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Ohio House of Representatives
Public Health Policy Committee
House Bill 190
Kezia Ofosu Atta, Policy Assistant
Groundwork Ohio
October 11, 2023

Chair Lipps, Vice Chair Stewart, Ranking Member Liston, and members of the House Public Health Policy Committee, my name is Kezia Ofosu Atta, and I am a Policy Assistant at Groundwork Ohio. My expertise is in maternal and young child health.

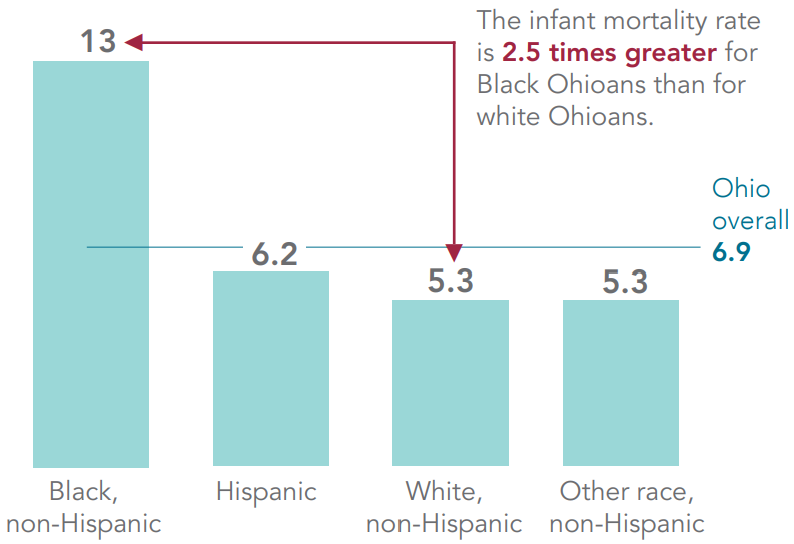
Today, I join fellow advocates, professionals, community leaders, and families from across Ohio to provide proponent testimony on House Bill 190, which designates the week of April 11 to April 17 as Black Maternal Health Week. I would like to thank our bill sponsors, Representatives Brent and White, for their leadership in prioritizing the voices and needs of Ohio's black mothers and their infants and I would also like to thank the committee for your time today.

Groundwork Ohio is a statewide, nonpartisan public-policy research and advocacy organization that champions high-quality early learning and healthy development strategies from the prenatal period to age five, that lay a strong foundation for Ohio kids, families, and communities. Our vision is to make Ohio the best place to be a young child so that every child can reach their full potential. The goal of the Center for Maternal and Young Child Health is to use research and policy to improve the health of Ohio's mothers and young children.

Babies learn who they are by how they are treated. The choices that the state of Ohio makes, how state policymakers prioritize or fail to care for our babies, will shape who they become. Here are a few statistics on how our babies doing in Ohio:

- Ohio ranks 41st worst for infant mortality, and 32nd worst for infant maltreatment.
- Nearly 1 in 4 pregnant moms do not have access to prenatal care in their first trimester.
- Half of Ohio's infants and toddlers and their families live in poverty.

Our state's infant mortality rates continue to be worse than the U.S. average at 6.9 infant deaths under the age of 1 per 1,000 births. This means more than 1 in 150 Ohio babies don't live to see their first birthday. The infant mortality rate is 2.5 times greater for Black Ohioans than for white Ohioans.

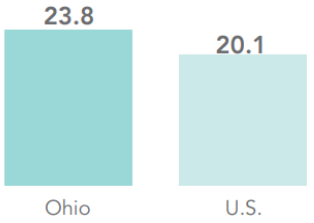


Healthy children begin with healthy moms. Of all that brain science has taught us over the last 30 years, one of the clearest findings is that early brain development is directly influenced by babies' day-to-day interactions with their caregivers. Even before birth, babies have a built-in expectation that adults will be available and care for their needs. Their very survival depends on this availability. If babies' expectations for protection and nurturance are less than adequately met, their confidence in getting their needs met through relationships may be challenged. When this occurs, emotional and social development suffer, and, because babies' emotional base is the foundation for all other learning, so do intellectual and language development. A baby's early experiences in relationships, whether at home or in an early education environment, set the stage for future brain functioning.

Whether infants are born healthy and with the potential to thrive as they grow greatly depends on their mother's well-being even before birth. Infants and toddlers rely on parents or other primary caretakers to provide a safe environment; create positive, new experiences; and guide their emotions. Decades of research on maternal mental health show that maternal depression can impact a mother's ability to meet these needs. Babies need moms to be physically well and present in their lives in addition to mentally well. Maternal depression may pose serious mental health problems for mothers and jeopardize their ability to provide safe, responsive, and nurturing care to their young children. The incidence of maternal depression is high, placing many young children at risk for developing mental health and behavioral problems.

More mothers are dying from causes related to pregnancy and childbirth in Ohio than in other states.

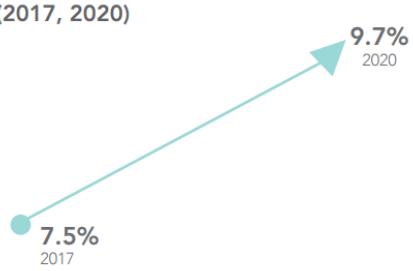
Number of deaths from causes related to pregnancy or its management, per 100,000 live births (2019)



Source: CDC WONDER, as compiled by America's Health Rankings (2019)

Postpartum depression increased 29% among Ohio women during the COVID-19 pandemic.

Percent of women with a live birth who experienced postpartum depression (2017, 2020)



Source: Ohio Pregnancy Assessment Survey (2017, 2020)

Racism can directly affect maternal and infant health and is a primary driver of infant and maternal mortality. For example, repeated exposure to racial discrimination can contribute to maternal toxic stress, which is linked to preterm births, low birth weight, and infant and maternal mortality. Racial disparities in infant and maternal mortality/morbidity persist despite maternal income or education level.[1] Black moms in Ohio require our thoughtful and focused attention because of the health disparities they are experiencing alongside their babies and families:

- In Ohio, from 2008-2016, non-Hispanic Black women were more than 2.5 times as likely to die from pregnancy-related causes, than non-Hispanic White women.
- More recent data affirms a stubborn disparity. From 2017-2018, excluding deaths due to overdose, the pregnancy-related mortality ratio for non-Hispanic Black individuals per 100,000 live births was 20.9 compared to non-Hispanic White women with 13.6.
- Non-Hispanic Black women in Ohio are at more risk of pregnancy-related deaths due to all causes except overdose.[2]
- Only three-quarters of pregnant women in Ohio received prenatal care in their first trimester of pregnancy. Black women in Ohio were more likely to experience delays in care including being less likely than their white peers to receive care in the first trimester of their pregnancy.
- Embolisms, pre-eclampsia, eclampsia, infections, and cardiovascular and coronary conditions were the leading causes of pregnancy-related deaths among non-Hispanic Black women in Ohio.
- While it is not the leading cause of death for Black women in the most recent data, half of all pregnancy-related deaths from 2017-2018 were due to a mental health condition.[3]

[1] Groundwork Ohio Early Childhood Dashboard
[2] ODH Report on Pregnancy-Related Deaths
[3] ODH Report on Pregnancy-Related Deaths

Among this humbling and urgent data, there is also hope. Of all pregnancy-related deaths that occurred in Ohio from 2017-2018, 73% of deaths of non-Hispanic Black women were preventable.[4] Among the key contributing factors that, if altered, could have potentially prevented maternal death from occurring, was the provider, support person or mother's lack of knowledge or understanding of threats to the health of Black pregnant women whether it's shortness of breath requiring the need for immediate care or how the impact of chronic stress as a result of racism. House Bill 190 is necessary to create awareness of the needs of pregnant Black women so that more Ohioans including moms, families, clinicians, community-based providers, and policymakers can improve systems that recognize inequalities and act to prevent Black moms from dying and improve their health and the health of their babies.

I am happy to answer any questions you may have.

Data Note: All data shared in this testimony is available in the Groundwork Ohio Early Childhood Data Dashboard.

[4] ODH Report on Pregnancy-Related Deaths

A Report on Pregnancy-Related Deaths in Ohio 2017-2018

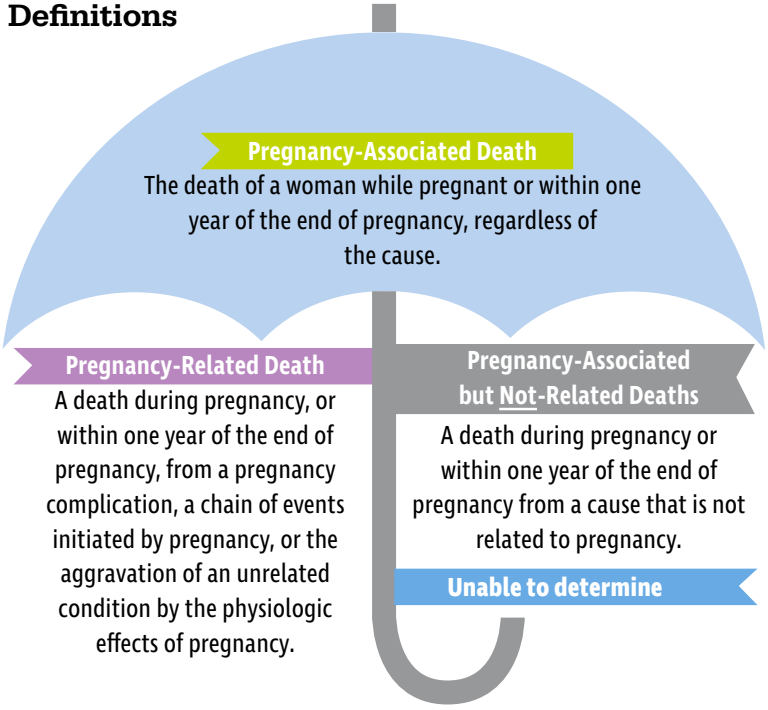
Ohio Department of Health

Table of Contents

Introduction:

The purpose of this report is to fulfill the legislative requirement outlined in Ohio Revised Code Section 3738.08. This legislation mandates the release of a biennial report that, "summarizes the Pregnancy-Associated Mortality Review's (PAMR) findings from the reviews completed in the immediately preceding two calendar years, including any trends or patterns identified by the board." Stakeholders are encouraged to review the PAMR process in Appendix A of this document to learn more about how pregnancy-related death data is collected and determined. This report examines both pregnancy-associated and pregnancy-related deaths.

Definitions



These definitions help PAMR answer the question,

"If the woman had not been pregnant, would she have still died?"

If the answer is no, then that death is considered pregnancy-related.

Key Findings:

- 34% (72) of pregnancy-associated deaths were determined to be pregnancy-related.
  - 72% of pregnancy-related deaths were deemed preventable.
- Most pregnancy-related deaths (79%) occurred to non-Hispanic White women.
- Overdose was the leading cause of death overall.
  - Most overdose deaths occurred among women who were: unmarried, non-Hispanic White, ages 25 to 34, had less than a college education, lived in a metropolitan county, or were insured by Medicaid.
  - 91% of overdose deaths were deemed preventable.
- Lack of care coordination/continuity of care was the most identified factor that contributed to pregnancy-related deaths between 2017-2018.
- Multiple levels of action, such as within systems, among care providers, and within communities, are needed to reduce maternal mortality and improve maternal health outcomes.

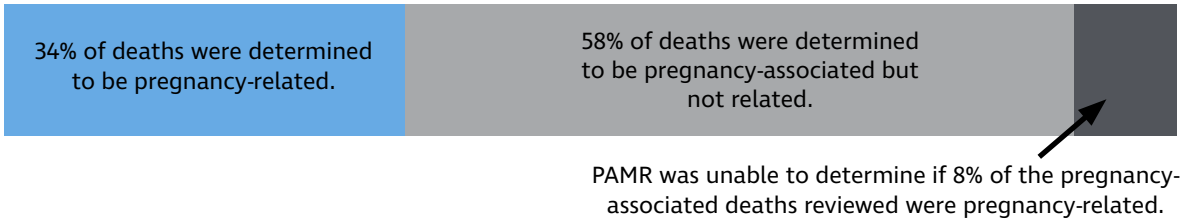
Pregnancy-Related Deaths, 2017-2018

From 2017-2018, there were a total of 211 pregnancy-associated deaths reviewed by PAMR. One hundred twenty-one (121) deaths occurred in 2017, and 90 occurred in 2018 (Figure 1). All decedents were either pregnant at the time of death, or were pregnant at one point within the year preceding their death and therefore, were considered *pregnancy-associated*.

