Michigan Maternal Mortality Surveillance Report: A Focus on Contributing Factors & Review Team Recommendations

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Overview: Michigan Maternal Mortality Surveillance

The death of a woman during pregnancy, at delivery, or within a year after the end of pregnancy is a tragedy. Sadly, approximately 80 women die each year in Michigan. As the public health authority with statewide responsibilities, the Michigan Department of Health and Human Services (MDHHS) investigates maternal deaths via the Michigan Maternal Mortality Surveillance (MMMS) program. The MMMS program works in partnership with a multidisciplinary Maternal Mortality Review Committee (MMRC) to review cases of maternal death, identify contributing factors present in each death, and develop recommendations based on those contributing factors.

The MMRC utilizes the Centers for Disease Control and Prevention (CDC) Maternal Mortality Review Information Application (MMRIA) Committee Decisions Form to document committee decisions, including contributing factors and aligned recommendations for prevention. There are 29 contributing factor classes (shown on page 4). Contributing factors and recommendations aligned to these contributing factors are each identified at the patient/ family, provider, facility, system, and community levels. The prevention type (primary, secondary, tertiary) and expected impact of recommendations (small, medium, large, extra large, giant) are also determined.

Contributing Factor Classes

The MMRC determines contributing factors within 29 overarching themes:

- 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
- Personnel
- Policies/Procedures
- Referral
- Social Support/ Isolation
- Structural Racism
- Substance Use Disorder
- Tobacco Use
- Trauma
- Unstable Housing
- Violence
- Other

Contributing factor definitions can be found at: Committee Decisions Form-(reviewtoaction.org) or Appendix C

Methods

Data methods: Data from the Maternal Mortality Review Information Application (MMRIA) were used for this analysis. This database includes maternal deaths from 2017 onward. This report includes maternal deaths that have been reviewed as of 12/31/2021. This includes all 2017 and 2018 deaths, as well as a portion of 2019, 2020, and 2021 deaths. Maternal deaths with expedited reviews were excluded from the analysis as contributing factors and recommendations are not identified for expedited reviews. SAS Version 9.4 was used for the quantitative data analysis; NVivo was used for the qualitative data analysis. This analysis does not include multiple counts for a single contributing factor class within a case; rather it identifies if each contributing factor was identified at least once in each case.

Underlying cause of death is determined by the maternal mortality review committee (MMRC) and is used to distinguish cause of death groupings in this report. The MMRC also identifies contributing factors that if altered may have prevented the woman's death. The resulting statistics in this report are the numbers or percentages of cases in which the contributing factor class was found. Obesity, discrimination, mental health and substance use disorder are analyzed in both the contributing factors worksheet and as circumstances contributing to the death. These variables are included if a case was identified as either a contributing factor or a 'yes' or 'probable' circumstance contributing to the death. Recommendations for each cause of death category were identified by linking cause of death to the recommendations list by case number. Recommendations were filtered by contributing factor class and were selected for inclusion by frequency of recommendation and internal recommendation scoring. Definitions for contributing factor classes can be found in Appendix C.

A full data dictionary can be found at: Maternal Mortality Review Information App (MMRIA) | CDC . A full list of recommendations and additional data can be found at: The Michigan Maternal Mortality Surveillance Program website

All Causes

A Focus on Contributing Factors and Recommendations

There were 129 cases included in this analysis. Full review cases include cases that have completed an entire committee review. Substance use disorder, clinical skill/quality of care, mental health conditions, discrimination, and continuity of care were the top five leading contributing factor classes.

Contributing Factor Class	Number of cases	Percentage of cases
Substance Use Disorder	72	55.8
Clinical Skill/ Quality of Care	66	51.2
Mental Health	55	42.6
Discrimination	40	31.0
Continuity of Care	40	31.0

MMMS Priority Recommendations

Below are the MMRC priority recommendations which meet the following criteria: Highest prioritization score and recommendations that have been made for more than one case. See Appendix A for resources for pregnant and parenting persons and health care professionals.

