

CDC *VITAL SIGNS* TOWN HALL TELECONFERENCE

PREGNANCY-RELATED DEATHS



Centers for Disease Control and Prevention

National Center for Chronic Disease Prevention and Health Promotion

Division of Reproductive Health



AGENDA

- Welcome : **Shanna Cox, Associate Director for Science, Division of Reproductive Health, CDC**
- Presentations:
 - **Emily Petersen, MD, FACOG**
LCDR, U.S. Public Health Service
Division of Reproductive Health, CDC
 - **Shannon Lightner, MPA, MSW**
Deputy Director, Illinois Department of Public Health
Office of Women's Health and Family Services
 - **Laurie Baksh, MPH**
Manager, Maternal and Infant Health Program
Utah Department of Health
- Closing Remarks
- Questions

PREGNANCY-RELATED DEATHS, UNITED STATES, 2011–2015, AND STRATEGIES FOR PREVENTION, 13 STATES, 2013–2017

LCDR EMILY E. PETERSEN, MD, FACOG

MEDICAL OFFICER, MATERNAL AND INFANT HEALTH BRANCH

DIVISION OF REPRODUCTIVE HEALTH

CENTERS FOR DISEASE CONTROL AND PREVENTION

US PUBLIC HEALTH SERVICE



BACKGROUND

- Approximately 700 women die each year in the US due to complications of pregnancy
- Objectives
 - Describe timing and characteristics of pregnancy-related deaths
 - Describe preventability, contributing factors, and prevention strategies

PREGNANCY MORTALITY SURVEILLANCE SYSTEM (PMSS): ENHANCED SURVEILLANCE

- ACOG/CDC Maternal Mortality Study Group (1986)
- All 50 states, NYC, DC
- Based on death certificates, linked birth or fetal death certificates, and other information as available
- Review each case and determine whether related to pregnancy, and cause of death

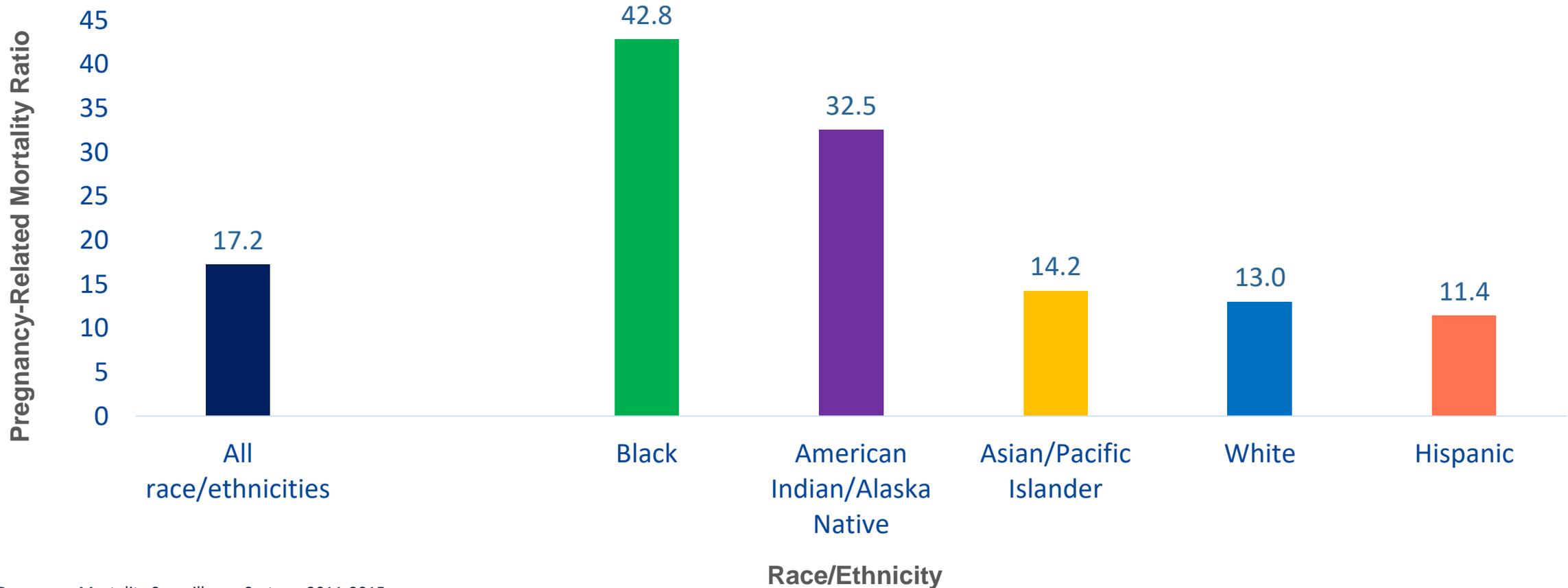
PREGNANCY MORTALITY SURVEILLANCE SYSTEM (PMSS)

- **Pregnancy-related**
 - Complication of pregnancy
 - Aggravation of a unrelated condition by the physiology of pregnancy
 - Chain of events initiated by the pregnancy
- **Pregnancy-related mortality ratio (PRMR; deaths per 100,000 births)**

MATERNAL MORTALITY REVIEW COMMITTEES (MMRCS)

- Multidisciplinary teams at state or local level
- Data sources include vital records, medical records, autopsy reports, social service records, etc.
- 13 states included in this report:
 - Arizona (2016), Colorado (2014–2015), Delaware (2013–2017), Florida (2017), Georgia (2013–2014), Hawaii (2015–2016), Illinois (2015), Mississippi (2016–2017), North Carolina (2014–2015), Ohio (2013–2016), South Carolina (2014–2017), Tennessee (2017), and Utah (2015–2016)

BLACK AND AMERICAN INDIAN/ALASKA NATIVE WOMEN WERE ~3 TIMES AS LIKELY TO DIE FROM PREGNANCY-RELATED CAUSES AS WHITE WOMEN

