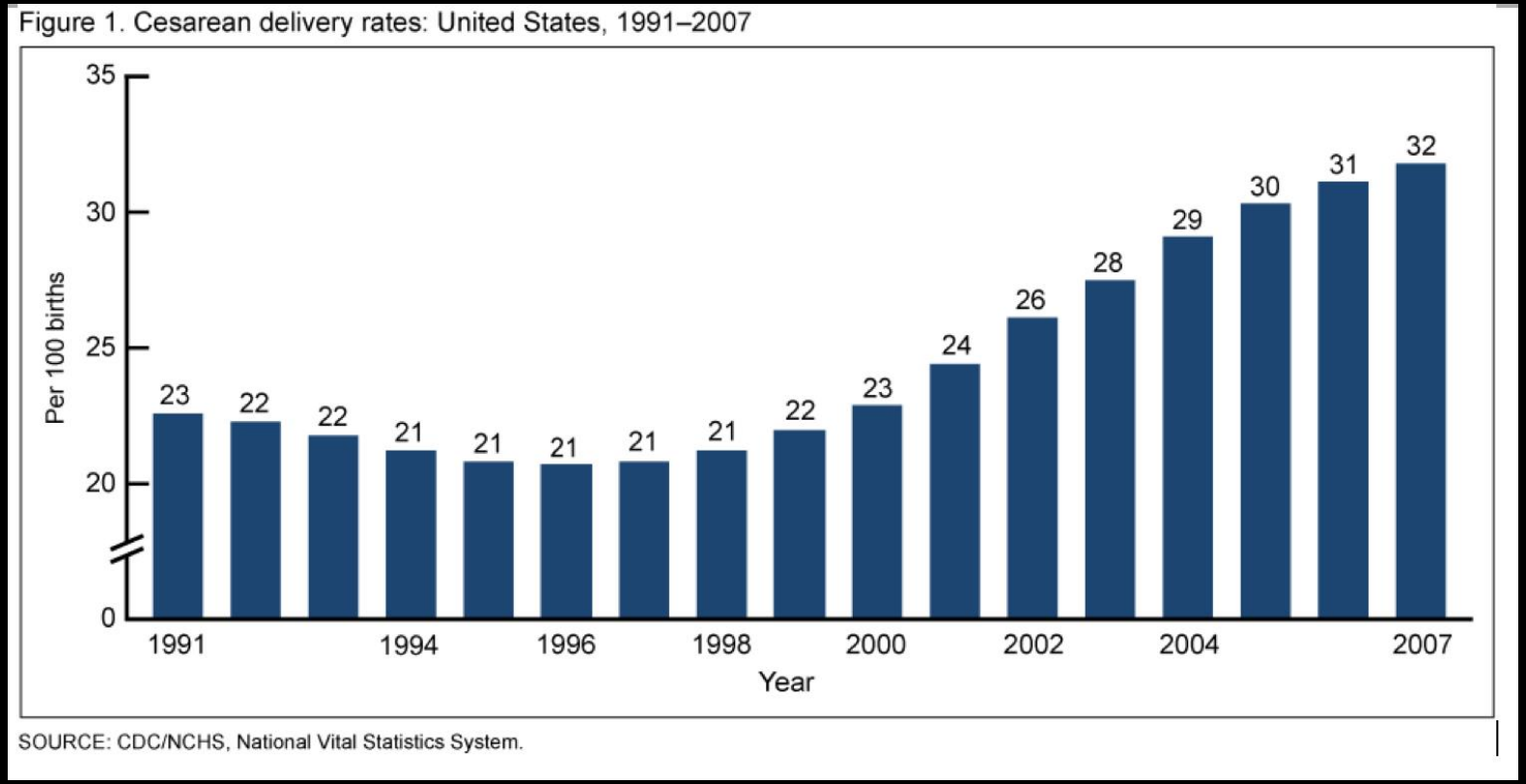
Maternal mortality more than quadrupled in the last 3 decades

- 1987: 7.2 deaths per 100,000
- 2018: 17.4 deaths per 100,000
- 2020: 23.8 deaths per 100,000
- 2021: 32.9 deaths per 100,000

80% of pregnancy-related deaths were preventable from 2017-2019 (CDC, 2022)

Factors Contributing to Maternal Mortality

1. Increase in cesarean section births.
    - 500% increase in c-section births since 1970.
    - C-section births increase chance of complications by 80%.