Of the 211 pregnancy-associated deaths that occurred between 2017-2018 reviewed by PAMR:

- 34% (72) were determined to be pregnancy-related. Pregnancy-related deaths are those deaths determined by PAMR to be *directly related to, or aggravated by pregnancy or its management*. The remainder of this report will focus on findings from the review of pregnancy-related deaths that occurred from 2017-2018 in Ohio. Appendix B includes expanded definitions of pregnancy-relatedness.

Figure 1. Over 1/3 of pregnancy-associated deaths occurred in Ohio from 2017-2018 were related to pregnancy (n=211).



The breakdown of pregnancy-associated deaths by relatedness, among deaths that occurred in 2017-2018 is consistent with the previously released 2008-2016 pregnancy-associated mortality data.

Racial Disparities in Pregnancy-Related Deaths Depend on Cause of Death

Among the 72 pregnancy-related deaths in Ohio from 2017-2018, 57 (79%) were to non-Hispanic White women, 11 (15%) were to non-Hispanic Black women, and 4 (6%) were to Hispanic women or non-Hispanic women of a race other than Black or White (Table 2 in Appendix C). In Ohio, from 2008-2016, non-Hispanic Black women were more than 2.5 times as likely to die from pregnancy-related causes, than non-Hispanic White women (Ohio Department of Health, 2019). However, in 2017-2018, due to the adoption of new criteria adapted from the Utah Department of Health Perinatal Mortality Review[1], to determine the pregnancy-relatedness of unintentional overdose deaths, an increased number of unintentional overdose deaths were determined to be pregnancy-related in 2017 and 2018 (Appendix C). The majority of pregnancy-related overdose deaths primarily occurred among non-Hispanic White women. However, pregnancy-related deaths due to causes other than overdose occurred disproportionately among non-Hispanic Black women. Therefore, data in the next section of this report are presented including and excluding overdose, to understand the contribution of overdose to pregnancy-related deaths by race/ethnicity.

[1]*Under previous criteria and in earlier PAMR reports, deaths due to overdose among women pregnant at the time of death or within one year of pregnancy, were classified as pregnancy-associated deaths and not pregnancy-related deaths. Refer to Appendix C of this report for more information on PAMR methodology.*

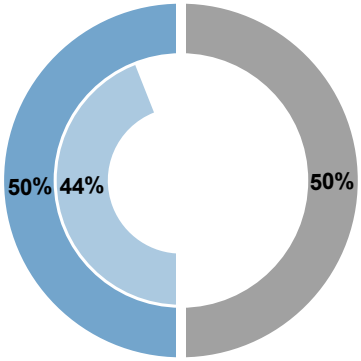
Leading Causes of Pregnancy-Related Deaths, 2017-2018

Thirty-six, or half (50%) of all pregnancy-related deaths were due to mental health conditions and injuries. Mental health conditions and injury include deaths due to overdose, motor vehicle accidents, firearm, hanging, strangulation, and suffocation. Among the 36 deaths due to mental health conditions and injuries, 32 were due to overdose, making overdose the leading cause of death among pregnancy-related deaths between 2017-2018 (Figure 2).

Among the other 36 pregnancy-related deaths between 2017-2018, 11% (8) were due to infections, 8% (6) were due to embolisms, 8% (6) were due to cardiovascular and coronary conditions, 6% (4) were due to hemorrhage, 4% (3) were due to amniotic fluid embolisms, 4% (3) were due to cardiomyopathy, 4% (3) were due to cerebrovascular accidents, 3% (2) were due to pre-eclampsia and eclampsia, and 1% (1) was due to an unknown cause of death (Figure 2).

Figure 2. Of the 72 pregnancy-related deaths that occurred in Ohio from 2017-2018, overdose was the leading cause of death.

44% of all pregnancy-related deaths from 2017-2018 were due to overdose.



Half (50%) of all pregnancy-related deaths from 2017-2018 were due to mental health conditions and injuries.

Mental health conditions and injuries include deaths due to:

- Overdose.
- Motor vehicle accident.
- Firearm.
- Hanging, strangulation, or suffocation.

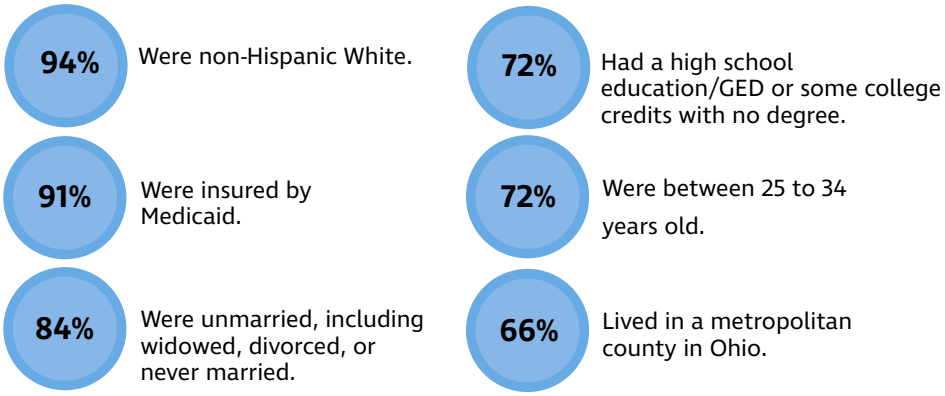
Half (50%) of all pregnancy-related deaths from 2017-2018 were due to causes other than mental health conditions and injuries.

- 11% were due to infections.
- 8% were due to embolisms.
- 8% were due to cardiovascular and coronary conditions.
- 6% were due to hemorrhage.
- 4% were due to amniotic fluid embolisms.
- 4% were due to cardiomyopathy.
- 4% were due to cerebrovascular accidents.
- 3% were due to hypertensive disorders of pregnancy.
- 1% were due to unknown causes.

Demographics of Pregnancy-Related Deaths Due to Overdose

Overall from 2017 to 2018, pregnancy-related deaths due to overdose tended to women who were unmarried, non-Hispanic White, ages 25 to 34, had less than a college education, lived in a metropolitan county, or were insured by Medicaid (Figure 3).

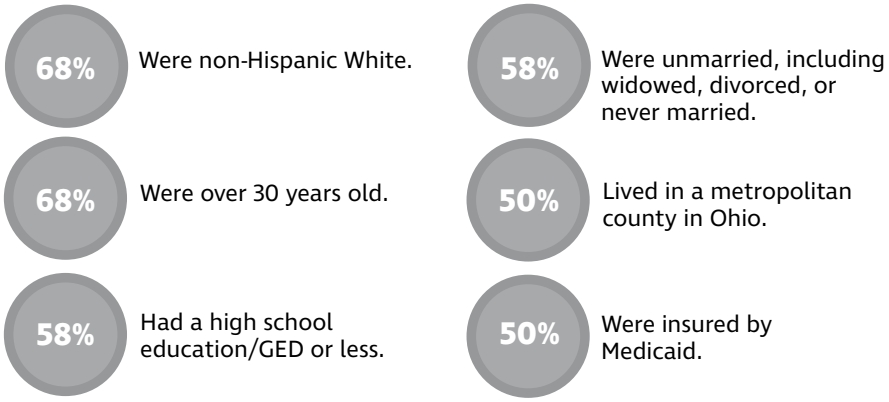
Figure 3. Among the 32 pregnancy-related deaths due to overdose in Ohio from 2017-2018:



Demographics of Pregnancy-Related Deaths Due to Causes Other Than Overdose

Overall from 2017 to 2018, pregnancy-related deaths due to causes other than overdose tended to be to women who were unmarried, non-Hispanic White, older than age 30 , had a high school education or less, lived in a metropolitan county, or were insured by Medicaid (Figure 4).

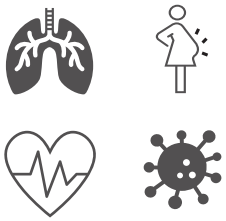
Figure 4. Among the 40 pregnancy-related deaths due causes other than overdose in Ohio from 2017-2018:



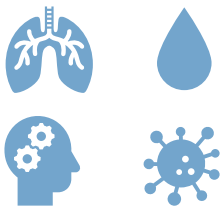
Leading Causes of Death by Race/Ethnicity

The leading causes of pregnancy-related deaths among non-Hispanic White women (n=57) differed from those among non-Hispanic Black women (n=11) from 2017-2018 (Appendix C).

Mental health conditions[1] (56%), including substance use disorder/overdose, were the leading cause of pregnancy-related deaths among non-Hispanic White women.



Causes of death among Hispanic and non-Hispanic women with races other than Black or White (n=4), were evenly distributed between embolism (25%), hemorrhage (25%), mental health conditions[1] (25%), and infection (25%).



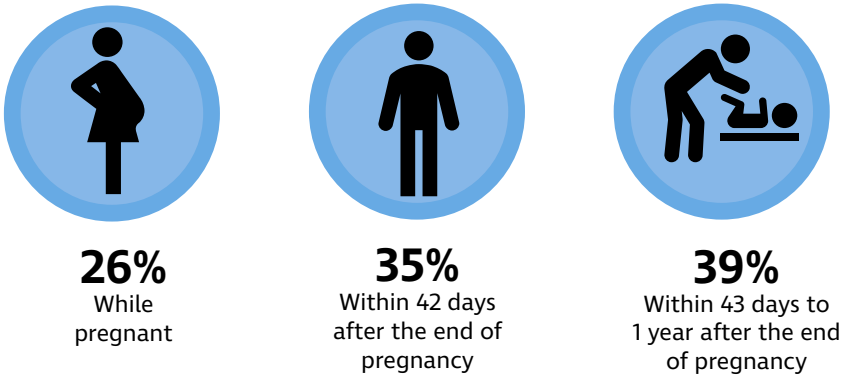
Embolisms (18%), pre-eclampsia and eclampsia (18%), infections (18%), and cardiovascular and coronary conditions (18%) were the leading causes of pregnancy-related deaths among non-Hispanic Black women.

[1] *Mental health conditions include deaths due to substance use disorder/overdose, depression, anxiety disorder, and other psychiatric conditions. See Appendix A for more information about how causes of death are determined by PAMR.*

Timing of Pregnancy-Related Deaths, 2017-2018

Among the 72 pregnancy-related deaths that occurred from 2017-2018, 39% occurred within 43 to 365 days after the end of pregnancy, 35% occurred within the 42 days immediately following the end of pregnancy, and 26% were pregnant at the time of their death (Figure 5).

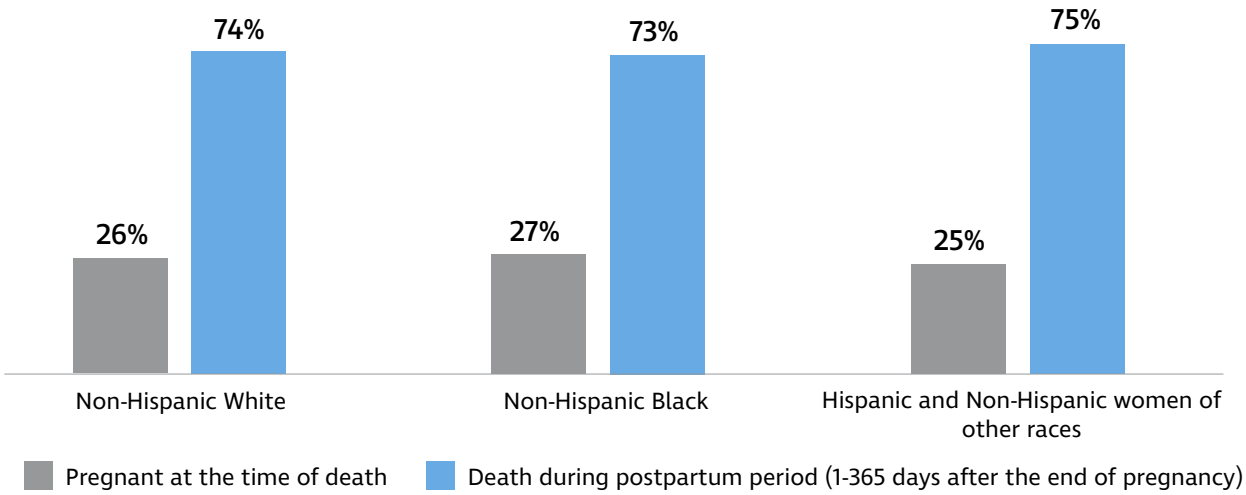
Figure 5. Most pregnancy-related deaths occurred in the postpartum period between 2017-2018.



Timing of Death Did Not Vary by Race/Ethnicity

The postpartum period (1-365 days after the end of pregnancy) was the most common timing of pregnancy-related deaths regardless of race/ethnicity. Approximately three-fourths of all pregnancy-related deaths to non-Hispanic White, non-Hispanic Black, Hispanic, and non-Hispanic women of other races occurred within one year after the end of pregnancy, with approximately one-fourth occurring during pregnancy (Figure 6).