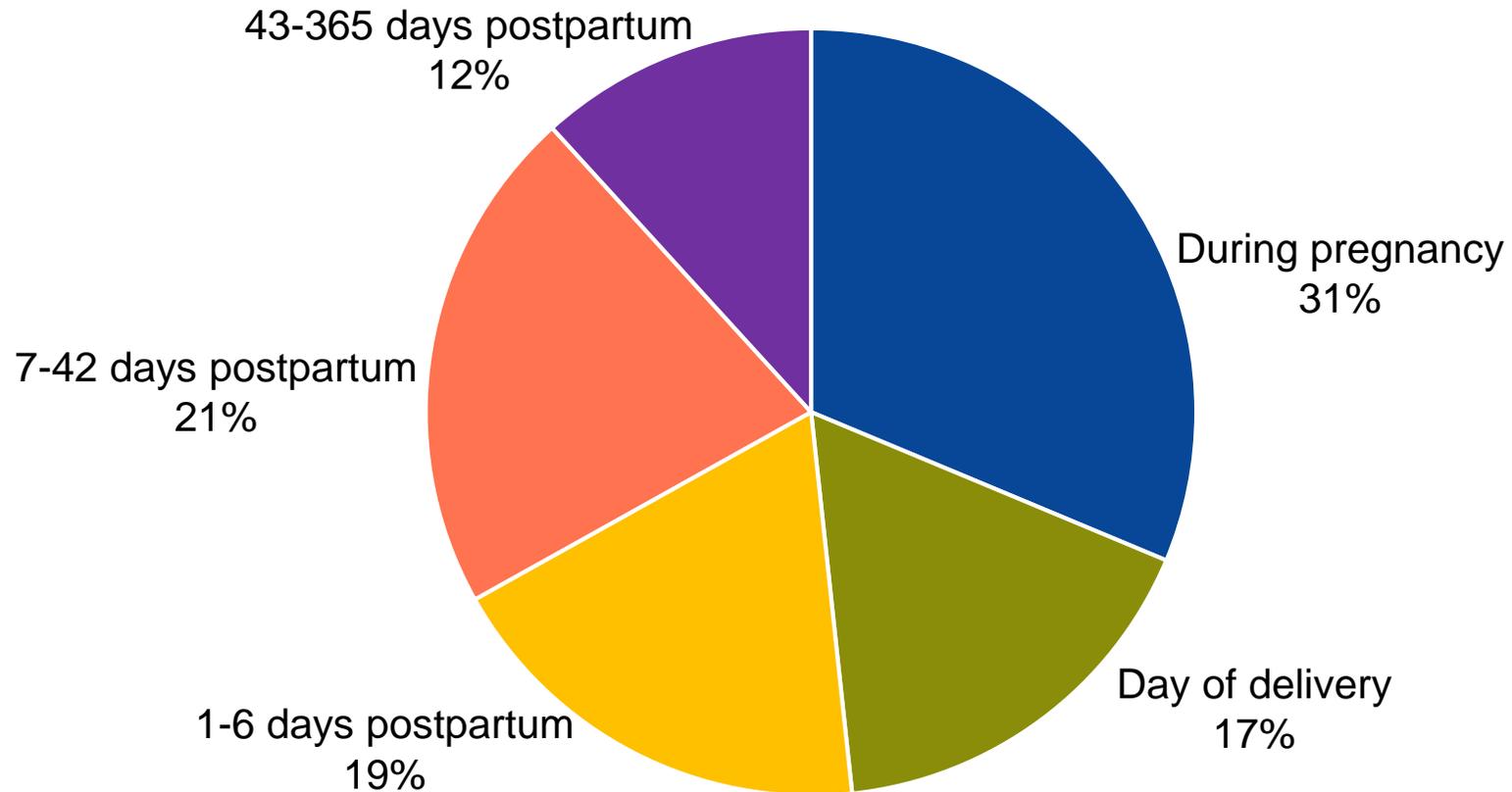


Pregnancy Mortality Surveillance System, 2011-2015

PRMR = number of pregnancy-related deaths per 100,000 births

Women identified as white, black, American Indian/Alaska Native, or Asian/Pacific Islander were not Hispanic. Hispanic women could be of any race.

PREGNANCY-RELATED DEATH CAN HAPPEN THROUGHOUT PREGNANCY, AND UP TO ONE YEAR AFTER DELIVERY

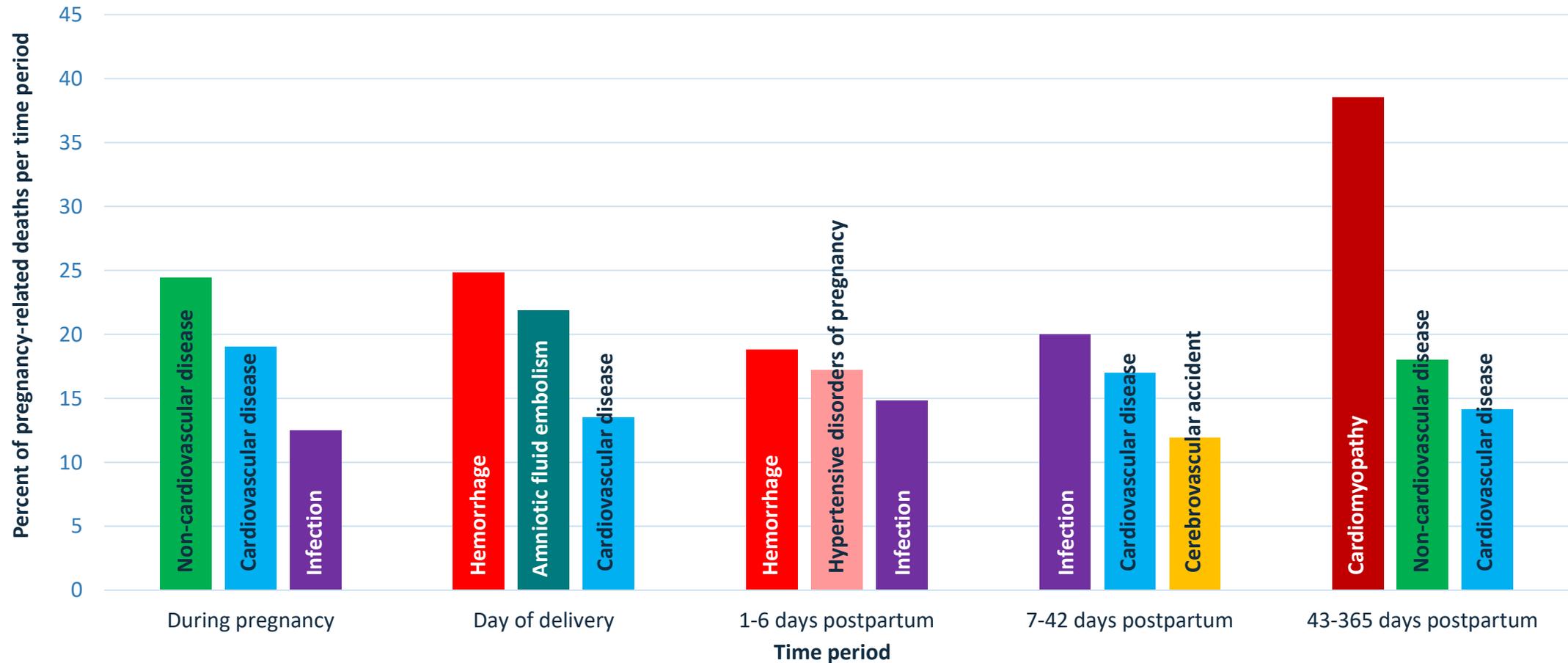


- Pregnancy Mortality Surveillance System, 2011-2015
- Excludes 420 of 3,410 pregnancy-related deaths due to unknown timing

