2021 MATERNAL DEATHS in IDAHO

A report of findings by the Maternal Mortality Review Committee

Idaho maternal & child health

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TABLE OF CONTENTS

DEFINITIONS

The following definitions will be used throughout this report.

Maternal morbidity: unexpected outcomes of labor and delivery that result in short-or long-term consequences to a woman's health.

Pregnancy-associated death (or maternal death[i]): is the death of a woman from any cause during pregnancy or within one (1) year following the end of the pregnancy.[1] (May be related or unrelated to pregnancy).

Pregnancy-related death: 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, death: the death of a woman while pregnant, or within one year of pregnancy, from a cause that is unrelated to pregnancy.

Figure 1 - Source: Centers for Disease Control and Prevention. (2022). State Strategies for Preventing Pregnancy-Related Deaths: A Guide for Moving Maternal Mortality Review Committee Data to Action.

i. For this report, a maternal death is defined as listed above and in Idaho Code and meets the same definition as pregnancy-associated death. The definition used here does not follow the National Center for Health Statistics and the World Health Organization's definition of a maternal death: which is "the death of a woman while pregnant or within 42 days of termination of pregnancy, regardless of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental causes."

EXECUTIVE SUMMARY

Idaho Code Title 39, Chapter 96, gives the Department of Health and Welfare the authority to coordinate the activities of the Maternal Mortality Review Committee (MMRC). This multidisciplinary group from across the state reviews every maternal death and makes recommendations to improve the care for women and to reduce or eliminate preventable deaths. Due to the sunset clause in Idaho Code Title 39, Chapter 96, the Idaho MMRC will not be continuing after June 30, 2023, and this will be the last report unless reauthorized.

This report includes information about the maternal deaths in Idaho that occurred in 2021 and a short summary of preliminary data for maternal deaths that occurred in 2022. Findings comparing 2018, 2019, 2020, and 2021 maternal deaths are included in Appendix A.

Key Findings for 2021

- Seventeen women died in Idaho while pregnant or within one year of pregnancy. Sixteen of these deaths were reviewed by the MMRC, see page 14 for additional information.
- Fifteen deaths were determined to be preventable.
- Nine of the deaths were determined to be pregnancy-related.
- The most common contributing factor in these women's deaths was lack of knowledge regarding importance of event. The provider or patient did not receive adequate education or lacked knowledge or understanding regarding the significance of a health event or the need for treatment/follow-up after evaluation for a health event. The second most common contributing factor was lack of access/financial resources. The third most common was mental health conditions.
- The most common underlying cause of death was mental health conditions, which includes deaths related to suicide, substance use disorder, overdose/poisoning, and unintentional injuries determined by the MMRC to be related to a mental health condition. This was followed by infection and amniotic fluid embolism.
- Idaho's 2021 MMRC Pregnancy-Related Mortality Ratio (PRMR) was 40.1 pregnancy-related deaths per 100,000 live births. The MMRC PRMR was 41.8 in 2020, 13.6 in 2019, and 18.7 in 2018.

Key Recommendations for 2021

- Idaho Medicaid should expand coverage for pregnant women to 12 months postpartum, regardless of pregnancy outcome.
- Facilities should implement screening for adverse childhood experiences as part of routine patient care and have appropriate follow-up options in place such as treatment, referral, or emotional support.
- Facilities, systems, and communities should increase access, education, and funding for mental health resources across the state, including access to mental health care providers for patients both in-person and by telehealth.
- Idaho Medicaid, and other insurers, should consider case management for pregnant and postpartum women with substance use disorder and/or mental health conditions.
- Providers should educate patients and their families on the importance of a safety plan and the removal of means of suicide, including gun locks and safe storage, for pregnant or postpartum patients having suicidal thoughts, who have a history of suicide attempts, or other mental health conditions.
- Facilities should educate providers who may lack training on the risk factors, symptoms, and signs of cardiovascular disease and arrhythmias for all women but especially those who are planning to become pregnant, currently pregnant, or postpartum. Providers should be prepared to identify and treat common types of arrhythmias and refer patients to cardiology for specialized care.
- Providers, facilities, and systems should continue to educate the public that CDC recommends COVID-19 vaccines for everyone aged 6 months and older, including people who are pregnant, breastfeeding, trying to get pregnant now, or those who might become pregnant in the future. This recommendation includes getting boosters per CDC guidance.

PURPOSE OF MATERNAL MORTALITY REVIEW COMMITTEES

MMRCs offer the best opportunity for better understanding and preventing maternal mortality. The Idaho MMRC is a state level, multidisciplinary committee and meets at least annually to evaluate maternal deaths that occurred in the state in the past year. MMRCs play a critical role in maternal health data collection efforts, and they facilitate an understanding of the drivers of maternal mortality and morbidity and associated disparities. Having an Idaho-specific MMRC allows the committee to identify factors contributing to these tragic outcomes and determine what interventions at the patient, provider, facility, system, and community level will have the most impact in the context of our state.

MMRC Vision, Mission, & Goals

The Idaho MMRC's vision is to eliminate preventable maternal deaths, reduce maternal morbidities, and improve population health for women of reproductive age in Idaho. Their mission is to identify pregnancy-associated deaths, review those caused by pregnancy complications and other associated causes, identify the factors contributing to these deaths, and recommend public health and clinical interventions that may reduce these deaths and improve systems of care.

The goals include:

- Perform a multidisciplinary review of maternal mortality cases.
- Identify trends and risk factors in Idaho.
- Recommend improvements to care and actionable strategies for prevention.
- Disseminate the findings and recommendations across the state.

A maternal mortality review is:

- An ongoing anonymous and confidential process of data collection, analysis, interpretation, and action.
- A systematic process guided by Idaho Code and policies.
- Intended to move from data collection to prevention activities.

It is important to remember that a maternal mortality review is not:

- A mechanism to assign blame or responsibility for any death.
- A research study.

- A peer review.
- An institutional review.
- A substitute for existing mortality and morbidity inquiries or reviews.

Cascading Effects of MMRCs

A maternal death is one of the most devastating and rare negative maternal outcomes. The small numbers of maternal deaths make comprehensive and multidisciplinary review of these deaths feasible, providing an efficient way for identifying prevention opportunities that lead to cascading prevention effects on other maternal health outcomes[2] (Figure 2). Implementation of the MMRC recommendations may not only help to prevent future maternal deaths but may also help reduce instances of severe maternal morbidity[ii] which is 100 times more common than a pregnancy-related death.[2] Implementation may also reduce the number of pregnancies that may require extended hospitalization, or other specialty care. As a result, the MMRC can play a critical role in reducing health care costs and improving the quality of health services and health outcomes for Idaho mothers and their babies.[3]

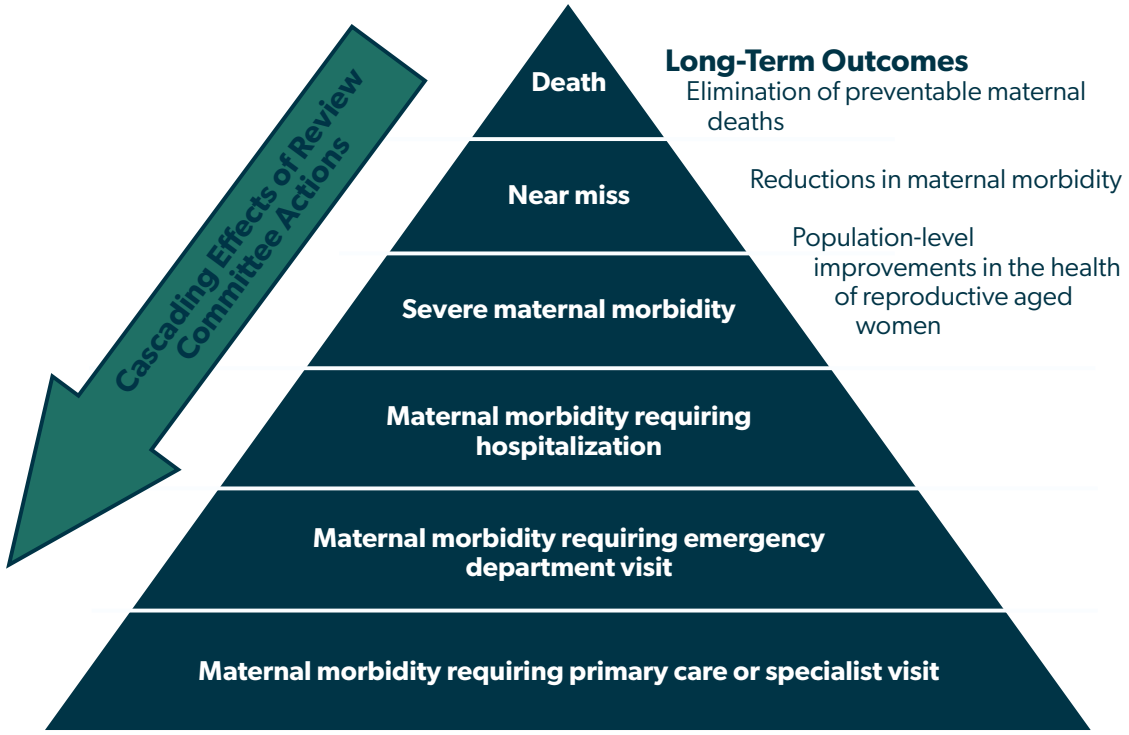


Figure 2 - Source: Building U.S. Capacity to Review and Prevent Maternal Deaths. (2018). Report from nine maternal mortality review committees. Sourced from http://reviewtoaction.org/Report_from_nine_MMRCs

ii. Severe maternal morbidity refers to unexpected outcomes of labor and delivery that result in significant short- or long-term consequences to a woman's health.

MATERNAL MORTALITY REVIEW PROCESS

The Idaho Maternal Mortality Review (MMR) Program was established in 2019 and adopted a standardized annual review process. This process was adapted from Review to Action, a resource developed by the Association of Maternal and Child Health Programs (AMCHP), the Centers for Disease Control and Prevention (CDC) Foundation, and the CDC Division of Reproductive Health. The review process (Action Cycle) is shown in Figure 3 and is explained in more detail below.

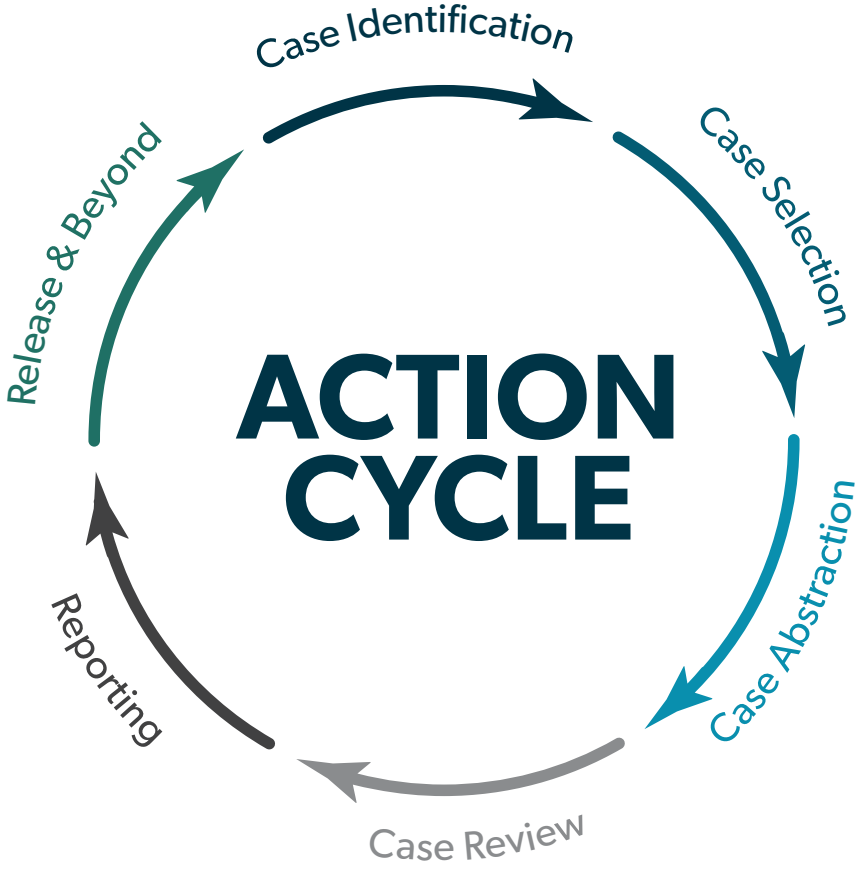


Figure 3 - Source: https://reviewtoaction.org/implement/process-review

Case Identification

The MMR Program works with the Bureau of Vital Records and Health Statistics (BVRHS) to identify deaths for review. The Maternal and Child Health Research Analyst, in BVRHS, notifies the MMR Program Manager when a death record is received and the box indicating pregnancy status/history on the death certificate has been completed (Figure 4). The Research Analyst also notifies the MMR Program if the cause of death listed on the death certificate includes a code that is related to obstetrics, but the pregnancy checkbox is not marked. These codes could include, but are not limited to, conditions such as eclampsia, postpartum hemorrhage, or amniotic fluid embolism.