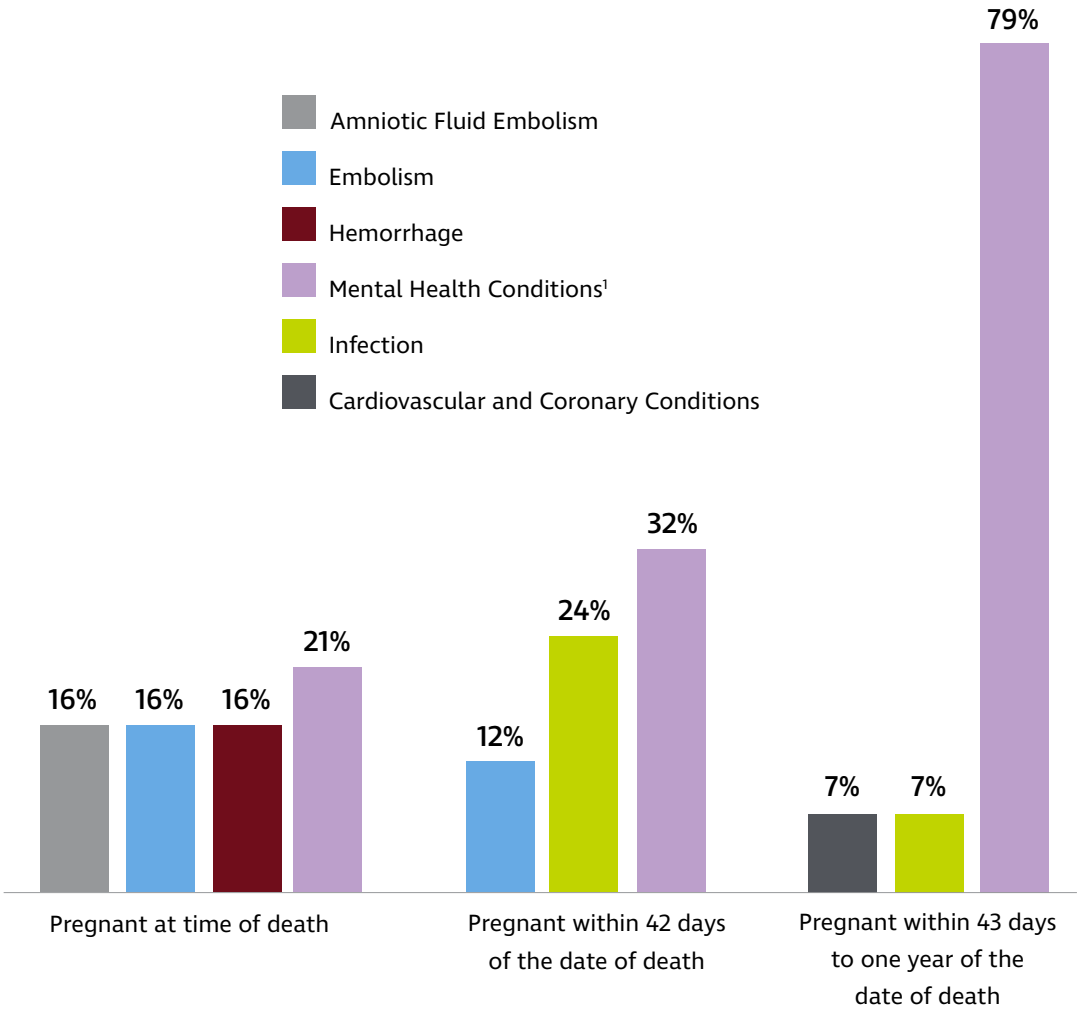
Figure 6. Timing of pregnancy-related death did not vary by race/ethnicity from 2017-2018 in Ohio (n= 72).



Leading Cause of Death Varied by Timing

The leading cause of death varied by timing of death from 2017-2018. The leading causes of pregnancy-related deaths that occurred during pregnancy were mental health conditions (21%), hemorrhage (16%), embolisms (16%), and amniotic fluid embolisms (16%). The leading causes of death that occurred within 42 days after the end of pregnancy, were mental health conditions (32%), infection (24%), and embolisms (12%). The leading causes of death that occurred between 43 days to one year after the end of pregnancy were mental health conditions (79%), infection (7%), and cardiovascular conditions (7%) (Figure 7). Mental health conditions were the leading cause of pregnancy-related death, overall (Figure 7).

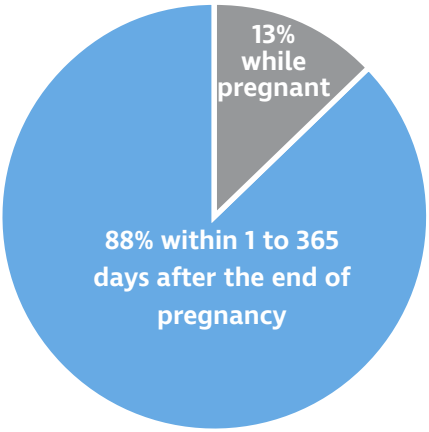
Figure 7. Leading cause of death varied by timing.
Most frequent causes of pregnancy-related deaths by timing.



[1] *Mental health conditions include deaths due to substance use disorder/overdose, depression, anxiety disorder, and other psychiatric conditions. See Appendix A for more information about how causes of death are determined by PAMR.*

Among the 36 deaths due to mental health conditions and injuries, 32 were due to overdose (Figure 2 in Leading Causes of Pregnancy-Deaths, 2017-2018 section). Nearly all (88%) deaths due to overdose occurred during the postpartum period (Figure 8).

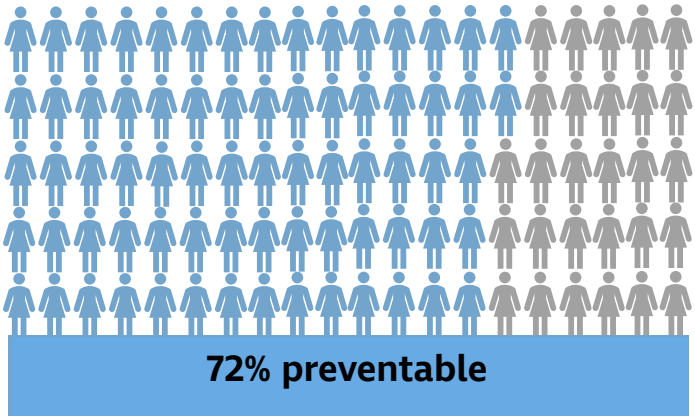
Figure 8. Almost all deaths due to overdose occurred in the postpartum period (n=28).



Preventability of Pregnancy-Related Deaths, 2017-2018

After reviewing all available information for each pregnancy-related death, the PAMR committee determines whether each death was preventable. A death is considered preventable if the committee determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors. Among the 72 pregnancy-related deaths that occurred from 2017-2018, the committee deemed 72% (52) preventable (Figure 9).

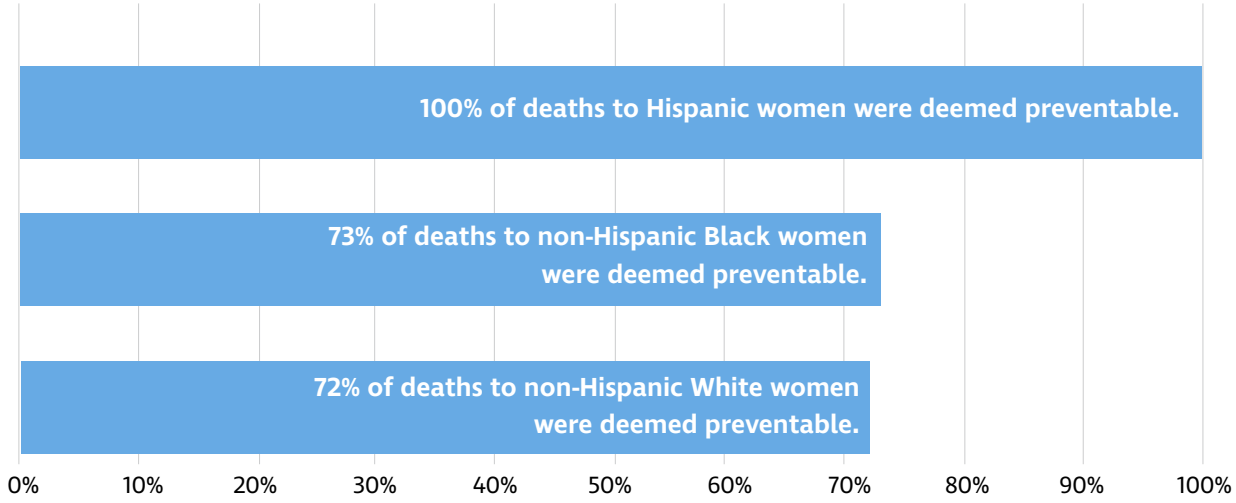
Figure 9. Most pregnancy-related deaths that occurred in Ohio from 2017 to 2018 were preventable.



Preventability of Pregnancy-Related Deaths by Race/Ethnicity

Of the 72 pregnancy-related deaths that occurred from 2017-2018, 100% (3) of pregnancy-related deaths to Hispanic women were preventable, 73% (8) of pregnancy-related deaths to non-Hispanic Black women were preventable, and 72% (41) of pregnancy-related deaths to non-Hispanic White women were preventable (Figure 10).

Figure 10. Almost all deaths among non-Hispanic Black, non-Hispanic White, and Hispanic women were preventable from 2017-2018.



Preventability of Pregnancy-Related Deaths by Cause of Death

Of the 72 pregnancy-related deaths that occurred from 2017-2018, 100% of deaths due to hypertensive disorders of pregnancy (2) were deemed preventable, 91% of deaths due to mental health conditions (31) were deemed preventable, 75% of deaths due to hemorrhage (3) were deemed preventable, 67% of deaths due to cardiovascular and coronary conditions (4) were deemed preventable, 67% of deaths due to embolisms (4) were deemed preventable, 67% of deaths due to a cerebrovascular accident (2) were deemed preventable, 63% of deaths due to infection (5) were deemed preventable, and 50% of deaths due to injury (1) were deemed preventable (Figure 11).

Among the 32 deaths due to overdose, 91% were deemed preventable (Figure 12).

Figure 11. Preventability varied among leading causes of pregnancy-related deaths from 2017-2018.

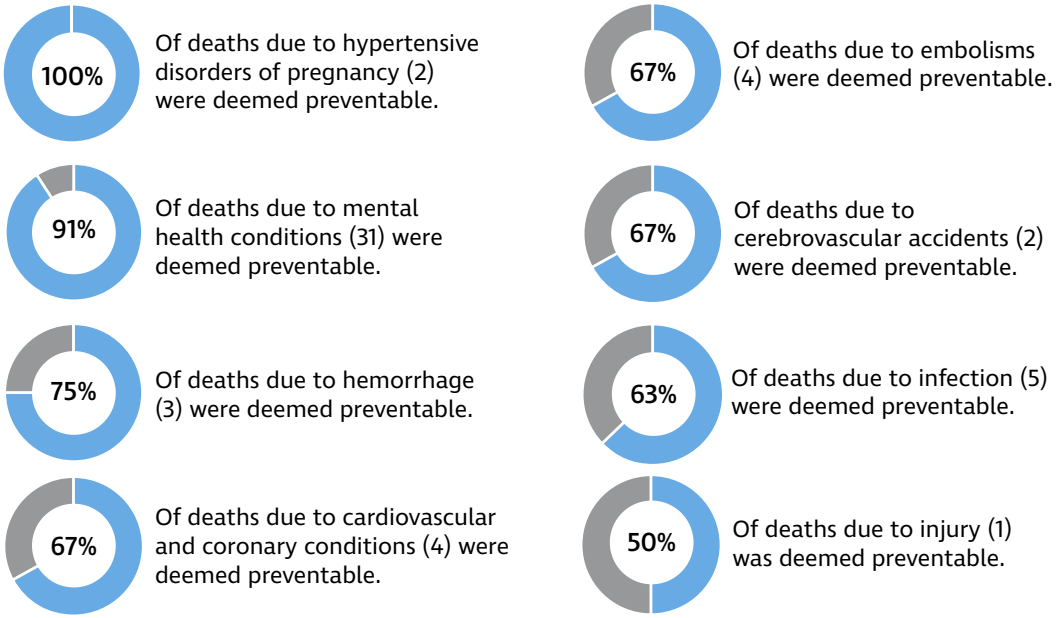
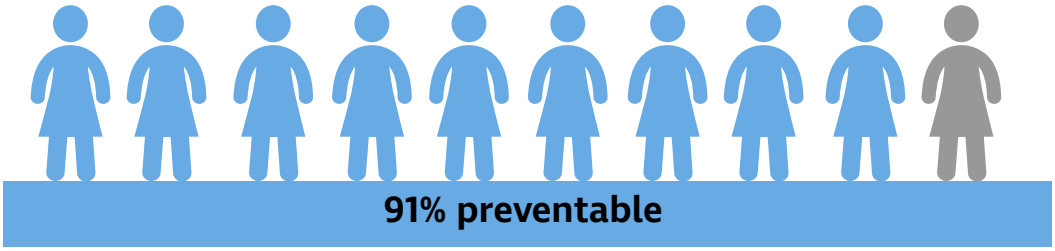


Figure 12. 91% of pregnancy-related deaths due to overdose were preventable from 2017-2018.