- The MMRC and the Michigan Alliance for Innovation on Maternal Health (MI AIM) staff will work toward full implementation of the AIM safety bundles: Obstetric Hemorrhage and Severe Hypertension in Pregnancy while working to adopt & implement the Safety Bundles:
  - Care for Pregnant and Postpartum People with Substance Use Disorder (+AIM)
  - Safe Reduction of Primary Cesarean Birth (+AIM)
  - Mental Health: Depression and Anxiety (+AIM)
  - Maternal Venous Thromboembolism (+AIM)
  - Sepsis bundle (CMQCC)
  - Improving Health Care Response to Cardiovascular Disease in Pregnancy and Postpartum (CMQCC)
- Partner with Family Planning and Chronic Disease programs to provide contraceptive counseling and reproductive life planning education to providers serving individuals of reproductive age.

MMMS Priority Recommendations (Continued)

- Preconception care, interventions to prevent and treat chronic disease and awareness of reproductive health are crucial elements which should be targeted before pregnancy for ensuring improved pregnancy, neonatal and child health outcomes.
- MMRCs, in conjunction with MDHHS will increase access to education for providers and systems on delivering culturally competent care and reducing stigma, bias and barriers when implementing services and recommend that all providers are exposed to implicit bias training that leads to use of best practices for dignity and respectful care.
- Increase access to home visiting/family support services for all pregnant and postpartum persons in Michigan.
- Encourage providers and hospital discharge planners to partner with doulas, community health workers, family support professionals and home visiting programs to improve access to care and provide peer support to pregnant and parenting persons.
- Offer pregnant and parenting persons wrap-around services to help align systems of care and transform every interaction into an opportunity for change.
- Implement a comprehensive state-wide education initiative to address pregnancy and its intersection with mental health, sexual abuse, intimate partner violence (IPV), trauma, substance use, and chronic health conditions, as well as its increased occurrence in populations of women who are most vulnerable and marginalized.
- Supporting prenatal care providers virtual and/or face-to-face coordination with home visiting/family support services.
- Require social work consults for all pregnant or postpartum patients with Substance Use Disorder, IPV, past trauma and/or mental health disorders. Including referrals to appropriate follow up care and support such as MIHP.
- Implement substance use screening (including alcohol and tobacco) at first prenatal visit, throughout pregnancy and postpartum visits.
- Increase the availability and education for use of Narcan.
- Work with child protective services to create systematic change around policies regarding follow up, prevention services for high-risk women, and care coordination.
- The MMRC will increase awareness and visibility of behavioral health options, including the University of Michigan MC3, to prenatal care providers, birthing hospitals, and emergency departments using the Department's communication strategies and processes.
- Promote the National Suicide Prevention Lifeline and support expanding the capacity of the program in Michigan.

Pregnancy-Related Medical

There were 37 pregnancy-related medical cases included in this analysis. Chronic disease, clinical skill/quality of care, adherence, access to care, and delay were the top five contributing factor classes identified in these cases.

Contributing Factor Class	Number of cases	Percentage of cases
Chronic Disease	21	56.8
Clinical Skill/ Quality of Care	20	54.1
Adherence	12	32.4
Access to Care	10	27.0
Delay	9	24.3

MMRC Select Recommendations

Select recommendations that address the top five contributing factor classes identified within pregnancy-related medical cases included:

Chronic Disease
The MMRC and MI AIM staff will work toward full implementation of the AIM safety bundles: Obstetric Hemorrhage and Severe Hypertension in Pregnancy.

Clinical Skill/Quality of Care
Partner with family planning and chronic disease to provide contraceptive counseling and reproductive life planning education to providers working with individuals of reproductive age.

Access to Care
Protect critical access hospitals and improve access to health care by keeping essential services in rural communities.

Pregnancy-Related Medical

Resources for Select Recommendations

Chronic Disease

The MI AIM Patient Safety Bundles are a structured way of improving care processes and patient outcomes. Michigan has been working on the implementation of the Obstetric Hemorrhage and Severe Hypertension bundles and improving health outcomes for mothers by combating the leading causes of preventable maternal mortality. To view the patient safety bundles, visit: Patient Safety Bundles | AIM Program (Previously Council on Patient Safety) (safehealthcareforeverywoman.org) .

Clinical Skill/Quality of Care

Empowering patients to be effective advocates for their health requires that they have adequate information and understanding about their health conditions. Working with patients to help them make informed decisions can help them have a health pregnancy and a healthy baby. For more information on chronic health conditions and pregnancy, visit: Chronic health conditions and pregnancy (marchofdimes.org).

Access to Care

The MMRC recommended scope of practice bills be adapted to increase the ability of nurse midwives and other advanced practice nurses to improve access to care. They also emphasized the need to promote access to risk-appropriate perinatal care to pregnant women.