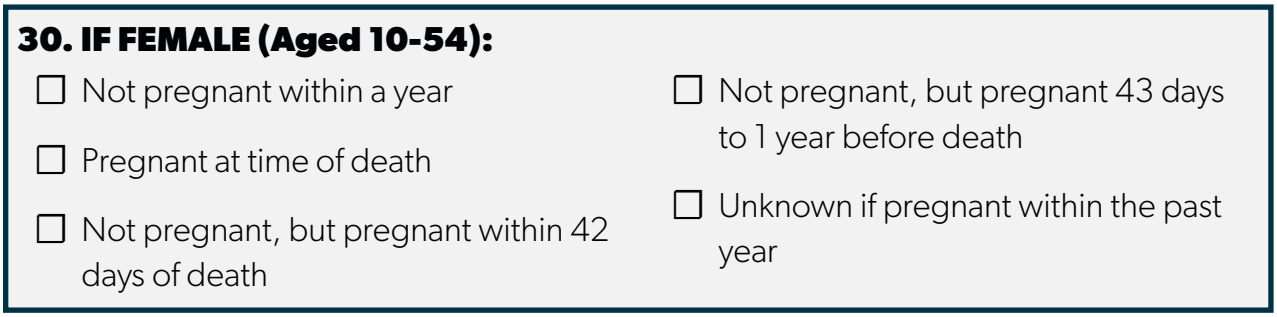


Figure 4 - Pregnancy Status/History Example

After collecting a list of deaths that occurred within the review timeframe, the Research Analyst matches the death certificates with birth certificates or stillbirth certificates of the infant (if applicable) associated with the deceased women. If a woman was pregnant at the time of her death, there may not be an associated birth certificate or stillbirth certificate. These records are kept strictly confidential between the BVRHS and the MMR Program. Members of the MMRC do not have access to personally identifiable information.

Case Selection

The MMRC scope is to review all pregnancy-associated deaths for each year – which is the best practice in maternal mortality surveillance.

Case Abstraction

Once death certificates have been received, the MMR Program Manager reviews them and solicits relevant records from a variety of sources (e.g., healthcare facilities, law enforcement, and coroners). For each death, records are reviewed and then abstracted into a case narrative by the MMR Program Manager and the Maternal and Child Health (MCH) Registered Nurse (RN). Case narratives are summaries of the events that occurred leading up to a woman's death with all personally identifiable information,

including locations and names, redacted. These case narratives are provided to the MMRC members so they can review the facts of each death with an objective, unbiased perspective.

Case Review

For the review process, MMRC members typically convene in-person and review the case narratives. Due to the COVID-19 pandemic, the 2021 meetings were held in a secure, virtual format. Due to the multi-disciplinary positions on the MMRC, the members can make recommendations at the patient, provider, facility, system, and community levels. These recommendations are intended to address factors the MMRC identifies as "contributing factors" to a woman's death. A full list of contributing factors considered by the MMRC, and their definitions can be found in Appendix B.

Reporting

The MMRC is required by Idaho statute to deliver an annual report of the findings and recommendations to the Idaho Legislature and to make these findings and recommendations available to health care providers and facilities, community organizations, and the public. This complex data is presented in a way to help stakeholders act on key findings to prevent future maternal deaths and reduce instances of severe maternal morbidity.

Release & Beyond

The MMR Program seeks to widely distribute the annual report and partner with stakeholders and decision makers to move MMRC data and recommendations to action. The annual report is posted on the Idaho MMRC's webpage, distributed to partners and stakeholders through email and other communication channels, and provided to the Legislative Services Office. In 2022, the MMR Program presented MMRC data and recommendations to the Health Quality Planning Commission, the Medical Care Advisory Committee, and at the Idaho Perinatal Nurse Leadership Summit.

In May 2022, the CDC released a new resource, State Strategies for Preventing Pregnancy-Related Deaths: A Guide for Moving Maternal Mortality Review Committee Data to Action, to support these efforts. It presents an iterative four-step process to translate data into action (Figure 5).

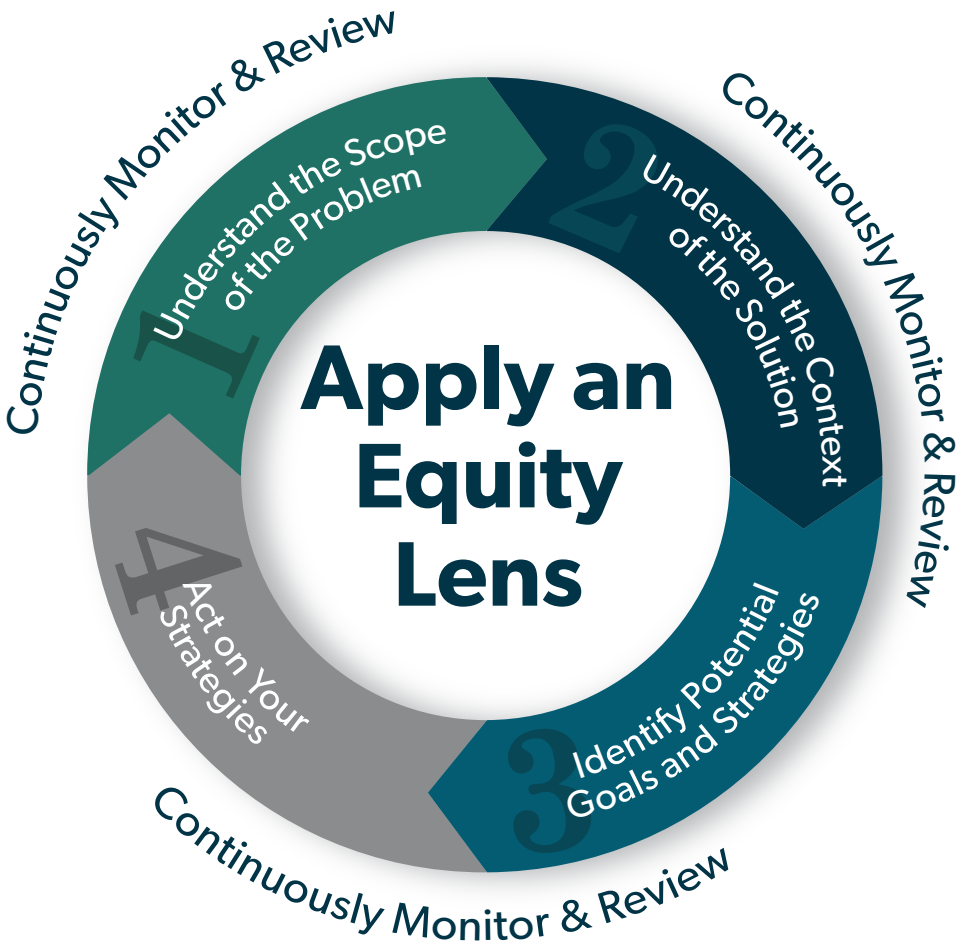


Figure 5 - Steps to moving MMRC data to action to reduce maternal mortality, from Centers for Disease Control and Prevention. (2022).

Organizations that seek to implement MMRC recommendations are encouraged to review the guide above and connect with the MMR Program to share both their challenges and successes in reducing maternal mortality and morbidity.

2021 MATERNAL MORTALITY DEATH REVIEW

The committee reviews each death using the CDC's standardized MMRC Decision Form to answer the following questions:

1. Was the death pregnancy-related?
2. What was the cause of death?
3. Was the death preventable?
4. What were the factors that contributed to the death?
5. What are the recommendations and actions that address these contributing factors?
6. What is the anticipated impact of these actions if implemented?

Findings

Twenty-one deaths occurring during 2021 were identified by the BVRHS. Of those, four women did not meet the criteria of a pregnancy-associated death and the boxes on the death certificate indicating pregnancy status/history were found to be marked in error. These deaths were not reviewed or included in Idaho's MMR data and one additional death was not reviewed due to lack of available records. As a result, sixteen pregnancy-associated deaths were reviewed by the MMRC. Eleven of the deaths could be linked to a birth or stillbirth certificate. For four of the cases, the woman was pregnant at the time of death.

Demographics

Table 1 describes the demographics of the 2021 pregnancy-associated deaths that were reviewed in 2021.

Pregnancy-Associated Deaths Demographics, 2021		
Age (5 – year age groups)	**Number of Deaths**	**Percentage of Deaths**
15 to 19 years	1	6%
20 to 24 years	2	13%
25 to 29 years	5	31%
30 to 34 years	7	44%
35 to 39 years	1	6%
40 to 44 years	-	-
45 to 49 years	-	-

Pregnancy-Associated Deaths Demographics, 2021		
Race/Ethnicity	**Number of Deaths**	**Percentage of Deaths**
Non-Hispanic, White	11	69%
Non-Hispanic, Black	1	6%
Hispanic	3	19%
American Indian/Alaska Native	-	-
Pacific Islander	1	6%
Bi-racial	-	-
Marital Status	**Number of Deaths**	**Percentage of Deaths**
Married	5	31%
Married, but Separated	-	-
Widowed	-	-
Divorced	4	25%
Never Married	7	44%
Unknown/Not specified	-	-
Education	**Number of Deaths**	**Percentage of Deaths**
8th Grade or Less	-	-
9th-12th Grade; No Diploma	3	19%
High School Grad or GED Completed	6	38%
Some College; No Degree	4	25%
Associate's Degree	1	6%
Bachelor's Degree	1	6%
Master's Degree	1	6%
Doctorate or Professional Degree	-	-
Not specified	-	-

Table 1 - Pregnancy-Associated Deaths Demographics, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program.

District of Residence

The numbers shown in Table 2 indicate the health district where each woman resided prior to her death. It does not indicate where the woman died. (For district of death, see Table 8 in Appendix A.) To keep the woman's death confidential, the deaths are displayed by health district and not at the county level. Refer to Figure 6 for a map of Idaho's health districts.

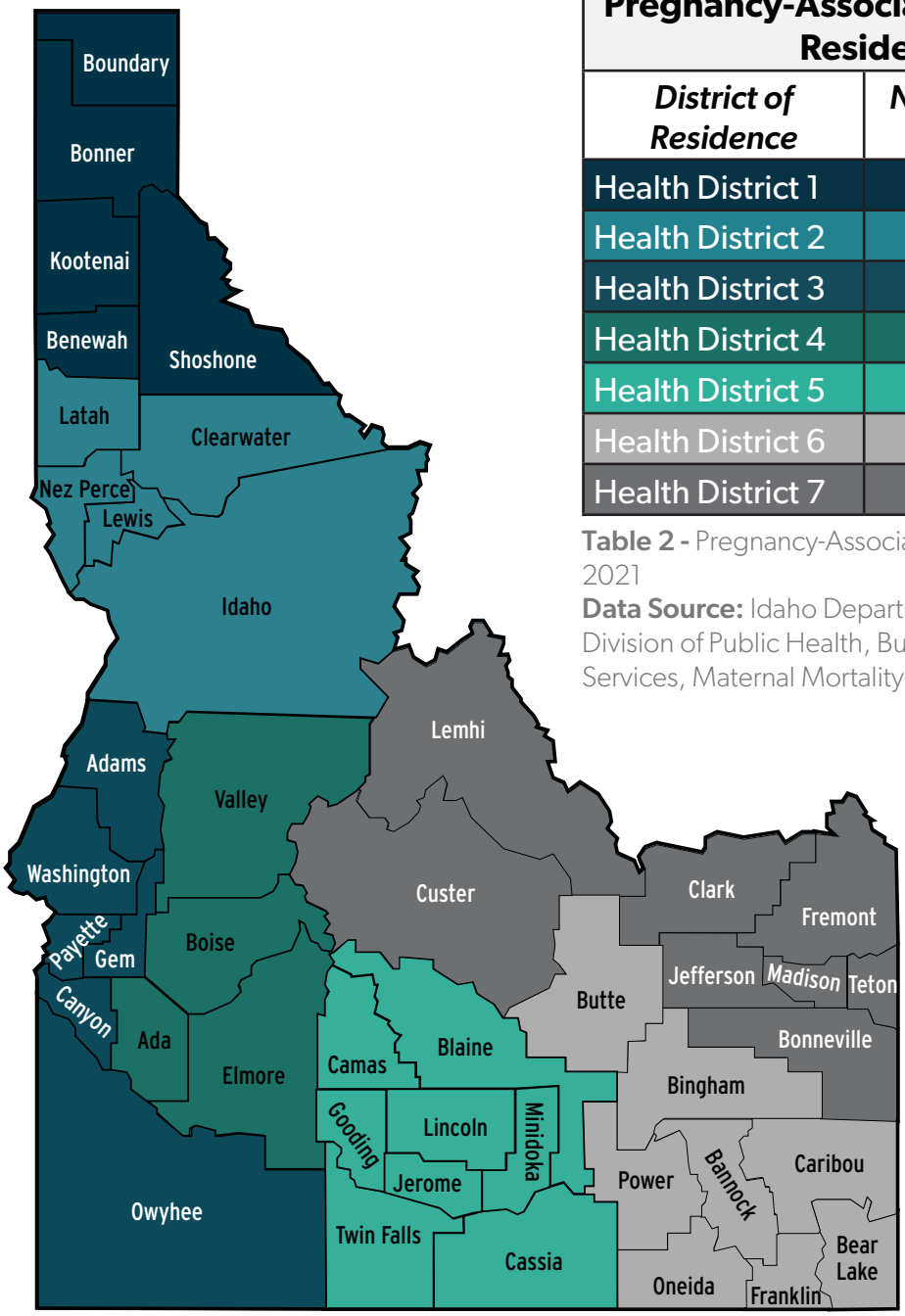


Figure 6 - Idaho Health Districts

Pregnancy-Associated Deaths District of Residence, 2021		
District of Residence	*Number of Deaths*	*Percentage of Deaths*
Health District 1	1	6%
Health District 2	-	-
Health District 3	4	25%
Health District 4	7	44%
Health District 5	1	6%
Health District 6	1	6%
Health District 7	2	13%

Table 2 - Pregnancy-Associated Deaths District of Residence, 2021

Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Pregnancy Checkbox Status

When looking at timing of death, in four of the sixteen deaths the woman was pregnant at the time of death, in three of the sixteen deaths the woman was no longer pregnant but had been pregnant within 42 days of death, and in nine of the sixteen deaths the woman was pregnant no longer pregnant but was pregnant 43 to 365 days before her death (Figure 7).