Contributing Factors to Pregnancy-Related Deaths, 2017-2018

Part of the review process includes identification of contributing factors, or factors that if altered, could have potentially prevented the maternal death from occurring. The purpose of identifying contributing factors is to acknowledge and elevate the impact both clinical and non-clinical determinants of health can have on maternal outcomes. Contributing factors can include a wide range of experiences that the decedent encountered prior to their death. Unstable housing, uncoordinated care, loss of insurance, chronic diseases, traumatic childhood experiences, misdiagnosis, and lack of referral to substance use treatment are all types of contributing factors that have been identified among pregnancy-related deaths in the past. Appendix D of this report includes the Committee Decision Form, which the PAMR committee uses for each review and includes a complete list of the contributing factor classifications.

There were a total of 179 contributing factors identified across the 72 pregnancy-related deaths from 2017-2018. On average, 2.5 contributing factors were identified for each pregnancy-related death. Over half (65%) of all contributing factors identified fell within the eight classifications listed and described below.

- **Lack of Care Coordination/Continuity of Care**
  Lack of care coordination/continuity of care was the most identified factor that contributed to pregnancy-related deaths between 2017-2018. Care coordination/continuity of care refers to (a) effective communication and organized coordination between prenatal, labor and delivery, and postpartum providers; and (b) both clinical care providers and non-clinical care providers, such as social services. Contributing factors related to lack of care coordination/continuity of care were identified most among decedents with the following characteristics:
  - Known history of substance use disorders.
  - Known history of mental health disorders.
  - Known history of chronic diseases.
  - During the postpartum period.

- **Lack of Knowledge**
  Among deaths where lack of knowledge was a contributing factor, lack of knowledge was most often in reference to a provider, support person (e.g., spouse, grandparents, siblings), or the decedent not receiving adequate education or lacking understanding of a health event (e.g., shortness of breath as a trigger to seek immediate care).

- **Delay in Seeking or Receiving Care**
  Delays in seeking or receiving care were noted to be the result of:
  - The decedent potentially being unaware that they should seek care for symptoms they were experiencing.
  - A facility being unequipped to provide appropriate care.
  - Delays in referral to specialty care.
  - Delays in diagnosis.

Contributing Factors to Pregnancy-Related Deaths, 2017-2018 continued

- **Lack of Adherence to Medical Guidance, Referrals, or Standards of Care**
  Lack of adherence to medical guidance, or referrals by the decedent (e.g., not attending appointments, not adhering to treatment, or not taking medications as instructed by their healthcare provider) was most prevalent in those with a known history of substance use disorder, mental health disorder, and chronic disease.

- **Inadequate Assessment of Risk**
  Inadequate assessment of risk most often referred to healthcare providers not screening patients for substance use disorder, mental health conditions, including postpartum depression, domestic or intimate partner violence, and social barriers to health. The lack of screening/assessment of risk subsequently contributed to health issues among decedents.

- **Substance Use Disorder**
  Substance use disorder is characterized by recurrent use of alcohol and/or drugs, causing significant clinical and functional impairment, such as health problems or disability.

- **Lack of Access/Resources**
  Lack of health insurance, transportation, and childcare often served as barrier to health for decedents. Additionally, a lack of geographically accessible and timely access to needed care services, such as substance use treatment facilities and mental health care providers, was another way that systemic barriers contributed to pregnancy-related deaths. Decedents were cited as having to wait months to be admitted into a treatment facility or to get an appointment with a mental health professional after being referred by their provider.

- **Clinical Skill/Quality of Care**
  Lack of clinical skills among healthcare providers resulted in decreased quality of care among decedents. This included healthcare providers not being appropriately trained/skilled for the situation, or not exercising clinical judgment consistent with standards of care. Most contributing factors related to lack of clinical skill were related to healthcare providers not recognizing the significance of a sign, symptom, or complaint from the decedent when they presented to a care facility.

Common Contributing Factors Varied by Leading Cause of Death

The eight classifications of contributing factors listed above (lack of care coordination/continuity of care, lack of knowledge, delay in seeking or receiving care, lack of adherence to medical guidance or standards of care, inadequate assessment of risk, substance use disorder, lack of access to care/financial resources, and lack of clinical skill/quality of care) varied by leading causes of death.

- Lack of adherence to medical guidance or standards of care, lack of access to care/financial resources, lack of care coordination/continuity of care, and lack of clinical skill/quality of care contributed the most to pregnancy-related deaths due to **cardiovascular and coronary disease**.
- Delays in seeking or receiving care contributed the most to pregnancy-related deaths due to **infections**.
- Delays in seeking or receiving care, and lack of knowledge, were the most identified contributing factors among deaths due to **thrombotic embolisms**.
- Lack of care coordination/continuity of care, substance use disorder, and inadequate assessment of risks, contributed most to deaths due to **mental health disorders**.
    - Among the mental health deaths due to overdose, lack of care coordination/continuity of care contributed the most.

PAMR Committee Recommendations for Preventing Future Pregnancy-Related Deaths, 2017-2018

Once the committee identifies contributing factors, recommendations are made based on those factors (that, if implemented), could prevent future maternal deaths from occurring. Pregnancy-related deaths are the result of the convergence of clinical, social, systemic, community, interpersonal, and individual factors a decedent experiences throughout their life, and leading up to their death. To prevent future maternal deaths, the PAMR committee strives to acknowledge the impact these varying factors have on maternal health outcomes, by crafting specific, actionable recommendations.

The PAMR committee made recommendations for preventing future maternal deaths based on pregnancy-related deaths from 2017-2018. Following is a summary of these recommendations as they relate to the most common categories of contributing factors, and how a multidisciplinary approach and various levels of action are needed to make improvements in maternal health outcomes in Ohio.

Though all patient populations would benefit from the recommendations included below, the PAMR committee identified pregnant, postpartum, and parenting women with mental health conditions, substance use disorder, multiple comorbidities/chronic diseases, survivors of human trafficking/sexual abuse, and those with limited social support, as priority populations.

To improve care coordination/continuity of care:

Decision makers should consider:	Healthcare systems[1] should consider:	Administrators of facilities[2] where pregnant and postpartum women seek services should consider:	Providers and professionals[3] that provide services to pregnant and postpartum women should consider:	Support persons of pregnant and postpartum women should:
Increasing funding for community health workers throughout the state to address issues that contribute to pregnancy-related deaths.	Developing a comprehensive team of care coordinators to identify and address barriers to care.	Providing social service consults for all patients with a history of depression, suicide, and substance use disorder prior to postpartum discharge.	Participating in comprehensive teams of care coordinators to identify and address barriers to care.	Encourage patients to seek assistance through patient navigator/care coordinator services when substance use and mental health treatment is needed.

[1]***Healthcare systems*** *includes but is not limited to hospitals, hospital systems, and provider offices.*

[2]***Facilities where pregnant and postpartum women seek care or services*** *includes, but is not limited to doctor's offices, social services agencies, community-based organizations, and public health departments.*

[3]***Providers and professionals that provide care and services to pregnant and postpartum women include,*** *but are not limited to mental health providers, obstetrics and gynecology providers, nurses, Child Protective Services (CPS), and social workers.*

To increase knowledge regarding the significance of urgent maternal warning signs:

Decision makers should consider:	Administrators of facilities[2] where pregnant and postpartum women seek services should consider:	Emergency medicine services (EMS) and first responders should consider:
Implementing statewide community education campaigns to raise awareness around urgent maternal warning signs.	Educating patients/clients and their support systems on urgent maternal warning signs.	Receiving regular education regarding risk factors of pregnancy and postpartum state, and incorporate this into their treatment and transport algorithms.

[2]***Facilities where pregnant and postpartum women seek care or services*** *includes, but is not limited to doctor's offices, social services agencies, community-based organizations, and public health departments.*

What is ODH doing to increase knowledge of urgent maternal warning signs?

ODH is funding a project using the Council on Patient Safety's Urgent Maternal Warning Signs education to teach women about severe symptoms that can occur during pregnancy or in the postpartum period that should not be ignored.

This messaging is being provided in non-clinical settings, such as WIC Clinics and through Home Visiting providers to reach a wider audience.

ODH is also planning a public awareness campaign using the CDC's Hear Her campaign materials, which seeks to share life-saving messages about urgent maternal warning signs.

To enable patients to adhere to medical guidance or standards of care:

Healthcare systems[1] should consider:
Ensuring emergency departments are staffed with trained mental health providers.
Making screening, brief intervention, and referral to treatment (SBIRT) a system-wide standard of care.

[1]***Healthcare systems*** *includes, but is not limited to, hospitals, hospital systems, and provider offices.*

To improve assessments of risk factors and common contributors to maternal morbidity and mortality:

Decision makers should consider:	Administrators of facilities[2] where pregnant and postpartum women seek services should consider:	Jails and correctional facilities should consider:	Providers and professionals[3] that provide services to pregnant and postpartum women should consider:
Increasing school-based screening for child abuse/neglect and mental health disorders, and making interventions such as counseling, readily available within schools to address life-long traumatic experiences (that begin in childhood and persist into adulthood), impacting maternal health outcomes.	Implementing embolism risk assessments for every pregnant or postpartum patient, upon admission. Providing annual trainings for staff members on screening and addressing human trafficking.	Screening inmates/convicts of reproductive age (18-44 years old) upon intake, for recent pregnancy or postpartum status, to assess risk for worsening mental health issues.	Screening patients of reproductive age (18-44 years old) upon intake, for recent pregnancy or postpartum status. Instituting adverse childhood experiences (ACE's) SBIRT at prenatal encounters. Screening patients for social support at every visit and refer them to peer support programming, when necessary. Performing SBIRT for mental health conditions, domestic violence, intimate partner violence, human trafficking, and the presence of guns within the home, throughout the prenatal and postpartum period.

[2]***Facilities where pregnant and postpartum women seek care or services*** *includes, but is not limited to, doctor's offices, social services agencies, community-based organizations, and public health departments.*

[3]***Providers and professionals that provide care and services to pregnant and postpartum women include,*** *but are not limited to, mental health providers, obstetrics and gynecology providers, nurses, Child Protective Services (CPS), and social workers.*

What is ODH doing to improve assessments of risk factors and common contributors to maternal morbidity and mortality?

ODH is funding a project to provide educational opportunities to emergency medicine physicians, advanced practice providers, nurses, and first responders to increase their knowledge and preparedness for common obstetric emergencies that occur in emergency departments and during maternal transports.

To reduce the impact substance use disorder has among pregnant and postpartum individuals:

Decision makers should consider:	Healthcare systems[1] should consider:	Administrators of facilities[2] where pregnant and postpartum women seek services should consider:	Jails and correctional facilities should consider:
Funding research into successful treatment programs for non-punitive treatment of non-opioid addiction in pregnant and postpartum women. De-criminalizing drug offenses among pregnant and postpartum women and encouraging substance use treatment instead.	Instituting annual provider training for pain management in patients with a history of opiate use disorder to minimize relapse risk for patient. Making psychiatric care affordable, available, and accessible in a co-location with health services for patients with substance use disorder. Increasing availability of beds and prioritizing in-patient treatment for pregnant and postpartum women with substance use disorder. Instituting immediate referral and treatment from certified peer recovery specialists for patients with substance use disorder. Implementing policies that enable emergency department providers to initiate Suboxone/ Narcan treatment as an outpatient treatment and/or provide bridge prescriptions until the patient can attend a scheduled appointment at a treatment center.	Making sure every woman with substance use disorder has a plan of safe care prior to discharge. Ensuring postpartum care is scheduled and coordinated for the mother/infant dyad prior to discharge. Discharging patients with a home supply of Naloxone/Narcan, including proper use instructions.	Providing quick access to medical assessment for inmates with substance use disorder, and those that exhibit signs of withdrawal. Conducting assessments at least once per shift for women in active withdrawal from substance use disorder, or more frequently, if needed.