The American College of Obstetricians and Gynecologists has identified resources on topics related to levels of maternal care that may be helpful for ob-gyns, other health care providers, and patients. To view these resources, visit: The American College of Obstetricians and Gynecologists website (www.acog.org/More-Info/LOMC).

Pregnancy-Associated, not Related Medical

There were 11 pregnancy-associated, not related medical cases included in this analysis. Chronic disease, clinical skill/quality of care, adherence to medical recommendations, continuity of care, discrimination, and substance use disorder were leading contributing factor classes.

Contributing Factor Class	Number of cases	Percentage of cases
Chronic Disease	9	81.8
Clinical Skill/Quality of Care	7	63.6
Adherence	5	45.5
Continuity of Care	4	36.4
Discrimination	4	36.4
Substance Use Disorder	4	36.4

MMRC Select Recommendations

Select recommendations that address the top five contributing factor classes identified within pregnancy-associated, not related medical cases included:

Clinical Skill/Quality of Care

The MMRC and MI AIM staff will work toward full implementation of the AIM safety bundles: Obstetric Hemorrhage and Severe Hypertension in Pregnancy while working to adopt and implement the following safety bundle: *Improving Health Care Response to Cardiovascular Disease in Pregnancy and Postpartum (CMQCC)*

Adherence

Preconception care interventions to prevent and treat chronic disease and awareness of reproductive health are crucial elements which should be targeted before pregnancy for ensuring improved pregnancy, neonatal and child health outcomes.

Pregnancy-Associated, not Related Medical

MMRC Select Recommendations (Continued)

Continuity of Care/Care Coordination

Offer pregnant and parenting persons wrap-around services to help align systems of care and transform every interaction into an opportunity for change.

Discrimination

Work with Children's Protective Services to create systematic change around policies regarding follow-up, prevention services for high-risk women, and care coordination.

Substance Use

Implement a comprehensive statewide education initiative to address pregnancy and its intersection with mental health, sexual abuse, intimate partner violence (IPV), trauma, substance use, and chronic health conditions as well as its increased occurrence in populations of women who are most vulnerable and marginalized.

Pregnancy-Associated, not Related Medical

Resources for Select Recommendations

Continuity of Care/Care Coordination

To improve continuity of care and care coordination, MMRC members highlighted opportunities for emergency departments to make referrals to family support professionals who can provide critical linkages between families and community service systems. For more information on Home Visiting Services in Michigan, visit: Home Visiting (michigan.gov). Information about community health care workers in Michigan can be accessed at: MiCHWA - Michigan Community Health Worker Alliance.

Discrimination

The March of Dimes offers resources and information for people who work in health-related fields to reduce stigma so moms and babies can get the support and care they need. For more information, visit:

- March of Dimes Beyond Labels: Substance Use Stigma.
- Stories of Stigma and Abuse: Beyond Labels: Substance Use Disorder Stigma Stories – YouTube.

Clinical Skill/Quality of Care

The Improving Health Care Response to Cardiovascular Disease in Pregnancy and Postpartum Toolkit is a resource for obstetrics, primary care and emergency medicine providers who interact with women during prenatal care or the postpartum period. The toolkit includes an overview of clinical assessment and comprehensive management strategies for cardiovascular disease based on risk factors and presenting symptoms.

Adherence

Talking with a family planning provider or doctor about pregnancy goals, health, and lifestyle before pregnancy will help get birthing persons off to a healthy start. For more information about family planning services in Michigan, visit: Family Planning (michigan.gov). Additional information on preconception health can be accessed from: Home | Preconception Care | CDC.

Substance Use Disorder

There were 49 substance use cases included in this analysis. Substance use disorder, mental health conditions, clinical skill/quality of care, continuity of care, and discrimination were leading contributing factor classes.

Contributing Factor Class	Number of cases	Percentage of cases
Substance use disorder	49	100.0
Mental health conditions	30	61.2
Clinical skill/ quality of care	29	59.2
Continuity of care	21	42.9
Discrimination	19	38.8

MMRC Select Recommendations

Select recommendations that address the top five contributing factor classes identified within substance use disorder cases included:

Substance Use

The MMRC and MI AIM staff will work toward full implementation of the AIM safety bundles: Obstetric Care for Women with Opioid Use Disorder (+AIM).

