Maternal & Child Death Review Commission

2023 Annual Report

The Delaware MCDRC
REVIEW & PREVENTION
OF MATERNAL AND CHILD DEATHS

Maternal and Child Death Review Commission

900 King Street, Suite 220

Wilmington, DE 19801-3341

(302) 255-1760

https://courts.delaware.gov/childdeath/

Submitted to

The Honorable John Carney, Governor

State of Delaware

Garrett H.C. Colmorgen, MD, Chair

Dedicated to all the families forever marked by these tragic, untimely deaths: the parents without children, the children without mothers, and the communities trying to help.

Table of Contents

The Maternal and Child Death Review Commission **6**

Executive Summary **7**

Introduction **9**

Child Death Review and Sudden Death in the Young **10**

Fetal and Infant Mortality Review **19**

Maternal Mortality Review **26**

2023 Cases Reviewed 26

2019-2023 Five-year Analysis of MMR Cases 29

Community Action Team **35**

Conclusion **37**

Appendix A: Additional FIMR Recommendations **38**

Appendix B: Additional MMR Recommendations **40**

Appendix C: Commissioners and Review Panel Members **41**

List of Abbreviations

BIPOC	Black, indigenous, and other people of color
CAT	Community Action Team
CDC	Centers for Disease Control and Prevention
CDR	Child Death Review
CRT	Case Review Team
DHMIC	Delaware Healthy Mother and Infant Consortium
DMMA	Delaware Medicaid and Medical Assistance
DPH	Division of Public Health
DPQC	Delaware Perinatal Quality Collaborative
DSAMH	Division of Substance Abuse and Mental Health
ERASE MM	Enhancing Reviews and Surveillance to Eliminate Maternal Mortality
FIMR	Fetal and Infant Mortality Review
MCH	Maternal child health
MCO	Managed Care Organization
MMR	Maternal Mortality Review
MMRC	Maternal Mortality Review Committee
NCFRP	National Center for Fatality Review and Prevention
PANR	Pregnancy associated but not related
PMAD	Perinatal mood and anxiety disorders
PRAMS	Pregnancy Risk Assessment Monitoring System
PPROM	Preterm premature rupture of membranes
PRMR	Pregnancy related mortality ratio
SDY	Sudden Death in the Young
SUD	Substance Use Disorder
SUID	Sudden Unexplained Infant Death
UTD	Unable to determine

Glossary

Child death: The death of a child before their 18th birthday.

Fetal death: The spontaneous death of a fetus, a developing human in the uterus from usually two months after conception to birth.[1]

Fetal mortality rate: The number of fetal deaths at 20 weeks of gestation or more per 1,000 live births and fetal deaths in a defined population.

Infant death: The death of a child before their first birthday.

Infant mortality rate: The number of infant deaths per 1,000 live births in a defined population.

Perinatal mood and anxiety disorders: Mental health conditions that can be related to or exacerbated by a woman's being pregnant or in the first year postpartum. These conditions include depression, anxiety, panic disorder, obsessive compulsive disorder, bipolar disorder, posttraumatic stress disorder and postpartum psychosis.

Pregnancy associated death: A death during pregnancy or within one year of the end of pregnancy from any cause.

Pregnancy associated but 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.[2]

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 physiological effects of pregnancy.[3]

Pregnancy related mortality ratio: The number of pregnancy related deaths per 100,000 live births in a defined population.

[1] Merriam Webster Dictionary. Accessed at https://www.merriam-webster.com/dictionary/fetus on May 14, 2024.
[2] Centers for Disease Control and Prevention (CDC). Maternal Mortality Review Committee Decisions Form v23.
[3] CDC. Maternal Mortality Review Committee Decisions Form v23.

The Maternal and Child Death Review Commission

Review Conducts in-depth reviews of maternal and child deaths.

Reveal Uncovers contributing factors that may have played a role in the deaths.

Act Works with partners and sponsors programs to implement recommendations from review teams.

Beacuse every child and mother deserve a tommorrow

Review

Child Death Review & Sudden Death in the Young

- Reviews infant deaths due to unsafe sleep, suspected abuse or neglect, and child deaths (1-17 years old) due to any cause.
- In 2023, 54 cases were reviewed including 12 unsafe sleep related deaths.
- Most unsafe sleep related cases involve the enviromental risk factors of soft bedding and toys and the baby not being placed to sleep in a crib or bassinette.
- One -third of unsafe sleep related deaths occurred while a caregiver was impaired by alcohol and/or drugs.
- The number of child deaths reviewed due to motor vehicle collisions increased.
- The number of youth homicides reviewed decreased.
- Social connectedness is an important protective factor for youth mental health.

Fetal & Infant Mortality Review

- Reviews a sample of infant deaths not involving unsafe sleep, suspected abuse or neglect, and fetal deaths.
- In 2023, 53 cases were reviewed.
- Continuity of care is still an important issue with key findings relating to a delay in accessing prenatal care or difficulty getting into care in a timely manner.
- Perceived quality of care is vital in creating demand for services and engaging mothers in their care.
- Maternal mental health is an important part of holistic pregnancy care. FIMR strengths testify to the importance of routinely screening for mood and anxiety issues, offering counseling and medication options as appropriate, and co-locating mental health and physical health services to decrease barriers to access.

Maternal Mortality Review

- Reviews all deaths that occur during pregnancy or up to one year after the end of a pregnancy from any cause, this is referred to as a pregnancy associated case.
- In 2023, 10 cases were reviewed.
- Many pregnancy associated deaths in Delaware involve both mental health conditions and substance use disorder, and overdose has been the #1 cause of death for the last four years of review.
- Pregnancy associated deaths involve many overlapping risks including trauma history in the woman's life, social risks and health risks.
- Coordinated care that is patient-centered is important to address the multiple issues affecting women at highest risk for pregnancy associated death.

to Action

Cribs for Kids

- In 2023 the Cribs for Kids program distributed 50% more Pack n' Plays compared to the prior year and added six new partner agencies to its referring network.

Community Action Team

- The MCDRC received a supplemental grant from the CDC to prioritize and implement MMR and FIMR findings through a Community Action Team.
- The team is being conscientiously structured to embody the principles of true community engagement and community empowerment.
- The team is taking a multisectoral approach inclusive of people with lived experience.