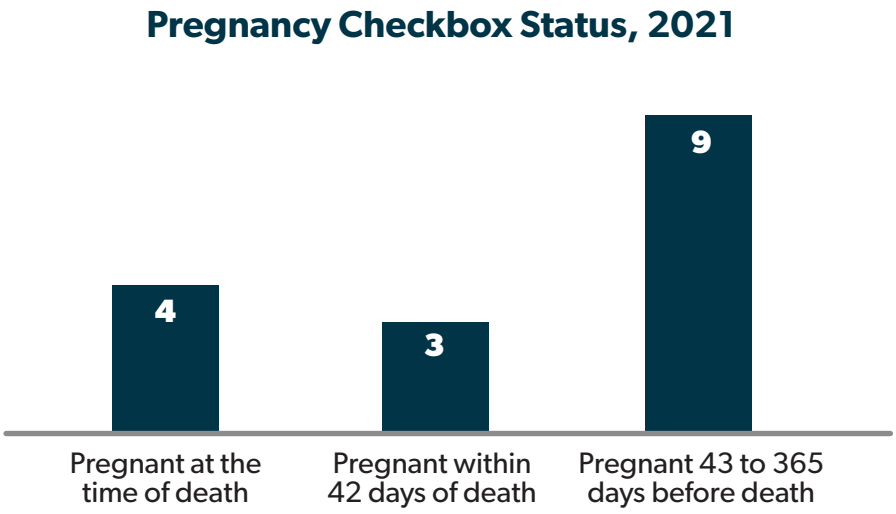


Figure 7 - Pregnancy Checkbox Status, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Pregnancy-Relatedness

Each death is classified into one of three categories: pregnancy-related, pregnancy-associated but not related, or pregnancy-associated but unable to determine pregnancy-relatedness.

After reviewing the deaths, the MMRC members determined that nine of the sixteen deaths were pregnancy-related.

Pregnancy-Relatedness Status, 2021	Number of Deaths	Percentage of Deaths
Pregnancy-Related	9	56%
Pregnancy-Associated, but NOT Related	4	25%
Pregnancy-Associated but Unable to Determine Pregnancy Relatedness	3	19%

Table 3 - Pregnancy-Relatedness Status, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Pregnancy-Related Mortality Ratio

The Pregnancy-Related Mortality Ratio (PRMR) is a calculation of the number of pregnancy-related deaths per 100,000 live births.

$$\frac{\text{\# of pregnancy-related deaths}}{\text{\# of live births}} \times 100{,}000$$

In 1987 the PRMR in the U.S.[iii] was 7.2 pregnancy-related deaths per 100,000 live births and in 2019 the ratio was 17.6.[4] Pregnancy-related deaths in Idaho have also been increasing. The five-year average of Idaho's PRMR from 2003-2007 to 2017-2021 increased by 41.8% from 20.6 to 29.2, respectively. Figure 8 shows Idaho's PRMR[iv] and Idaho's MMRC PRMR[v] from 2018 to 2021, as well as the available U.S. PRMR.

Idaho's MMRC PRMR uses the number of pregnancy-related deaths as determined by the MMRC (see definitions below). How the MMRC defines and determines pregnancy-related deaths for the Idaho MMRC PRMR is one of the most comprehensive and in-depth views of maternal deaths because all pregnancy-associated deaths are reviewed to determine pregnancy-relatedness, regardless of the underlying cause of death. This includes deaths that are due to injury or accidental causes such as substance use disorder, overdose, and suicide. Not only is the MMRC PRMR the most comprehensive, but it can also often be the most accurate. Death reviews can find instances where the pregnancy checkbox on the death certificate was marked incorrectly. They can also identify when an underlying cause of death may have been used improperly and the woman's death was not pregnancy-related.

iii. Pregnancy-related Death for U.S. PRMR is defined as the death of a woman while pregnant or within 1 year of the end of pregnancy regardless of the outcome, duration, or site of the pregnancy — from any cause related to or aggravated by the pregnancy or its management. Pregnancy-related deaths as defined in Pregnancy Mortality Surveillance System generally do not include deaths due to injury, including deaths caused by mental health conditions.

iv. Pregnancy-related Death for Idaho PRMR is defined as the death of a woman while pregnant or within 1 year of the end of a pregnancy – regardless of the outcome, duration, or site of the pregnancy – from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes. Only those deaths with the underlying cause of death assigned to International Statistical Classification of Diseases, 10th Revision (ICD–10) code numbers A34, O00-O99 are included.

v. Pregnancy-related Death for Idaho MMRC PRMR is defined as deaths reviewed and determined by Idaho's MMRC and defined as the death of a woman while pregnant or within 1 year of the end of a pregnancy – regardless of the outcome, duration, or site of the pregnancy – from any cause related to or aggravated by the pregnancy or its management, including deaths due to injury, accidental, or incidental causes.

There was a significant increase in the 2020 Idaho MMRC PRMR (41.8), from the previous two years (18.7 in 2018 and 13.6 in 2019) and the PRMR remained high (40.1) in 2021. This may be related to quality improvements made to the MMR Program's record request process. In 2018, there were several deaths unable to be determined if they were pregnancy related. There were also fewer maternal deaths in 2019 compared to the other three years. However, the rise in Idaho's MMRC PRMR seems to follow a rise in Idaho's PRMR. The Idaho PRMR will continue to be available and should be tracked to monitor maternal health outcomes in Idaho. With the discontinuation of the MMRC the Idaho MMRC PRMR will no longer be available, and as noted above this will mean pregnancy-related deaths due to injury or accidental causes will not be included. This could lead to an underestimation of pregnancy-related deaths in Idaho per 100,000 live births.

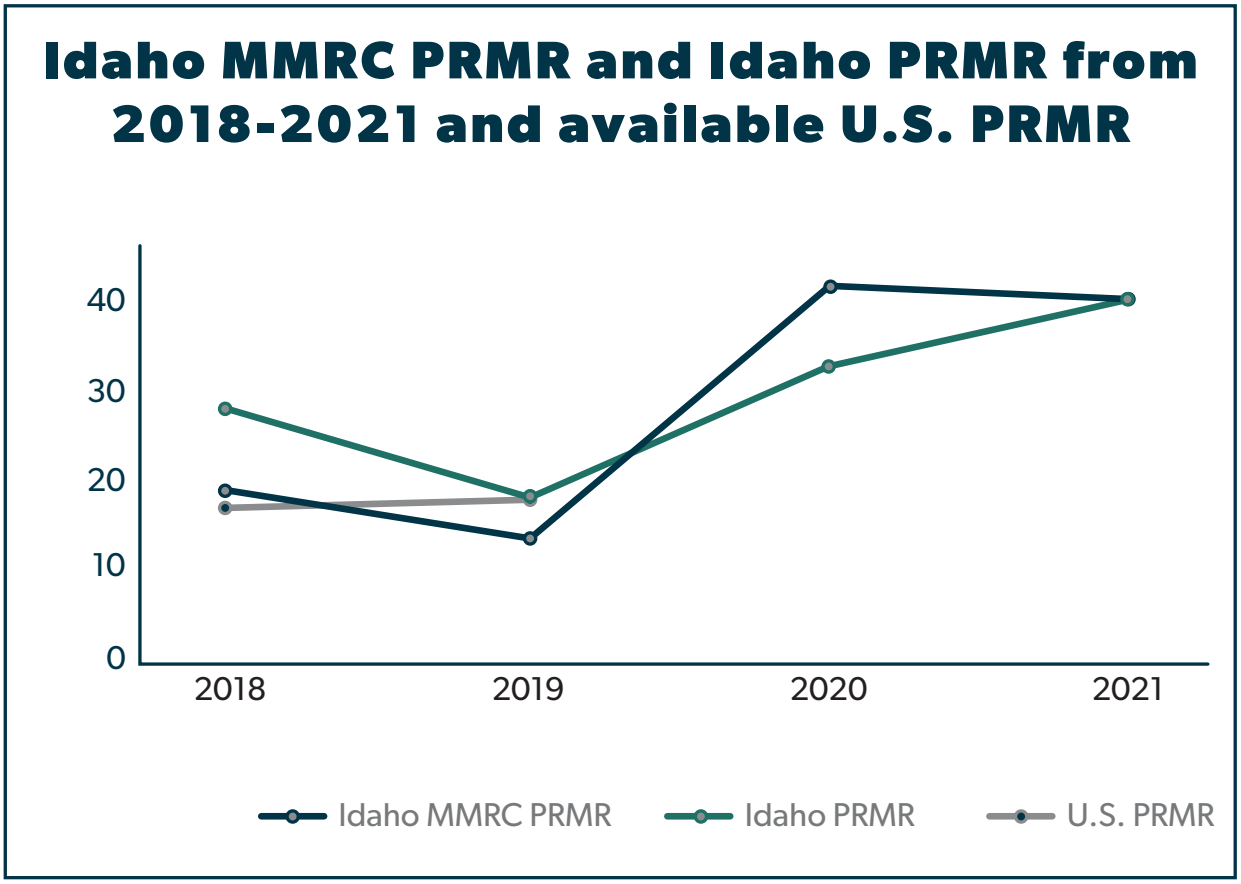


Figure 8 - Idaho MMRC PRMR and Idaho PRMR from 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program & Bureau of Vital Records and Health Statistics and Centers for Disease Control and Prevention, Division of Reproductive Health, National Center for Chronic Disease Prevention and Promotion[4]

Maternal Mortality Rate

Maternal mortality rate (MMR) is the number of maternal deaths per 100,000 live births. A maternal death is defined by the World Health Organization (WHO) as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes."

Figure 9 shows Idaho's MMR compared to the U.S. MMR from 2018 to 2021, both MMRs use the WHO's definition stated above. While Idaho's MMR has been less than U.S. MMR from 2019 to 2021, there is an increase in both. Idaho's MMR increased from 18.7 in 2018 to 22.3 in 2021 and the U.S. MMR increased from 17.4 in 2018 to 32.9 in 2021.

A report released by the WHO in 2023 reports the U.S. as one of eight countries and territories that had a significant percentage increase in their MMR between 2000 and 2020.[5] The trend continued in 2021.

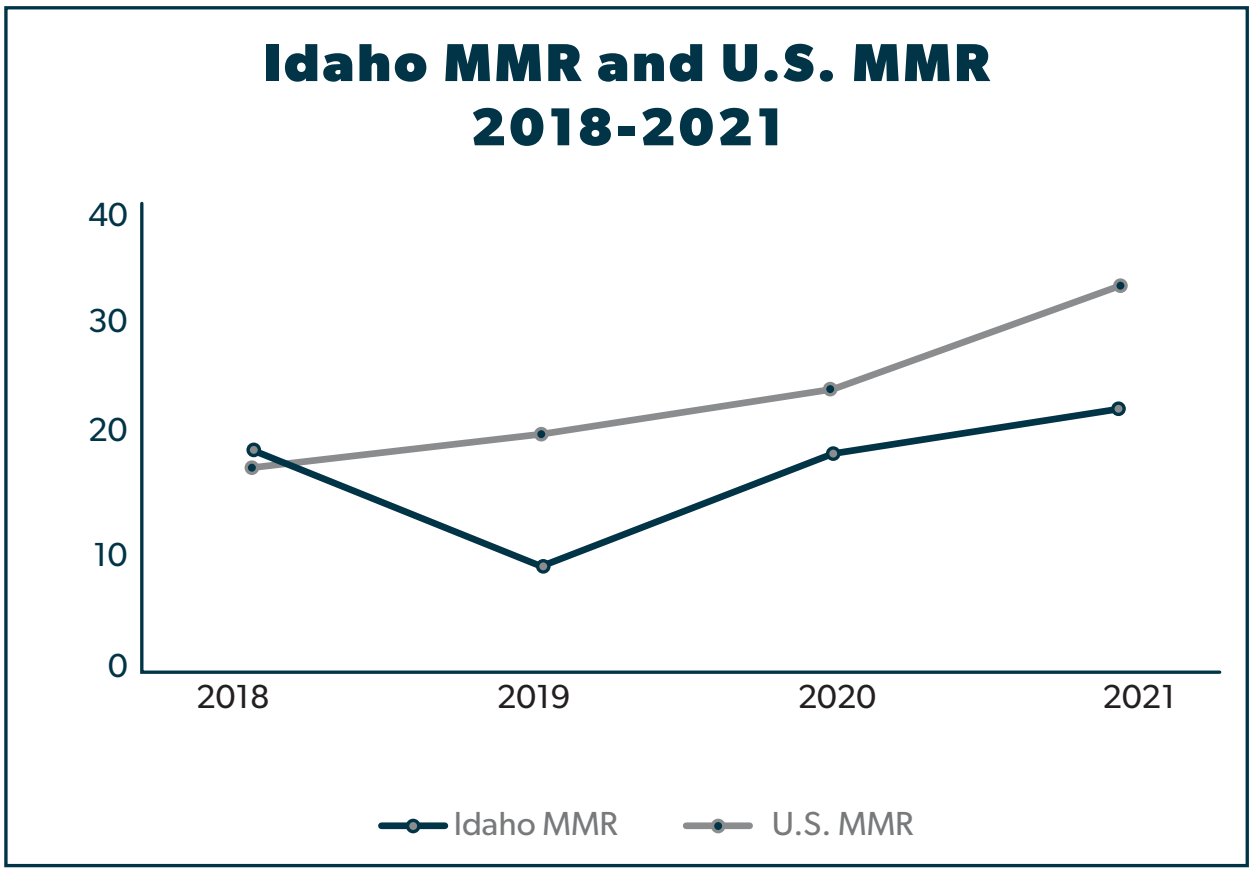


Figure 9 - Idaho MMR and U.S. MMR from 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Bureau of Vital Records and Health Statistics & National Center for Health Statistics, National Vital Statistics System, Natality and Mortality[6]
Only those deaths with the underlying cause of death assigned to International Statistical Classification of Diseases, 10th Revision (ICD–10) code numbers A34, O00-O95, or O98-O99 are included.

Cause of Death, Pregnancy-Related Deaths

As part of the review, the MMRC determines the underlying cause of death for pregnancy-related cases. The underlying cause of death refers to the disease or injury which initiated the chain of events leading to death or the circumstances of the accident or violence which produced the fatal injury.[7] After the cause of death is determined, the MMRC assigns the death to one of 21 categories created by the CDC to report pregnancy-related deaths. Occasionally, the cause of death is unknown and is labeled as such. The MMRC-identified primary underlying causes of death for 2021 are shown in Figure 10.