Community organizations should consider:	Providers and professionals[3] that provide services to pregnant and postpartum women should consider:	Support persons of pregnant and postpartum women should:
Evaluating, cataloging, and promoting available resources for mental health and substance use disorder resources. Educating residents about naloxone administration and bystander CPR.	Educating patients with a history of substance use disorder and mental health conditions about the potential for worsening of these conditions due to pregnancy, and the increased risk of overdose due to a physiological decrease in tolerance postpartum. Educating patients and families on the effects of mixing alcohol or opioids with benzodiazepines. Providing a home supply of Naloxone/Narcan including proper use instructions.	Encourage and support pregnant and postpartum friends/family to seek prenatal care, follow through with planned substance use program, seek care for mental health, and continue to refrain from substance use before, during, and after pregnancy.

[1]***Healthcare systems*** *includes, but is not limited to, hospitals, hospital systems, and provider offices.*

[2]***Facilities where pregnant and postpartum women seek care or services*** *includes, but is not limited to, doctor's offices, social services agencies, community-based organizations, and public health departments.*

[3]***Providers and professionals that provide care and services to pregnant and postpartum women include,*** *but are not limited to, mental health providers, obstetrics and gynecology providers, nurses, Child Protective Services (CPS), and social workers.*

What is ODH doing to improve maternal health outcomes and reduce the impact substance use disorder has among pregnant and postpartum women?

In 2019-2020, ODH convened multiple state agencies to participate in the Opioid Use Disorder, Maternal Outcomes, and Neonatal Abstinence Syndrome Initiative (OMNI), a learning community with the purpose of disseminating strategies and best practices to support program and policy implementation related to substance use disorder among pregnant and postpartum women, and infants diagnosed with neonatal abstinence syndrome. The goals for Ohio were to increase awareness and knowledge about plans of safe care by leveraging the work of the Ohio Department of Job and Family Services, and implementing at least two best practices to improve care coordination and transition care before, and following delivery of the child and through the life course. Both goals were achieved, with the latter specifically addressed in four Appalachian counties. The OMNI efforts are continued through the Practice and Policy Academy, being led by the Ohio Department of Mental Health and Addiction Services.

To increase access to care, healthcare services, and basic standards of living:

Decision makers should consider:	Healthcare systems[1] should consider:	Administrators of facilities[2] where pregnant or postpartum women seek services should consider:	Providers and professionals[3] that provide services to pregnant and postpartum women should consider:
Providing comprehensive prenatal and postpartum health coverage.	Using electronic medical record systems to generate reports identifying when a pregnant or postpartum patient misses scheduled healthcare visits, and develop processes for follow up. Initiating system-wide screenings and referrals to address barriers to care throughout the prenatal and postpartum period.	Always having trained interpreter services available. Providing services via telehealth. Establishing protocols for following-up with clients/ patients after missed appointments. Initiating system-wide screenings and referrals to address barriers to care throughout the prenatal and postpartum period. Implementing nurse navigators/case management for missed appointments when postpartum visits are not attended by the patient.	Screening and referring patients to address barriers to care throughout the pregnancy and during the postpartum period. Following-up with clients/ patients after missed appointments. Providing patients with instructions on how to obtain needed medication if they are uninsured or underinsured.

[1]***Healthcare systems*** *includes, but is not limited to, hospitals, hospital systems, and provider offices.*

[2]***Facilities where pregnant and postpartum women seek care or services*** *includes, but is not limited to, doctor's offices, social services agencies, community-based organizations, and public health departments.*

[3]***Providers and professionals that provide care and services to pregnant and postpartum women include,*** *but are not limited to, mental health providers, obstetrics and gynecology providers, nurses, Child Protective Services (CPS), and social workers.*

To increase the quality of care and timeliness of care patients receive:

Healthcare systems[1] should consider:	Administrators of facilities[2] where pregnant and postpartum women seek services should consider:	Providers and professionals[3] that provide services to pregnant and postpartum women should consider:
Implementing evidence-based, patient safety bundles, to equip hospital staff to recognize, treat and manage obstetric complications related to pregnancy and the postpartum state.	Level I and Level II obstetric hospitals should partner with education departments at Level III and Level IV obstetric hospitals for trainings on obstetric emergencies. Level I and Level II obstetric hospitals specifically should form a multidisciplinary task force of Level I-IV hospital staff, to identify and increase access to care.	Adopting the American College of Obstetricians and Gynecologists (ACOG) recommendation of an early postpartum visit within three weeks of delivery.

[1]***Healthcare systems*** *includes, but is not limited to, hospitals, hospital systems, and provider offices.*

[2]***Facilities where pregnant and postpartum women seek care or services*** *includes, but is not limited to, doctor's offices, social services agencies, community-based organizations, and public health departments.*

[3]***Providers and professionals that provide care and services to pregnant and postpartum women include,*** *but are not limited to, mental health providers, obstetrics and gynecology providers, nurses, Child Protective Services (CPS), and social workers.*

What is ODH doing to increase the quality-of-care patients receive?

In October 2020, ODH partnered with the Ohio Hospital Association to join the national maternal health initiative, the *Alliance for Innovation on Maternal Health* (AIM). This program works through state teams, hospitals, and health systems to align national, state and hospital level quality improvement efforts to improve overall maternal health outcomes.

ODH is working with the Ohio Colleges of Medicine Government Resource Center to implement the hypertension and hemorrhage patient safety bundles in all delivery hospitals across Ohio, to reduce preventable hypertension-related, and hemorrhage-related, maternal morbidity/mortality.

Appendix A. PAMR Process

History of PAMR in Ohio

The Ohio Pregnancy-Associated Mortality Review (PAMR) was established in 2010 to identify and review all pregnancy-associated deaths in Ohio, with the goal of developing effective interventions to reduce maternal mortality. Prior to 2010, a maternal death review was operated by ODH and the Ohio State Medical Association in the late 1970s and early 1980s. In 2009, a variety of factors prompted medical and public health professionals to explore re-establishing a statewide PAMR.

In 2010, ODH successfully competed for funding from the Agency for Healthcare Research and Quality (AHRQ) for a one-year patient safety planning grant to develop Ohio PAMR, which resulted in the program initiation. The grant required the development of the program and the review of one year of cases within that year. Funding after the first year came from the Maternal and Child Health Block Grant through ODH. The initial review process framework was adapted from the CDC publication, *Strategies to Reduce Pregnancy-Related Deaths*, along with technical assistance from CDC's Division of Reproductive Health, and states with fully functional PAMR systems (Berg, et al, 2001). The review process and forms were refined by PAMR staff and members over time, in collaboration with federal partners.

Identification of Cases and Case Abstraction

Each year, PAMR cases are identified by the ODH Bureau of Vital Statistics (VS) using the pregnancy checkbox on the death certificate, ICD-9-CM (prior to 2016) or ICD-10 obstetric cause of death codes, and linkage to live birth or fetal death certificates. Deaths must meet the following criteria to be reviewed:

- The death must be pregnancy-associated. Pregnancy-associated is defined as the death of a woman while pregnant or anytime within one year of pregnancy, regardless of cause.
- The decedent must be an Ohio resident.
- The death must have occurred in Ohio.

Deaths are first identified by ODH vital statistics staff from the pregnancy checkbox on the death certificate and/or the use of diagnostic O-codes, for the cause of death. Deaths from 2008 through 2015 were identified after a two-year lag, then beginning with 2016 deaths, after only a one-year lag. For the first three years, this was the only way deaths were identified.

In 2011, linkage was added, identifying about 15 to 20 additional deaths per year. This process was done retrospectively to identify any missed cases from 2008 through 2010, and has been routine since. Through the linkage, the woman's death certificate is matched to a corresponding live birth or fetal death certificate when applicable, (fetal deaths are only registered in Ohio at or above 20 weeks gestation). For maternal death certificates that cannot be linked, further investigation occurs to confirm that the pregnancy checkbox on the death certificate was not erroneously marked. For cases where there is concern for a possible error, the certifier is contacted for confirmation. A full list of deaths is usually available to PAMR staff by the spring of the following year.

Relevant records are then requested via a letter signed by a designee of the ODH Director of Health, and may include: primary health care provider records; prenatal care records; hospitalizations (labor and delivery and other); emergency medical services records; medical examiner files including autopsy, toxicology, and related investigative reports; social services and mental health records; and/or before fire marshal and law enforcement reports. In addition, Ohio PAMR has data sharing agreements with the Ohio Department of Medicaid, Ohio Child Fatality Review, the Women, Infants, and Children program (WIC), the Ohio Opiate Death Registry and the Ohio Violent Death Reporting System. Legal authority for data requests is provided by Ohio Revised Code 3738.05, which states that "an individual, government entity, agency that provides services specifically to individuals or families, law enforcement agency, health care provider, or other public or private entity that provided services to a woman whose death is being reviewed by the PAMR board shall submit to the board a copy of any record it possesses that the board requests. In addition, such an individual or entity may make available to the board additional information, documents, or reports that could be useful to the board's investigation."

Before a review can be conducted, records must be requested, and the time from request to reception is highly variable. It can be extremely difficult to locate sources of information. In particular, the source of prenatal care provision is not always clear. The delivering provider, as listed on the birth certificate, is not always the prenatal care provider. When pregnancies are only identified at autopsy and there is no birth or fetal death certificate, a delivering provider is not available at all, decreasing the chances of obtaining any prenatal care records.

Records are abstracted by PAMR nurse abstractors who are registered nurses, using a standardized form. Cases are abstracted directly into a CDC-supported data system. Each abstraction takes up to 20 hours, depending on the complexity of the case and record format (e.g., hand-written, electronic, hybrid of both). Deidentified case summaries are distributed to PAMR members before the meeting.

In 2017, a decision was made to decrease the time lag from the occurrence of a death, and PAMR review of that death. During 2017-2018, deaths during both 2015 and 2016 were reviewed. Due to the number of cases for 2015 and 2016 combined, PAMR was unable to fully review all deaths. Therefore, the following criteria (see Box 1) were instituted to determine which pregnancy-associated deaths would be fully abstracted and receive a full review.

Box 1. Criteria Used for Deaths That Occurred During 2015-2016 to Determine Which Deaths Would Receive Full Abstraction and PAMR Review

Review all

- Deaths determined by staff review to be potentially pregnancy-related.
- Drug overdose deaths during pregnancy.
- Suicide deaths during, or within six months of the end of pregnancy.
- Homicide deaths during pregnancy.

Sampling of

- Motor vehicle accident deaths during pregnancy, or within one year of pregnancy.
- Non-pregnancy-related cancer deaths within one year of the end of pregnancy.
- Homicide deaths within one year of the end of pregnancy.
- Drug overdose deaths within one year of the end of pregnancy.
- Non-pregnancy-related medical causes within one year of the end of pregnancy.
- Suicide deaths more than six months after end of pregnancy.

For deaths that occurred during 2015 or 2016 for which a full abstraction and review were not conducted, these limited data were abstracted into the data system by PAMR staff:

- PAMR ID
- Birth or Fetal Death Certificate information
- Death Certificate information
- Pregnancy-related: yes/no
- Pregnancy: During, within 1-42 days, with 43 days – one year
- If during pregnancy, gestational age at time of death
- Insurance: private, government, Medicaid, unknown

PAMR Case Review Process

Ohio's case review process was adapted from the CDC publication, *Strategies to Reduce Pregnancy-Related Deaths,* and from the processes of other concurrently operating state maternal review boards. Ohio's process utilizes both peer review and individual expertise while promoting reviewer engagement. Each member of the PAMR committee receives all case summaries approximately one week before the meeting; however, each case is assigned a primary and secondary reviewer who have specialized expertise in the type of case assigned and review the case in detail.

The PAMR committee meets at least three times per year. Committee members are split into two teams and each team reviews a set of cases. The purpose is to maximize the number of cases reviewed per meeting and facilitate member engagement through smaller team size. During the review meeting, each team follows this format:

1. The primary reviewer reads the narrative from the case summary form, adds pertinent details from the abstraction, and reviews pertinent strengths and gaps in the records available.
2. The secondary reviewer provides additional comments, if applicable.
3. All team members engage in a discussion, asking questions and providing answers from their specialty or review of the case.

4. The primary reviewer puts forward an opinion on the following:
    - Determination as pregnancy-related or not.
    - Assessment of case record completeness.
    - Determination of manner of death and the underlying cause of death (agree with death certificate or propose alternate).
    - The underlying cause of death is then classified per CDC's Pregnancy Mortality Surveillance System codes.
    - Opportunity to alter outcome (i.e., preventability).
    - Determination of suitability as a potential teaching case.
    - Identification of contributing factors at the provider, facility or system, and patient/family levels.
    - Identification of factors, barriers, gaps, needs, and areas for improvement related to the course of events that led to the decedent's death.
5. All team members engage in group discussion and come to consensus.
6. All team members contribute recommendations and action steps.