Executive Summary

The Maternal and Child Death Review Commission's (MCDRC) three fatality review programs reviewed 117 cases in 2023. Fifty-four of those cases were Child Death Review (CDR) and Sudden Death in the Young (SDY) cases representing 12 infants and 42 children between the ages of 1 and 17 years. In 2023 MCDRC staff applied for and received a five-year grant from the Centers for Disease Control and Prevention (CDC) to support the SDY reviews in keeping with best national practices. This grant support ensures Delaware's data from SDY cases is included in the national registry and contributes to research and programmatic efforts to better understand why sudden, unexpected deaths occur in children and what can be done to prevent them. Many of Delaware's SDY cases involve unsafe sleep related factors. The 12 unsafe sleep related cases reviewed in 2023 indicate that the most prevalent immediate risk factors are soft bedding and toys in the infant's sleep environment and/or the infant not sleeping in a crib or bassinette. Qualitative analysis of three years' worth of unsafe sleep related cases also reveal that some impacted families are dealing with multiple stresses such as unstable housing; shared housing with extended friends and family; criminal justice involvement for domestic abuse, violence or drug charges; and substance use disorder (SUD). One-third of unsafe sleep related cases reviewed in 2023 involved a caregiver impaired by alcohol or drugs at the time of the incident.

The MCDRC's Cribs for Kids (C4K) program expanded its outreach in 2023 with the onboarding of six new partner agencies, bringing the total to 36 referring agencies operating across the state. C4K partners distributed 332 Pack n' Plays in 2023, a 48% increase from the year prior. The efforts of the C4K partner network may in part account for the promising recent decrease in unsafe sleep related deaths seen in calendar year 2023. However, more time will be needed to assess if this is a significant, persistent trend. In the meantime, the quantitative and qualitative findings from CDR/SDY reviews indicate that there are important high-risk populations to reach through educational and support efforts. The CDR/SDY priority recommendation for 2023 is an action-oriented and measurable outcome:

- Safe sleep education: The MCDRC will seek additional funding to expand the C4K program. Goals for 2024 include:
    - Increase the number of Pack n' Plays distributed to 400
    - Increase the number of community-based trainings conducted
    - Expand the C4K partner network to include more SUD treatment programs and recovery residences.

The Fetal and Infant Mortality Review (FIMR) program deliberated 53 cases in 2023, and just over half (57%) were fetal deaths. In 2023, MCDRC staff applied for and were awarded a one-time grant to support FIMR recruitment and outreach efforts from the National Center for Fatality Review and Prevention (NCFRP), the backbone organization supporting FIMR and CDR panels throughout the U.S. The FIMR program provides an in-depth look at a subset of fetal and infant deaths occurring in Delaware in almost real-time. There was only a five-month lag between the occurrence of a fetal or infant death and its review by a FIMR case review team (CRT). This puts FIMR in a unique position to assess new and emerging trends and issues affecting the health of pregnant women. Quantitative and qualitative analyses revealed the importance of continuity of care, maternal mental health and quality of care as themes in the health and support of pregnant and postpartum women. One particular concern

identified was the delay or difficulty in accessing timely prenatal care experienced by nine women (18% of FIMR cases). Three 2023 FIMR priority recommendations were identified by CRT members:

- Access to perinatal care: The state and health entities in Delaware should consider creative models of care to assist those pregnant patients seeking early and regular prenatal care. This may include utilizing primary care providers for preconceptual care and inter-conceptual care; identifying prenatal patients early and putting them in contact with a Medicaid managed care organization (MCO) care coordinator; expanding access to midwifery care; and exploring the feasibility of models of care that operationalize educational and social supports such as the "Centering Pregnancy" program that simultaneously increase both access and quality of care, thus increasing demand for services.
- Maternal mental health: Health care practices and systems should expand the integration of mental health and primary care services to reduce barriers to access.
- Medicaid managed care organization (MCO) care coordination: Increase the awareness and integration of Medicaid MCO care coordination among women's health providers during the prenatal and postpartum periods. Encourage providers to complete the Obstetric Needs Assessment Form to hasten the identification of pregnant persons by Medicaid MCOs. Educate patients to fill out the notification of pregnancy forms.

The Maternal Mortality Review (MMR) Committee reviewed 10 cases in 2023. For the fourth consecutive year, overdose remained the leading cause of death. The co-occurrence of mental health diagnoses and SUD represent a highly prevalent and highly associated risk factor for maternal death. The MMR Committee members identified the following three priority recommendations based on the 2023 cases:

- Team-based care: A team-based, collaborative care plan--with input from the patient and providers--should be the standard approach to optimize a patient's health issues across physical, mental and social domains. The care plan would be a living document designed to follow a patient across multiple sites of care and to promote regular, timely communication between providers and between each provider and the patient.
- Care Coordination: Care coordinators and peer support specialists can help navigate patients through the health care system and transition across different levels and sites of care, ensuring fewer patients are lost to follow up.
    - All health care team members should know how to access or refer to care coordinators and peer support specialists to ensure follow up and communicate the care plan.
- Quality of care: Providers should communicate laboratory results back to the patient and develop a plan to address any abnormal results in a timely manner.

In 2023 MCDRC staff also applied for and was awarded a supplemental CDC grant to implement a Community Action Team (CAT) and translate FIMR and MMR recommendations into community-driven action steps. The CAT Coordinator was hired with grant support and worked with MCDRC staff to create an application and recruitment process inclusive of diverse members and people with lived experiences. The first kickoff CAT meeting was held in September to orient new members to the Commission's work and specifically the FIMR and MMR processes. CAT members have since been prioritizing top issues revealed by FIMR and MMR cases and planning for the structure of work groups to address them.

Introduction

The Maternal and Child Death Review Commission (MCDRC) oversees three fatality review programs to take an in-depth look at fetal, infant, child and maternal deaths and reveal opportunities for prevention and systems improvement. The review of these tragic and untimely losses positions the Commission and its partners to offer unique perspective on what can be done to better support mothers and families to achieve optimal health outcomes. The work of Delaware's multiple maternal child health partners has been vital to the successes achieved to date, notably a 39% reduction in Delaware's infant mortality rate and 23% reduction in the fetal mortality rate since 2011.[4] Building on the lessons and successes achieved, the Commission worked to bring more voices to the table and to expand its partnerships for collaboration in 2023. Delaware has notable disparities in access to care depending on geography and race/ethnicity. According to the March of Dimes, women in Delaware are overall at moderate vulnerability to adverse outcomes based on their availability of reproductive health services with a clear increase in vulnerability across the southern parts of the state.[5] Access to prenatal care varies based on race/ethnicity and poverty with almost half of Hispanic women living in higher poverty areas experiencing inadequate prenatal care (43%).[6] Black non-Hispanic women in Delaware still experience higher rates of preterm birth compared to other groups putting their infants at risk for complications and death.[7]

In 2023 the MCDRC received grant support to implement a Community Action Team (CAT) more formally linked to the FIMR and MMR programs and to help translate recommendations into feasible, community-driven action. The CAT is based on principles of true community engagement and is informed by guidance from the National Center for Fatality Review and Prevention (NCFRP). Purposefully drawn together to include multiple sectors and community perspectives from across the state, the CAT expands the opportunities for action based on fatality review findings. In addition, the Commission values and continues to work with its long-time partners to interpret and act on its recommendations. The Delaware Healthy Mother and Infant Consortium (DHMIC) and the Delaware Perinatal Quality Collaborative (DPQC) do important work to improve clinical and community-based care for women and infants. More partners, more voices and more community input are needed to do this work and bring everyone along

because every child and mother deserve a tomorrow.

