REVIEW DATE

Month/Day/Year

RECORD ID #

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

ESTIMATE THE DEGREE OF RELEVANT INFORMATION (RECORDS) AVAILABLE FOR THIS CASE:
These fields are for internal jurisdiction use in order to evaluate opportunities to gain better access to information for reviews.

☐ 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)

DOES THE COMMITTEE AGREE WITH THE UNDERLYING[1] CAUSE OF DEATH LISTED ON DEATH CERTIFICATE?
The underlying cause of death determination as documented by a multidisciplinary MMRC may be different from the underlying cause of death used by pathologists in the course of death certification documented in the Vital Statistics system.

☐ YES ☐ NO

COMMITTEE DETERMINATION OF CAUSE(S) OF DEATH

IF PREGNANCY-RELATED, COMMITTEE DETERMINATION OF UNDERLYING[1] CAUSE OF DEATH
Refer to Appendix A for PMSS-MM cause of death list.

If a death is pregnancy-associated, not related then an underlying cause of death entry is not necessary. Use optional box below.

TYPE	OPTIONAL: CAUSE (DESCRIPTIVE)
UNDERLYING[1,2]	
CONTRIBUTING[2,3]	
IMMEDIATE[2]	
OTHER SIGNIFICANT[2]	

COMMITTEE DETERMINATIONS ON CIRCUMSTANCES SURROUNDING DEATH[4]

DID **OBESITY** CONTRIBUTE TO THE DEATH?	☐ YES	☐ PROBABLY	☐ NO	☐ UNKNOWN
DID **DISCRIMINATION**[5] 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
- ☐ OTHER
- ☐ ACQUAINTANCE
- ☐ OTHER, SPECIFY:
- ☐ UNKNOWN
- ☐ NOT APPLICABLE

[1] 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.
[2] OPTIONAL field, CDC does not use this data.
[3] Add descriptions of contributors in the pathway between the immediate and underlying cause of death, as provided by the committee. Note that this is different from the contributing factors worksheet on page 2.
[4] If "Yes" or "Probably" is selected for preventable deaths, then an aligned contributing factor class and description would be expected in the grid on page 2.
[5] Encompasses Discrimination, Interpersonal Racism, and Structural Racism as described in Appendix B.

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[6] ☐ GOOD CHANCE ☐ SOME CHANCE ☐ NO CHANCE ☐ UNABLE TO DETERMINE

CONTRIBUTING FACTORS AND RECOMMENDATIONS FOR ACTION (Entries may continue to grid on page 3)

CONTRIBUTING FACTORS WORKSHEET

What were the factors that contributed to this death? Multiple contributing factors may be present at each level: Choose one contributing factor per row until all contributing factors have been identified and described.

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? Develop one recommendation per row until all contributing factors have been addressed.

DESCRIPTION OF ISSUE (enter a description for EACH contributing factor listed)	**CONTRIBUTING FACTOR** (enter one per row; repeat as needed if a contributor has more than one recommendation)	**LEVEL**	**COMMITTEE RECOMMENDATION** [Who?] should [do what?] [when?] Map recommendations to contributing factors; repeat as needed if a recommendation has more than one contributor.	**LEVEL**	**PREVENTION TYPE** (choose below)	**EXPECTED IMPACT** (choose below)

CONTRIBUTING FACTOR KEY (DESCRIPTIONS IN APPENDIX B)

- 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 drivers of health (poverty, inequality, etc.)

[6] If “Good Chance” or “Some Chance” are selected, then CDC considers this is a “Yes” in their analytic use of the preventability determination.

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: Choose one contributing factor per row until all contributing factors have been identified and described.

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? Develop one recommendation per row until all contributing factors have been addressed.

DESCRIPTION OF ISSUE (enter a description for EACH contributing factor listed)	**CONTRIBUTING FACTOR** (enter one per row; repeat as needed if a contributor has more than one recommendation)	**LEVEL**	**COMMITTEE RECOMMENDATIONS** [Who?] should [do what?] [when?] Map recommendations to contributing factors; repeat as needed if a recommendation has more than one contributor.	**LEVEL**	**PREVENTION TYPE** (choose below)	**EXPECTED IMPACT** (choose below)

CONTRIBUTING FACTORS AND RECOMMENDATIONS FOR ACTION (Continued from page 3)

CONTRIBUTING FACTORS WORKSHEET

What were the factors that contributed to this death? Multiple contributing factors may be present at each level: Choose one contributing factor per row until all contributing factors have been identified and described.