HIGHLIGHTED RESULTS, PMSS, 2011–2015

- Timing of deaths did not significantly differ between black and white women for most periods
 - Except: greater proportion of deaths among black women (15%) occurred 43-365 days postpartum compared to white women (10%)
- Heart disease and stroke (cardiomyopathy, other cardiovascular disease, cerebrovascular accidents) caused over one-third pregnancy-related deaths

Leading causes of death varied by timing



HIGHLIGHTED RESULTS, 13 STATE MMRCs, 2013–2017

- Approximately 3 in 5 deaths were determined to be preventable
 - Preventability did not vary by race/ethnicity (black, white, Hispanic)
 - Preventability did not vary by timing of death
- Contributing factors and prevention strategies were identified at the provider, patient, community, health facility, and systems levels
 - 3-4 contributing factors were identified on average per death
 - 2-3 prevention strategies were identified on average per death

MMRC-IDENTIFIED PREVENTION STRATEGIES

▶ Healthcare providers can

- Help patients manage chronic conditions
- Communicate about warning signs
- Use tools to flag warning signs early so women can receive timely treatment

▶ Health facilities can

- Standardize coordination of care and response to obstetric emergencies
- Train non-obstetric providers to consider recent pregnancy history

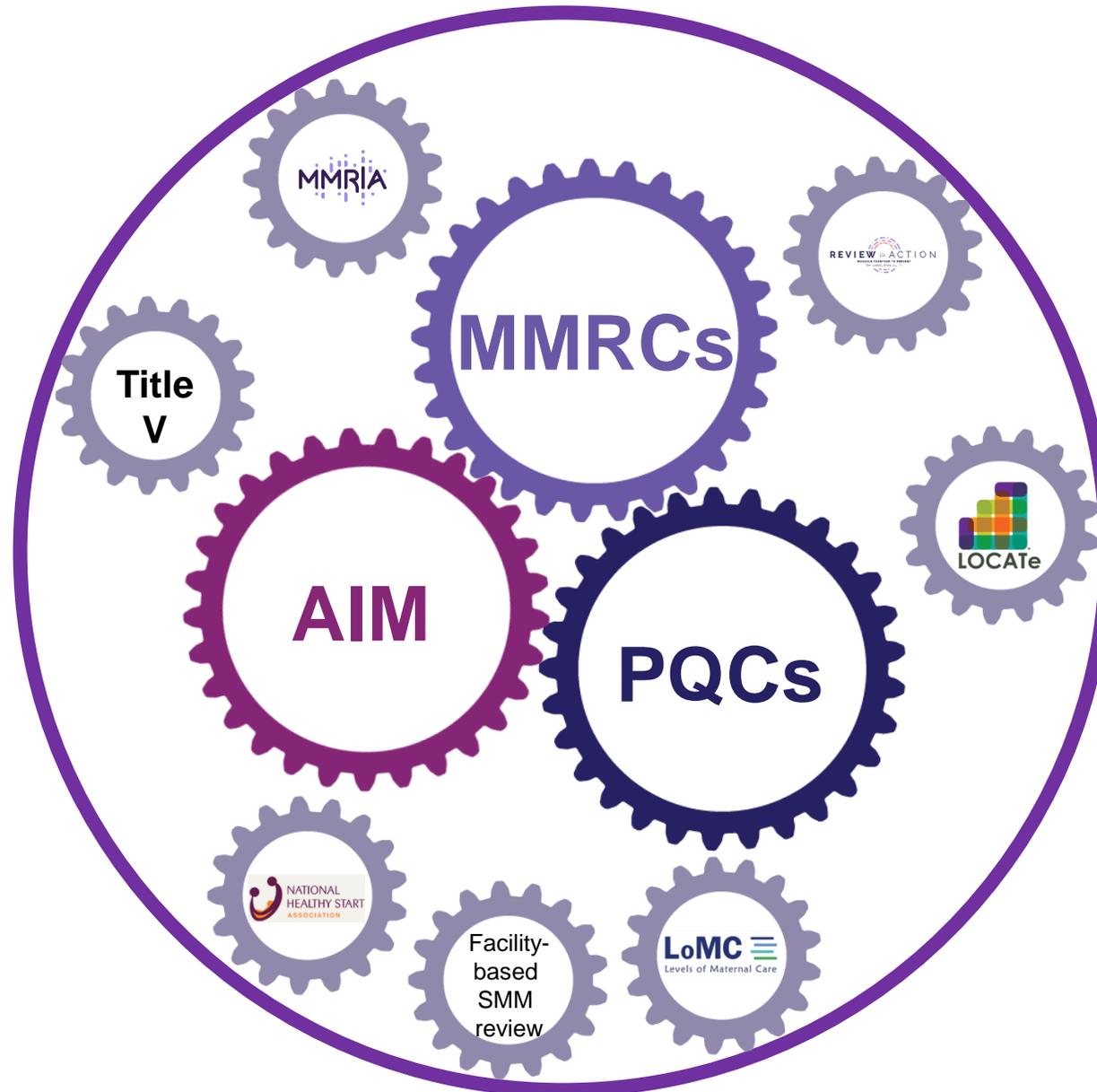
▶ Women and their families can

- Know and communicate about symptoms of complications
- Note pregnancy history any time medical care is received in the year after delivery

▶ States and communities can

- Assess and coordinate delivery hospitals for risk-appropriate care
- Support review of the causes behind every maternal death