- Amniotic Fluid Embolism
- Anesthesia Complications
- Autoimmune Disease/Collagen Vascular
- Cancer
- Cardiomyopathy
- Cardiovascular Conditions[vi]
- Cerebrovascular Accidents
- Conditions Unique to Pregnancy[vii]
- Embolism - Thrombotic
- Gastrointestinal Disorders
- Hematologic
- Hemorrhage
- Hypertensive Disorders of Pregnancy[viii]
- Infection
- Injury (Intentional/Unintentional)
- Mental Health Conditions[ix]
- Metabolic/Endocrine
- Neurologic/Neurovascular Conditions
- Pulmonary Conditions
- Renal Disease
- Unknown

vi. Cardiovascular conditions include deaths due to coronary artery disease, pulmonary hypertension, acquired and congenital valvular heart disease, vascular aneurysm, hypertensive cardiovascular disease, Marfan Syndrome, conduction defects, vascular malformations, and other cardiovascular disease; and excludes cardiomyopathy and preeclampsia, eclampsia, and chronic hypertension with superimposed preeclampsia which are categorized separately.

vii. Conditions unique to pregnancy include gestational diabetes, hyperemesis, and liver disease of pregnancy.

viii. Hypertensive disorders of pregnancy include preeclampsia and eclampsia.

ix. Mental health conditions include deaths related to suicide, substance use disorder, overdose/poisoning, and unintentional injuries determined by the MMRC to be related to a mental health condition.

MMRC-Identified Primary Underlying Causes of Death for Pregnancy-Related Deaths, 2021:

Figure 10 - MMRC-Identified Primary Underlying Cause of Death for Pregnancy Related Deaths, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

In two of the six cases in which mental health condition was the underlying cause of death, substance use disorder was the specific underlying cause. In the two cases in which infection was the underlying cause of death, COVID-19 was the specific underlying cause.

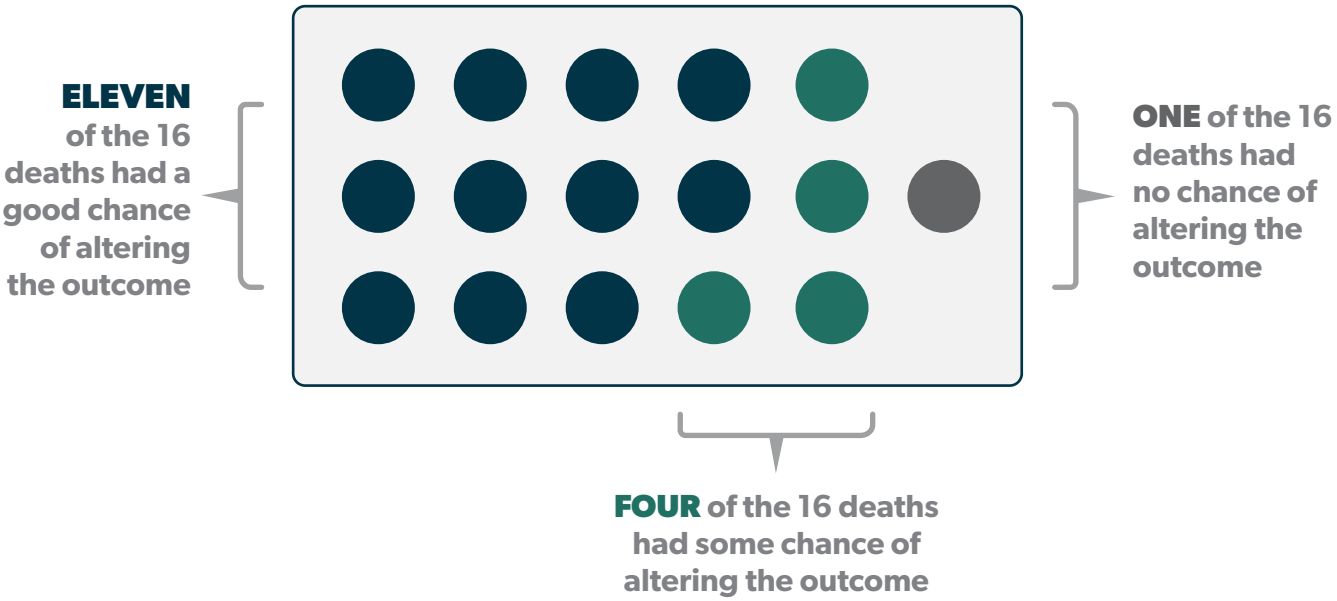
It's also noted if the MMRC agrees with the underlying cause of death listed on the death certificate. In eight of the deaths, the MMRC did agree with the cause of death listed; in one of the deaths, they did not. This does not necessarily mean the causes of death listed were incorrect; however, MMRCs often have more information available to them than the person who filled out the death certificate.

Preventability

The MMRC members determine if all the pregnancy-associated deaths, which includes pregnancy-related deaths, are preventable and answers a yes/no question: Was the death preventable? Per the CDC MMRC decision form, a death is considered preventable if the MMRC 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.[6] The MMRC then decides the chance of being able to alter the outcomes: good chance, some chance, no chance, or unable to determine.

In 2021, the MMRC determined that fifteen of the sixteen deaths could have been prevented, including all nine of the pregnancy-related deaths.



Of the 15 preventable deaths, reasonable changes were judged to have had a good chance of averting the death; for the other 4 deaths, reasonable changes were judged to have had some chance of altering the outcome.

Contributing Factors

The MMRC answers specific questions as to whether obesity, mental health conditions, and substance use disorder contributed to each of the pregnancy-associated deaths. Contributing factors are significant conditions contributing to the death, but not resulting in the underlying cause of death. It is important to note that the MMRC uses "probably" when there is not specific proof of each condition, which is especially difficult when determining if mental health conditions contributed to the death.

Obesity as a Contributing Factor in Pregnancy-Associated Deaths, 2021

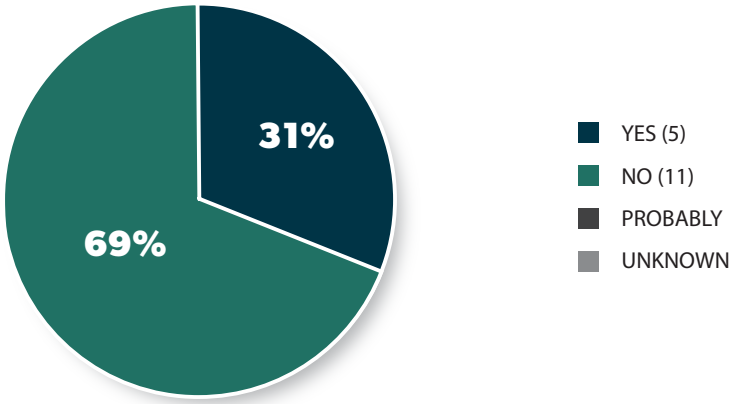


Figure 11 - Obesity as a Contributing Factor in Pregnancy-Associated Deaths, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Mental Health Conditions[x] as a Contributing Factor in Pregnancy-Associated Deaths, 2021

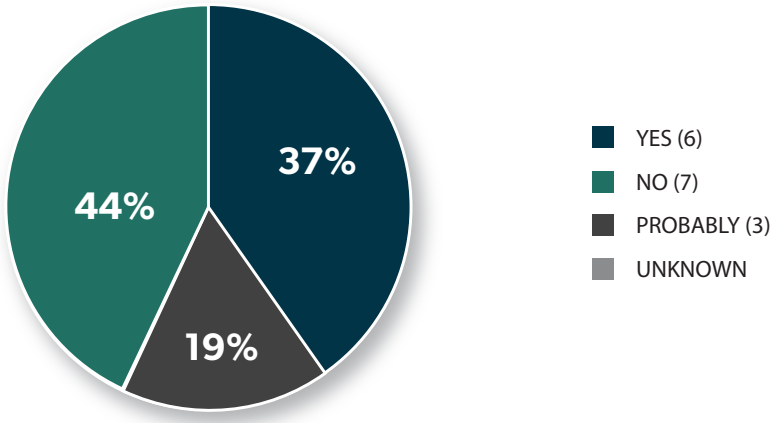


Figure 12 - Mental Health Conditions[x] as a Contributing Factor in Pregnancy-Associated Deaths, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

x. Other than Substance Use Disorder.

Substance Use Disorder as a Contributing Factor in Pregnancy-Associated Deaths, 2021

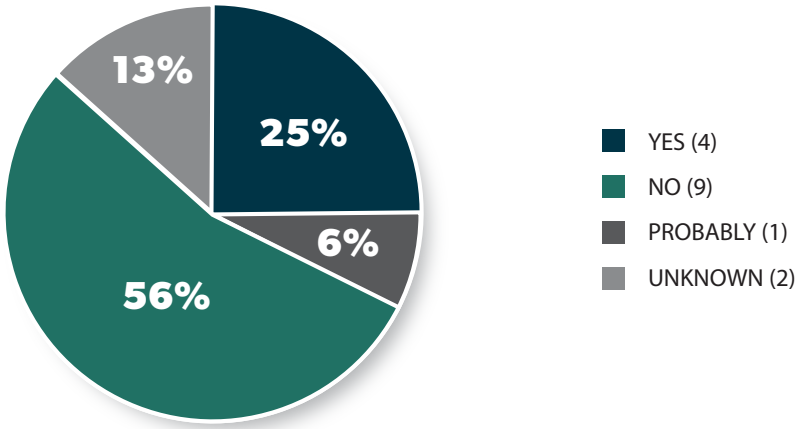


Figure 13 - Substance User Disorder as a Contributing Factor in Pregnancy-Associated Deaths, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Additional contributing factors are identified throughout the review of each death. Each factor is categorized into the following levels: patient/family, provider, facility, systems of care, or community and form the basis for the MMRC's recommendations.

The following were contributing factors identified during the review and the number of cases in which each contributing factor appeared. The definitions for these factors can be found in Appendix B:

- Lack of knowledge regarding importance of event, treatment, or follow up: **10**
- Lack of access/financial resources: **7**
- Mental health conditions: **6**
- Lack of continuity of care: **5**
- Failure to screen/inadequate assessment of risk: **5**
- Adherence to medical recommendations: **4**
- Substance use disorder: **4**
- Clinical skill/quality of care: **3**
- Delay: **3**
- Poor communication/lack of case coordination or management: **3**
- Inadequate community outreach/ resources: **3**
- Trauma: **2**
- Lack of referral or consultation: **2**
- Lack of standardized policies/ procedures: **2**
- Violence and intimate partner violence: **2**
- Discrimination: **2**
- Chronic disease: **1**
- Cultural/religious or language factors: **1**
- Unstable housing: **1**

Committee Recommendations

The MMRC members develop recommendations to help prevent future deaths from occurring. The CDC suggests using the following questions to help MMRCs find case-specific recommendations:

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

Recommendations are aimed at specific 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.

Recommendations are not summarized and grouped by cause of death or contributing factor to help keep recommendations specific. The MMRC strives to ensure recommendations are effective and address who should do what and when, and that maternal health providers, stakeholders, and policy makers at all five levels can incorporate recommendations, with the understanding that communities and regions of Idaho have their own unique needs. If reauthorized in the future, the MMRC will continue to collect and provide data, make recommendations, and set priorities to address maternal mortality and morbidity.

The following is a list of all 52 recommendations made for the pregnancy-associated deaths occurring in 2021.

MMRC Recommendations for Pregnancy-Associated Deaths, 2021

Patient/Family

- Patients should take all medication as prescribed by their provider.

Provider

- Providers should implement the American College of Obstetricians and Gynecologists (ACOG) standard of care for postpartum visits occurring 2-3 weeks after delivery.
- Providers must adhere to all state statutes and rules that pertain to their licensure.
- Providers should take a complete patient history upon initial visit. If a patient currently has depression or anxiety, a history of perinatal mood disorders, risk factors for perinatal mood disorders, or suicidal thoughts this warrants particularly close monitoring, evaluation, and assessment. (ACOG Committee Opinion, #757, "Screening for Perinatal Depression").
- Providers should follow ACOG's recommendation of screening patients at least once during the perinatal period for depression and anxiety, and, if screening in pregnancy, screening should be done again postpartum. (ACOG Committee Opinion, #757, "Screening for Perinatal Depression"). Providers should also follow ACOG's recommendation of a full assessment of physical, social, and psychological well-being within a comprehensive postpartum visit that occurs no later than 12 weeks after birth. (ACOG Committee Opinion #736, "Optimizing Postpartum Care"). The MMRC also recommends both occur after a miscarriage.
- Providers should follow-up with women after a pregnancy loss, especially in women with known mental health conditions or substance use disorder.
- Communication between prenatal providers and mental health providers should take place when the patient is being or has been seen by both. This communication should occur during the prenatal and postpartum periods.
- Providers should make referrals for appropriate mental health treatment for patients, preferably a warm hand-off or making the appointment with the patient present.
- Providers and facilities should work to educate a woman's family on postpartum depression, this should happen both during pregnancy and the postpartum period.

- Providers should educate patients and their families on the importance of a safety plan and the removal of means of suicide, including gun locks and safe storage, for pregnant or postpartum patients having suicidal thoughts, who have a history of suicide attempts, or other mental health conditions.
- Providers should ask patients the One Key Question® (Would you like to become pregnant in the next year?) to all women between the ages of 18-50.
- Providers, specifically obstetricians and pediatricians, should make referrals for their patients, especially if this is the first pregnancy, to home visiting services such as Parents as Teachers and Nurse Family Partnership.
- Providers should educate their patients who have ongoing, recurring, or chronic conditions on the importance of follow-up appointments and continued care and the adverse outcomes that can occur if care is not received.