[4] My Healthy Community. *Maternal and Child Health: Infant and Fetal Deaths.* Accessed at https://myhealthycommunity.dhss.delaware.gov/locations/state/maternal-and-child-health/infant-and-fetal-deaths on April 22, 2024.
[5] March of Dimes. *Where you live matters: maternity care in Delaware.* Accessed at https://www.marchofdimes.org/peristats/assets/s3/reports/mcd/Maternity-Care-Report-Delaware.pdf on April 22, 2024.
[6] March of Dimes. *Where you live matters: maternity care in Delaware.*
[7] March of Dimes. *2023 March of Dimes report card: Delaware.* Accessed at file:///C:/Users/Meena.Ramakrishnan/Downloads/MarchofDimesReportCard-Delaware%20(3).pdf on April 22, 2024.

Child Death Review and Sudden Death in the Young

What is CDR and SDY?

CDR and SDY conduct in-depth, multidisciplinary reviews of all the deaths occurring in Delaware to children between 1 and 17 years of age and many of the infant deaths in the first year of life.

What do CDR and SDY do?

Reviews seek to answer key questions of what happened and why so that prevention strategies can be identified to avert future child deaths and improve the system of pediatric care and family support.

What are key takeaways from 2023 CDR/SDY cases?

- Most unsafe sleep related cases involve the environmental risk factors of soft bedding and toys and the baby not being placed to sleep in a crib or bassinette. These risk factors are important to include in education efforts about safe sleep.
- One-third of unsafe sleep related deaths occurred while a caregiver was impaired by alcohol and/or drugs. Partnering with substance use disorder treatment and residential recovery programs are an important strategy to expand the Cribs for Kids program in Delaware.
- The number of accidental deaths due to motor vehicle collisions increased from 5 to 9 in 2022 to 2023 cases.
- The number of youth homicides decreased from 10 to 5 in 2022 to 2023 cases.

Child Death Review (CDR) and Sudden Death in the Young (SDY) are based on the MCDRC's statutory obligation to review all deaths of children and youth under 18 years of age who are Delaware residents. CDR and SDY panels review different types of cases. For SDY, the defining question is if the death was sudden and unexpected. Often, SDY cases are initially undetermined or possibly unsafe sleep related in manner or circumstance. Sometimes, it may be a death in an older child due to drowning. The CDR panel reviews cases that are assigned suicide or homicide as the manner of death, as well as many of the accidental and natural causes of death. The only cases that are triaged to another MCDRC program, FIMR, are those deaths of infants under one year of age who do not die due to suspected abuse, neglect or unsafe sleep factors.

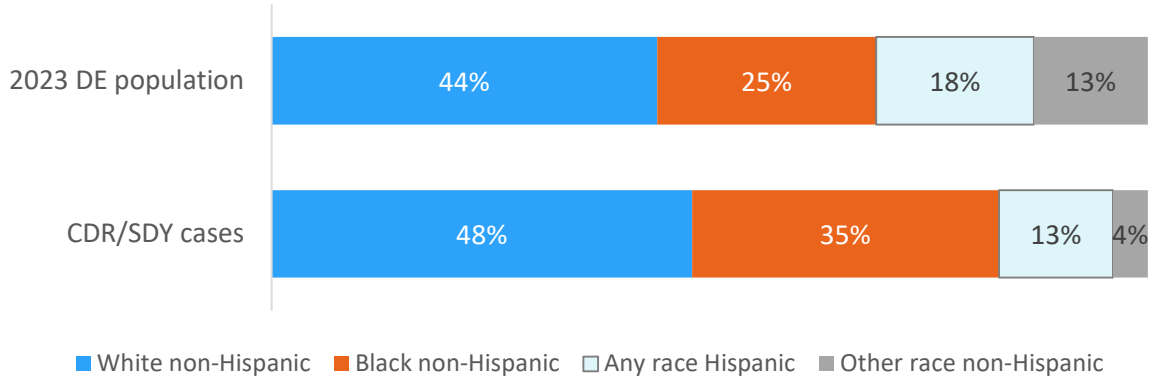
In 2023 the MCDRC applied for and was awarded a third round of CDC grant support to participate in the Sudden Unexplained Infant Death (SUID) and SDY case registry. This grant support allows MCDRC to conduct SDY in keeping with the most up to date national guidance and contribute data to national statistics on SUID and SDY cases.

In 2023 CDR reviewed 38 cases and SDY panels reviewed 16 cases, for a total of 54 cases reviewed. These cases represented deaths occurring between calendar years 2020 and 2023. Cases with pending criminal prosecution cannot be reviewed by a panel until prosecution is resolved, so this can significantly delay the review of some cases. Twelve cases reviewed were infant deaths, occurring before the child's first birthday. Twelve cases were unsafe sleep related deaths. Twenty cases (37%) involved children with chronic health conditions, and 17 of them (85%) died of natural causes. Children who died lived in all three counties with proportional representation similar to the population of under 17-year-olds in Delaware's counties. In 2023 cases,

the proportion of Black non-Hispanic children decreased somewhat from the years prior but is still higher than their proportion of total children in Delaware. While Black children make up 25% of the total population of 0–17-year-olds in Delaware, they made up 35% of the 2023 CDR/SDY case cohort. (See Figure C1.) This is decreased from the 58% of 2022 cases that involved Black children. For more demographic details on CDR and SDY cases, see the 2023 MCDRC Annual Report Data Addendum.

Figure C1: Race and ethnicity of children 0-17 years

There are higher than expected numbers of Black children among CDR/SDY cases compared to the population of 0-17-year-olds in Delaware.



Note: Delaware population data retrieved from Annie E. Casey Foundation, Kids Count Data Center. Child population in Delaware. CDR=Child Death Review. SDY=Sudden Death in the Young.

Figure C2 depicts the breakdown of CDR/SDY cases by the age of the child and race/ethnicity. Cases were evenly spread out between the age groups overall. For Black non-Hispanic children and youth, infancy and late adolescence (15-17 years old) were ages when they experienced higher than expected numbers of deaths. From the ages 1-14 years, White non-Hispanic children and youth had the greatest number of deaths. Figure C3 reports the cases reviewed by manner and race/ethnicity. Black youth disproportionately experienced suicides and homicides. White non-Hispanic youth most often died of accidental and natural causes. Figure C4 shows the manner or underlying cause of death for CDR and SDY cases.

Figure C2: Age groups by race and ethnicity

Infant deaths and older adolescent deaths most often involved **Black children and youth**.