Mental Health Condition

Offer pregnant and parenting persons wrap-around services to help align systems of care and transform every interaction into an opportunity for change.

Clinical Skill/Quality of Care

Require social work consults for all pregnant or postpartum patients with Substance Use Disorder, IPV, past trauma and/or mental health disorders including referrals to appropriate follow-up care and support, such as MIHP.

Substance Use Disorder

MMRC Select Recommendations (Continued

Continuity of Care/Care Coordination

Provide universal home visiting services for all pregnant and postpartum persons in Michigan.

Discrimination

Increase access to home visiting/family support services for all pregnant and postpartum persons in Michigan.

Substance Use Disorder

Resources for Select Recommendations

Substance Use

The Obstetric Care for Women with Opioid Use Disorder patient safety bundle underwent revision and was replaced with The Care for Pregnant and Postpartum People with Substance Use Disorder patient safety bundle in October of 2021. For state, jurisdiction, and hospital-based teams interested in implementing a patient safety bundle related to substance use disorders, please visit: Care for Pregnant and Postpartum People with Substance Use Disorder | AIM Program (Previously Council on Patient Safety) (safehealthcareforeverywoman.org).

Mental Health Condition

The MMRC recommended health care facilities offer wrap-around services and facilitated referrals to meet the patient and family resource needs, suggesting connections to home visiting and/or the maternal infant health program (MIHP). For more information on home visiting and MIHP, visit: Home Visiting (michigan.gov) and Maternal Infant Health Program (MIHP) (michigan.gov).

Clinical Skill/Quality of Care

Hospital social workers are and integral part of an interdisciplinary care team and provide needed emotional and social support to patients and their families. The MMRC recommended hospitals continue funding social workers and case managers to improve services provided to patients. The MMRC's recommendation is aligned with ACOG's Committee Opinion: Importance of Social Determinants of Health and Cultural Awareness in the Delivery of Reproductive Health Care | ACOG.

Continuity of Care/Care Coordination

In 2020, the Michigan Home Visiting Initiative completed the statewide home visiting needs assessment, county-wide assessments and a family focus companion document. County-level assessments, which highlight the strengths, family perspective and needs of home visiting, can be accessed at: Michigan Statewide Needs Assessments.

Suicide

There were 12 suicide cases included in this analysis. Mental health conditions, substance use disorder, discrimination, clinical skill/quality of care, and continuity of care were leading contributing factor classes.

Contributing Factor Class	Number of cases	Percentage of cases
Mental Health Conditions	12	100.0
Substance Use Disorder	8	66.7
Discrimination	7	58.3
Clinical Skill/ Quality of Care	6	50.0
Continuity of Care	6	50.0

MMRC Select Recommendations

Select recommendations that address the top five contributing factor classes identified within suicide cases included:

Substance Use

Increase awareness of services that provide support and resources to individuals affected by substance use disorder. For example: Families Against Narcotics.

Mental Health Condition

The MMRC will increase awareness and visibility of behavioral health options, including the University of Michigan MC3, to prenatal care providers, birthing hospitals, and emergency departments using the Department's communication strategies and processes.

Promote the National Suicide Prevention Lifeline and support expanding the capacity of the program in Michigan.

MMRC Select Recommendations (Continued)

Clinical Skill/Quality of Care

Provide universal rescreening by home visiting professionals/family support professionals and medical providers for IPV, substance use, mental health during visits, once a rapport with the client has been established.

Continuity of Care/Care Coordination

Offer pregnant and parenting persons wrap-around services to help align systems of care and transform every interaction into an opportunity for change.

Discrimination

MMRCs, in conjunction with MDHHS, will increase access to education for providers and systems on delivering culturally competent care and reducing stigma, bias, and barriers when implementing services and recommend that all providers are exposed to implicit bias training that lead to use of best practices for dignity and respectful care.

Suicide

Resources for Select Recommendations

Substance Use

Families Against Narcotics (FAN) is a community-based program for those seeking recovery, those in recovery, and family members affected by addiction. Their mission is to offer community-based, compassionate, best-practice/evidence-based services to people who have been affected by addiction—this includes individuals with SUD and their families—and to erase the stigma of addiction while instilling compassion and hope. For more information, visit: Family Support and Addiction Help | Families Against Narcotics.