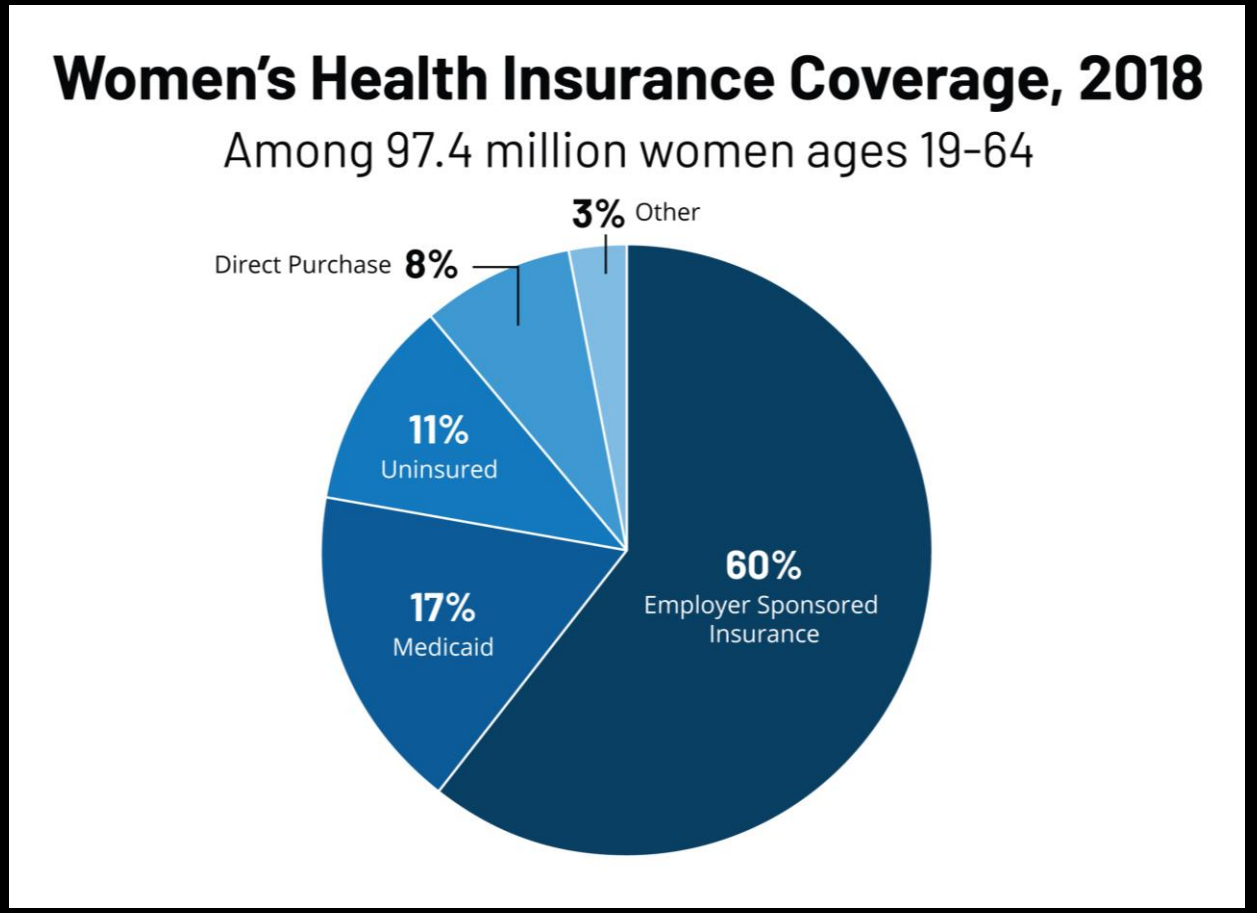


Factors Contributing to Maternal Mortality

2. Increase in rates of chronic health conditions in adults.
    - From 2005 to present, significant increase in chronic health conditions (respiratory disease, hypertension, diabetes, etc.).
    - Women of low SES and living in rural areas have higher rates of chronic health conditions