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? Develop one recommendation per row until all contributing factors have been addressed.

DESCRIPTION OF ISSUE (enter a description for EACH contributing factor listed)	**CONTRIBUTING FACTOR** (enter one per row; repeat as needed if a contributor has more than one recommendation)	**LEVEL**	**COMMITTEE RECOMMENDATIONS** [Who?] should [do what?] [when?] Map recommendations to contributing factors; repeat as needed if a recommendation has more than one contributor.	**LEVEL**	**PREVENTION TYPE** (choose below)	**EXPECTED IMPACT** (choose below)

APPENDIX A. PMSS-MM CODES: IF PREGNANCY-RELATED,[7] COMMITTEE DETERMINATION OF UNDERLYING[1] CAUSE OF DEATH

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

Amniotic Fluid Embolism
31.1 - Amniotic Fluid Embolism

Hypertensive Disorders of Pregnancy (HDP)
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 Malignancies/NOS

Cardiovascular Conditions (excluding cardiomyopathy, HDP, and CVA)
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 Diseases/NOS

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

Cerebrovascular Accident (CVA) not Secondary to HDP
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 Disorders/NOS

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

Unknown COD
999.1 - Unknown COD

[1] 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.
[7] 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.

APPENDIX B. 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. (Hardeman, 2022)[8]

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. (Hardeman, 2022)[8]

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. (Hardeman, 2022)[8]

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.

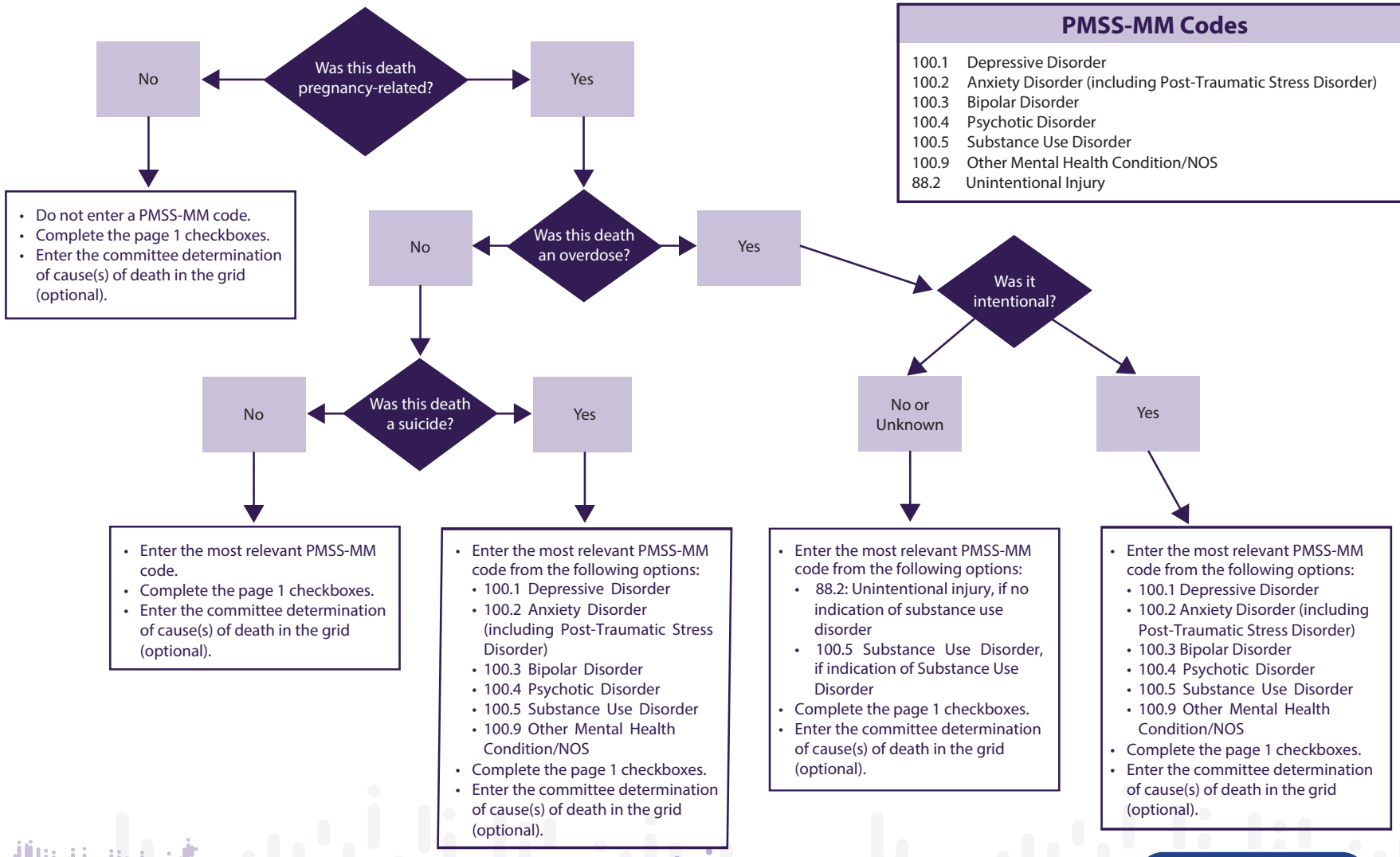
UNSTABLE HOUSING
Individual lived "on the street," in a homeless shelter, or in transitional or temporary circumstances with family or friends.