IMPROVING POPULATION HEALTH OF WOMEN





Illinois Maternal Mortality Review: Data to Action

Shannon Lightner,

Illinois Department of Public Health

Office of Women's Health and Family Services

History of Maternal Mortality Review in IL

- Maternal mortality reviews in Illinois began through regionalized perinatal centers in 1980s
- Convened state-level Maternal Mortality Review Committee (MMRC) in 2001
 - Reviews pregnancy-associated deaths from medical causes that are potentially related to pregnancy
- MMRC for Violent Deaths (MMRC-V) formed in 2015
 - Reviews pregnancy-associated deaths due to homicide, suicide, or drug overdose

Move Towards Population Health

- In 2016, IDPH sought technical assistance from the CDC to strengthen/expand our reviews
- Key opportunities for process improvement:
 - Ensuring that case reviews include all pregnancy-related deaths
 - Shifting from a clinical focus to a population health focus
 - Providing more structured administrative and technical support to the MMRCs
 - Systemizing procedures, particularly for case abstraction, data collection, and analysis

Redesigned MMRCs

IDPH redesigned the MMRCs, with seven objectives:

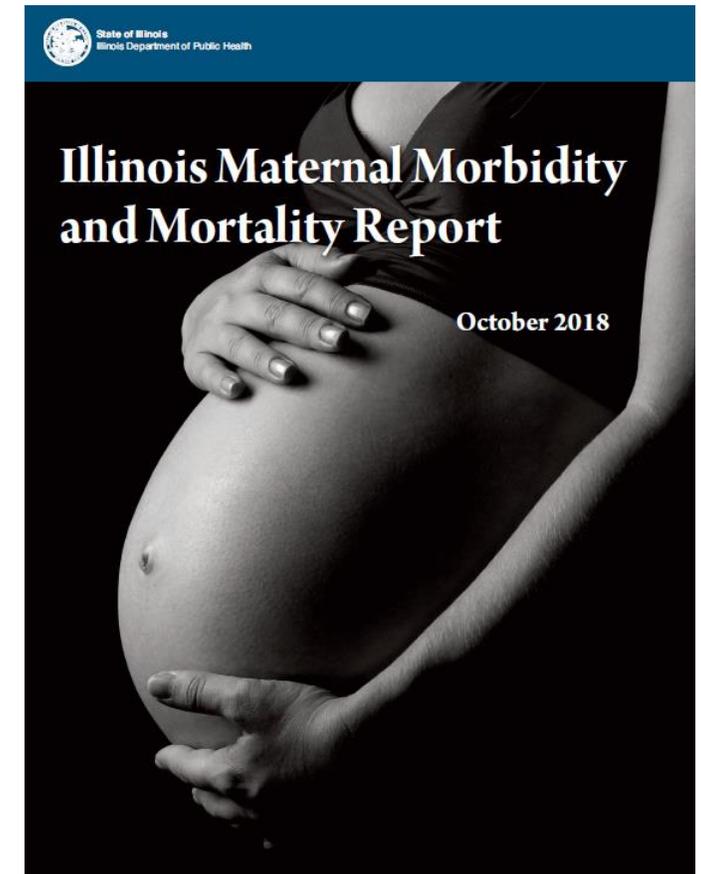
1. Ensure population-based state-level reviews
2. Improve timeliness of reviews
3. Develop sustainable systems for data collection and abstraction
4. Improve review efficiency and focus
5. Widen and diversify committee membership
6. Generate public health focused recommendations
7. Use data to identify trends, emerging issues, and action steps

Process for Creating Recommendations

- For every preventable maternal death that was reviewed, the MMRCs developed recommendations that may have prevented the death
- Recommendations were based on the critical factors identified in each case
- IDPH and the two MMRCs worked to refine and prioritize the recommendation list based on feasibility and impact
- The final recommendation list was unanimously passed by the two MMRCs in October 2018

Report Overview

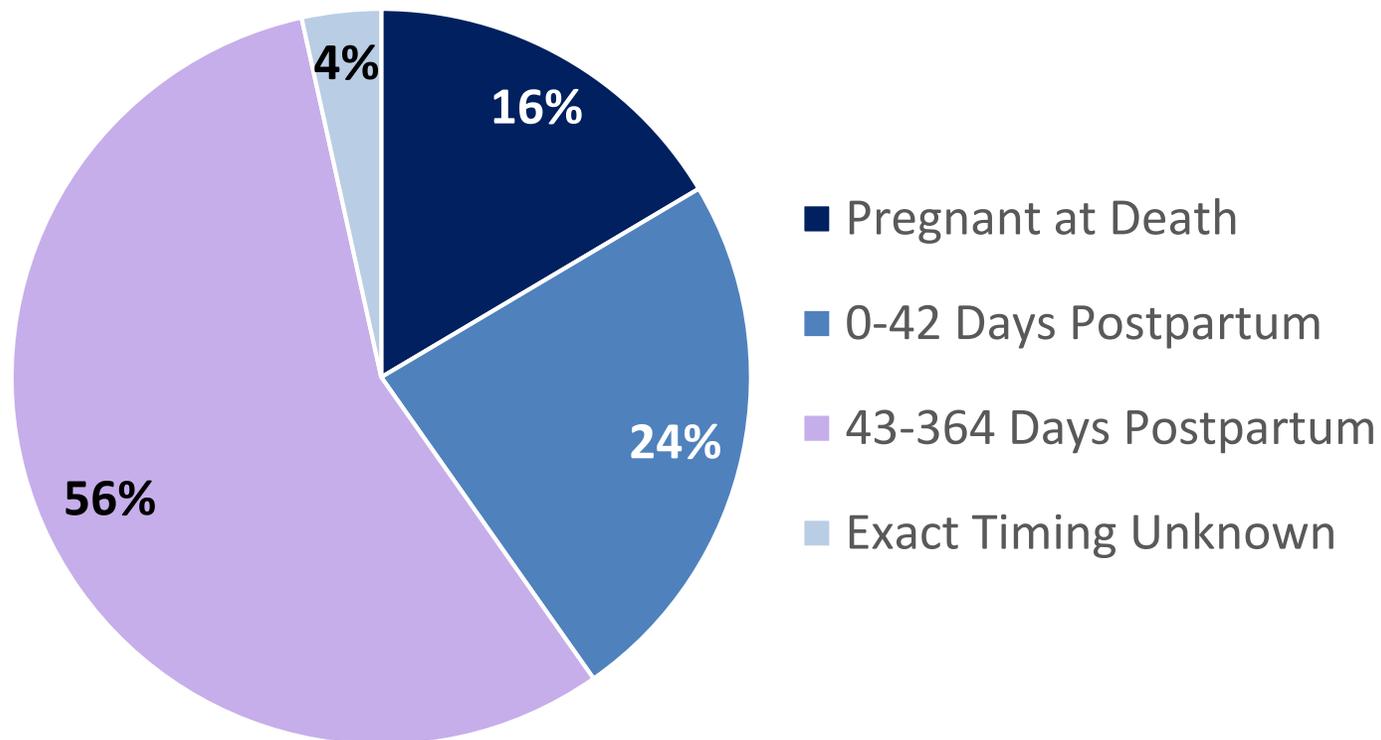
- In October 2018, IDPH published the first “Illinois Maternal Morbidity and Mortality Report” based on 2015 deaths using new approach
- Purpose of Report
 - Raise awareness about issues contributing to maternal morbidity and mortality
 - Demonstrate the commitment of Illinois to addressing maternal health
 - Deliver a “call to action” for preventing future maternal deaths