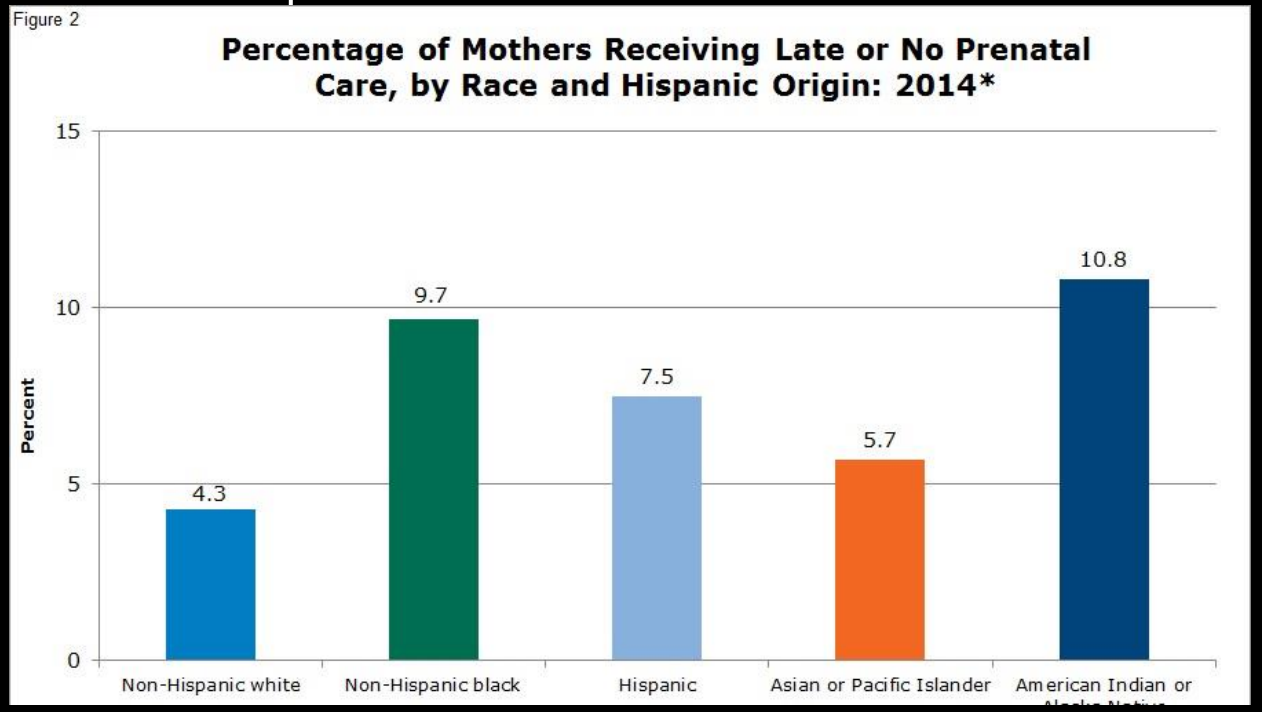
Factors Contributing to Maternal Mortality

3. Lack of health insurance and lack of access to healthcare.
    - Low rates of adequate prenatal care for women with Medicaid (64.2%) or no insurance (35.7%).