Facility

- Facilities should institute amniotic fluid embolism (AFE) protocols and consider incorporating atropine-ondansetron-ketorolac (A-OK).
- Facilities should keep A-OK medication in their hemorrhage cart(s).
- Facilities should educate providers who may lack training on the risk factors, symptoms, and signs of cardiovascular disease and arrhythmias for all women but especially those who are planning to become pregnant, currently pregnant, or postpartum. Providers should be prepared to identify and treat common types of arrhythmias and refer patients to cardiology for specialized care.
- Facilities should screen for substance use disorders when a patient seeks reproductive care and provide a referral when substance use is identified, preferably a warm handoff or call to the facility to schedule the first appointment while the patient is present.
- Facilities should implement early universal screening, brief intervention, and referral for treatment (SBIRT) for persons with substance use disorder, as well as those that are at risk of developing these disorders.
- Facilities should use validated/Edinburgh Postnatal Depression Scale screening tools at 1st prenatal visits, labor and delivery hospitalization, and 1st postpartum follow-up visit for depression, anxiety, and intimate partner violence. Screening should always be done privately with the patient.

- Facilities should institute communication channels between providers for better coordination of care for patients, especially for patients with mental health conditions, substance use disorder, or other potentially high-risk scenarios that have been identified.
- Facilities should implement screening for adverse childhood experiences as part of routine patient care and have appropriate follow-up options in place such as treatment, referral, or emotional support.

System

- Idaho Medicaid should expand coverage for pregnant women to 12 months postpartum, regardless of pregnancy outcome.
- The State of Idaho should continue to work toward increased access to primary care providers to help prevent delays in Idahoans accessing care and treatment.
- Systems working on substance use disorders should educate providers on working with pregnant and postpartum patients with substance use disorder and reducing stigma.
- Idaho Medicaid, and other insurers, should consider case management for pregnant and postpartum women with substance use disorder and/or mental health conditions.
- Idaho Medicaid, and its behavioral health contractor, should engage in targeted outreach to both educate prenatal providers on available behavioral health services to treat depression and substance use disorder for pregnant and postpartum women and how they can help patients quickly access those resources.
- Idaho Medicaid should encourage early universal screening, brief intervention, and referral for treatment (SBIRT) for persons with substance use disorder, as well as those that are at risk of developing these disorders.
- Payers should reimburse for early universal screening, brief intervention, and referral for treatment (SBIRT) for persons with substance use disorder.
- Public and private insurers should regularly review and consider changing their eligibility requirements to provide increased access to insurance coverage.

- Idaho Department of Health and Welfare should continue to promote the suicide hotline and consider a campaign specific to postpartum depression targeted to pregnant and postpartum women and providers for that population.
- Idaho Department of Health and Welfare should promote the federal maternal mental health hotline https://mchb.hrsa.gov/national-maternal-mental-health-hotline.
- Once established, the Idaho Perinatal Quality Collaborative (PQC), should share best practices regarding AFE protocols and the use of A-OK medication statewide.
- Systems should gain a better understanding of the barriers keeping people from entering prenatal care early in, or prior to, pregnancy. This could be done through surveys, focus groups, or other research methodologies.
- Systems should study and publish findings on rural disparities in maternal care including maternal level of care, location of facilities, access to providers and specialists, financial barriers, etc.
- Idaho Medicaid should look into expanded case management for patients with ongoing, recurring, or chronic conditions. If a participant has ongoing visits to the emergency department this may be an indicator that a participant needs help getting connected to care and/or managing a health condition.
- The Idaho Department of Health and Welfare should have more direct messaging to pregnant women regarding COVID-19 vaccinations with additional recommendations for other vaccinations during pregnancy.
- Systems need to continue statewide distribution of current recommendations for treatment and care related to COVID-19.
- Idaho Medicaid should consider funding for housing for participants who are pregnant or postpartum and survivors of domestic violence.

Multi-level Recommendations

- Providers and facilities should educate high-risk pregnant and postpartum patients on warning signs and symptoms of COVID-19 that require assessment and care from a provider.
- Providers, facilities, and systems should continue to educate the public that CDC recommends COVID-19 vaccines for everyone aged 6 months and older, including

people who are pregnant, breastfeeding, trying to get pregnant now, or those who might become pregnant in the future. This recommendation includes getting boosters per CDC guidance.

- Facilities and systems should support primary care resources and assist primary care providers with referrals for patients (e.g., specialty providers, community resources, financial assistance) to help provide continuous care.
- Facilities and systems should increase access to case management and support for patients with mental health conditions and substance use disorder.
- Facilities and systems should provide patients, families, and providers education on medication management and treatment for mental health conditions.
- Facilities and systems should work to increase access to inpatient treatments that would be beneficial for pregnant and postpartum patients with certain mental health conditions. Multiple inpatient treatments, or increasing the length of stay, should also be considered.
- Facilities and systems should continue to work towards integrating behavioral health into medical care and case management.
- Facilities and systems should review ACOG Committee Opinion #518 "Intimate Partner Violence" and educate providers on the importance of screening and the important role they can play in identifying women who are experiencing intimate partner violence.
- Facilities and systems should continue to work to reduce barriers to access vaccinations so patients can receive them at times and locations when it's convenient for them.
- Facilities and systems should educate providers on motivational interviewing techniques to help patients make decisions about their healthcare.
- Facilities, systems, and communities should increase access, education, and funding for mental health resources across the state, including access to mental health care providers for patients both in-person and by telehealth.
- Facilities, systems, and communities should increase access to substance use disorder treatment, especially for pregnant women.

- Systems and communities should increase support and wrap-around services for survivors of domestic violence (housing, childcare, etc.).
- Consistent prenatal care should be encouraged and adhered to at all levels to allow more opportunities for screening, education, and appropriate care.

Impact

When MMRC recommendations are made, MMRC members are encouraged to consider what level of prevention the recommendation is aimed at to address the contributing factors: primary, secondary, or tertiary.

- Primary prevention are actions that prevent the contributing factor before it occurs.
- Secondary prevention are actions that reduce the impact of a contributing factor once it has occurred.
- Tertiary prevention are actions that reduce the impact or progression of what has become an ongoing contributing factor.[2]

Recommendations that support primary prevention are often prioritized over those that support secondary or tertiary prevention.

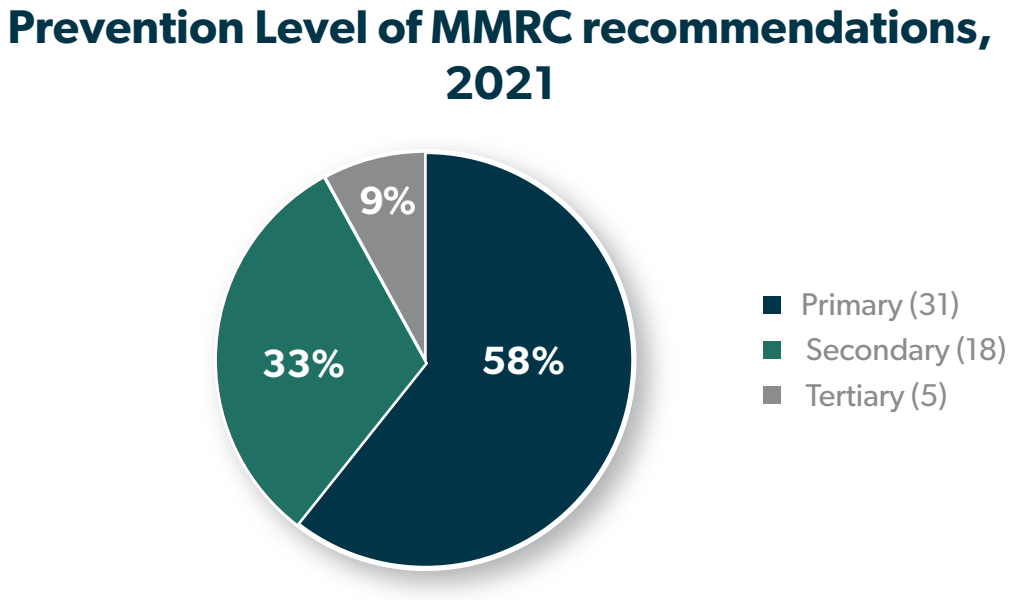


Figure 14 - Prevention Level of MMRC Recommendations, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

The MMRC also considers the expected level of impact if the recommendation is implemented, ranging from small to giant. Expected impact levels are adapted from the Health Impact Pyramid (Figure 15). Recommendations that are "giant" or aimed at the bottom of the pyramid, have the greatest potential for population level impact and require less individual effort. Actions that are "small" or are aimed at the top of the pyramid, make an impact at the individual level, and require behavioral change. The MMRC seeks to have a variety of recommendations that are aimed at all levels of impact. This is only the third year that the MMRC has reported on the anticipated level of impact. If the MMRC is reauthorized efforts would continue to be made to incorporate impact in reporting and to help prioritize recommendations.

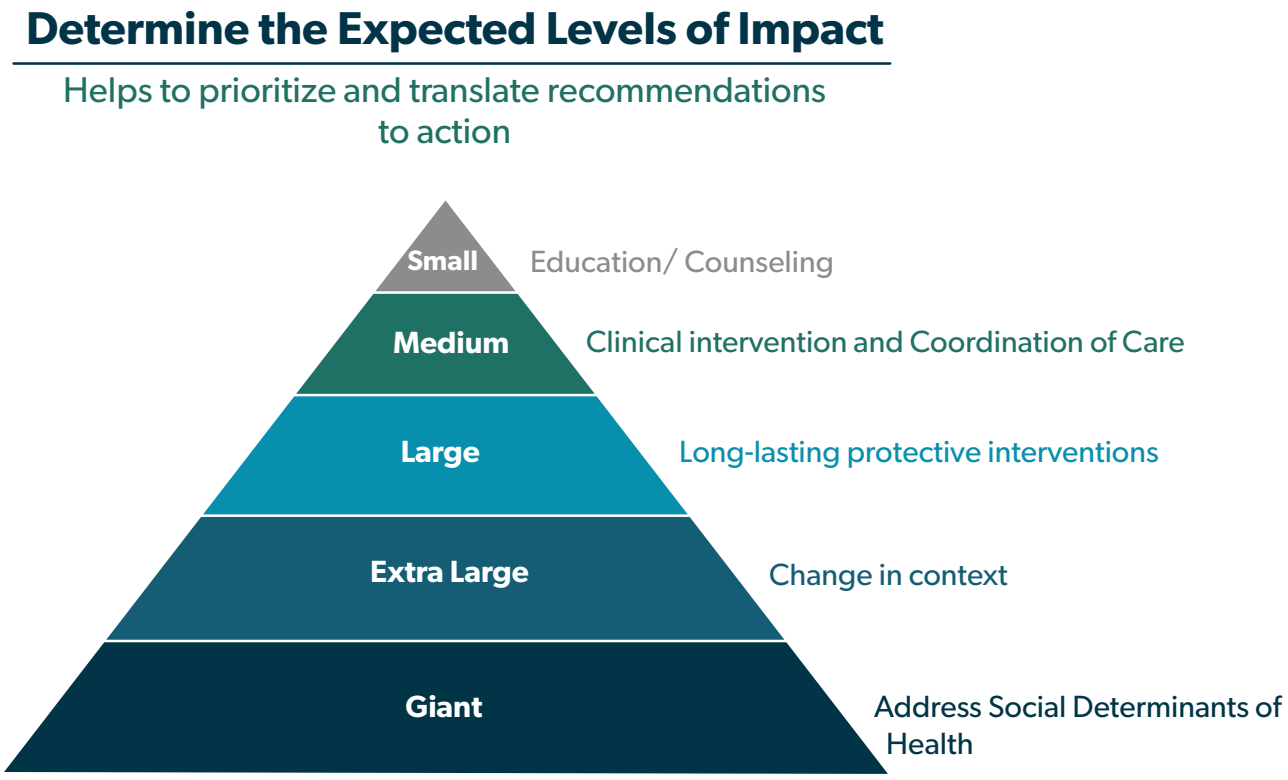


Figure 15 - Expected Level of Impact if Recommendation is Implemented
Building U.S. Capacity to Review and Prevent Pregnancy-associated Deaths (2018). Report from nine maternal mortality review committees. Retrieved from http://reviewtoaction.org/Report_from_Nine_MMRCs

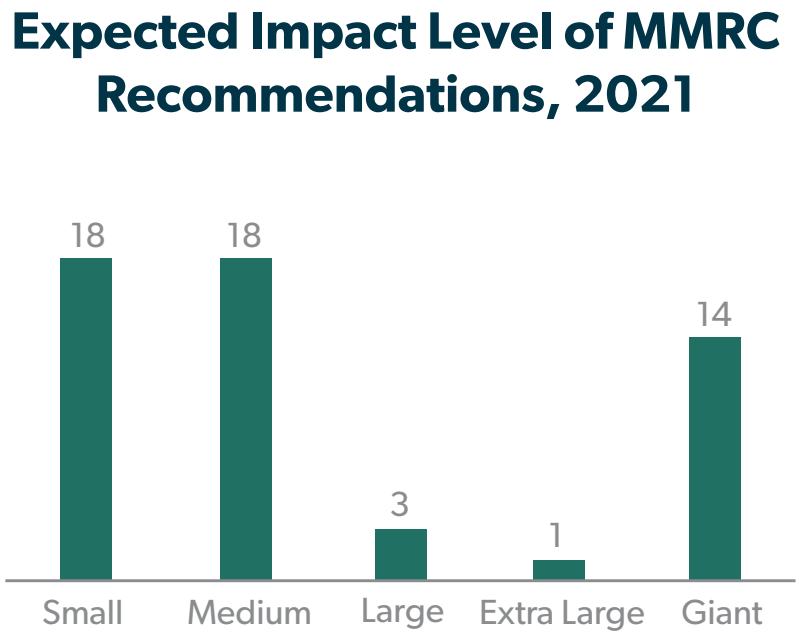


Figure 16 - Expected Impact Level, 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

DATA AND RECOMMENDATIONS IN ACTION[xi]

The annual report has included updates on MMRC recommendations since the 2019 annual report. Updates are provided on current progress being made towards implementation, or current implementation of, recommendations. This is not meant to be an exhaustive list of all action being taken on MMRC recommendations, but rather a highlight of efforts being made to improve maternal health in Idaho.