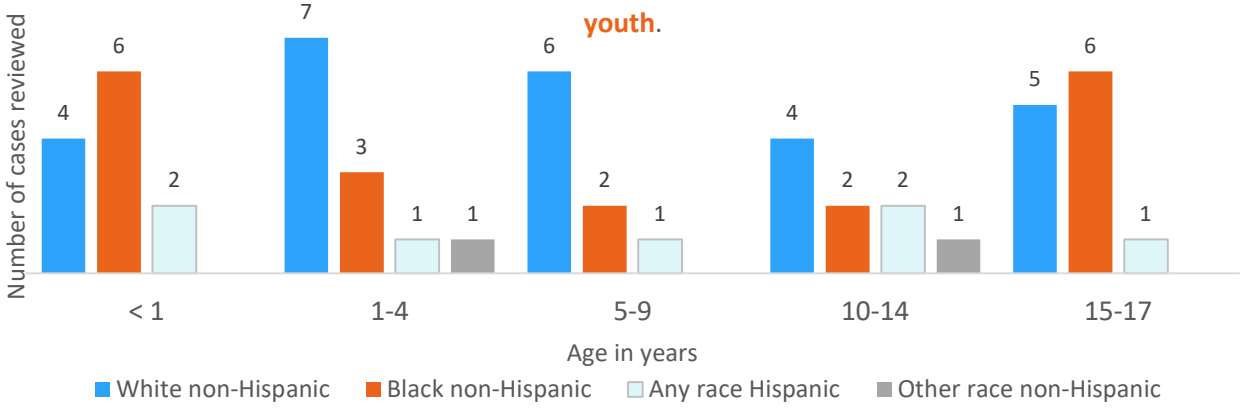


Figure C3: Manner of death by race and ethnicity

White youth made up most of the accidental and natural deaths, while Black youth accounted for almost all suicides and homicide deaths.

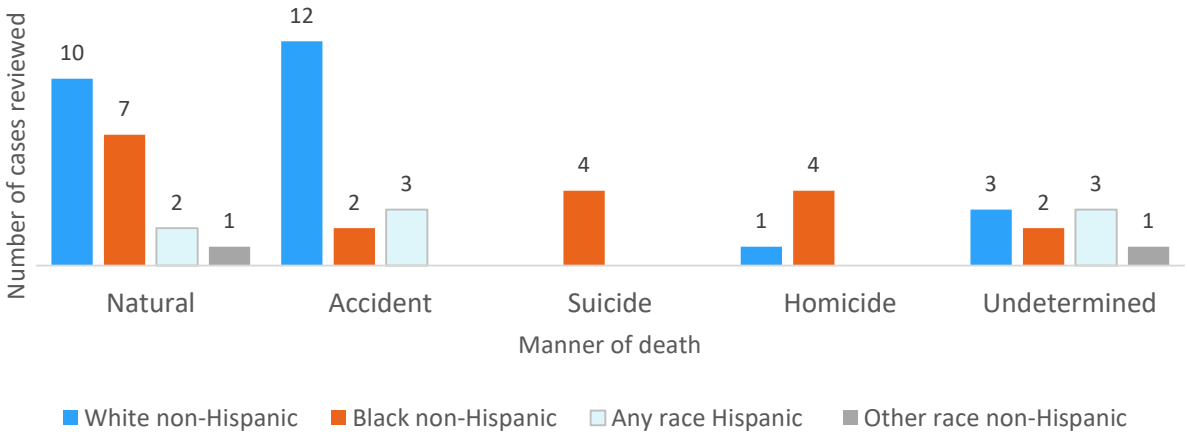
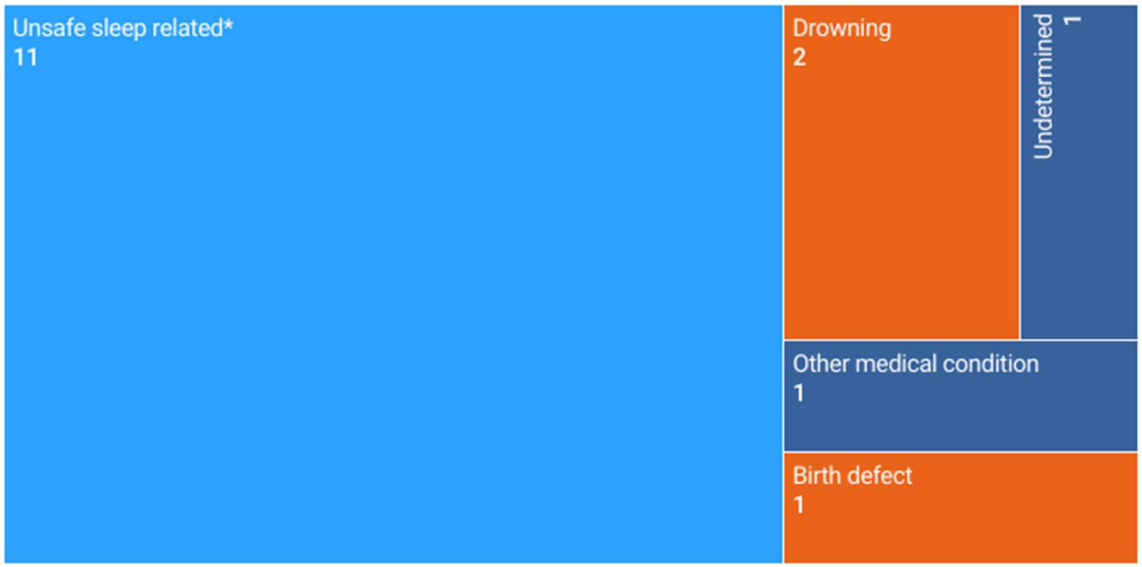


Figure C4a: Underlying cause of death in SDY cases (n=16)

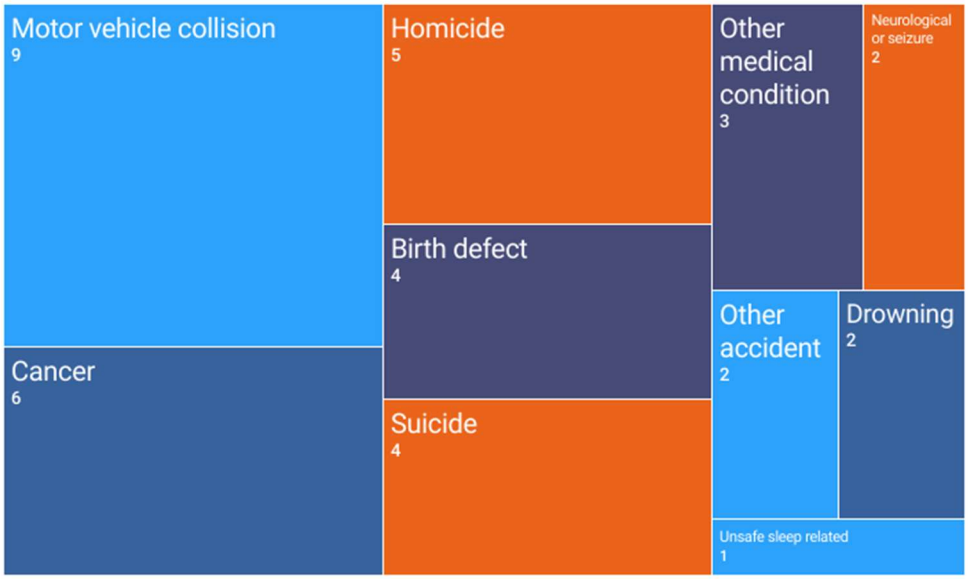
Most Sudden Death in the Young (SDY) cases were related to unsafe sleep conditions.