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.

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

APPENDIX C. CODING UNDERLYING CAUSE OF DEATH FOR SUICIDES AND OVERDOSES



PMSS-MM Codes

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 Mental Health Condition/NOS
88.2	Unintentional Injury

ERASE MM
Enhancing Reviews and Surveillance to Eliminate Maternal Mortality

MMRIA
MATERNAL MORTALITY REVIEW INFORMATION APP

DEPARTMENT OF HEALTH & HUMAN SERVICES-USA CDC

APPENDIX D. FAQ: COMMITTEE DETERMINATIONS ON CIRCUMSTANCES SURROUNDING DEATH

These frequently asked questions refer to the following checkboxes on the committee decisions form:

Did obesity contribute to the death?
Did discrimination[9] contribute to the death?
Did mental health conditions other than substance use disorder contribute to the death?
Did substance use disorder[10] contribute to the death?
Was this death a suicide?
Was this death a homicide?
If accidental death, homicide, or suicide, list the means of fatal injury.
If homicide, what was the relationship of the perpetrator to the decedent?

1. **Should the checkboxes be completed for all pregnancy-associated deaths or just those determined to be pregnancy-related?**

   The checkboxes should be completed for all deaths reviewed by your committee, regardless of relatedness. If your committee does not review a pregnant or postpartum person's death because it is considered out of your scope, there is no need to complete the checkboxes.

2. **Should the checkboxes be completed in reference to the pregnant or postpartum person, or the broader context surrounding the death?**

   The checkboxes refer to the decedent's own experience. For example, if a pregnant or postpartum person had a substance use disorder which contributed to the death, the checkbox should be marked 'yes'. In contrast, if the death was a homicide where the perpetrator had a substance use disorder that contributed to causing a death, and the victim did not have a substance use disorder, or the victim had a substance use disorder that did not contribute to the death, the checkbox should be marked 'no'.

3. **Does discrimination encompass racism and other forms of bias?**

   Yes, and more specificity may be added using the contributing factors worksheet on page 2 of the committee decisions form. Interpersonal racism or structural racism may also be documented there.

4. **If substance use was involved in the death, should we choose 'yes' for the substance use disorder checkbox?**

   This checkbox refers to 'substance use disorder', not just substance use. The committee should only choose 'yes' or 'probably' if there is indication of a substance use disorder diagnosis or an expert on the committee (e.g., psychiatrist, psychologist, licensed counselor) who feels that the criteria for a diagnosis of substance use disorder are met based on the available information. Additionally, the checkbox should only be marked 'yes' if the committee decides that the substance use disorder was a contributing factor in the death. If the pregnant or postpartum person had a substance use disorder but this did not contribute to the death, the checkbox should be marked 'no'.