Idaho Medicaid should expand coverage for pregnant women to 12 months postpartum, regardless of pregnancy outcome. (2019 & 2020 Recommendation)

During the 2023 Idaho Legislative Session HB0201 was introduced in the House Health and Welfare Committee. This bill would have extended Medicaid postpartum coverage in Idaho from 60 days to 12 months. The bill did not receive a hearing.

A Statewide Perinatal Quality Collaborative (PQC) should be established to promote best practice and multidisciplinary care for pregnant women. (2019 & 2020 Recommendation)

PQCs are networks of clinical teams, public health leaders, and other stakeholders and partners, including patients and families, that work together to improve maternal and infant outcomes. They do this by implementing statewide quality improvement projects, knowledge and resource sharing, advocacy, reporting and analytics, and are often considered the action arm of the MMRC.

In 2021, Idaho's MCH Health Program Manager met with other states' PQC leaders to discuss their structure, funding sources, project selection and adoption processes, and membership. The MCH Section, which houses the MMR Program, determined that partnering with an external entity would provide more sustainability for establishing Idaho's PQC.

xi. Progress shared on MMRC recommendations and data is this section is not directly attributable to the work of the MMRC or MMR Program, unless specifically stated. Nor does the MMRC or MMR Program seek to take credit of ideas or work done by other stakeholders that align with MMRC recommendations.

The MCH Section began the subgrant solicitation process for the Idaho PQC in February 2022 and awarded the subgrant to Comagine Health in April 2022. Over the past year, the MCH Program has worked with Comagine Health to create a stakeholder engagement plan, which led to engagement of "PQC Champions." These PQC Champions began meeting in the Spring of 2023 and are working towards creating the PQC's mission, vision, and values, selecting the first quality improvement initiative for the PQC to implement, and engaging additional stakeholders and potential PQC members across the state.

The MCH Program will continue to work with Comagine Health over the next year to have a fully functioning state PQC. They will begin implementation of the first quality improvement initiative, including assistance for data collection and reporting.

Healthcare systems and public health systems should make home visiting programs, such as Nurse-Family Partnership and Healthy Start, available statewide and normalize them in communities. (2020 Recommendation)

In June 2022, the MMR Program and the State Maternal, Infant, and Early Childhood Home Visiting Program provided a joint letter of support for Central District Health's application Nurse-Family Partnership® (NFP) to implement the NFP Program. Central District Health's application was accepted, and they began providing NFP services in Ada County in November 2022.

The Idaho Legislature should remove the sunset date on Title 39, Chapter 96, so that the MMRC can continue. (2020 Recommendation)

See MMRC Legislation, under MMRC Updates.

INTRA-AGENCY COLLABORATION

In 2020, the MCH Program was invited to work with the Divisions of Medicaid and Behavioral Health and the Overdose Prevention Program on an application for technical assistance through the National Academy for State Health Policy (NASHP) MCH Policy Innovation Program. The Idaho team applied to focus efforts primarily on Medicaid-eligible pregnant women who are struggling with substance use disorders. The Idaho team's application was accepted and over the past two years they have been receiving technical assistance from NASHP and working toward the following goals: increasing the percentage of pregnant Medicaid participants with moderate to severe substance use disorder who engage in behavioral treatment; increasing the percentage of pregnant Medicaid participants with moderate to severe opioid use disorder who continue or start medications for opioid use disorder; and decreasing the percentage of maternal deaths related to substance use disorder.

In Spring 2022, the Idaho team held a series of stakeholder engagement sessions with different groups including prenatal care clinicians, behavioral health clinicians, and women with substance use disorder who had been pregnant, were currently pregnant, or may become pregnant to gain insight and feedback on proposed strategies to achieve the goals listed above. The sessions were well attended, and the Idaho team decided to pursue a case management program through the Division of Medicaid for pregnant women with substance use disorder based on the feedback that was received. The MCH Program and the Division of Medicaid were able to provide a joint presentation to the Medical Care Advisory Committee to share data from the MMRC and feedback from the stakeholder meetings.

The NASHP MCH Policy Innovation Program concluded in March 2023. Idaho Medicaid will continue looking into opportunities for case management for pregnant and postpartum women with substance use disorder. Participation in this program also allowed for strong collaboration between IDHW programs and divisions, which will continue through future meetings to address gaps and disparities in maternal health.

MMRC UPDATES

COVID-19 Impact on Maternal Deaths in Idaho

In reviewing all maternal deaths for 2021, the MMRC found that COVID-19 was the underlying cause of death in two of the pregnancy-related deaths. In one pregnancy-associated but not pregnancy-related death, COVID-19 was found to have contributed to the death. The MMRC also felt that COVID-19 may have contributed to one death that the MMRC was unable to determine if the death was pregnancy-related. The MMRC made recommendations for all four cases related to COVID-19. Based on review of records, in three of the four cases noted above, a positive COVID-19 test was reported with no record of vaccination.

MMRC Legislation (HB0081)

Idaho's MMRC was established within the Department of Health and Welfare on July 1, 2019, through Idaho Code Title 39, Chapter 96. This code outlines committee membership, responsibilities of the MMRC, and the authority and protections given to it. It also includes a sunset clause effective July 1, 2023.

In the Spring of 2022, the MMR Program began working with Division of Public Health leadership to propose legislation to remove the sunset date in the existing MMRC statute during the 2023 Idaho Legislative Session. The removal of the sunset clause would have allowed the MMRC to maintain its authorities and protections to continue to conduct comprehensive multidisciplinary reviews of maternal deaths in Idaho, identify the drivers of maternal mortality and morbidity, make recommendations to improve the health of women and infants, and reduce the incidence of maternal mortality and morbidity in the state. The proposed legislation would have had no impact on the State General Fund as MMRC activities are funded by the Title V Federal MCH Block Grant at an annual cost of approximately $10,000 (less than what was noted in the original bill from 2019).

The MMR Program was able to garner additional support of the proposed legislation through engagement of stakeholders from Idaho's largest birthing hospitals, statewide medical associations, and community organizations. Representatives from several of these entities were able to provide public testimony in support of the bill during the

House Health and Welfare Committee hearing. The proposed legislation was tabled in the House Health and Welfare Committee and did not receive a vote.

With no action being taken on the proposed legislation, Idaho Code Title 39, Chapter 96 will sunset on June 30, 2023. As a result, the MMRC will no longer have the authority and protections to access records and data, the protection of the records and data gathered, the ability to share de-identified data, and the protections for MMRC members and participants. Without these authorities and protections, the MMRC cannot carry out key functions of the maternal mortality review process and will cease to function. Unless new legislation is passed in the future, the MMRC will not be reviewing or making recommendations for the ten maternal deaths that occurred in 2022 and this will be the last annual report published.

The maternal health landscape continues to shift in Idaho with healthcare provider shortages, hospital discontinuation of labor and delivery services, and changes in state and federal laws and policies related to healthcare and medical insurance. With these changes it stands to reason that the causes and rates of maternal mortality and morbidity will change as well. Without the Idaho MMRC and their review of maternal deaths, the roots of these causes and what can be done to change them are likely to remain unknown. Therefore, there will be less opportunity to implement Idaho-specific recommendations to address preventable causes of maternal death which may lead to adverse maternal and infant health outcomes.

2022 MATERNAL DEATHS SUMMARY

The MMR Program felt it was important to share the available information for the pregnancy-associated deaths that occurred during 2022. This brief information was gathered from a limited number of records, which were only reviewed by the MMR Program. There will not be an opportunity for a full review by the MMRC.

Preliminary Findings

Eleven deaths were identified by the BVRHS. Based on initial records the MMR Program reviewed, one woman did not meet the criteria of a pregnancy-associated death and the box on the death certificate indicating pregnancy status/history was found to be marked in error, and the death is not included in the data below. One of the deaths could be linked to a birth or stillbirth certificate. For eight of the cases, the woman was pregnant at the time of death.

Demographics

Table 4 describes the demographics of all the pregnancy-associated deaths that occurred in 2022.

Pregnancy-Associated Deaths Demographics, 2022

Age (5-year age groups)	Number of Deaths	Percentage of Deaths
15 to 19 years	-	-
20 to 24 years	1	10.0%
25 to 29 years	1	10.0%
30 to 34 years	3	30.0%
35 to 39 years	2	20.0%
40 to 44 years	1	10.0%
45 to 49 years	1	10.0%
50+ years	1	10.0%
Race/Ethnicity		
Non-Hispanic, White	7	70.0%
Non-Hispanic, Black	-	-
Hispanic	2	20.0%
American Indian/Alaska Native	1	10.0%
Pacific Islander	-	-
Bi-racial	-	-

Marital Status		
Married	4	40.0%
Married, but Separated	-	-
Widowed	1	10.0%
Divorced	1	10.0%
Never Married	4	40.0%
Unknown/Not Specified	-	-
Education		
8th Grade or Less	1	10.0%
9th-12th Grade; No Diploma	3	30.0%
High School Grad or GED Completed	1	10.0%
Some College; No Degree	2	20.0%
Associate's Degree	3	30.0%
Bachelor's Degree	-	-
Master's Degree	-	-
Doctorate or Professional Degree	-	-
Not specified	-	-

Table 4 - Pregnancy-Associated Deaths Demographics, 2022
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

District of Residence

The numbers shown in Table 5 indicate the health district where each woman resided prior to her death. It does not indicate where the woman died. To keep the woman's death confidential, the deaths are displayed by health district and not at the county level. Refer to Figure 17 for a map of Idaho's health districts.

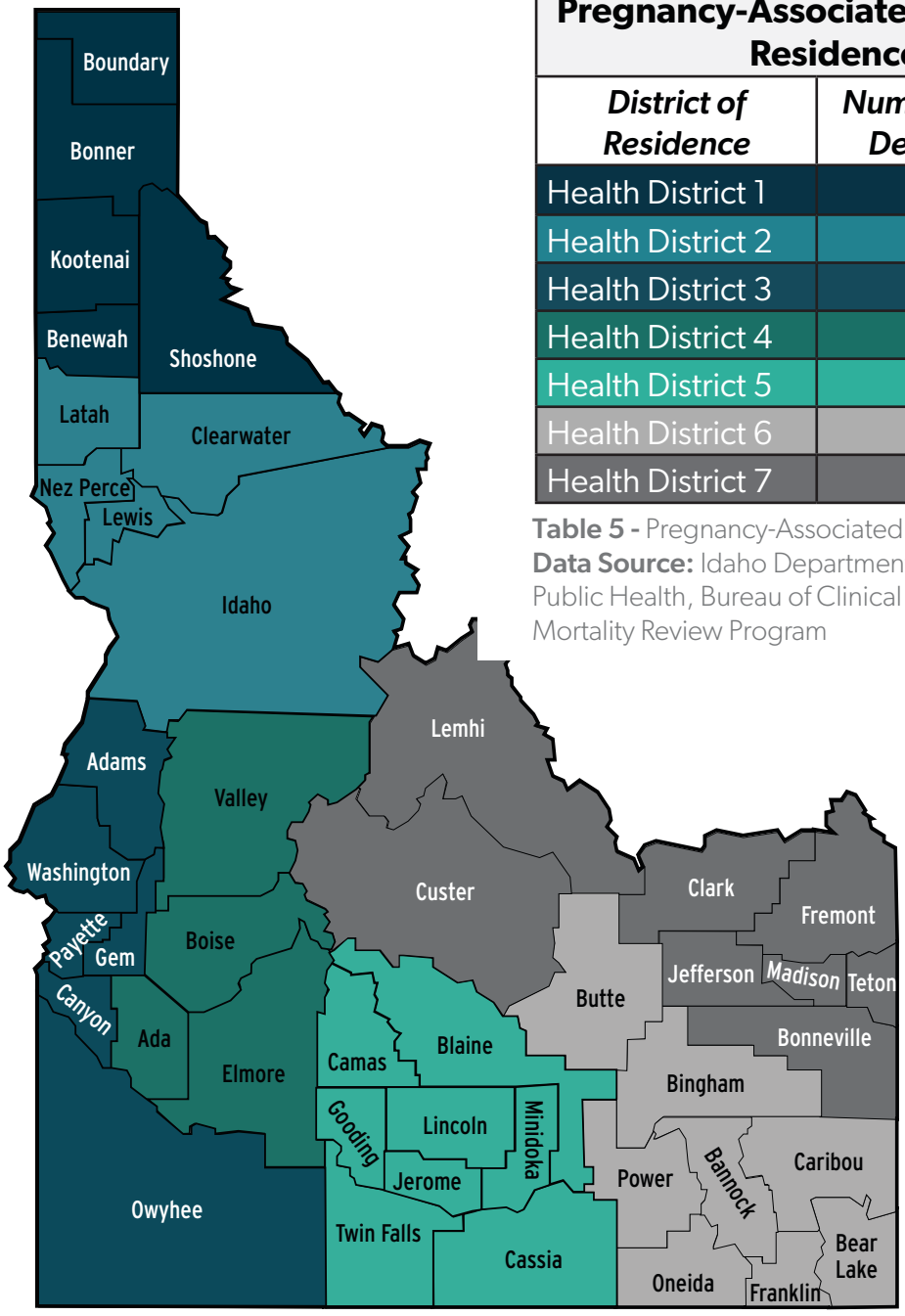


Figure 17 - Idaho Health Districts

Pregnancy-Associated Deaths District of Residence, 2022		
District of Residence	*Number of Deaths*	*Percentage of Deaths*
Health District 1	1	10.0%
Health District 2	2	20.0%
Health District 3	3	30.0%
Health District 4	-	-
Health District 5	3	30.0%
Health District 6	1	10.0%
Health District 7	-	-

Table 5 - Pregnancy-Associated Deaths District of Residence, 2022
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Pregnancy Checkbox Status

When looking at timing of death, in eight of the ten deaths the woman was pregnant, for the other two deaths one woman was pregnant within 42 days of death, and the other woman was pregnant 43 to 365 days before her death (Figure 18).