*Two cases involved concurrent infections resulting in deaths.

Figure C4b: Underlying cause or manner of death in CDR cases (n=38)

Motor vehicle collisions (accidental) and cancer (natural) were the leading causes of death in Child Death Review (CDR) cases.

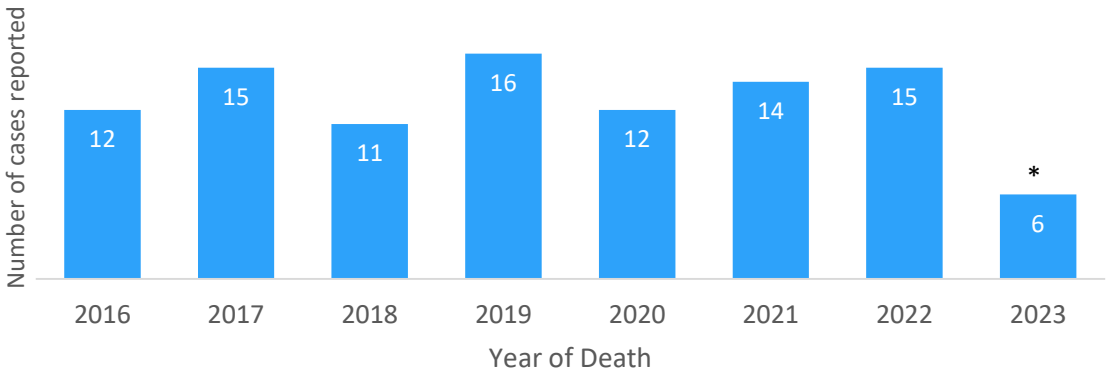


Unsafe sleep related deaths

Child deaths associated with conditions of unsafe sleep at the time of death have been a long-standing issue described and documented by the MCDRC. Unsafe sleep conditions have been noted in a disproportionately high number of Black non-Hispanic infant deaths in particular. While the numbers of reported unsafe sleep related deaths are lower for calendar year 2023, we are cautious because not all deaths may have been reported yet by the Delaware Division of Public Health (DPH) (Figure C5). Also, Delaware being a small state means that death counts can fluctuate just by chance from year to year, and it will take multiple years of information to more accurately assess if there is a notable, sustained decrease in the number of unsafe sleep related deaths.

Figure C5: Number of unsafe sleep related deaths by year of death

There has been a decrease in the number of unsafe sleep related deaths that occurred in calendar year 2023. It will take more time to assess if this is a real difference or just random vari



*There are some 2023 cases pending review that cannot be attributed to unsafe sleep until finalized, so numbers may change and will be included in future reporting.

Example of unsafe sleep environment

By definition, unsafe sleep related cases have at least one—often multiple—environmental risk factors that were identified at the time of death. Table C1 shows the frequency of the individual environmental risk factors noted in these cases. The child being in an environment with soft bedding or toys nearby was found in almost all cases (92%) and is much more common in unsafe sleep related deaths than in the general practice of caring for infants as reported by mothers who have delivered in Delaware (PRAMS 2020 survey). Another risk factor that is highly prevalent in unsafe sleep related cases is that the child was not in a crib, bassinette or side sleeper (75%), and this risk factor has been at a constant level in such cases over the last several years. In one-third of 2023 unsafe sleep related cases, the adult caring for the child was drug or alcohol impaired at the time of death.

Table C1: Immediate risk factors associated with unsafe sleep related deaths compared to infant care practices among women delivering in Delaware

Many unsafe sleep related cases involve multiple environmental risk factors, most commonly the presence of soft bedding or toys around the child.

		2023 Unsafe sleep related deaths	PRAMS 2020
	Not in crib, bassinette or side sleeper	75%	10%
	Not sleeping on back	42%	22%
	Unsafe bedding or toys near infant	92%	8%
	Sleeping with other people	50%	23%
	Intrauterine drug exposure	44%	7% *
	Tobacco use: mother	33%	21%
	Adult was drug or alcohol impaired at time of death	33%	--

PRAMS is the Pregnancy Risk Assessment Monitoring System, operated by DPH. Personal communication with George Yocher.
*Delaware 2020 Substance Exposed Infant Database. Personal communication with Jen Donahue.

The circumstances surrounding unsafe sleep related deaths can also be informed by the in-depth review of the family and community context in which such deaths occur. A qualitative analysis of unsafe sleep related cases revealed there are other issues that may be impacting a family and caregivers,

putting them under chronic or extenuating stress, and thus affecting their ability to care for their children. Figure C6 shows some of the themes uncovered through a qualitative review of unsafe sleep related cases that occurred and were reviewed between 2020 and 2022 (n=36). This analysis helps inform prevention efforts.

The MCDRC oversees the Cribs for Kids (C4K) program in Delaware. The C4K program distributes free Pack n' plays and provides trainings on infant safe sleep. The program partners with numerous agencies across the state to do this work. In 2023, six new C4K partner agencies were trained for a total of 36 referring agencies. The number of Pack n' Plays distributed in 2023 increased almost 50% to 332, up from 224 Pack n' Plays distributed in 2022.