Mental Health Condition

The MC3 Program provides same-day psychiatry support to primary care providers in Michigan who are managing patients with behavioral health problems, including women who are contemplating pregnancy, pregnant or postpartum with children up to a year. All primary care providers in Michigan are eligible to participate. For more information, visit: MC3 – Psychiatry support for Michigan primary care providers (depressioncenter.org).

Clinical Skill/Quality of Care

Module to introduce family support professionals to screening techniques for mental health, substance use and intimate partner violence. For more information, visit: Institute for the Advancement of Family Support Professionals (institutefsp.org).

Homicide

There were eight homicide cases included in this analysis. Due to the small number of cases, this brief focuses on the top four contributing factor class categories. Violence, other, mental health conditions, and clinical skill/ quality of care were the top contributing factor classes.

Contributing Factor Class	Number of cases	Percentage of cases
Violence	8	100.0
Other	4	50.0
Mental health conditions	3	37.5
Clinical skill/ quality of care	3	37.5

MMRC Select Recommendations

Select recommendations that address the top five contributing factor classes identified within homicide cases included:

Violence

Ensure all domestic violence and intimate partner violence (IPV) survivors are linked to agencies which provide services such as advocacy, peer support, resources, and crisis intervention.

Other

Individuals should practice risk reduction/risk mitigation when a loved one is suicidal or has a mental health condition (e.g., removing guns from residence, locking guns).

Mental Health Condition

Partner with DV and IPV prevention organizations (internal and external) to increase capacity on innovative IPV interventions with the intention of tailoring implementation to best fit communities and disseminating.

Clinical Skill/Quality of Care

Assure our health care workers are educated on signs and symptoms of IPV.

Homicide

Resources for Select Recommendations

Violence

In 2022, the State of Michigan's Division of Victim Services launched a Domestic Violence Hotline to support the needs of survivors, their family, friends, and allied professionals. Michigan's Domestic Violence Hotline (1-866-VOICEDV) is a free and confidential resource for victims to call text or chat. All calls, texts and chats are answered by a trained advocate who can provide crisis support, services and local resources. For more information visit: Domestic Violence Hotline (michigan.gov).

Other

Families, organizations, health care providers, and policymakers can take many actions to reduce access to lethal means of self-harm. To learn more, visit: The Suicide Prevention Resource Center website.

Mental Health Condition

In October 2020, BARBICIDE® partnered with Shear Haven to launch a new program dedicated to mobilizing hair salon professionals and others to fight the epidemic of domestic violence in communities across the United States. The program builds awareness of abuse by training salon professionals to recognize warning signs and refer clients to local resources. To learn more about this initiative, visit: Shear Haven Domestic Violence Training | BARBICIDE®.

Clinical Skill/Quality of Care

Health providers have an unprecedented opportunity to provide universal education on healthy relationships, assess patients for IPV, and intervene if abuse is identified. This can improve health and decrease risk for violence. To learn more, visit: Health Providers: Respond to Domestic Violence in Your Health Setting (ipvhealth.org) .

Appendix A: Resources for pregnant & parenting persons, health care and family support professionals

Family Planning

- Family Planning (michigan.gov)

Grief and Support

- Michigan Pregnancy and Infant Loss Support Resources

Health care

- AWHONN- Association of Women's Health, Obstetric and Neonatal Nurses - AWHONN
- MC3 – Psychiatry support for Michigan primary care providers (depressioncenter.org)
- MI AIM (google.com)
- Michigan Prison Doula Initiative (mpdi.org)
- Regional Perinatal Quality Collaboratives (RPQC's) (michigan.gov)
- Women, Infants & Children (michigan.gov)

Family Support Services

- Home Visiting (michigan.gov)
- Maternal Infant Health Program (MIHP) (michigan.gov)
- Home | Michigan 211 (mi211.org)

Intimate Partner Violence

State

- Michigan's Domestic Violence Hotline – 1-866-VOICEDV
- Michigan Sexual Assault Hotline - 855-VOICES4 (864-2374) or Text 866-238-1454.
- MDHHS Division of Victim Services: Assistance for Crime Victims
- Michigan Legislature: Domestic Violence & Sexual Violence Prevention Resource Guide
- Firearm Safety (michigan.gov)

National

- Futures without Violence

Appendix A: Resources for pregnant & parenting persons, health care and family support professionals