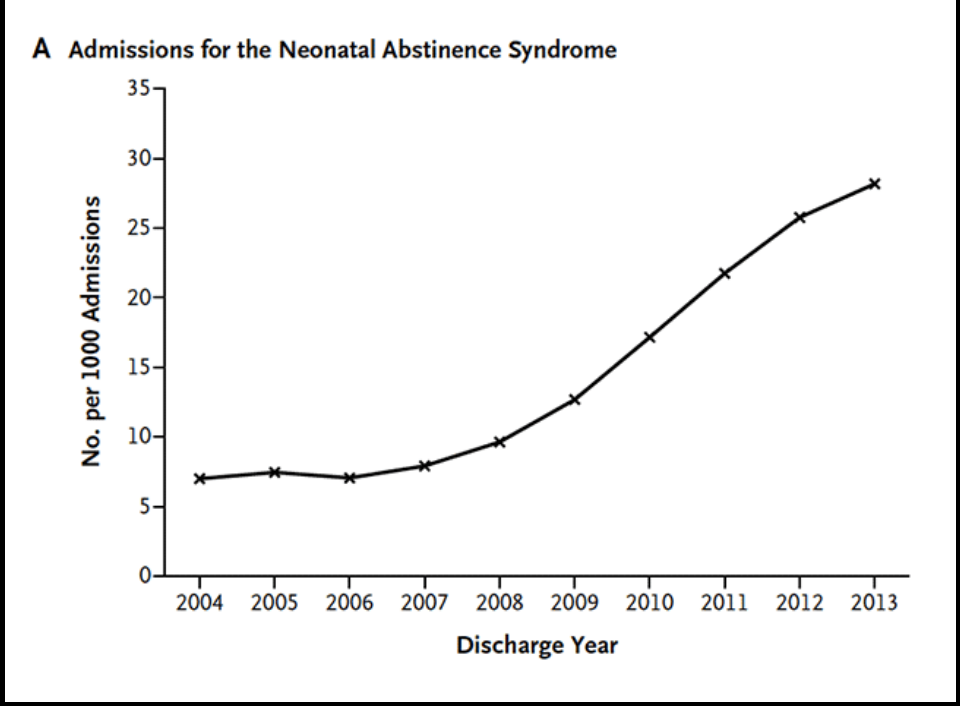


Factors Contributing to Maternal Mortality

4. Disparities in access and quality of care for people of color.
    - Black and Native women are 2-3 times more likely to die a pregnancy-related death
    - Black women are 3 times more likely to receive no prenatal care and 3 times more likely to experience discrimination in their prenatal care

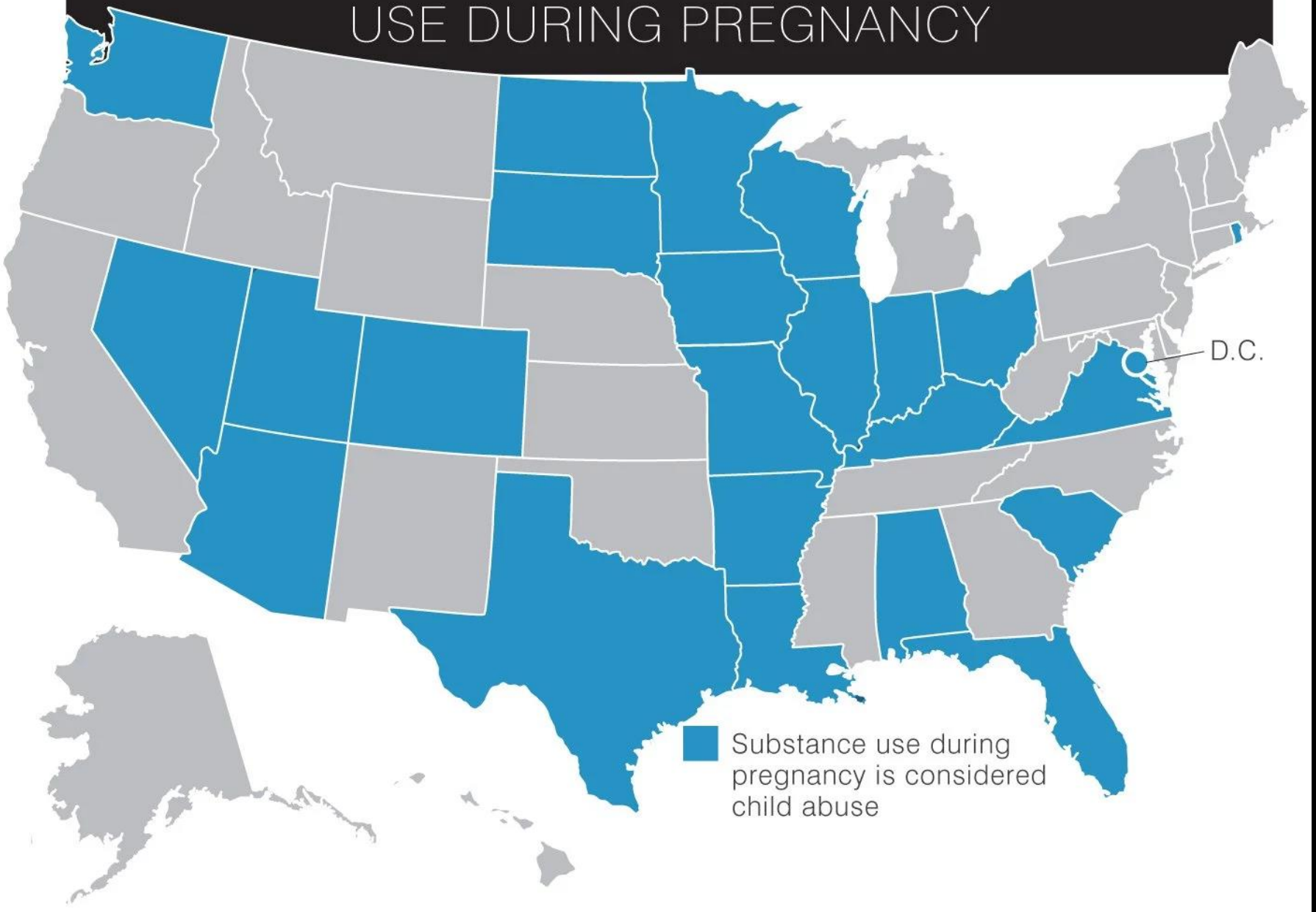


Factors Contributing to Maternal Mortality



5. Increased rates of substance use during pregnancy.
   - From 2007 to 2017, rates of maternal mortality due to overdose increased over two times.
   - Women who use substances are less likely to receive adequate prenatal care.
   - Recent trend in state-level laws becoming stricter