2023 Priority CDR/SDY Recommendation

Safe sleep education

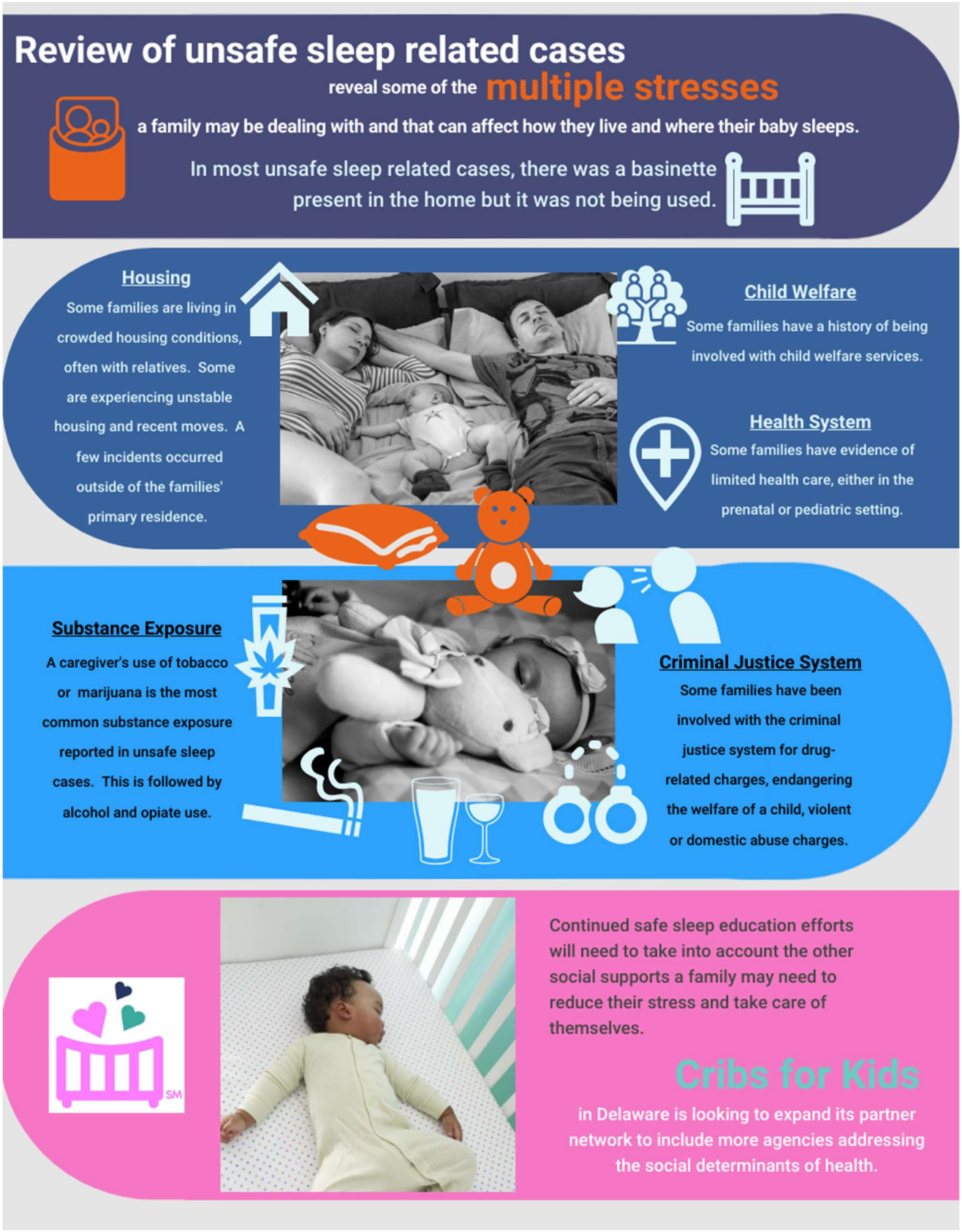
Recommendation/Action Step: The MCDRC will seek additional funding to expand the Cribs for Kids (C4K) program. Goals for 2024 include:

- increase the number of cribs distributed to 400
- increase the number of community-based trainings conducted
- expand the C4K partner network to include more SUD treatment programs and recovery residences throughout Delaware.

Rationale:

- The number of unsafe sleep deaths reported to the Commission decreased to six in calendar year 2023.
- One in three unsafe sleep deaths reviewed in 2023 involved a caregiver who was drug or alcohol impaired at the time of the incident, making substance use, along with immediate environmental conditions, an important risk factor in these types of deaths.

Figure C6: Qualitative analysis of unsafe sleep related cases reviewed 2020-2022 (n=36)

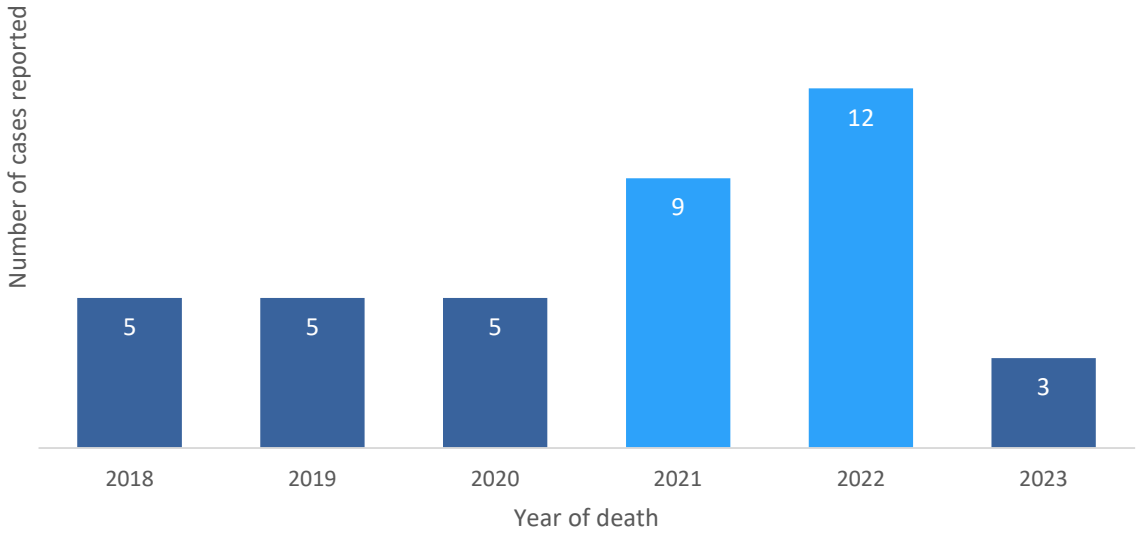


Motor Vehicle Collisions

In calendar years 2021 and 2022 the number of Delaware youth killed in motor vehicle collisions increased. These deaths involve youth as drivers, passengers, pedestrians or bicyclists. The Delaware numbers mirror national statistics which also show an increase in child motor vehicle fatalities for 2020 and 2021 (Figure C7).[8]

Figure C7: Number of motor vehicle related deaths by year of death

Delaware child motor vehicle fatalities peaked in 2021 and 2022.

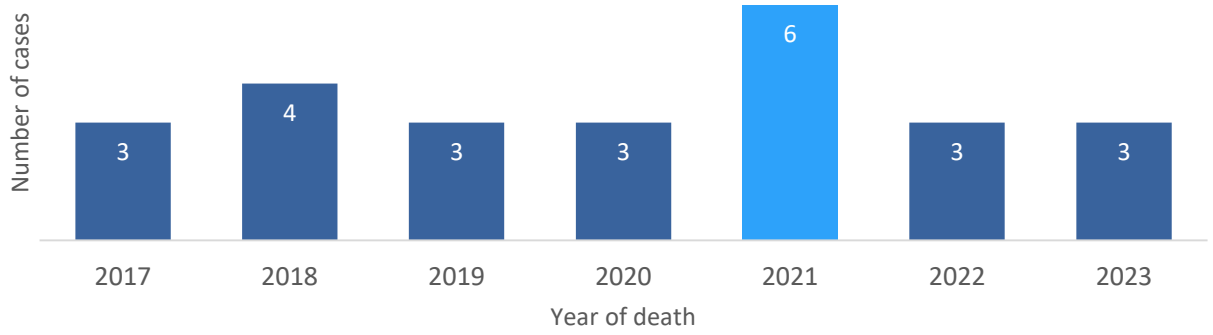


Suicides

Suicide is a leading cause of death among US youth. Nationally, the number of youth suicides peaked in 2021 and has decreased 8% in 10-24-year-olds between 2021 and 2022.[9] Delaware saw

Figure C8: Number of youth suicides by year of death

Youth suicides peaked in Delaware in 2021, similar to the national trend.



