MAINE CENTER FOR DISEASE CONTROL AND PREVENTION

Pregnancy-Associated Deaths, 2022

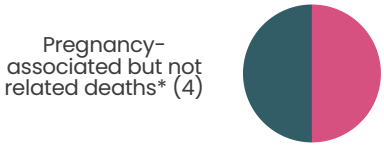
In 2022, eight pregnancy-associated deaths occurred in Maine. These deaths were reviewed by Maine's Maternal, Fetal, and Infant Mortality Review (MFIMR) panel in 2024-2025 to identify contributing circumstances and develop recommendations to prevent future occurrences. Further details on findings and recommendations will be included in the 2025 MFIMR annual report.

Overview of Deaths

Most deaths occurred in the **postpartum period.**

7 of 8 deaths were **preventable.**

4 of 8 deaths were **related to pregnancy.**



Decedent characteristics

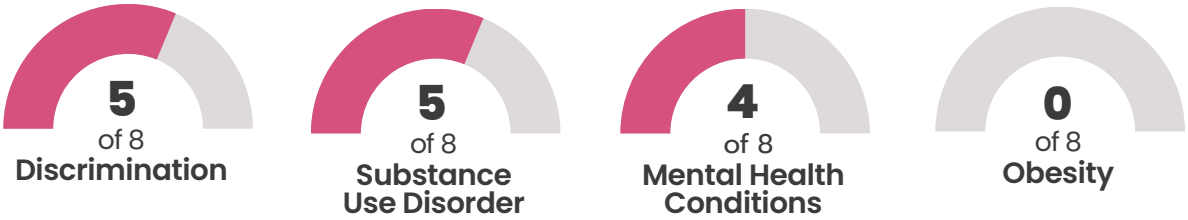
- 8 of 8 decedents were non-Hispanic White.
- Decedents ranged from 20 to 43 years old at the time of death. The median age was 29.
- 7 of 8 decedents were residing in a rural area at the time of their passing.
- 5 of 8 decedents had a high school diploma or less education; 3 had completed at least some college.
- 7 of 8 decedents had documented stressful life experiences, including intimate partner violence, child welfare involvement, substance use disorder, significant barriers to healthcare access, and/or psychiatric hospitalization.

Causes of Death

	Related	Associated but not related
Cerebrovascular Accident	1	
Mental health condition/suicide		1
Motor vehicle accident		1
Overdose	1	2
Thrombotic pulmonary or other embolisms	2	

Contributing Circumstances

The MFIMR panel found the circumstances below were at least **probable contributors** to pregnancy-associated deaths in 2022. Deaths may have more than one contributing circumstance.



Was or probably was a contributor

Was NOT a contributor, probably was NOT a contributor, or could not determine

* See Background and Technical Notes (page 2) for definitions.

Sources: Decedent race, age, education, and rurality: Maine Death Certificates and/or Birth Certificates, MECDC Data, Research and Vital Statistics (DRVS); Cause of death: Maine Death Certificates, DRVS and Maternal Mortality Record and Information Application (MMRIA); Pregnancy relatedness, contributing circumstances, and stressful life events: MMRIA.

Background and Technical Notes

ABOUT MATERNAL MORTALITY REVIEW IN MAINE

Maine's MFIMR is convened and administered by the Maine Center for Disease Control and Prevention (MECDC), with support for the maternal mortality review process from the Maine Medical Association Center for Quality Improvement (MMA-CQI), and made possible by a grant from US Centers for Disease Control and Prevention's Enhancing Reviews and Surveillance to Eliminate Maternal Mortality program (ERASE-MM). Data in this report are drawn from Maine's Maternal Mortality Review and Information Application (MMRIA), and include information obtained from Maine vital records (birth certificates, death certificates, and fetal death certificates), medical and social service records, family interviews, and panel deliberations.

DEFINITIONS: **TYPE OF DEATH**

***Maternal death*:** A maternal death is defined by the World Health Organization and the US CDC National Vital Statistics System as a death to a birthing person during or within 42 days of the end of pregnancy due to causes directly related to or aggravated by pregnancy, *excluding* accidental or incidental causes (e.g., deaths due to homicide, suicide, drug overdose, motor vehicle accidents, etc.) [1]

***Pregnancy-associated death*:** A pregnancy-associated death is *any* death to a birthing person while pregnant or within one year of the end of pregnancy, regardless of the cause of death. The MFIMR panel began to routinely review all Maine resident occurrent pregnancy-associated deaths in 2023, beginning with 2021 deaths. [2]

***Pregnancy-related death*:** A pregnancy-related death is defined by US CDC ERASE-MM as 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. Maine's MFIMR panel uses this definition to determine whether a pregnancy-associated death was also pregnancy-related. [2]

***Pregnancy-associated, but not related death*:** A pregnancy-associated death determined by Maine's MFIMR panel to not be related to pregnancy [2]

***Preventable death*:** Maine's MFIMR panel applies the ERASE-MM definition of preventability when reviewing pregnancy-associated deaths: 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. [2]

DEFINITIONS: **CONTRIBUTING CIRCUMSTANCES**

Maine's MFIMR panel is tasked with determining if discrimination, obesity, mental health, and/or substance use contributed to a death. The definitions of each circumstance are outlined below.

***Discrimination*:** MFIMR determines whether discrimination contributed to the death using Hardeman's definition of discrimination: treating someone less or more favorably based on the group, class or category they belong to resulting from biases, prejudices, and stereotyping. Discrimination can manifest as differences in care, clinical communication and shared decision-making. [3]

***Mental health conditions*:** MFIMR determines whether a mental health condition contributed to the death, and not just whether the person had a mental health condition. Mental health conditions are defined as present when the individual had a documented diagnosis of a psychiatric disorder. If a formal diagnosis is not available, subject matter experts (e.g., psychiatrist, psychologist, licensed counselor) may determine whether the criteria for a diagnosis of substance use disorder or another mental health condition are met based on the available information. [2]

***Obesity*:** MFIMR determines whether obesity contributed to the death, not just whether the person was obese. The committee may determine that obesity contributed to the death when the condition directly compromised an individual's health or health care. BMI is calculated from weight and height (weight [kg]/ height [m^2]); a BMI of 30 or higher is considered obese. [4]

***Substance use disorder (SUD)*:** MFIMR determines whether SUD contributed to the death, and not just whether the individual had SUD. SUD is characterized by recurrent use of substances causing clinically and functionally significant impairment, such as health problems or disability. The panel may determine that substance use disorder contributed to the death when the disorder directly compromised their health status. [2]

FOR MORE INFORMATION

Maine's MFIMR panel: https://www.maine.gov/dhhs/mecdc/population-health/mch/perinatal/maternal-infant/
US CDC ERASE-MM: https://www.cdc.gov/maternal-mortality/index.html

[1] US CDC, National Center for Health Statistics, *How NCHS Measures Maternal Deaths?* Retrieved from https://www.cdc.gov/nchs/maternal-mortality/faq.htm

[2] US CDC, Enhancing Reviews and Surveillance to Eliminate Maternal Mortality, Maternal Mortality Review Committee Decisions Form, version 24. Retrieved from https://www.cdc.gov/maternal-mortality/media/pdfs/2024/05/mmria-form-v24-fillable-508.pdf

[3] 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.

[4] US CDC, Division of Nutrition, Physical Activity, and Obesity, Obesity and Weight Status, Retrieved from https://www.cdc.gov/nccdphp/dnpao/data-trends-maps/help/npao_dtm/definitions.html