   If the committee determines the death was an intentional or accidental overdose, this should be recorded as poisoning/overdose under means of fatal injury.

5. **For the substance use disorder and mental health conditions checkboxes, is a formal diagnosis required?**

   A diagnosis should ideally be indicated in the pregnant or postpartum person's medical records. However, this may underestimate the number of pregnant or postpartum people with substance use disorder or mental health conditions if persons are unable to access care or treatment. 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.

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[9] Defined as treating someone less or more favorably based on the group, class or category they belong to resulting from biases, prejudices, and stereotyping [including racism]. It can manifest as differences in care, clinical communication and shared decision-making. (Hardeman RR, et al. *Developing Tools to Report Racism in Maternal Health for the CDC Maternal Mortality Review Information Application (MMRIA): Findings from the MMRIA Racism & Discrimination Working Group*. Matern Child Health J. 2022.)

[10] 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 pregnant or postpartum person's health status (e.g., acute methamphetamine intoxication exacerbated pregnancy-induced hypertension, or the pregnant or postpartum person was more vulnerable to infections or medical conditions).

6. **If substance use disorder contributed to the death, but another mental health condition did not, should we also choose 'yes' for the mental health conditions checkbox?**

   No, substance use disorder should be captured separately from other mental health conditions.

7. **Does substance use disorder include tobacco use?**

   No, substance use disorder as defined here does not include tobacco use. You would NOT mark the substance use disorder checkbox as 'yes' or 'probably' based solely on tobacco use. If the committee determines that tobacco use was a contributor to the death, ensure that Tobacco Use is noted in the contributing factor worksheet with an actionable recommendation that addresses it.

8. **When do we need to choose a means of fatal injury on the committee decisions form?**

   If the committee determines that a death was an accidental death, homicide, or suicide, they should also determine the means of fatal injury to be recorded on the committee decisions form. Unintentional and intentional overdoses should be recorded as poisoning/overdose.

9. **If the committee selects 'yes' or 'probably' for any of the checkboxes (obesity, discrimination, mental health conditions, and/or substance use disorder), should they always document the corresponding contributing factor class and an actionable recommendation?**

   Typically, we expect the circumstances surrounding a death to align with a specified contributing factor class and recommendation. However, recommendations are focused on actions that would have prevented the death. If your committee determines that a circumstance such as obesity contributed to a death that is not preventable, they do not need to document a contributing factor class and recommendation.

10. **When do we need to choose a relationship of the perpetrator to the decedent?**

    If the committee determines that a death was a homicide, they should also record the relationship of the perpetrator to the decedent on the committee decisions forms. The means of fatal injury checkbox should also be filled out for all homicides.

11. **If certain deaths are not reviewed by our committee (for example, suicides and homicides), should we still complete the checkboxes?**

    No, these checkboxes are intended to capture the committee decisions. If a death is not reviewed by the committee, the Circumstances Surrounding Death checkboxes should not be completed.

12. **What if our determination for manner of death does not match the manner indicated on the death record?**

    The checkboxes are intended to capture the decisions of the review committee, and it is expected that sometimes these decisions may differ from the death record. For example, an overdose may have an unknown manner of death on the death certificate, but relevant subject matter experts (e.g. medical examiner), could review additional information and determine that the overdose was intentional. The committee would then check 'yes' for the suicide checkbox. There is also a place on the committee decisions form for indicating whether the committee agrees with the cause of death listed on the death certificate.

13. **Are there opportunities for quality improvement with the checkbox data?**

    Yes, there are lots of opportunities using checkbox data. For example, all unintentional overdoses and overdoses of unknown intent with indication of substance use disorder should have an underlying cause of death PMSS-MM code of 100.5 (Substance Use Disorder) or 100.9 (Other Mental Health Conditions/NOS). If the substance use disorder checkbox is marked 'yes', but the PMSS-MM code is 88.2 (Unintentional Injury), there may be discrepancies in how the MMRC is selecting PMSS-MM codes.