[8] CDC, National Center for Health Statistics. National Vital Statistics System, Mortality 2018-2021 on CDC WONDER Online Database, released in 2021. Accessed at http://wonder.cdc.gov/ucd-icd10-expanded.html on Apr 18, 2024.

[9] CDC. Suicide Data and Statistics. Accessed at https://www.cdc.gov/suicide/suicide-data-statistics.html#print on April 18, 2024.

similar trends with a peak number of youth suicides in 2021 (Figure C8). The CDR panel determined that in five of the six suicide deaths that occurred in 2021, Covid indirectly contributed to the death but was not the immediate or underlying cause of death. National data from CDR teams in 39 states from 2004-2017 indicate that:

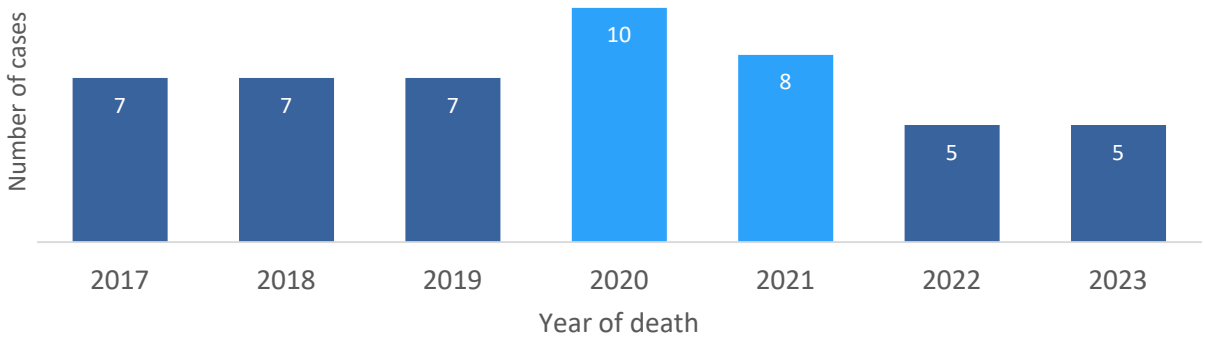
- One out of three children who died by suicide had a disability or chronic illness.
- 40% of children who died by suicide were receiving mental health services around the time of their death.
- 37% of children who died by suicide had a documented history of substance use, most often marijuana and/or alcohol.[10]

Homicides

Youth homicides peaked in the US in 2020-2021, coinciding with the period of Covid lockdowns and disruption of regular school and community services.[11] This national trend is mirrored in Delaware data that shows a peak in homicide cases in 2020-2021 (Figure C9). Overall, US data shows that firearms accounted for over 90% of youth homicides 10-19 years of age in 2021.[12]

Figure C9: Number of youth homicides by year of death

Youth homicides were up in 2020 and 2021 in Delaware, similar to national trends. Most of these deaths involved firearms.



[10] National Center for Fatality Review and Prevention. Suicide prevention recommendations based on child death review: national center report. June 2021.

[11] Curtin SC, Garnett MF. Suicide and homicide death rates among youth and young adults aged 10–24: United States, 2001–2021. NCHS Data Brief, no 471. Hyattsville, MD: National Center for Health Statistics. 2023. DOI: https://dx.doi.org/10.15620/cdc:128423.

[12] CDC National Center for Health Statistics. National Vital Statistics System, Mortality 2018-2021 on CDC WONDER Online Database, released in 2021. Accessed at http://wonder.cdc.gov/ucd-icd10-expanded.html on Apr 18, 2024.

Child Abuse and Neglect

In 2023 nine CDR/SDY cases were jointly reviewed with the Child Abuse and Neglect Panel. Findings from these cases were combined with those from near deaths involving child abuse and neglect and reviewed at a joint retreat of the Child Protection Accountability Commission and the MCDRC held in November 2023. Prioritized recommendations are included in the 2024-2025 Joint Action Plan of the Child Protection Accountability Commission and the MCDRC.

Fetal and Infant Mortality Review

FIMR reviewed 53 cases in 2023. Over half of cases (57%) were fetal deaths—those are stillbirths occurring after 20 weeks gestation—and 43% were infant deaths from causes not involving suspected abuse, neglect or unsafe sleep. FIMR's two case review teams (CRTs) met monthly, one team deliberating cases from New Castle County and the other team from Kent and Sussex Counties. There was only a delay of five months on average between the occurrence of a death and case review. FIMR cases represent almost equally a subset of fetal and infant deaths that occurred in calendar years 2022 and 2023. For all cases that are referred to the MCDRC, staff reach out to the mother and invite her to participate in a family interview. If she accepts, her case is fully reviewed. All other cases are triaged based on date of death, odd dates for one half of the year and then even dates for the other half, to randomly select about half of fetal and infant deaths occurring in Delaware for full FIMR review.

The 2023 FIMR cases continue to represent a disproportionately high burden of fetal and infant deaths among Black non-Hispanic Delawareans: they made up 28% of persons giving birth throughout the state in 2021 but make up 42% of the 2023 FIMR cohort. This disparity is more marked among fetal death cases with almost half (47%) being deaths occurring to Black non-Hispanic mothers. (See the 2023 MCDRC Annual Report Data Addendum for more details.)

What is FIMR?

FIMR is a multidisciplinary in-depth case review process to identify ways we can make pregnancy, childbirth and infancy safer for all families in Delaware.

What does FIMR do?

Since 2007 the Delaware FIMR program has reviewed a subset of all fetal and infant deaths occurring in the state to uncover risk and protective factors and trends that impact the care women and babies are receiving and opportunities to improve pregnancy outcomes.

What are key takeaways from 2023 FIMR cases?

- Continuity of care is still an important issue with key findings relating to a delay in accessing prenatal care or difficulty getting into care in a timely manner.
- Perceived quality of care is important in creating demand for services and engaging mothers in their care.
- Maternal mental health is an important part of holistic pregnancy care. Many FIMR cases demonstrate the high burden of perinatal mood and anxiety disorders (PMAD), especially among mothers who have suffered a pregnancy loss. FIMR strengths testify to the importance of routinely screening for PMAD, offering counseling and medication options as appropriate, and co-locating mental health and physical health services to decrease barriers to access.