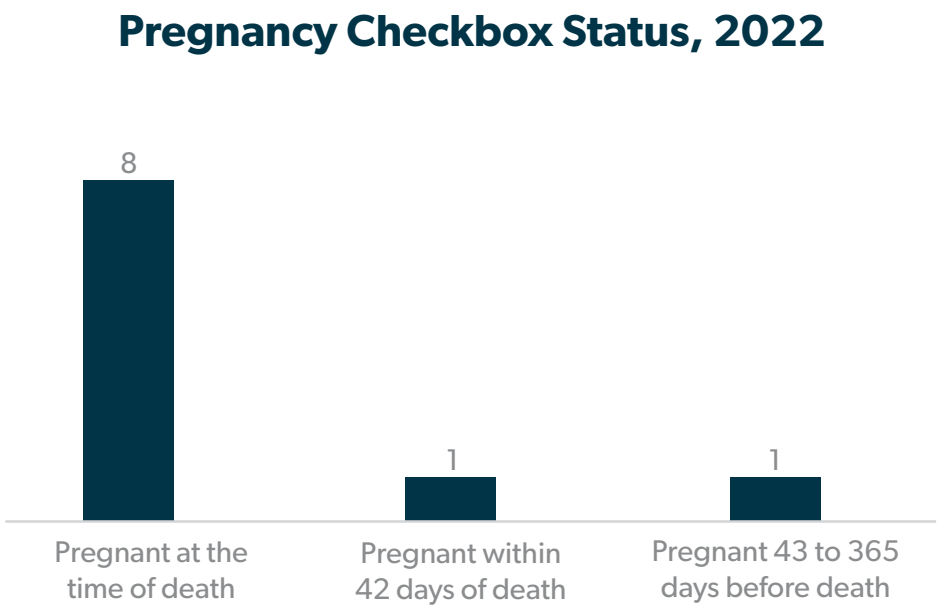


Figure 18 - Pregnancy Checkbox Status, 2022
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Cause of Death

As noted above, this is preliminary data and the MMRC has not reviewed these cases and determined if they were pregnancy-related or assigned the underlying cause of death to one of the 21 categories determined by the CDC. However, the MMR Program was able to review the cause of death listed on the death records received. Of note, six of the cases had a cause of death related to pregnancy, childbirth, and the puerperium[xii] and none of the ten deaths had an underlying or immediate cause of death related to mental health (suicide) or substance use disorder. The latter is different from findings from the previous four years of maternal death reviews and reinforces the need for the Idaho MMRC to continue to monitor the causes of maternal death in Idaho.

xii. The period of about six weeks after childbirth during which the mother's reproductive organs return to their original nonpregnant condition.

APPENDIX A: COMBINED FINDINGS FROM 2018-2021 MMRC MATERNAL DEATH REVIEWS

Below are the findings from the 42 pregnancy-associated deaths that occurred between 2018 and 2021.

Pregnancy-Associated Deaths Demographics, 2018-2021					
Demographics	**Number of Deaths**				**Percentage of Deaths**
	2018	**2019**	**2020**	**2021**	**2018-2021**
Total Number of Deaths	10	5	11	16	
Age (5-year age groups)					
15 to 19 years	-	-	-	1	2.4%
20 to 24 years	4	1	2	2	21.4%
25 to 29 years	-	2	5	5	28.6%
30 to 34 years	2	2	3	7	33.3%
35 to 39 years	4	-	1	1	14.3%
40 to 44 years	-	-	-	-	-
45 to 49 years	-	-	-	-	-
Race/Ethnicity					
Non-Hispanic, White	4	4	10	11	69.0%
Non-Hispanic, Black	-	-	-	1	2.4%
Hispanic	2	-	1	3	14.3%
American Indian/Alaska Native	1	1	-	-	4.8%
Pacific Islander	1	-	-	1	4.8%
Bi-racial	2	-	-	-	4.8%
Marital Status					
Married	5	-	5	5	35.7%
Married, but Separated	-	-	-	-	-
Widowed	-	-	-	-	-
Divorced	-	1	2	4	16.7%
Never Married	5	4	4	7	47.6%
Unknown/Not Specified	-	-	-	-	-

Pregnancy-Associated Deaths Demographics, 2018-2021					
Education					
8th Grade or Less	1	1	1	-	7.1%
9th-12th Grade; No Diploma	1	1	2	3	16.7%
High School Grad or GED Completed	5	1	3	6	35.7%
Some College; No Degree	-	2	3	4	21.4%
Associate's Degree	2	-	1	1	9.5%
Bachelor's Degree	1	-	1	1	7.1%
Master's Degree	-	-	-	1	2.4%
Doctorate or Professional Degree	-	-	-	-	-
Not specified	-	-	-	-	-

Table 6 - Pregnancy-Associated Deaths Demographics, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Pregnancy-Associated Deaths District of Residence,2018-2021					
	Number of Deaths				*Percentage of Deaths*
District of Residence	***2018***	***2019***	***2020***	***2021***	***2018-2021***
Health District 1	2	-	1	1	9.5%
Health District 2	-	2	-	-	4.8%
Health District 3	3	-	4	4	26.1%
Health District 4	-	-	-	7	16.7%
Health District 5	1	2	3	1	16.7%
Health District 6	-	1	3	1	11.9%
Health District 7	4	-	-	2	14.3%

Table 7 - Pregnancy-Associated Deaths District of Residence, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Pregnancy-Associated Deaths District of Death, 2018-2021					
	Number of Deaths				Percentage of Deaths
District of Residence	2018	2019	2020	2021	2018-2021
Health District 1	2	-	1	1	9.5%
Health District 2	-	2	-	-	4.8%
Health District 3	1	-	2	2	11.9%
Health District 4	2	-	2	9	31.0%
Health District 5	1	2	3	2	19.0%
Health District 6	-	1	3	1	11.9%
Health District 7	4	-	-	1	11.9%

Table 8 - Pregnancy-Associated Deaths District of Death, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

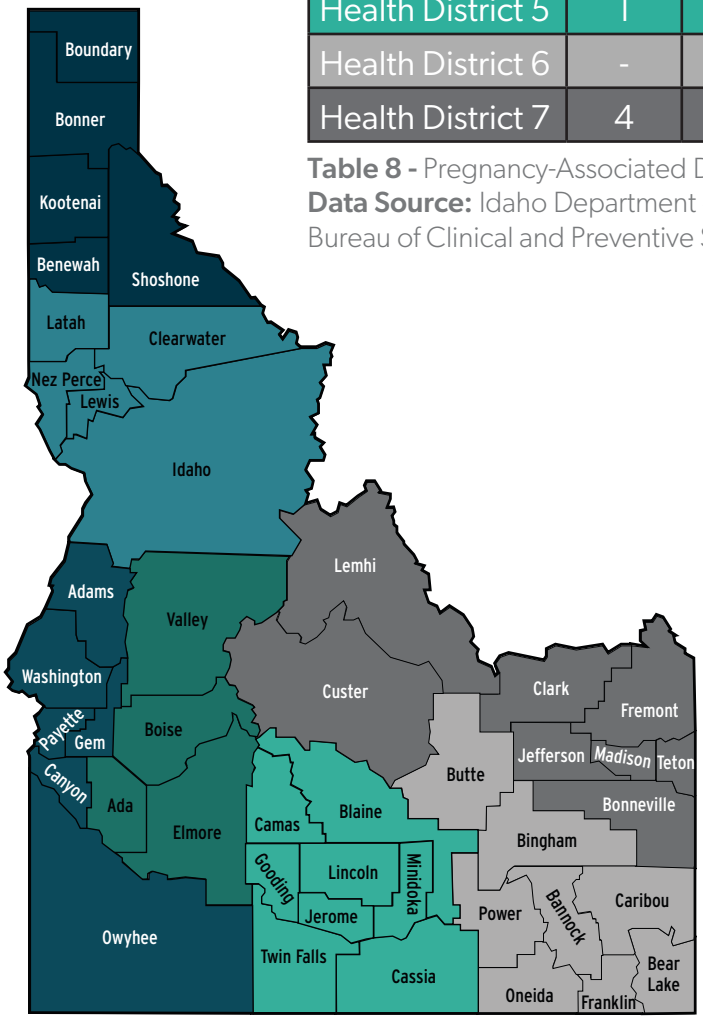


Figure 19 - Idaho Health Districts

Pregnancy-Associated Deaths with Medicaid[xiii], 2018-2021		
Year	*Number of Deaths*	*Percentage of Deaths*
2018	5	50%
2019	5	100%
2020	8	73%
2021	12	75%

Table 9 - Pregnancy-Associated Deaths with Medicaid[xiii], 2018 - 2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

The Idaho MMRC reviewed a total of 42 pregnancy-associated deaths occurring between 2018 and 2021. Of these, 25 (60%) were related to or aggravated by pregnancy or its management (pregnancy-related deaths) and 8 (19%) were due to a cause unrelated to pregnancy (pregnancy-associated, but NOT -related deaths). The other 9 (21%) were determined to be pregnancy-associated, but the MMRC was unable to determine pregnancy-relatedness.

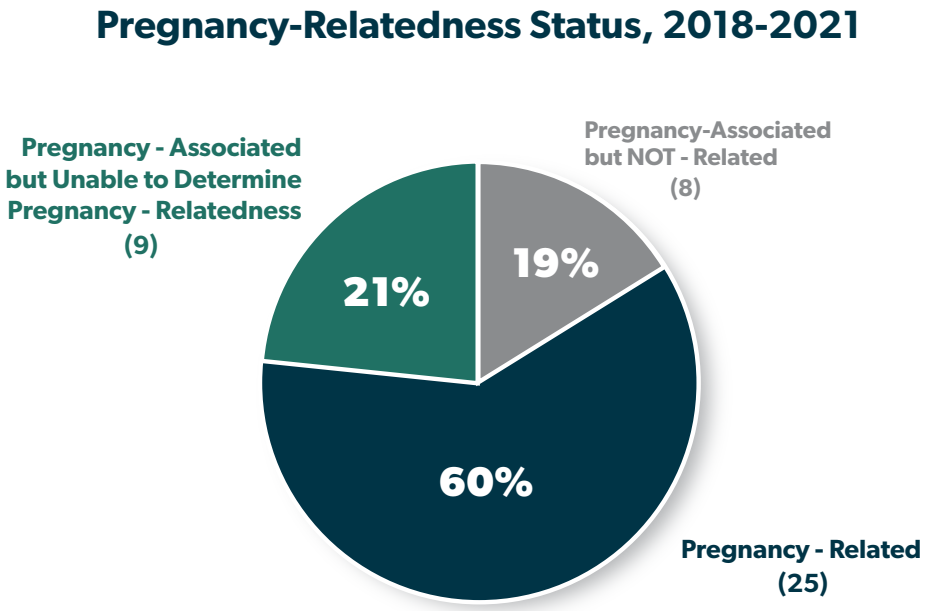


Figure 20 - Pregnancy-Relatedness Status, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

xiii. Person was on Medicaid until date of death.

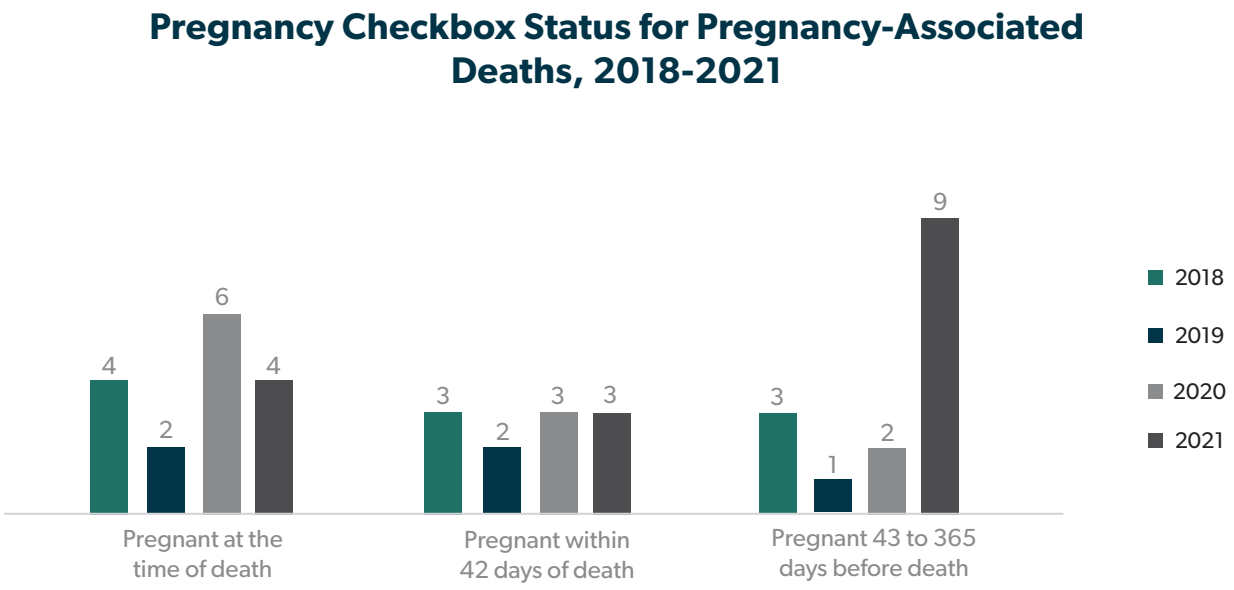


Figure 21 - Pregnancy Checkbox Status for Pregnancy-Associated Deaths, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Between 2018-2021, 10 (42%) of pregnancy-related deaths in Idaho happened while the woman was pregnant, 8 (33%) happened in the first 42 days after a pregnancy, and another 6 (25%) happened 43 to 365 days after pregnancy as seen in Figure 22.