http://dph.illinois.gov/sites/default/files/publications/publications_owhmaternalmorbiditymortalityreport112018.pdf

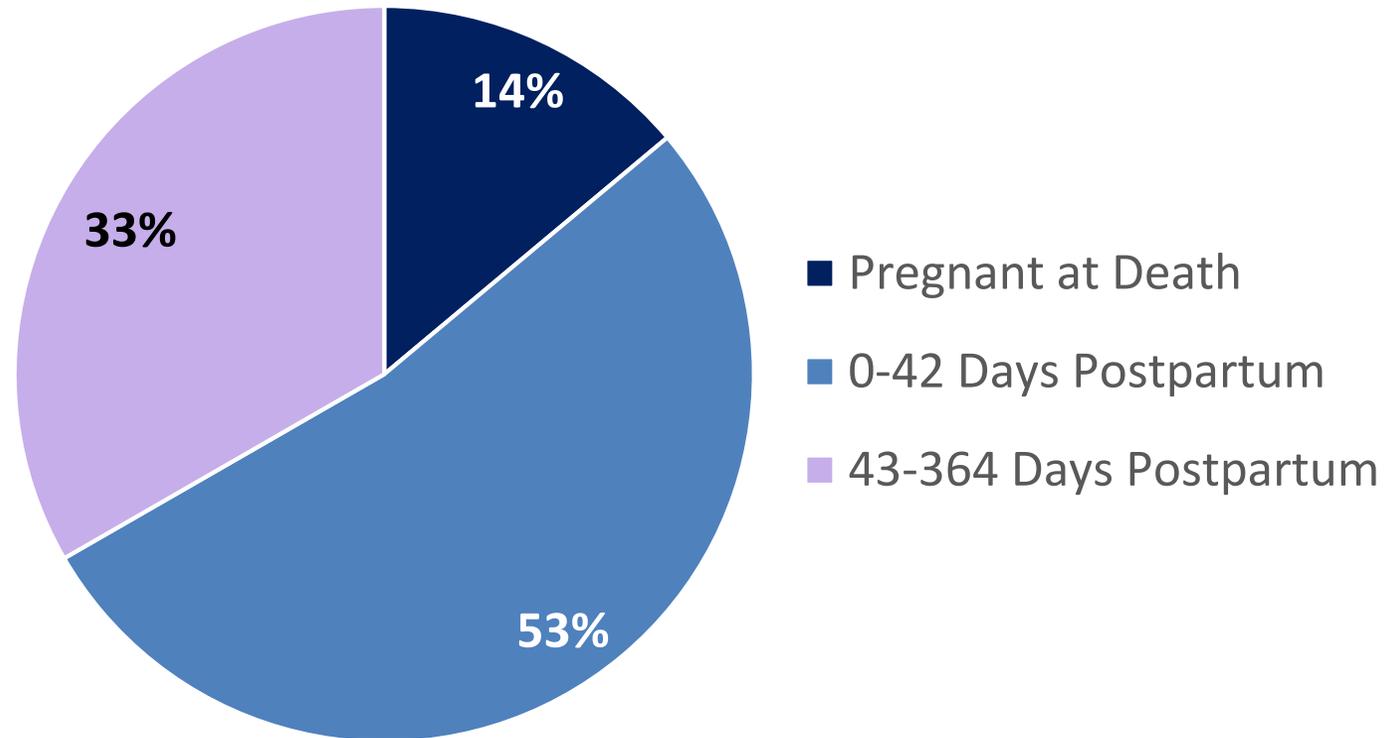
Timing of Pregnancy-Associated Deaths

- Because more than half of pregnancy-associated deaths occurred later than 42 days postpartum, it is important to continue tracking and monitoring deaths out to one full year after pregnancy



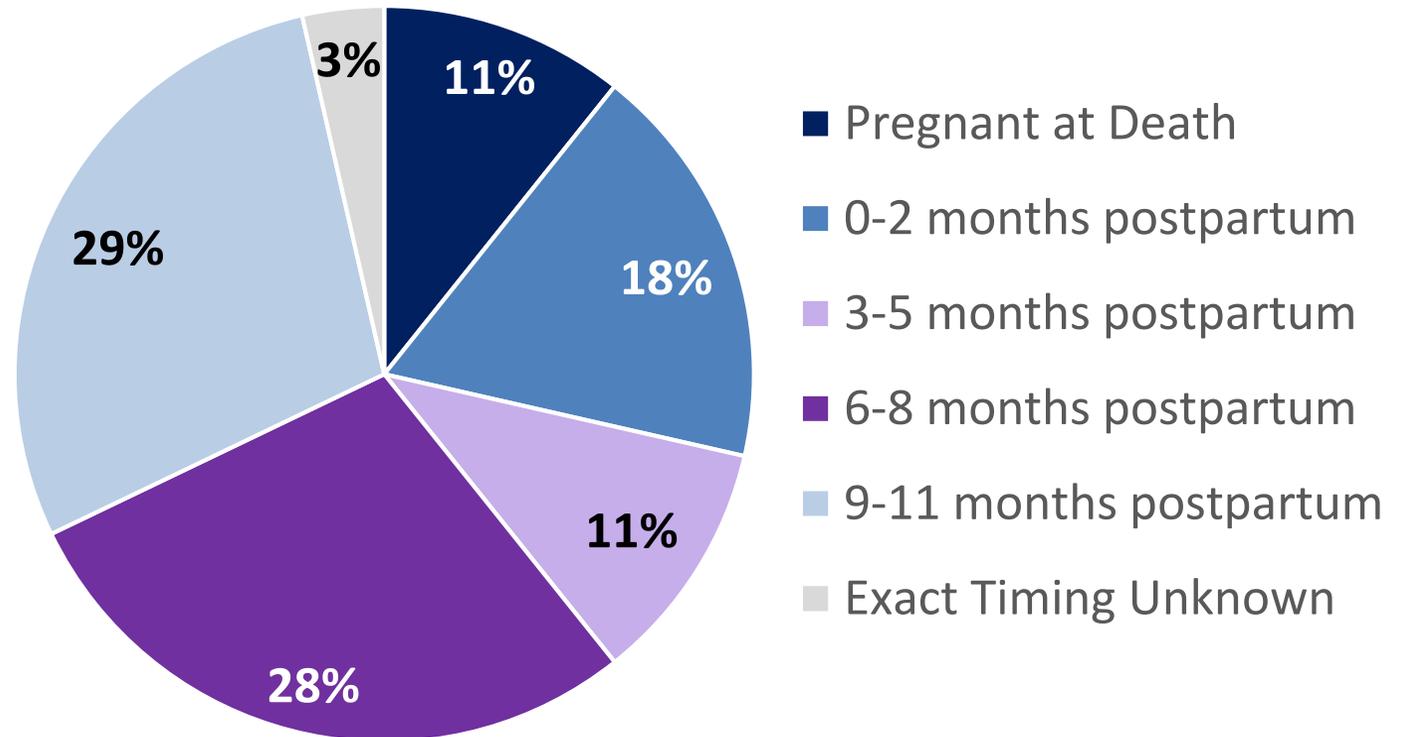
Timing of Pregnancy-Related Deaths, 2015