A committee decision form is used to document the consensus of the committee in a standardized format for each case. Each PAMR meeting opens with an overview of the review process, a reminder of definitions and confidentiality statement, and presentation of any updates. Meetings include an invited presentation on a topic of relevance to the PAMR committee. The topics alternate between medical and social determinants of health.

Appendix B. Definitions

The following definitions are used throughout this report.

Pregnancy-associated death. The death of a woman while pregnant or anytime within one year of the end of pregnancy, regardless of cause.

> **Pregnancy-related death.** The death of a woman while pregnant or within one year of the end of pregnancy, regardless of duration and site of pregnancy, from any cause related to or aggravated by her pregnancy or its management (e.g., 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, death.** The death of a woman while pregnant or within one year of the end of pregnancy, due to a cause unrelated to pregnancy.
>
> **Pregnancy-associated, but unable to determine pregnancy-relatedness.** The death of a woman while pregnant or within one year of the end of pregnancy, due to a cause that could not be determined to be pregnancy-related or not pregnancy-related.

Pregnancy-associated mortality ratio (PMR). The number of pregnancy-associated deaths per 100,000 live births.

Pregnancy-related mortality ratio (PRMR). The number of pregnancy-related deaths per 100,000 live births.

Chance to Alter Outcome. The review committee determination if there was no chance, some chance, or a good chance "of the death being averted by one or more reasonable changes to patient, family, community, provider, and/or systems factors."

Preventability. A death is considered preventable if the committee determines that there was at least some chance of the death being averted.

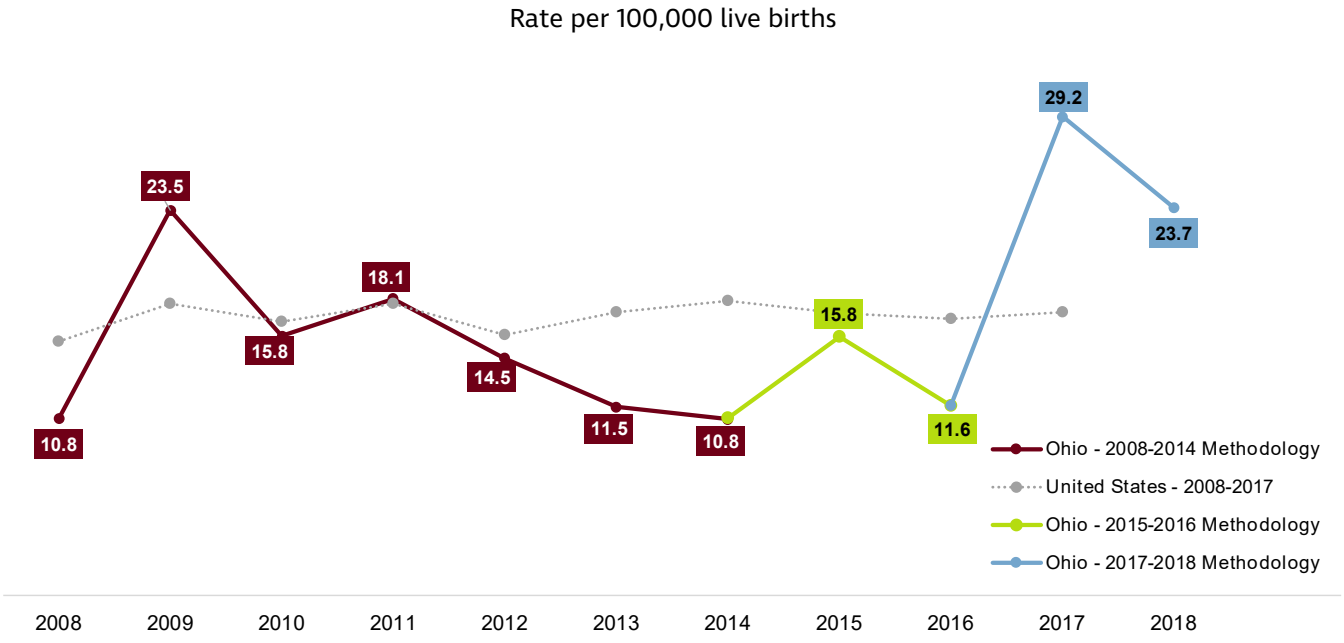
Contributing Factor. Factors identified by the review committee that contributed to the death. These are steps that, if altered, may have prevented the woman's death. The factors may be related to the patient, health care providers, facilities/hospitals where the woman sought care, or to the systems that influence the lifestyle, care, and health services for the woman.

Appendix C. PAMR Data Trends, Methodology Updates, and Supplemental Data

Pregnancy-Related Mortality Trends

From 2008 to 2018, there were a total of 258 pregnancy-related deaths that occurred in Ohio. Figure 13 shows trends in pregnancy-related mortality ratios (PRMR) (the number of pregnancy-related deaths per 100,000 live births) in Ohio from 2008 through 2018. Throughout this time, PAMR has continuously worked to improve and refine the methodology used to review pregnancy-associated deaths. Figure 13 describes when PAMR methodology changed to aid in interpretation of the data.

Figure 13. Pregnancy-related mortality ratios more than doubled in recent years due to an adoption of new unintentional overdose review criteria by PAMR.



From 2008-2014, the review process was not specific enough to discern the contribution of mental health conditions and overdose to pregnancy-related deaths. Therefore, deaths due to these causes were classified as pregnancy-associated (but not related) and are not included in the figure. For additional information about 2008-2014 deaths, please refer to the previously released 2008-2016 pregnancy-associated mortality data.

Deaths that occurred in 2015 and 2016 were reviewed simultaneously. Due to the number of cases for 2015 and 2016 combined, select criteria were used determine which pregnancy-associated deaths would and would not be reviewed. See BOX 1 of Appendix A of this documents for an overview of this review criteria.

The pregnancy-related mortality ratio more than doubled from 2016-2017 (Figure 12). This increase is a result of the adoption of new criteria adapted from the Utah Department of Health Perinatal Mortality Review to determine the pregnancy-relatedness of unintentional overdose deaths. Use of the new criteria resulted in an increased number of unintentional overdose deaths determined to be pregnancy-related in 2017-2018.

United States and Ohio surveillance methods differ. Both methods include women who died during pregnancy or within one year of pregnancy. Maternal Mortality Review Committees (MMRCs) have access to multiple sources of information that can provide a deeper understanding of the circumstances surrounding a death than Pregnancy Mortality Surveillance System (PMSS) can offer. State and local MMRCs perform comprehensive reviews of deaths using information beyond what is available in vital records, including medical and non-medical data sources. MMRCs have the potential to get the most detailed, complete data on maternal mortality that then supports their ability to make specific recommendations for prevention. This also allows MMRCs to make determinations of pregnancy-relatedness on a broader set of deaths than is possible for PMSS, such as deaths due to injury. In contrast to the MMRC process, the U.S. process is based only on vital statistics data submitted to the CDC by states. Additionally, the 2018 PMSS dataset includes deaths which occurred in Ohio and deaths of Ohio residents that occurred in other states. More information on the U.S. system can be found at https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html.

These changes in methodology over time are important to consider when interpreting and comparing data across time, especially when considering racial/ethnic disparities.

Table 1 describes the PRMRs for each of the respective time periods described above by race/ethnicity. A large increase in non-Hispanic White deaths is observed from 2015-2016 to 2017-2018. This increase is a result of the change in PAMR methodology implemented for 2017-2018 deaths, which resulted in an increase in the number of overdose deaths determined to be pregnancy-related. Over 90% of all overdose deaths were to non-Hispanic White women in 2017-2018. Please see Appendix C of this report for additional information about pregnancy-related deaths by race/ethnicity.

Table 1. Pregnancy-Related Mortality Ratios, by Race/Ethnicity and Year, Ohio 2008-2014, 2015-2016, and 2017-2018 (Deaths per 100,000 Live Births)

Year by PAMR Methodology Changes	Non-Hispanic Black	Non-Hispanic White
2008-2014	29.5	12.1
2015-2016	27.2	10.3
2017-2018 (all deaths)	23.0	28.7
2017-2018 (excluding deaths due to overdose)	20.9	13.6

Table 2. Demographic Characteristics of Pregnancy-Related Deaths that Occurred Between 2017-2018 in Ohio

	Total Pregnancy-Related Deaths (Including Those Due to Overdose)	Total Pregnancy-Related Deaths (Excluding Those Due to Overdose)	Total Pregnancy-Related Deaths Due to Overdose	Live Births from 2017-2018	PRMR* (Including Those Due to Poisoning/ Overdose)	PRMR*(Excluding Those Due to Poisoning/ Overdose)	PRMR* (Only Overdose Deaths)
Age							
<20	5	4	1	14,973	---	---	---
20-24	10	5	5	59,524	16.8	---	---
25-29	18	4	14	84,513	21.3	---	16.6
30-34	21	12	9	74,829	28.1	16.0	---
35-39	15	12	3	32,187	46.6	37.3	---
>=40	3	3	0	6,078	---	---	---
	72	**40**	**32**	**272,104**			**0.0**
Education							
12th Grade or Less, No Diploma	14	7	7	35,498	39.4	---	---
High School Graduate or GED	31	16	15	75,161	41.2	21.3	20.0
Some College Credit but No Degree	11	3	8	52,340	21.0	---	---
Associate or Bachelor's Degree	13	11	2	76,813	16.9	14.3	---
Advanced Degree (Includes Graduate or Professional Degree)	3	3	0	6,925	---	---	---
	72	**40**	**32**				
Race/Ethnicity							
Non-Hispanic White	57	27	30	198,457	28.7	13.6	15.1
Non-Hispanic Black	11	10	1	47,821	23.0	20.9	---
Non-Hispanic, Other Races	1	1	0	9,666	---	---	---
Hispanic	3	2	1	14,907	---	---	---
	72	**40**	**32**				

**Pregnancy-Related Mortality Ratio (PRMR)*

Table 2. Demographic Characteristics of Pregnancy-Related Deaths that Occurred Between 2017-2018 in Ohio (continued)

	Total Pregnancy-Related Deaths (Including Those Due to Overdose)	Total Pregnancy-Related Deaths (Excluding Those Due to Overdose)	Total Pregnancy-Related Deaths Due to Overdose	Live Births from 2017-2018	PRMR* (Including Those Due to Poisoning/) Overdose)	PRMR*(Excluding Those Due to Poisoning/ Overdose)	PRMR* (Only Overdose Deaths)
Insurance							
Uninsured or self-pay	2	2	0	13,079	---	---	---
Insured, Medicaid	49	20	29	111,269	44.0	18.0	26.1
Insured, Private	12	11	1	136,666	8.8	8.0	---
Insured, Other (Includes Champus/ Tricare and other)	5	5	0	9,568	---	---	---
Unknown	4	2	2	1,538	---	---	---
	72	**40**	**32**				
Marital Status							
Married	22	17	5	154,631	14.2	11.0	---
Unmarried (Widowed, divorced, never married)	50	23	27	117,383	42.6	19.6	23.0
Unknown	0	0	0	74	---	---	---
	72	**40**	**32**				
ODH County Type* **							
Metropolitan	36	15	21	151,630	23.7	9.9	13.8
Suburban	12	10	2	41,374	29.0	24.2	---
Rural, Non-Appalachian	7	4	3	35,249	---	---	---
Appalachian	17	11	6	43,857	38.8	25.1	---
	72	**40**	**32**				

**Pregnancy-Related Mortality Ratio (PRMR)*

***Ratios based on fewer than 20 deaths should be interpreted with caution. Ratios based on fewer than ten deaths are not displayed.*

****ODH categorizes Ohio's 88 counties into four county type designations (suburban, rural non-Appalachian, Appalachian, and metropolitan) based on similarities in terms of population and geography. The current county type designations originated with the Ohio Family Health Survey in 1998, and are based on the U.S. Code and U.S. Census information. Also, Rural, Appalachian counties parallel the Appalachian counties designated by the Appalachian Regional Commission. The Appalachian Region, as defined in ARC's authorizing legislation, is a 205,000-square-mile region that follows the spine of the Appalachian Mountains from southern New York to northern Mississippi. It includes all of West Virginia and parts of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. Forty-two percent of the region's population is rural, compared with 20 percent of the national population.*

Table 3. Underlying Cause of Death of Pregnancy-Related Deaths from 2017-2018 in Ohio