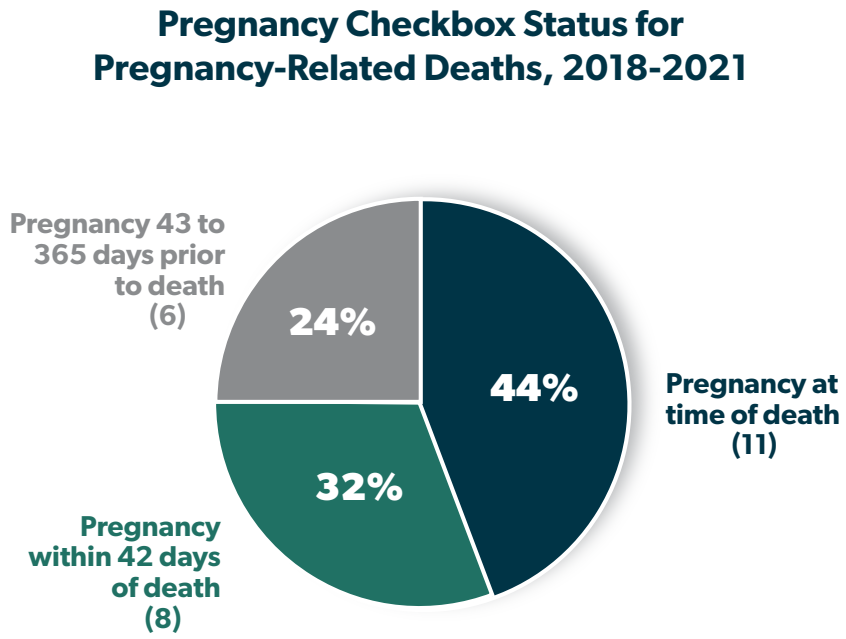


Figure 22 - Pregnancy Checkbox Status for Pregnancy-Related Deaths, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

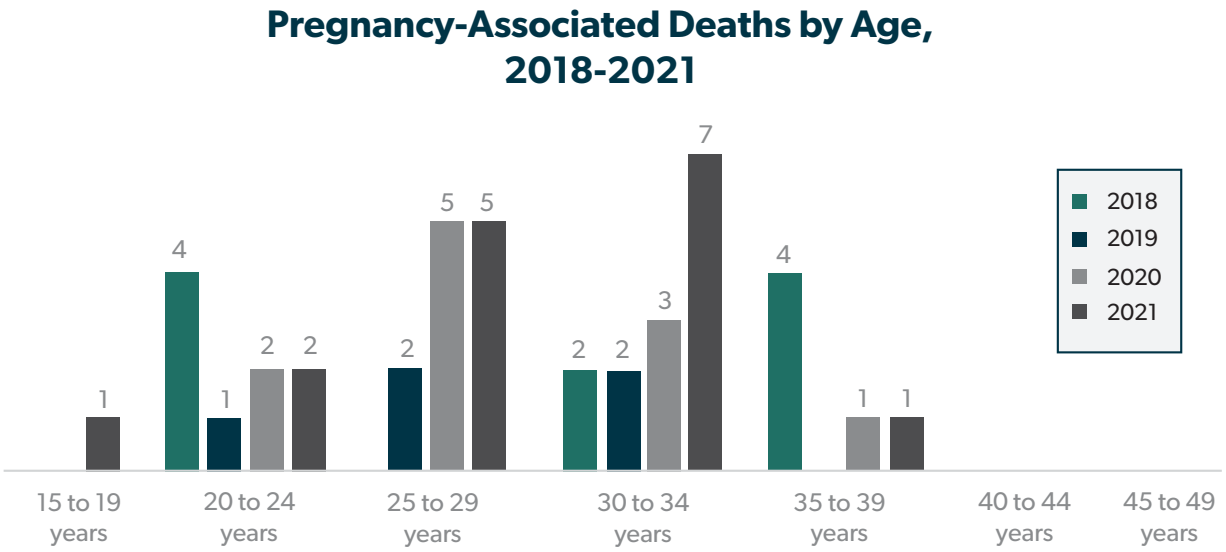


Figure 23 - Pregnancy-Associated Deaths by Age, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Figure 23 shows the five-year age intervals of when the maternal deaths occurred between 2018-2021, a slight majority of the deaths occurred between 33-34 years of age (33%), followed by 25-29 years of age (29%), and 20-24 years of age (21%). The MMRC has identified the underlying causes of pregnancy-related deaths from 2018-2021 as listed in Figure 24.

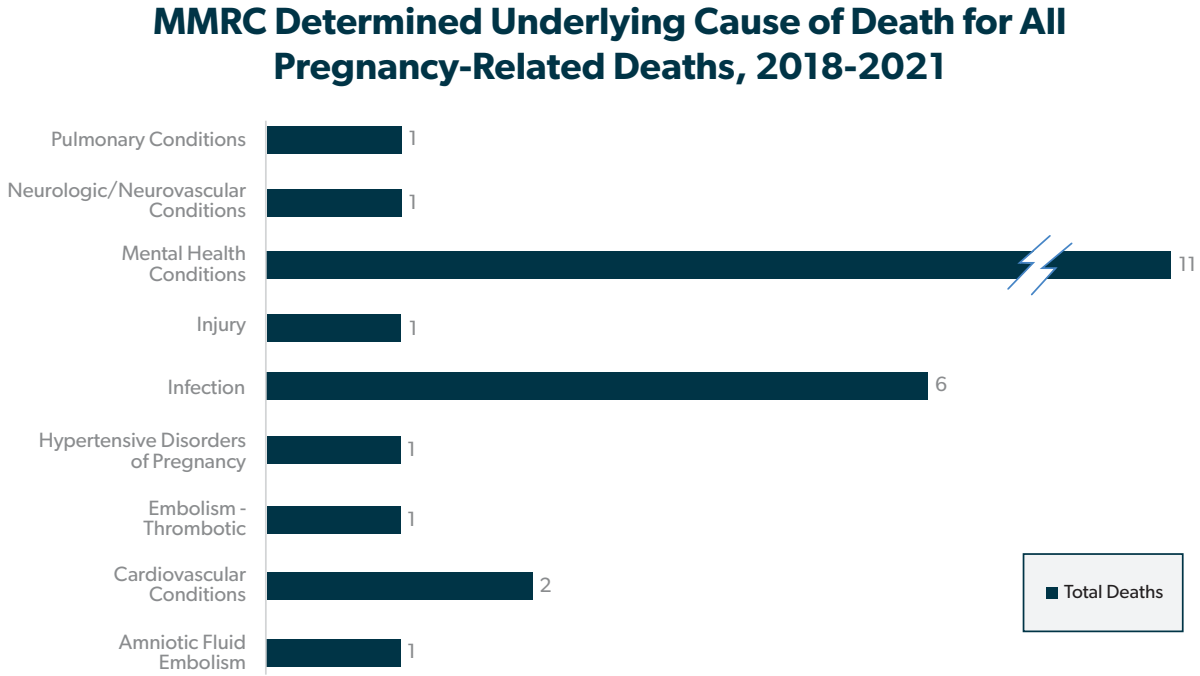


Figure 24 - MMRC Determined Underlying Cause of Death for all Pregnancy-Related Deaths, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Of the pregnancy-associated deaths between 2018-2021, 17% had obesity as a contributing factor, 26% had mental health conditions as a contributing factor, and 31% had substance use disorder as a contributing factor. It is important to note that the MMRC uses "probably" when there is not specific proof of each condition, which is especially difficult when determining if mental health conditions contributed to the death.

Obesity as a Contributing Factor in Pregnancy-Associated Deaths, 2018-2021

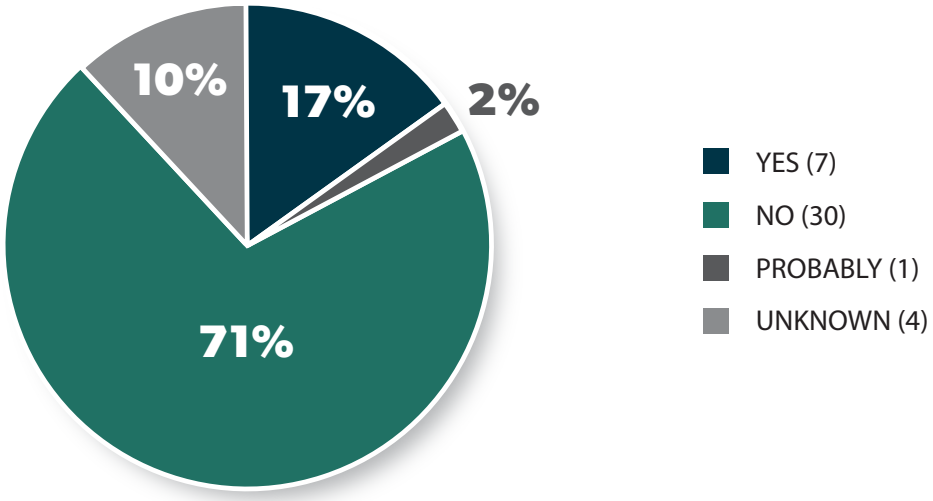


Figure 25 - Obesity as a Contributing Factor in Pregnancy-Associated Deaths, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Mental Health Conditions[xiv] as a Contributing Factor in Pregnancy-Associated Deaths, 2018-2021

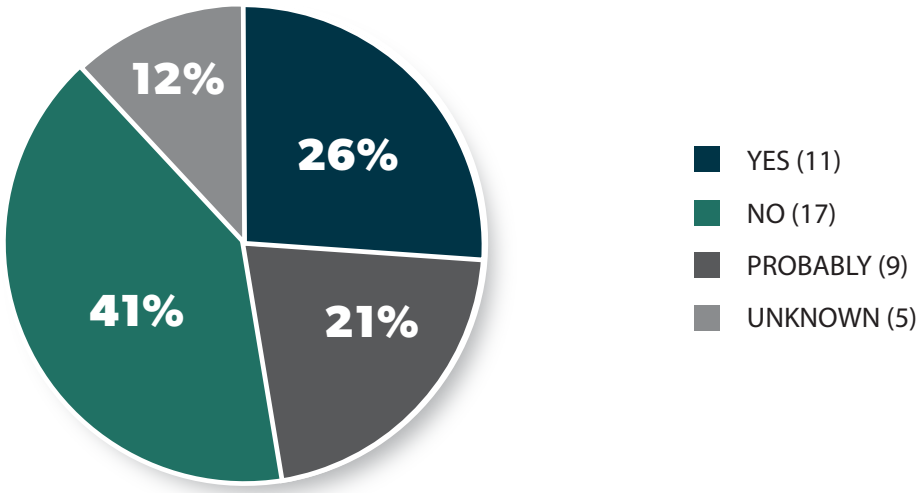


Figure 26 - Mental Health Conditions[xiv] as a Contributing Factor in Pregnancy-Associated Deaths, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

Substance Use Disorder as a Contributing Factor in Pregnancy-Associated Deaths 2018-2021

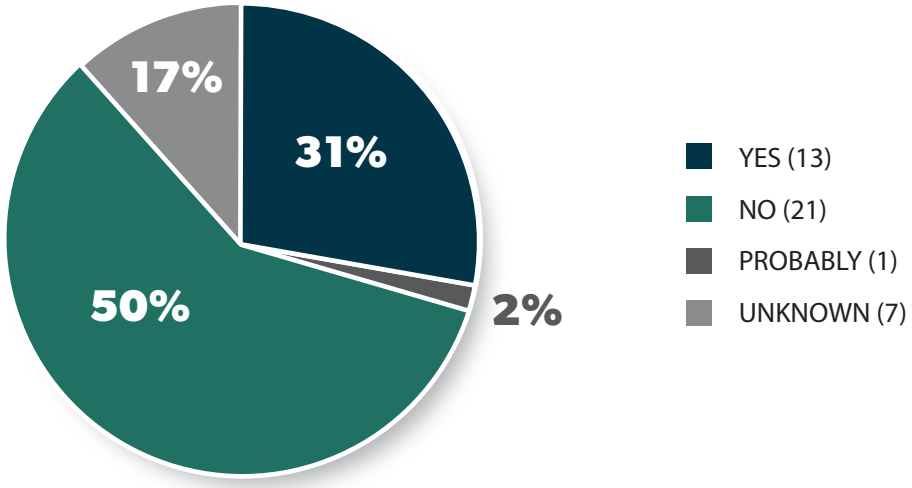


Figure 27 - Substance Use Disorder as a Contributing Factor in Pregnancy-Associated Deaths, 2018-2021
Data Source: Idaho Department of Health and Welfare, Division of Public Health, Bureau of Clinical and Preventive Services, Maternal Mortality Review Program

xiv. Other than Substance Use Disorder.

APPENDIX B: MMRC CONTRIBUTING FACTOR DESCRIPTIONS

CONTRIBUTING FACTOR DESCRIPTIONS

LACK OF **ACCESS/FINANCIAL** RESOURCES
System issues, e.g. lack or loss of healthcare insurance or other financial duress, as opposed to woman's noncompliance, impacted woman's ability to care for herself (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 woman's 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 woman at risk for a poor clinical outcome recognized, and the woman was not transferred/transported to a provider able to give a higher level of care.

CHILDHOOD SEXUAL ABUSE/TRAUMA
The patient experienced 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; physical or emotional abuse or violence other than that related to sexual abuse during childhood.

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 current 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 woman's complete records or did not communicate woman's status sufficiently. Lack of continuity can be between prenatal, labor and delivery, and postpartum providers.

CULTURAL/RELIGIOUS, OR LANGUAGE FACTORS Demonstration 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 carried a diagnosis of a psychiatric disorder. This includes postpartum depression.

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 woman'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.

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)

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

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 a woman's health status (e.g. acute methamphetamine intoxication exacerbated pregnancy-induced hypertension, or woman was 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).

UNSTABLE HOUSING
Woman 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, or stranger.

OTHER
Contributing factor not otherwise mentioned. Please provide description.

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IDAHO DEPARTMENT OF
HEALTH & WELFARE
DIVISION OF PUBLIC HEALTH

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