- Two-thirds of pregnancy-related deaths occurred during pregnant or within one year of pregnancy
- One third of pregnancy-related deaths occurred beyond the traditional 42 day postpartum window



Timing of Violent Pregnancy-Associated Deaths, 2015

- Less than one third of violent deaths occurred while the woman was pregnant or in the first three months postpartum
- More than half of violent deaths occurred at least 6 months after pregnancy



Opportunities for Prevention: Looking More Broadly at the Postpartum Period

- **Access to care**, especially specialty care and behavioral health services, is still an issue, even for women with insurance
- **Providers do not know where to refer postpartum women** with mental health and substance use disorders
- **Inadequate provider skill** reduces the quality of care and there is a need to educate all provider types who treat postpartum women
- There is **limited public awareness about postpartum health** problems and concerns
- **Lack of care coordination** is a universal issue for all women
- Hospitals lack **clear policies and procedures around the identification and treatment of postpartum women**; policies are not consistent across hospital departments

Recommendation Audience

- Recommendations were developed to target five audiences:
 - Hospitals
 - Healthcare providers
 - Health insurance plans and managed care organizations (*including Medicaid*)
 - State of Illinois (*including legislature, public health, human services*)
 - Women and their families/friends
- The report shows how all of these groups have a shared role in the promotion of women's health and the prevention of maternal mortality

Data to Action

- 15 bills addressing maternal morbidity and mortality introduced in the State Legislature
- Philanthropic community discussing ways to come together to prioritize maternal mortality recommendations
- Home visiting programs targeting infants are training home visitors on how to assess mothers
- Invited to give over 20 presentations with diverse audiences (early childhood providers, medical students/residents, public policy practitioners)

MATERNAL MORTALITY AND MENTAL HEALTH

Utah Perinatal Mortality Review

Laurie Baksh, MPH



MATERNAL MORTALITY REVIEW IN UTAH

- Utah's Perinatal Mortality Review Committee was established in 1995
- Retrospectively reviewed cases from 1984-1994 and subsequent years through 2019
- Case data was held in self-developed Access database until 2014
- Cases from 2015 forward abstracted and reviewed using the Maternal Mortality Review Information Application (MMRIA) system

DETERMINING RELATEDNESS

- PREGNANCY-RELATED**

The death of a woman during pregnancy or within one year of the end 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

- PREGNANCY-ASSOCIATED, BUT NOT -RELATED**

The death of a woman during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy

- PREGNANCY-ASSOCIATED BUT UNABLE TO DETERMINE PREGNANCY-RELATEDNESS**

- NOT PREGNANCY-RELATED OR -ASSOCIATED**

(i.e. false positive, woman was not pregnant within one year of her death)

2015 – UTAH CHANGE IN DETERMINATION

- Developing concern about the number of maternal suicide and overdose deaths being reviewed
- Increased understanding that mental health conditions may be aggravated during pregnancy and the postpartum year
 - Colorado paper on maternal deaths from suicide and overdose
- New expertise on committee
- As a result, the Utah PMR made the decision to develop standard criteria for determining pregnancy-relatedness in suicide and overdose deaths
- Implemented this change in review process beginning with the 2015 maternal deaths

ADDITION OF EXPERTISE TO COMMITTEE

- The PMR committee added expertise in mental health and substance use disorders to the committee
 - LCSW – Provider of maternal mental health intensive outpatient services
 - Representation from the Division of Substance Abuse and Mental Health
 - Representation from the Violence and Injury Prevention Program
 - Added representation when suicides are reviewed
 - Medical expertise in perinatal addiction and mental health

UTAH CRITERIA FOR DETERMINING PREGNANCY RELATEDNESS IN SUICIDE AND OVERDOSE DEATHS

- **Pregnancy Complications**

- Increased pain leading to self harm and/or use of prescribed or illicit drugs
- Traumatic event in pregnancy or postpartum with a temporal relationship between the event leading to self-harm or increased drug use and subsequent death
- Pregnancy related complication likely exacerbated by drug use leading to subsequent death