- Love is Respect National Teen Dating Abuse Helpline - 866-331-9474 or TTY 866-331-8453
- National Domestic Violence Hotline - 800-799-SAFE (7233) or Text LOVEIS to 22522
- National Resource Center on Domestic Violence
- Rape, Abuse & Incest National Network's (RAINN) National Sexual Assault Hotline

Mental Health

- The Lifeline and 988 : Lifeline (988lifeline.org)
- Michigan Crisis and Access Helpline (MiCal)
- Mental Health Resources (michigan.gov)

Policy

- Prioritizing Maternal Health | Michigan | MCMCH

Substance Use

- Get Help Now -Behavioral Health (michigan.gov)
- Families Against Narcotics

Appendix B: Definitions & Medical Terminology

Cardiovascular Disease: A group of heart and blood vessel disorders.

Care Coordination: Involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care.

Chronic Disease: Defined broadly as conditions that last one year or more and require ongoing medical attention or limit activities of daily living or both. Chronic diseases such as heart disease, cancer, and diabetes are the leading causes of death and disability in the United States.

Chronic Hypertension: Having high blood pressure before you get pregnant or before 20 weeks of pregnancy.

Community Health Worker: Frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served.

Culturally Competent Care: The ability of systems to provide care to patients with diverse values, beliefs and behaviors, including the tailoring of health care delivery to meet patients' social, cultural and linguistic needs.

Doula: Trained community health workers who give continuous labor and delivery support to pregnant people and their families.

Family Support Professional: Professionals who provide a broad array of supports and services to families in need.

Gestational Hypertension: Happens when you only have high blood pressure* during pregnancy and do not have protein in your urine or other heart or kidney problems. It is typically diagnosed after 20 weeks of pregnancy or close to delivery.

Appendix B: Definitions & Medical Terminology

Harm Reduction: An approach that emphasizes engaging directly with people who use drugs to prevent overdose and infectious disease transmission, improve the physical, mental, and social wellbeing of those served, and offer low-threshold options for accessing substance use disorder treatment and other health care services.

Home Visiting: Free programs that offer services to pregnant mothers and families with young children.

Intimate Partner Violence: A pattern of learned behavior in which one person uses physical, sexual, and emotional abuse to control another person.

Maternal Levels of Care: A classification system that establishes levels of maternal care that pertain to basic care (level I), specialty care (level II), subspecialty care (level III), and regional perinatal health care centers (level IV).

Maternal Mortality: The death of a woman during pregnancy or within one year of the end of pregnancy.

Opioid Use Disorder (OUD): A pattern of opioid use that leads to significant impairment of daily life or distress.

Postpartum Hemorrhage: Cumulative blood loss of greater than or equal to 1,000 mL or blood loss accompanied by signs or symptoms of hypovolemia within 24 hours after the birth process.

Pregnancy-Associated, not Related Death: A death during pregnancy or within one year of the end of pregnancy from a cause that is not related to pregnancy.

Appendix B: Definitions & Medical Terminology

Pregnancy-Related Death: 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.

Preventable Death: A death that could have been averted by one or more reasonable changes to patient, family, provider, facility, system and/or community factors.

Reproductive Life Planning: A set of personal goals about having or not having children based on one's own values, goals, and resources.

Sepsis: A life-threatening complication of an infection.

Substance Use Disorder: Recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home.

Thromboembolism: The blockage of a blood vessel by a thrombus carried through the bloodstream from its site of formation.

Wraparound Care: An established practice of coordinating services and supports for birthing persons to meet their needs using a strengths-based approach. The wraparound team can include health care professionals, community agencies/organization, and any other support systems aimed at meeting the needs of the family.

Appendix C: Contributing Factor Definitions

LACK OF ACCESS/FINANCIAL RESOURCES
Systemic barriers, e.g., lack or loss of health care 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 health care 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.

Appendix C: Contributing Factor Definitions

DISCRIMINATION
Treating someone less or more favorably based on the group, class or category they belong to resulting from biases, prejudices, and stereotyping. It can manifest as differences in care, clinical communication and shared decision-making. (Smedley et al, 2003 and Dr. Rachel Hardeman).

ENVIRONMENTAL FACTORS
Factors related to weather or social environment.

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

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

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

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

LEGAL
Legal considerations that impacted outcome.

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

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

Appendix C: Contributing Factor Definitions

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

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

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

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

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

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

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

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

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

OTHER
Contributing factor not otherwise mentioned. Please provide description.