STATE POLICIES ON SUBSTANCE USE DURING PREGNANCY



SOURCE: https://www.guttmacher.org/state-policy/explore/substance-use-during-pregnancy#

Current Study

More research is needed to better understand the relationship between substance use and maternal mortality

- No current research examining the impact of policies that punish prenatal substance use across all 50 states
- Substance use may increase one's chances of receiving inadequate prenatal care

Current Study

Goal: Examine the impact of state-level policies on rates of prenatal care and maternal and infant mortality.

Policies include:

1. Prenatal substance use is considered child abuse
2. Prenatal substance use is grounds for civil commitment
3. Suspected prenatal substance use requires mandated reporting
4. Suspected prenatal substance use requires mandated testing

Legal Epidemiology

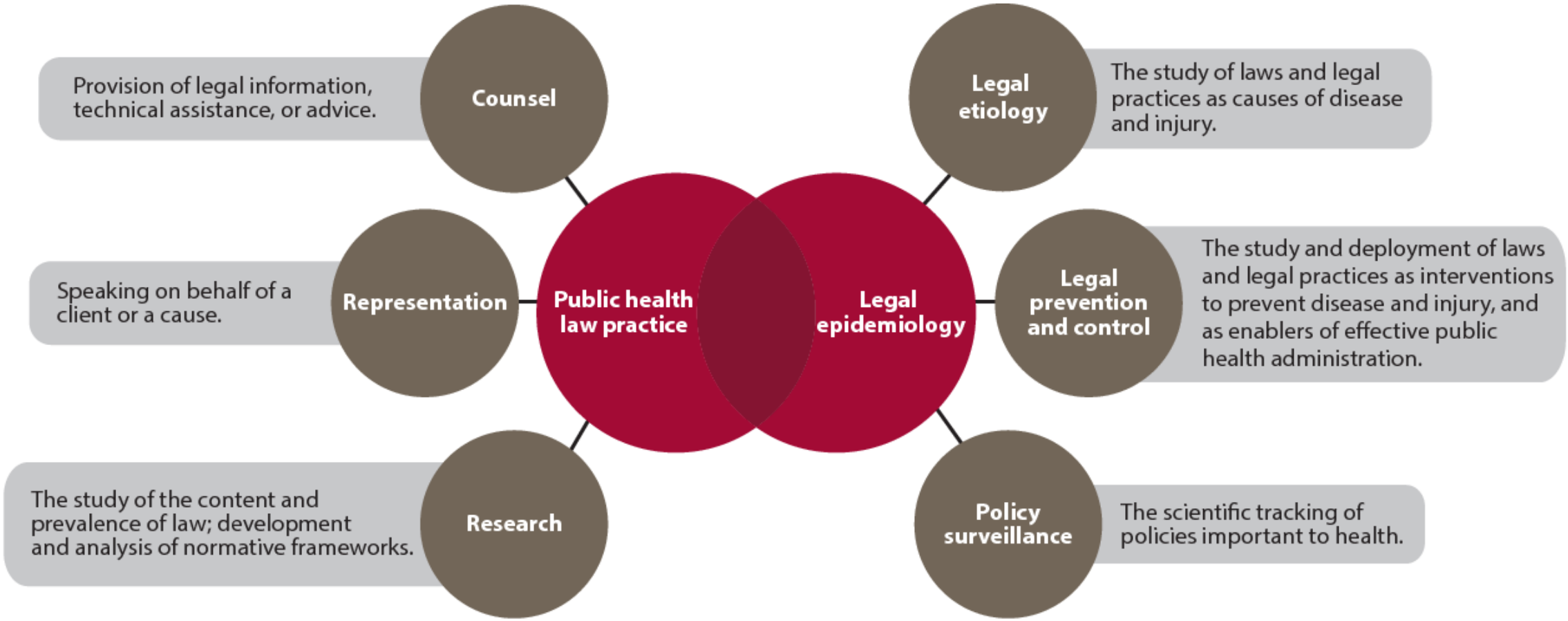


Figure 1

Transdisciplinary public health law.