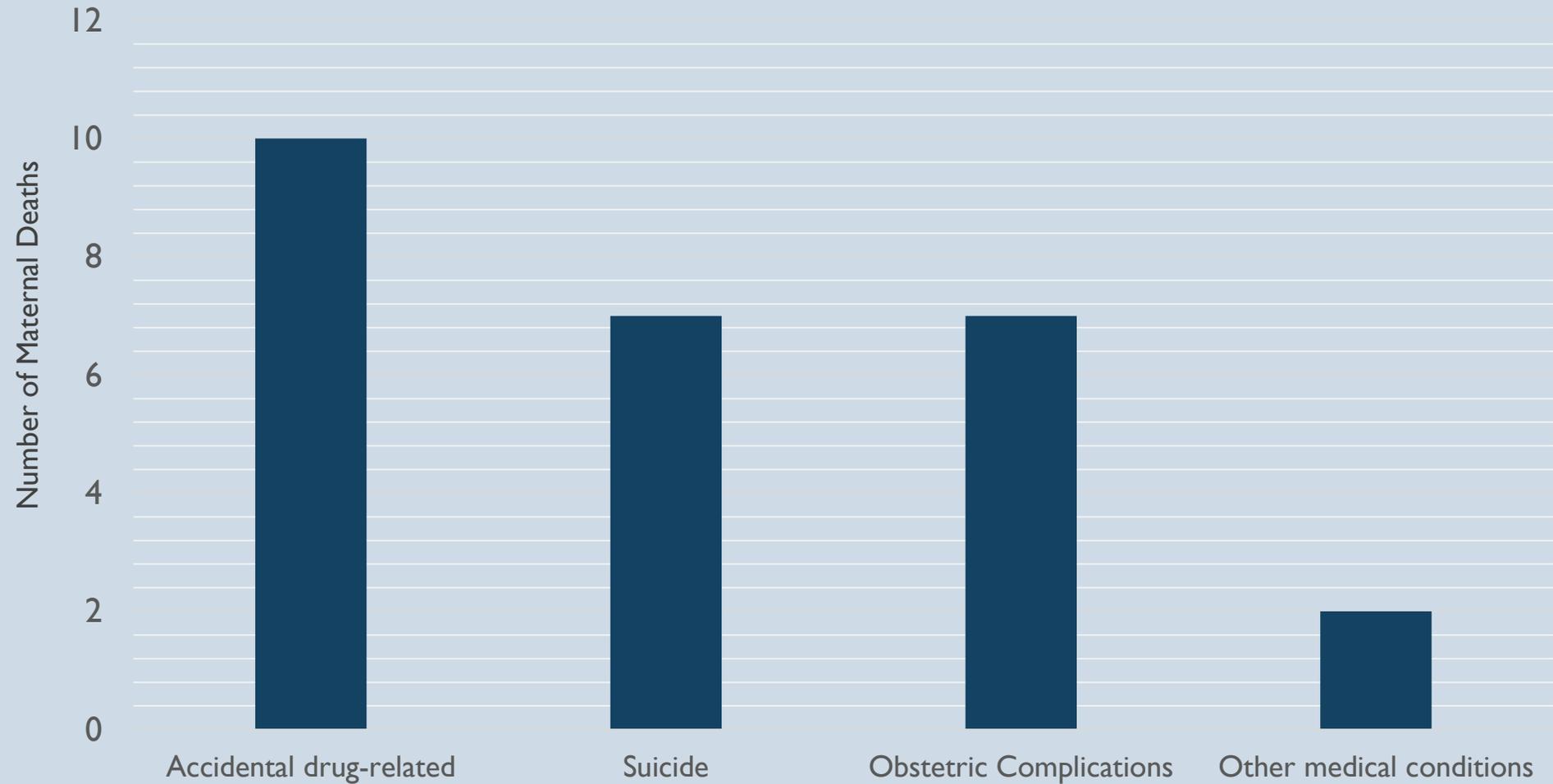
UTAH CRITERIA FOR DETERMINING PREGNANCY RELATEDNESS IN SUICIDE AND OVERDOSE DEATHS

- **Chain of events initiated by pregnancy**
 - Cessation or attempted taper of substance use treatment/pharmacotherapy for pregnancy-related concerns leading to maternal destabilization, self-harm and/or drug use and subsequent death
 - Cessation of medications due to pregnancy-related concerns
 - Postpartum depression, anxiety or psychosis resulting in maternal destabilization, self harm and/or drug use
 - Recovery/stabilization achieved during pregnancy or postpartum with clear statement in records that pregnancy was a motivating factor with subsequent relapse and overdose due to decreased tolerance and/or multiple drug use

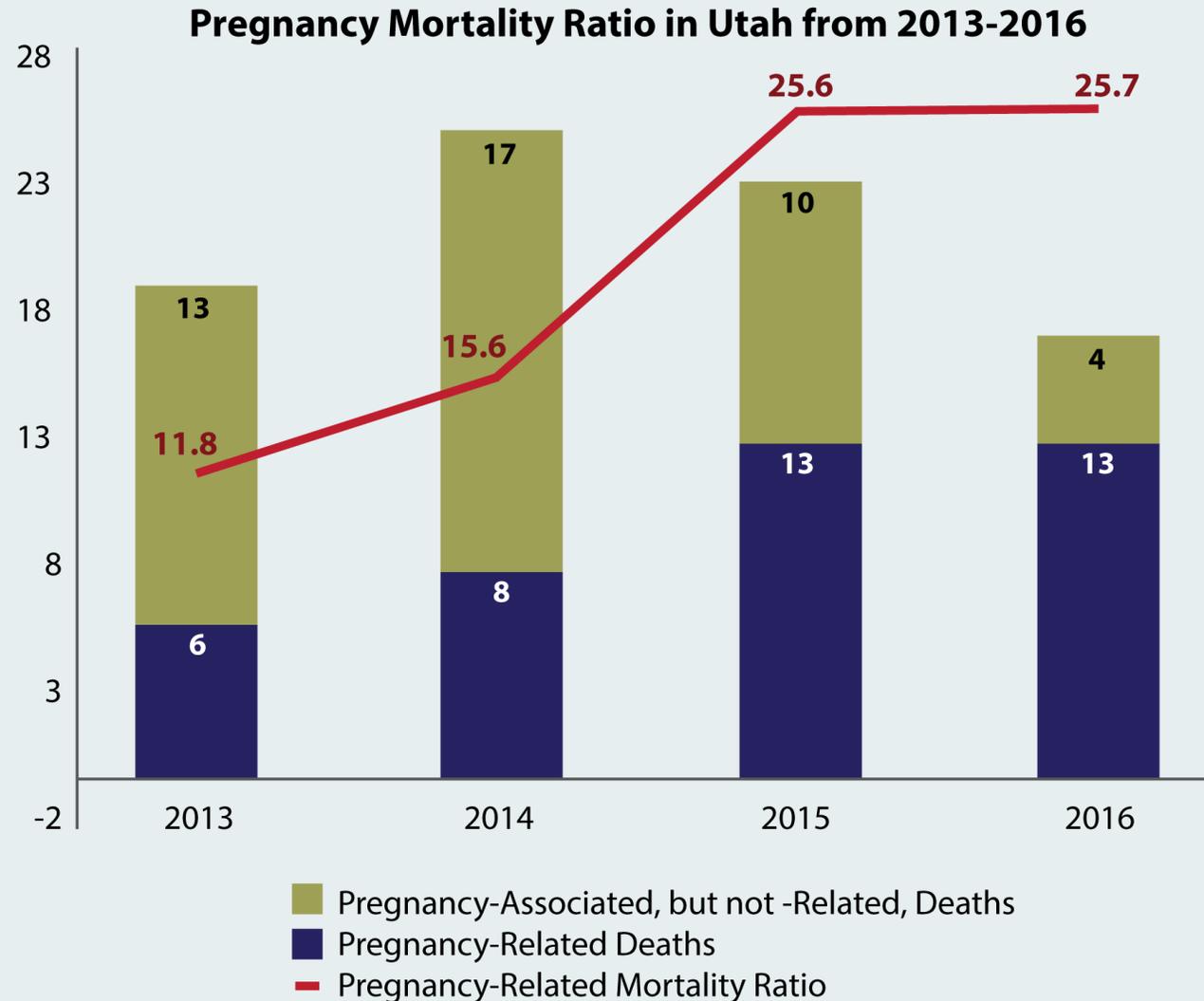
UTAH CRITERIA FOR DETERMINING PREGNANCY RELATEDNESS IN SUICIDE AND OVERDOSE DEATHS