	Total Pregnancy-Related Deaths	Percent of All Pregnancy-Related Deaths	Pregnancy-Related Mortality Ratio (Per 100,000 live births)
Cardiovascular and Coronary Conditions	6	8%	---
Infections	8	11%	---
Hemorrhage	4	6%	---
Pre-eclampsia and Eclampsia	2	3%	---
Cardiomyopathy	3	4%	---
Embolisms (Does not include amniotic fluid embolism)	6	8%	---
Mental Health	34	47%	12.6
Injury	2	3%	---
Other (Includes cerebrovascular accident, amniotic fluid embolism, and unknown COD)	7	10%	---
	72	**100%**	**26.5**

Table 4. Underlying Cause of Death of Pregnancy-Related Deaths from 2017-2018 by Race/Ethnicity in Ohio

	Non-Hispanic White Pregnancy-Related Deaths	Non-Hispanic Black Pregnancy-Related Deaths	Non-Hispanic/ Other Pregnancy-Related Deaths	Hispanic Pregnancy-Related Deaths	Total Pregnancy-Related Deaths
Cardiovascular and Coronary Conditions	7%	18%	0	0%	6
Infections	9%	18%	100%	0%	8
Hemorrhage	4%	9%	0	33%	4
Pre-eclampsia and Eclampsia	0%	18%	0	0%	2
Cardiomyopathy	5%	0%	0	0%	3
Embolisms (Does not include amniotic fluid embolism)	5%	18%	0	33%	6
Mental Health	56%	9%	0	33%	34
Injury	4%	0%	0	0%	2
Other (Includes cerebrovascular accident, amniotic fluid embolism, and unknown COD)	11%	9%	0	0%	7
	100%	**100%**	**100%**	**100%**	**72**

Table 5. Preventability by Underlying Cause of Death among Pregnancy-Related Deaths from 2017-2018

Cause of Death	Not Preventable	Preventable	Total Number of Pregnancy-Related Deaths
Hypertensive Disorders of Pregnancy	0%	100%	2
Mental Health Conditions	9%	91%	34
Hemorrhage (Excludes Aneurysms or CVA)	25%	75%	4
Cardiovascular Conditions	33%	67%	6
Embolism - Thrombotic (Non-Cerebral)	33%	67%	6
Cerebrovascular Accident not Secondary to Hypertensive Disorders of Pregnancy	33%	67%	3
Infection	38%	63%	8
Injury	50%	50%	2
Amniotic Fluid Embolism	100%	0%	3
Cardiomyopathy	100%	0%	3
Unknown COD	100%	0%	1
Total	**28%**	**72%**	**72**

Table 6. Preventability by Race/Ethnicity among Pregnancy-Related Deaths from 2017-2018

Race	Not Preventable	Preventable	Total Number of Pregnancy-Related Deaths
Hispanic	0%	100%	3
Non-Hispanic Black	27%	73%	11
Non-Hispanic White	28%	72%	57
Non-Hispanic/Other Races	100%	0%	1
Total	**28%**	**72%**	**72**

Appendix D. Committee Decision Form

Review to Action promotes the maternal mortality review process, and houses the Committee Decision Form, located at the following link.

MMRIA

MATERNAL MORTALITY REVIEW COMMITTEE DECISIONS FORM v21 1

REVIEW DATE

Month/Day/Year

RECORD ID #

COMMITTEE DETERMINATION OF CAUSE(S) OF DEATH

IF PREGNANCY-RELATED, COMMITTEE DETERMINATION OF UNDERLYING* CAUSE OF DEATH
Refer to page 3 for PMSS-MM cause of death list.

PREGNANCY-RELATEDNESS: SELECT ONE

- ☐ PREGNANCY-RELATED
  A death 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
  A death 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

TYPE	OPTIONAL: CAUSE (DESCRIPTIVE)
UNDERLYING*	
CONTRIBUTING	
IMMEDIATE	
OTHER SIGNIFICANT	

ESTIMATE THE DEGREE OF RELEVANT INFORMATION (RECORDS) AVAILABLE FOR THIS CASE:

- ☐ COMPLETE
  All records necessary for adequate review of the case were available
- ☐ SOMEWHAT COMPLETE
  Major gaps (i.e, information that would have been crucial to the review of the case)
- ☐ MOSTLY COMPLETE
  Minor gaps (i.e, information that would have been beneficial but was not essential to the review of the case)
- ☐ NOT COMPLETE
  Minimal records available for review (i.e, death certificate and no additional records)
- ☐ N/A

DOES THE COMMITTEE AGREE WITH THE UNDERLYING* CAUSE OF DEATH LISTED ON DEATH CERTIFICATE? ☐ YES ☐ NO

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

MANNER OF DEATH

WAS THIS DEATH A SUICIDE?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
WAS THIS DEATH A HOMICIDE?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN

IF ACCIDENTAL DEATH, HOMICIDE, OR SUICIDE, **LIST THE MEANS OF FATAL INJURY**

- ☐ FIREARM
- ☐ SHARP INSTRUMENT
- ☐ BLUNT INSTRUMENT
- ☐ POISONING/ OVERDOSE
- ☐ HANGING/ STRANGULATION/ SUFFOCATION
- ☐ FALL
- ☐ PUNCHING/ KICKING/BEATING
- ☐ EXPLOSIVE
- ☐ DROWNING
- ☐ FIRE OR BURNS
- ☐ MOTOR VEHICLE
- ☐ INTENTIONAL NEGLECT
- ☐ OTHER, SPECIFY:
- ☐ UNKNOWN
- ☐ NOT APPLICABLE

IF HOMICIDE, WHAT WAS THE **RELATIONSHIP OF THE PERPETRATOR TO THE DECEDENT?**

- ☐ NO RELATIONSHIP
- ☐ PARTNER
- ☐ EX-PARTNER
- ☐ OTHER RELATIVE
- ☐ ACQUAINTANCE
- ☐ OTHER, SPECIFY:
- ☐ UNKNOWN
- ☐ NOT APPLICABLE

*Underlying cause refers to the disease or injury that initiated the chain of events leading to death or the circumstances of the accident or violence which produced the fatal injury.
**Encompasses Discrimination, Interpersonal Racism, and Structural Racism as described on page 4.

COMMITTEE DETERMINATION OF PREVENTABILITY

A death is considered preventable if the committee determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors.

WAS THIS DEATH PREVENTABLE?	☐ YES	☐ NO
CHANCE TO ALTER OUTCOME	☐ GOOD CHANCE ☐ NO CHANCE	☐ SOME CHANCE ☐ UNABLE TO DETERMINE

CONTRIBUTING FACTORS AND RECOMMENDATIONS FOR ACTION (Entries may continue to grid on page 5)

CONTRIBUTING FACTORS WORKSHEET

What were the factors that contributed to this death?
Multiple contributing factors may be present at each level.

RECOMMENDATIONS OF THE COMMITTEE

If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?

DESCRIPTION OF ISSUE (enter a description for EACH contributing factor listed)	CONTRIBUTING FACTORS (choose as many as needed below)	LEVEL	COMMITTEE RECOMMENDATIONS [Who?] should [do what?] [when?] Map recommendations to contributing factors.	LEVEL	PREVENTION TYPE (choose below)	EXPECTED IMPACT (choose below)

CONTRIBUTING FACTOR KEY (DESCRIPTIONS ON PAGE 4)

- Access/financial
- Adherence
- Assessment
- Chronic disease
- Clinical skill/ quality of care
- Communication
- Continuity of care/ care coordination
- Cultural/religious
- Delay
- Discrimination
- Environmental
- Equipment/ technology
- Interpersonal racism
- Knowledge
- Law Enforcement
- Legal
- Mental health conditions
- Outreach
- Policies/procedures
- Referral
- Social support/ isolation
- Structural racism
- Substance use disorder - alcohol, illicit/prescription drugs
- Tobacco use
- Trauma
- Unstable housing
- Violence
- Other

DEFINITION OF LEVELS

- **PATIENT/FAMILY:** An individual before, during or after a pregnancy, and their family, internal or external to the household, with influence on the individual
- **PROVIDER:** An individual with training and expertise who provides care, treatment, and/or advice
- **FACILITY:** A physical location where direct care is provided - ranges from small clinics and urgent care centers to hospitals with trauma centers
- **SYSTEM:** Interacting entities that support services before, during, or after a pregnancy - ranges from healthcare systems and payors to public services and programs
- **COMMUNITY:** A grouping based on a shared sense of place or identity - ranges from physical neighborhoods to a community based on common interests and shared circumstances

PREVENTION TYPE

- **PRIMARY:** Prevents the contributing factor before it ever occurs
- **SECONDARY:** Reduces the impact of the contributing factor once it has occurred (i.e, treatment)
- **TERTIARY:** Reduces the impact or progression of what has become an ongoing contributing factor (i.e, management of complications)

EXPECTED IMPACT

- **SMALL:** Education/counseling (community- and/or provider-based health promotion and education activities)
- **MEDIUM:** Clinical intervention and coordination of care across continuum of well-woman visits (protocols, prescriptions)
- **LARGE:** Long-lasting protective intervention (improve readiness, recognition and response to obstetric emergencies/LARC)
- **EXTRA LARGE:** Change in context (promote environments that support healthy living/ensure available and accessible services)
- **GIANT**: Address social determinants of health (poverty, inequality, etc.)

IF PREGNANCY-RELATED, COMMITTEE DETERMINATION OF UNDERLYING CAUSE OF DEATH* PMSS-MM

* PREGNANCY-RELATED DEATH: DEATH 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.

Hemorrhage (Excludes Aneurysms or CVA)
10.1 - Hemorrhage – Uterine Rupture
10.2 - Placental Abruption
10.3 - Placenta Previa
10.4 - Ruptured Ectopic Pregnancy
10.5 - Hemorrhage – Uterine Atony/Postpartum Hemorrhage
10.6 - Placenta Accreta/Increta/Percreta
10.7 - Hemorrhage due to Retained Placenta
10.10 - Hemorrhage – Laceration/Intra-Abdominal Bleeding
10.9 - Other Hemorrhage/NOS

Infection
20.1 - Postpartum Genital Tract (e.g,, of the Uterus/Pelvis/Perineum/Necrotizing Fasciitis)
20.2 - Sepsis/Septic Shock
20.4 - Chorioamnionitis/Antepartum Infection
20.6 - Urinary Tract Infection
20.7 - Influenza
20.8 - COVID-19
20.10 - Pneumonia
20.11 - Other Non-Pelvic Infection (e.g,, TB, Meningitis, HIV)
20.9 - Other Infection/NOS

Embolism - Thrombotic (Non-Cerebral)
30.1 - Embolism – Thrombotic (Non-Cerebral)
30.9 - Other Embolism (Excludes Amniotic Fluid Embolism)/NOS

Amniotic Fluid Embolism
31.1 - Embolism - Amniotic Fluid

Hypertensive Disorders of Pregnancy
40.1 - Preeclampsia
50.1 - Eclampsia
60.1 - Chronic Hypertension with Superimposed Preeclampsia

Anesthesia Complications
70.1 - Anesthesia Complications

Cardiomyopathy
80.1 - Postpartum/Peripartum Cardiomyopathy
80.2 - Hypertrophic Cardiomyopathy
80.9 - Other Cardiomyopathy/NOS

Hematologic
82.1 - Sickle Cell Anemia
82.9 - Other Hematologic Conditions including Thrombophilias/TTP/HUS/NOS

Collagen Vascular/Autoimmune Diseases
83.1 - Systemic Lupus Erythematosus (SLE)
83.9 - Other Collagen Vascular Diseases/NOS

Conditions Unique to Pregnancy
85.1 - Conditions Unique to Pregnancy (e.g, Gestational Diabetes, Hyperemesis, Liver Disease of Pregnancy)

Injury
88.1 - Intentional (Homicide)
88.2 - Unintentional
88.9 - Unknown Intent/NOS

Cancer
89.1 - Gestational Trophoblastic Disease (GTD)
89.3 - Malignant Melanoma
89.9 - Other Malignancy/NOS

Cardiovascular Conditions
90.1 - Coronary Artery Disease/Myocardial Infarction (MI)/Atherosclerotic Cardiovascular Disease
90.2 - Pulmonary Hypertension
90.3 - Valvular Heart Disease Congenital and Acquired
90.4 - Vascular Aneurysm/Dissection (Non-Cerebral)
90.5 - Hypertensive Cardiovascular Disease
90.6 - Marfan Syndrome
90.7 - Conduction Defects/Arrhythmias
90.8 - Vascular Malformations Outside Head and Coronary Arteries
90.9 - Other Cardiovascular Disease, including CHF, Cardiomegaly, Cardiac Hypertrophy, Cardiac Fibrosis, Non-Acute Myocarditis/NOS