    Another opportunity for quality improvement is to compare the obesity checkbox with the decedent's actual BMI calculated using the height and weight provided in the records. Are there instances where your committee is selecting 'yes' when the BMI suggests the person was at a healthy weight? Of note—this checkbox is intended to capture whether obesity contributed to the death, not whether the pregnant or postpartum person was obese / obesity was present.

APPENDIX E. CONSENSUS PREGNANCY-RELATED CRITERIA FOR SUICIDE AND UNINTENTIONAL OVERDOSES[11, 12]

Present Y/N	Consensus pregnancy-related criteria for suicide and unintentional overdoses	Examples
	Pregnancy Complication	
	Increased pain directly attributable to pregnancy or postpartum events leading to self-harm or drug use that are implicated in suicide or unintentional drug-related death. *[consensus during pregnancy]*	Back pain, pelvic pain, kidney stones, cesarean incision, or perineal tear pain
	Traumatic event in pregnancy or postpartum (diagnosis of fetal anomaly, stillbirth, preterm delivery, neonatal or infant death, traumatic delivery experience, removal of children from custody) with a temporal relationship between the event leading to self-harm or increased drug use and subsequent death. *[consensus in all time periods]*	Stillbirth, preterm delivery, diagnosis of fetal anomaly, traumatic delivery experience, relationship destabilization due to pregnancy, removal of child(ren) from custody
	Pregnancy-related complication likely exacerbated by drug use leading to subsequent death. *[consensus in pregnancy – only time period considered]*	Placental abruption or preeclampsia in setting of drug use
	Chain of Events Initiated by Pregnancy	
	Cessation or attempted taper of medications for pregnancy-related concerns (neonatal/fetal exposure risk, fear of child protective service involvement) leading to maternal destabilization or drug use and subsequent death. Neonatal or fetal risk - *[consensus in all time periods]*. Child Protective Service involvement - *[consensus during pregnancy]*	Substance use pharmacotherapy (methadone or buprenorphine), psychiatric medications, pain medications
	Inability to access inpatient or outpatient addiction or mental health treatment due to pregnancy. *[consensus during and within 6 months of pregnancy]*	Health care professionals uncomfortable with treating pregnant women, facilities not available that accept pregnant women
	Perinatal psychiatric conditions resulting in maternal destabilization or drug use and subsequent death. *[consensus during and within 6 months of pregnancy]*	Depression diagnosed in pregnancy or postpartum resulting in suicide
	Recovery/stabilization of substance use disorder achieved during pregnancy or postpartum with clear statement in records that pregnancy was motivating factor with subsequent relapse and subsequent death. *[no consensus at any time period]*	Relapse leading to overdose due to decreased tolerance or polysubstance use
	Aggravation of Underlying Condition by Pregnancy	
	Worsening of underlying depression, anxiety or other psychiatric condition in pregnancy or postpartum period with documentation that mental illness led to drug use or self-harm and subsequent death. *[consensus during and within 6 months of pregnancy]*	Pre-existing depression exacerbated in the postpartum period leading to suicide
	Exacerbation, under-treatment or delayed treatment of pre-existing condition in pregnancy or postpartum leading to use of prescribed or illicit drugs resulting in death, or suicide. *[consensus during and within 6 months of pregnancy]*	Undertreatment of chronic pain leading to misuse of medications or use of illicit drugs, resulting in death
	Medical conditions secondary to drug use in setting of pregnancy or postpartum that may be attributable to pregnancy-related physiology and increased risk of complications leading to death. *[no consensus at any time period]*	Stroke or cardiovascular arrest due to stimulant use

[11] Smid MC et al, 2023. *Consensus pregnancy-related criteria for suicide and unintentional overdoses using a Delphi process.* Arch Womens Ment Health.

[12] The italicized text in brackets specify where the Delphi exercise with representatives from 48 MMRCs and eight experts in maternal mortality, substance use disorder, and maternal mental health reached consensus on the criterion. Lack of Delphi consensus as shown in brackets should not override committee consensus on a specific case. If "Yes" is chosen by the committee for at least one of the boxes under any of the three categories then that would constitute a pregnancy-related death.