- **Aggravation of an unrelated condition by the physiologic effects of pregnancy**
 - Worsening of underlying depression, anxiety or other psychiatric condition in pregnancy or postpartum period with documentation that mental illness led to self-harm and/or drug use
 - Exacerbation, under-treatment or delayed treatment of pre-existing condition in pregnancy or postpartum leading to self-harm and/or use of prescribed or illicit drugs
 - Medical conditions secondary to drug use in setting of pregnancy or postpartum that may be attributable to pregnancy-related physiology and increased risk of complications leading to death

PREGNANCY-RELATED DEATHS, UTAH, 2015-2016



PREGNANCY-RELATED MORTALITY, UTAH AND U.S., 2013-2016



MENTAL HEALTH FINDINGS

An analysis of maternal deaths between 2015-2016 noted that 75% of pregnancy-associated deaths had a pre-existing mental health condition noted in the medical record

COMMITTEE RECOMMENDATIONS

- SUD/mental health and OB providers should co-manage patients
- Improve availability and use of Naloxone
- Prenatal and postpartum screening for mental health and substance use
- Standardized screening processes for mental health screening
- Educate on available resources, suicide response, use of EPDS
- Provider education on MAT
- Provider education on appropriate medication management in pregnancy for mental health disorders

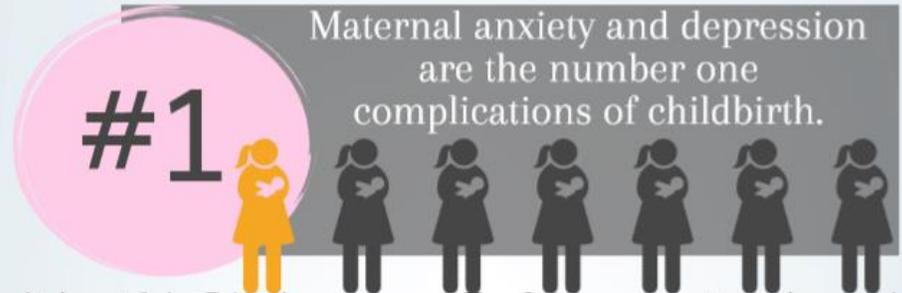
REVIEW TO ACTION

- 2019 legislative session – 3 year appropriations request to provide funding for maternal mental health initiatives in Utah
- Championed by the Utah Postpartum Support International policy committee
- Maternal mortality data cited in infographic materials given to legislators
- ACOG Section Chair and PMR member testified at committee hearing to champion the funding request. Cited data on deaths related to suicide and drug overdose in Utah
- Data was combined with powerful stories shared by women who experienced the impacts of mental health issues in pregnancy and postpartum - funding was provided.
- Added a new Maternal Mental Health Specialist to our Maternal and Infant Health Program who attends PMR committee
- Will also fund tele-mental health services for women living in rural areas of the state

REVIEW TO ACTION

- New state funding for perinatal addiction in rural areas
 - Substance Use in Pregnancy Recovery Addiction Dependence (SUPeRAD) clinic - Price
<https://medicine.utah.edu/internalmedicine/epidemiology/parcka/index-superad-price.php>
- Established a new maternal mental health subcommittee of the Utah Women and Newborns Quality Collaborative
 - Working to implement recommendations for standardized screening and referral
- AIM – Next bundle will be the Obstetric Care for Women with Opioid Use Disorder

Please Help Utah Women and Families with Maternal Mental Health Support



At least 1 in 7 Utah women suffer from postpartum depression*

*Utah Pregnancy Risk Assessment Monitoring System, 2015 data

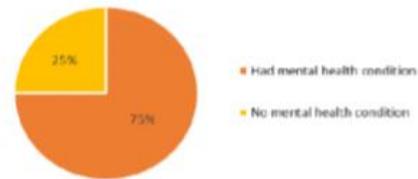
Did you know...

- more women experience maternal mental health issues than gestational diabetes and breast cancer
- moms can experience more than postpartum depression including anxiety, PTSD, OCD, Bipolar, psychosis
- death by suicide was the second leading cause of death for perinatal women from 2015-2016

Despite the prevalence and risk, there is a lack of awareness in the community and among healthcare providers. Mothers often feel they can't share their symptoms due to stigma and doctors often don't ask.



Pre-existing Mental Health Conditions Noted Among Maternal Deaths, Utah, 2015-2016



Source: Perinatal Mortality Review Data

The leading causes of maternal death in Utah in 2015-2016 were accidental drug-related deaths and suicide, which are both associated with mental health conditions. Even if deaths were attributable to other causes, a significant number of cases had prior or current mental health conditions noted.

Untreated maternal depression is linked to poor child developmental outcomes as well as marriage instability and lowered workforce productivity.



Infographic brought to you by Postpartum Support International Utah's Chapter
www.psiutah.org

THANK YOU

- Jewel Maeda, CNM MPH – Perinatal Mortality Review Coordinator
Jmaeda@utah.gov
- Laurie Baksh, MPH – Maternal and Infant Health Program Manager
lbaksh@utah.gov

QUESTIONS



THANK YOU

[CLICK TO ENTER CONTACT INFORMATION](#)