Current Study

Hypothesis: Stricter prenatal substance use policies will increase rates of maternal and infant mortality.

- Women will avoid seeking prenatal care out of fear of legal consequences.

Data

Publicly-available data was combined from several data sources:

1. **State Level Laws:** *Guttmacher Institute state-level coding of prenatal substance use laws*
2. **Maternal and Infant Mortality:** *CDC data on maternal mortality and infant mortality rates per 100,000 live births in the U.S. in 2018*
3. **Demographic Variables:** *U.S. Census state-level estimates of race and poverty level from 2010 to 2019*
4. **Prenatal Care:** *National Vital Statistics Report statistics on adequacy of prenatal care in the United States in 2016*
5. **Infant Substance Exposure:** *U.S. Department of Health and Human Services state-level data on the percentage of infants with prenatal substance exposure in 2018*
6. **Substance Use During Pregnancy:** *National Survey on Drug and Alcohol Use (NSDUH) data on substance use during pregnancy in 2018*

Analyses

Series of two-step backwards stepwise regressions to examine whether state-level policies predict maternal mortality

- First Step: Controlling for Covariates (demographic factors)
- Second Step: Policy as a Predictor

Results: Mandated Testing Laws Predict Maternal Mortality

Regression analyses examining the impact of mandated testing laws on maternal mortality.

Predictors	*B*	R^2
Step 1:		
Percent of Population Identifying as Black	20.076**	.537**
Percent of Women Receiving Prenatal Care First Trimester	-.581	
Percent Below Poverty Line	.341	
Percent of Infants with Neonatal Abstinence Syndrome	-.168	
Percent of Pregnant Women who used Illicit Drugs, Tobacco, or Alcohol in the Past Month	.085	
Step 2:		
Percent of Population Identifying as Black	22.694**	596**
Percent of Women Receiving Prenatal Care First Trimester	-.664*	
Percent Below Poverty Line	.221	
Percent of Infants with Neonatal Abstinence Syndrome	-.122	
Percent of Pregnant Women who used Illicit Drugs, Tobacco, Month	.058	
Mandated Testing Laws	6.660*	

** $p < .01$, * $p < .05$, $N = 50$.

Results: Child Abuse Laws Predict Infant Mortality

Regression analyses examining the impact of child abuse laws on infant mortality.

Predictors	*B*	R^2
Step 1:		
Percent of Population Identifying as Black	4.740**	.667**
Percent of Women Receiving Prenatal Care First Trimester	-.075*	
Percent of Population with Health Insurance	-.002	
Percent of Infants with Neonatal Abstinence Syndrome	.021	
Percent of Pregnant Women who used Illicit Drugs, Tobacco, or Alcohol in the Past Month	.026	
Step 2:		
Percent of Population Identifying as Black	5.196**	.708**
Percent of Women Receiving Prenatal Care First Trimester	-.079**	
Percent of Population with Health Insurance	-.066*	
Percent of Infants with Neonatal Abstinence Syndrome	.029	
Percent of Pregnant Women who used Illicit Drugs, Tobacco, or Alcohol in the Past Month	.030	
Substance Use as Child Abuse Laws	.542*	

** $p < .01$, * $p < .05$, $N = 50$.

Discussion

Mandated testing laws significantly predicted rates of maternal mortality after controlling for state-level covariates

- Entire model accounting for 59.6% of the variance in mortality

Child abuse laws significantly predicted rates of infant mortality when controlling for state-level covariates

- Entire model accounted for 70.8% of variance in infant mortality

Discussion

Results suggest:

- Increased rates of maternal and infant mortality is an unintended consequence of punitive prenatal substance use laws.
- The importance of supporting pregnant women in getting the required prenatal care.
  - Prior research suggests that women who receive no prenatal care are 3-4 times more likely to experience a pregnancy-related death
  - Women with Medicaid or no insurance are more likely to receive inadequate prenatal care

Areas for Future Research

- Longitudinal analyses examining how changes in laws impact changes in rates of maternal or infant mortality will allow for causal inferences
- Existing state-level data examines cisgender women's experiences of pregnancy – future research is needed to understand transgender and non-binary people's experiences of pregnancy
- There is a need for research examining how laws are disproportionately applied to women of color and women of low SES
  - Prior research suggests that low income, Black women who live in Southern states are more likely to be reported by hospital staff, subjected to drug testing, charged with a felony, and arrested.

Panel Discussion

Questions?

Thank You