Pulmonary Conditions (Excludes ARDS-Adult Respiratory Distress Syndrome)
91.1 - Chronic Lung Disease
91.2 - Cystic Fibrosis
91.3 - Asthma
91.9 - Other Pulmonary Disease/NOS

Neurologic/Neurovascular Conditions (Excluding CVA)
92.1 - Epilepsy/Seizure Disorder
92.9 - Other Neurologic Disease/NOS

Renal Disease
93.1 - Chronic Renal Failure/End-Stage Renal Disease (ESRD)
93.9 - Other Renal Disease/NOS

Cerebrovascular Accident not Secondary to Hypertensive Disorders of Pregnancy
95.1 - Cerebrovascular Accident (Hemorrhage/Thrombosis/Aneurysm/Malformation) not Secondary to Hypertensive Disorders of Pregnancy

Metabolic/Endocrine
96.2 - Diabetes Mellitus
96.9 - Other Metabolic/Endocrine Disorder/NOS

Gastrointestinal Disorders
97.1 - Crohn's Disease/Ulcerative Colitis
97.2 - Liver Disease/Failure/Transplant
97.9 - Other Gastrointestinal Disease/NOS

Mental Health Conditions
100.1 - Depressive Disorder
100.2 - Anxiety Disorder (including Post-Traumatic Stress Disorder)
100.3 - Bipolar Disorder
100.4 - Psychotic Disorder
100.5 - Substance Use Disorder
100.9 - Other Psychiatric Condition/NOS

Unknown COD
999.1 - Unknown COD

CONTRIBUTING FACTOR DESCRIPTIONS

LACK OF **ACCESS/FINANCIAL** RESOURCES
Systemic barriers, e.g, lack or loss of healthcare insurance or other financial duress, as opposed to noncompliance, impacted their ability to care for themself (e.g, did not seek services because unable to miss work or afford postpartum visits after insurance expired). Other barriers to accessing care: insurance non-eligibility, provider shortage in their geographical area, and lack of public transportation.

ADHERENCE TO MEDICAL RECOMMENDATIONS
The provider or patient did not follow protocol or failed to comply with standard procedures (i.e, non adherence to prescribed medications).

FAILURE TO SCREEN/INADEQUATE **ASSESSMENT** OF RISK
Factors placing the individual at risk for a poor clinical outcome recognized, and they were not transferred/transported to a provider able to give a higher level of care.

CHRONIC DISEASE
Occurrence of one or more significant pre-existing medical conditions (e.g, obesity, cardiovascular disease, or diabetes).

CLINICAL SKILL/QUALITY OF CARE (PROVIDER OR FACILITY PERSPECTIVE)
Personnel were not appropriately skilled for the situation or did not exercise clinical judgment consistent with standards of care (e.g, error in the preparation or administration of medication or unavailability of translation services).

POOR **COMMUNICATION**/LACK OF CASE COORDINATION OR MANAGEMENT/ LACK OF CONTINUITY OF CARE (SYSTEM PERSPECTIVE)
Care was fragmented (i.e, uncoordinated or not comprehensive) among or between healthcare facilities or units, (e.g, records not available between inpatient and outpatient or among units within the hospital, such as Emergency Department and Labor and Delivery).

LACK OF **CONTINUITY OF CARE** (PROVIDER OR FACILITY PERSPECTIVE)
Care providers did not have access to individual's complete records or did not communicate their status sufficiently. Lack of continuity can be between prenatal, labor and delivery, and postpartum providers.

CULTURAL/RELIGIOUS, OR LANGUAGE FACTORS The provider or patient demonstrated that any of these factors was either a barrier to care due to lack of understanding or led to refusal of therapy due to beliefs (or belief systems).

DELAY
The provider or patient was delayed in referring or accessing care, treatment, or follow-up care/action.

DISCRIMINATION
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. (Smedley et al, 2003 and Dr. Rachel Hardeman).

ENVIRONMENTAL FACTORS
Factors related to weather or social environment.

INADEQUATE OR UNAVAILABLE **EQUIPMENT/TECHNOLOGY**
Equipment was missing, unavailable, or not functional, (e.g, absence of blood tubing connector).

INTERPERSONAL RACISM
Discriminatory interactions between individuals based on differential assumptions about the abilities, motives, and intentions of others and resulting in differential actions toward others based on their race. It can be conscious as well as unconscious, and it includes acts of commission and acts of omission. It manifests as lack of respect, suspicion, devaluation, scapegoating, and dehumanization. (Jones, CP, 2000 and Dr. Cornelia Graves).

KNOWLEDGE - LACK OF KNOWLEDGE REGARDING IMPORTANCE OF EVENT OR OF TREATMENT OR FOLLOW-UP
The provider or patient did not receive adequate education or lacked knowledge or understanding regarding the significance of a health event (e.g, shortness of breath as a trigger to seek immediate care) or lacked understanding about the need for treatment/follow-up after evaluation for a health event (e.g, needed to keep appointment for psychiatric referral after an ED visit for exacerbation of depression).

INADEQUATE **LAW ENFORCEMENT** RESPONSE
Law enforcement response was not in a timely manner or was not appropriate or thorough in scope.

LEGAL
Legal considerations that impacted outcome.

MENTAL HEALTH CONDITIONS
The patient had a documented diagnosis of a psychiatric disorder. This includes postpartum depression. If a formal diagnosis is not available, refer to your review committee subject matter experts (e.g, psychiatrist, psychologist, licensed counselor) to determine whether the criteria for a diagnosis of substance use disorder or another mental health condition are met based on the available information.

INADEQUATE COMMUNITY **OUTREACH**/RESOURCES
Lack of coordination between healthcare system and other outside agencies/organizations in the geographic/cultural area that work with maternal health issues.

LACK OF STANDARDIZED **POLICIES/PROCEDURES**
The facility lacked basic policies or infrastructure germane to the individual's needs (e.g, response to high blood pressure, or a lack of or outdated policy or protocol).

LACK OF **REFERRAL** OR CONSULTATION
Specialists were not consulted or did not provide care; referrals to specialists were not made.

SOCIAL SUPPORT/ISOLATION - LACK OF FAMILY/ FRIEND OR SUPPORT SYSTEM
Social support from family, partner, or friends was lacking, inadequate, and/or dysfunctional.

STRUCTURAL RACISM
The systems of power based on historical injustices and contemporary social factors that systematically disadvantage people of color and advantage white people through inequities in housing, education, employment, earnings, benefits, credit, media, health care, criminal justice, etc. (Adapted from Bailey ZD. Lancet. 2017 and Dr. Carla Ortique).

SUBSTANCE USE DISORDER – ALCOHOL, ILLICIT/ PRESCRIPTION DRUGS
Substance use disorder is characterized by recurrent use of alcohol and/or drugs causing clinically and functionally significant impairment, such as health problems or disability. The committee may determine that substance use disorder contributed to the death when the disorder directly compromised their health status (e.g, acute methamphetamine intoxication exacerbated pregnancy- induced hypertension, or they were more vulnerable to infections or medical conditions).

TOBACCO USE
The patient's use of tobacco directly compromised the patient's health status (e.g, long-term smoking led to underlying chronic lung disease).

TRAUMA
The individual experienced trauma: i.e,, loss of child (death or loss of custody), rape, molestation, or one or more of the following: sexual exploitation during childhood plus persuasion, inducement, or coercion of a child to engage in sexually explicit conduct; or other physical or emotional abuse other than that related to sexual abuse during childhood.

UNSTABLE HOUSING
Individual lived "on the street," in a homeless shelter, or in transitional or temporary circumstances with family or friends.

VIOLENCE AND INTIMATE PARTNER VIOLENCE (IPV)
Physical or emotional abuse perpetrated by current or former intimate partner, family member, friend, acquaintance, or stranger.

OTHER
Contributing factor not otherwise mentioned. Please provide description.

CONTRIBUTING FACTORS AND RECOMMENDATIONS FOR ACTION (Continued from page 2)

CONTRIBUTING FACTORS WORKSHEET

What were the factors that contributed to this death?
Multiple contributing factors may be present at each level.

RECOMMENDATIONS OF THE COMMITTEE

If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?

DESCRIPTION OF ISSUE (enter a description for EACH contributing factor listed)	**CONTRIBUTING FACTORS** (choose as many as needed below)	**LEVEL**	**COMMITTEE RECOMMENDATIONS** [Who?] should [do what?] [when?] Map recommendations to contributing factors.	**LEVEL**	**PREVENTION TYPE** (choose below)	**EXPECTED IMPACT** (choose below)

Appendix E. Contributors and Acknowledgments

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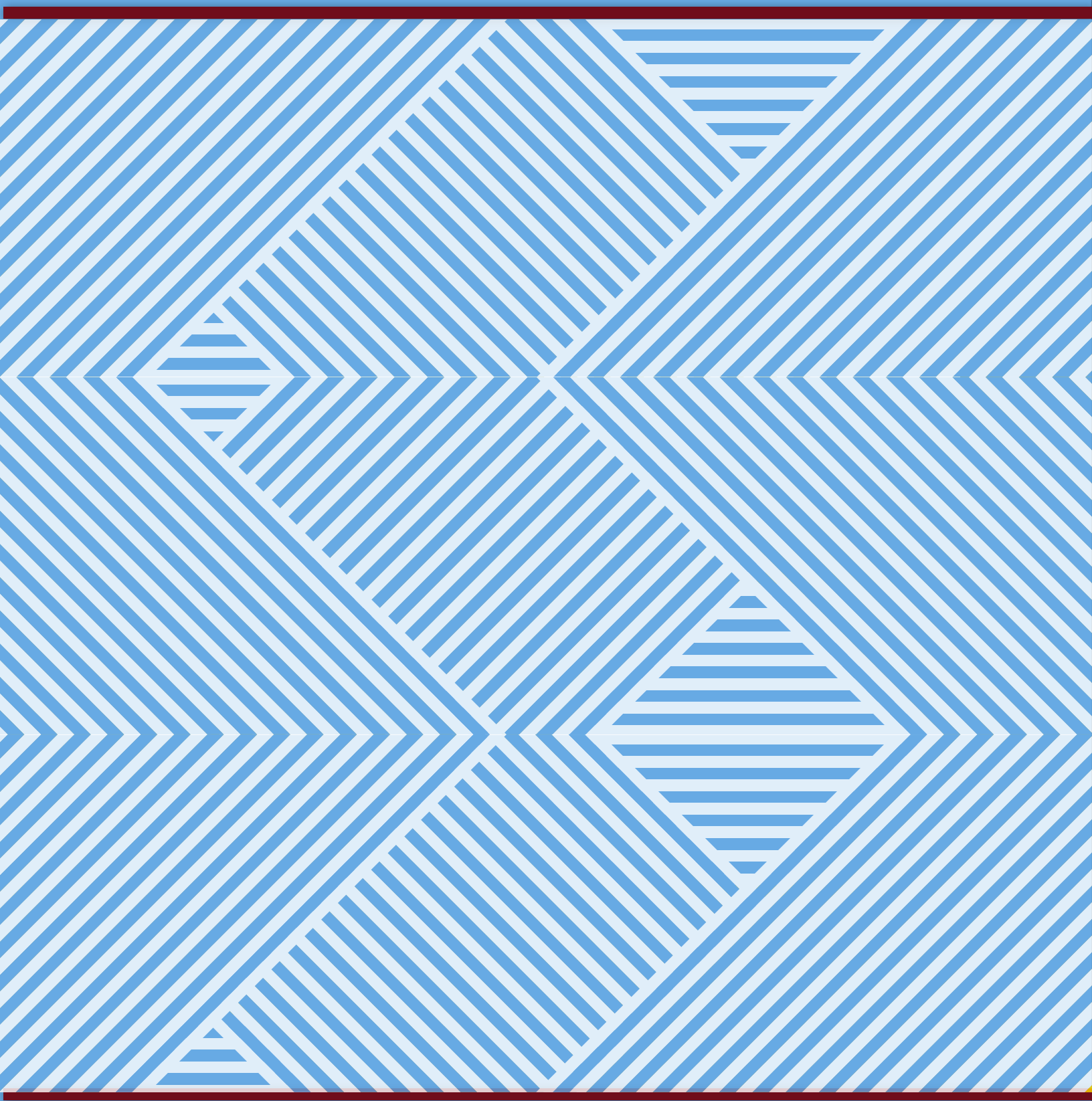
Appendix F. References

Berg C, et al. *Strategies to Reduce Pregnancy-Related Deaths: From Identification and Review to Action*. Atlanta: Centers for Disease Control and Prevention, 2001.

Ohio Department of Health. *A Report on Pregnancy-Associated Deaths in Ohio 2008-2016.* Columbus, OH: Ohio Department of Health. 2019.



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