The Family Interview

The family interview is a unique aspect of the FIMR process. All mothers who have experienced a loss that meets the FIMR criteria are invited to participate in an interview to tell their story. The family interview offers invaluable insight into the experiences accessing and receiving prenatal, delivery and postpartum care in Delaware. In 2023, 16% of FIMR cases included a family interview which allows for a deeper understanding of the challenges and successes the family faced and what worked well or did not work well in their care.

There were many fewer FIMR cases with congenital anomalies as the underlying cause of death in the 2023 reviews. Compared to 2022 reviewed cases when 50% of infant cases and 15% of fetal cases were attributed to a congenital anomaly, in 2023 it was only 22% and 0%, respectively. As shown in Figure F1, among infant cases, prematurity and its sequelae were the most frequent cause of death, reversing a trend seen in the preceding two years of review. Almost half of the total infant deaths (43%) involved infants under 24 weeks gestation at birth. Among fetal deaths, most often there was no identifiable underlying cause of death, but some cases could be linked to obstetrical complications involving the placenta or cervical insufficiency (Figure F2).

Figure F1: Underlying cause of infant deaths

Prematurity was the most common underlying cause of infant deaths reviewed in 2023 (n=23).

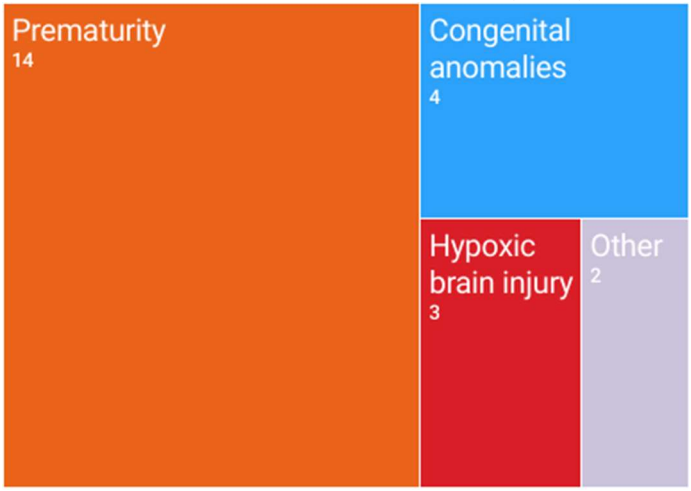
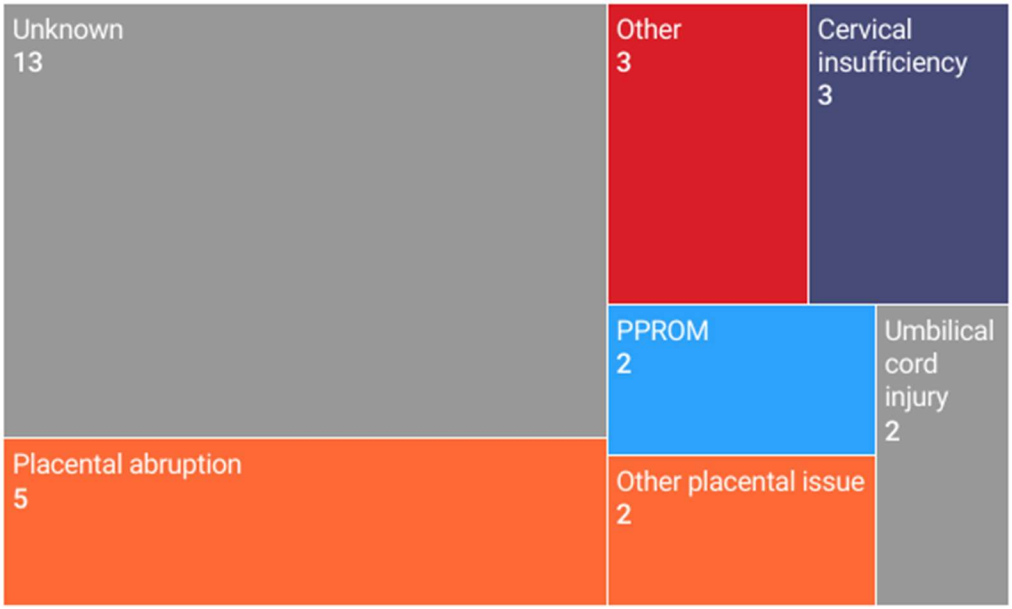


Figure F2: Underlying cause of fetal deaths

While most often there was no clear causal factor for a fetal death, obstetric complications of the **placenta** and **cervix** were identified in some cases.



PPROM = Preterm premature rupture of membranes

FIMR CRTs identify systemic risk factors (findings) and protective factors (strengths) during the case deliberation process. For the first time, strengths identified in FIMR cases (n=92) outnumbered findings (n=74). When grouped into categories, "Continuity of care" and "Quality of care" had the greatest number of findings, while "Mental health", "Continuity of care" and "Quality of care" had the greatest number of strengths (Figure F3). (For more detailed information by category, see the 2023 MCDRC Annual Report Data Addendum.)

Figure F3: Strengths outnumbered Findings in 2023 FIMR Cases

Continuity of Care includes issues relating to a family accessing care when they want it; getting a referral for appropriate care; or the (in)effective communication between providers to coordinate care, referral or follow up.

Category	Findings (n=74 total)	Strengths (n=92 total)
Maternal Health & Morbidity	3	0
Infant Health	1	2
Continuity of Care	13	16
Mental Health	4	20
Substance Use Disorder (SUD)	6	5
Quality of Care	15	14
Respectful Maternity Care	5	8
Family Support	7	10
Social Determinants of Health	1	10
Family Planning	3	5
Fetal Kick Counts (FKC)	4	0
Vital Statistics	4	0
FIMR Process	8	2

The most strengths were in Mental Health, those are issues relating to living with a mental health condition, its diagnosis or treatment; access to mental health care; or the stigma associated with mental health.

Quality of Care is the provision of care in keeping with the highest standards or evidence base to achieve care that is patient-centered and coordinated.

The FIMR CRT members convened for an annual retreat to review all the data from 2023 cases together and identify the top priority recommendations. Three priority recommendations as voted on by CRT members are described below. In addition, there were an additional four recommendations that were discussed at the retreat, and these are listed in Appendix A along with their rationale.

FIMR 2023 Priority Recommendations

Access to perinatal care

Recommendation: The state and health entities in Delaware should consider creative models of care to assist those pregnant patients seeking early and regular prenatal care. This may include utilizing primary care providers for preconceptual care and inter-conceptual care; identifying prenatal patients early and putting them in contact with a Medicaid managed care organization (MCO) care coordinator; expanding access to midwifery care; and exploring the feasibility of models of care that operationalize educational and social supports such as the "Centering Pregnancy" program that simultaneously increases both access and quality of care, thus increasing demand for services.

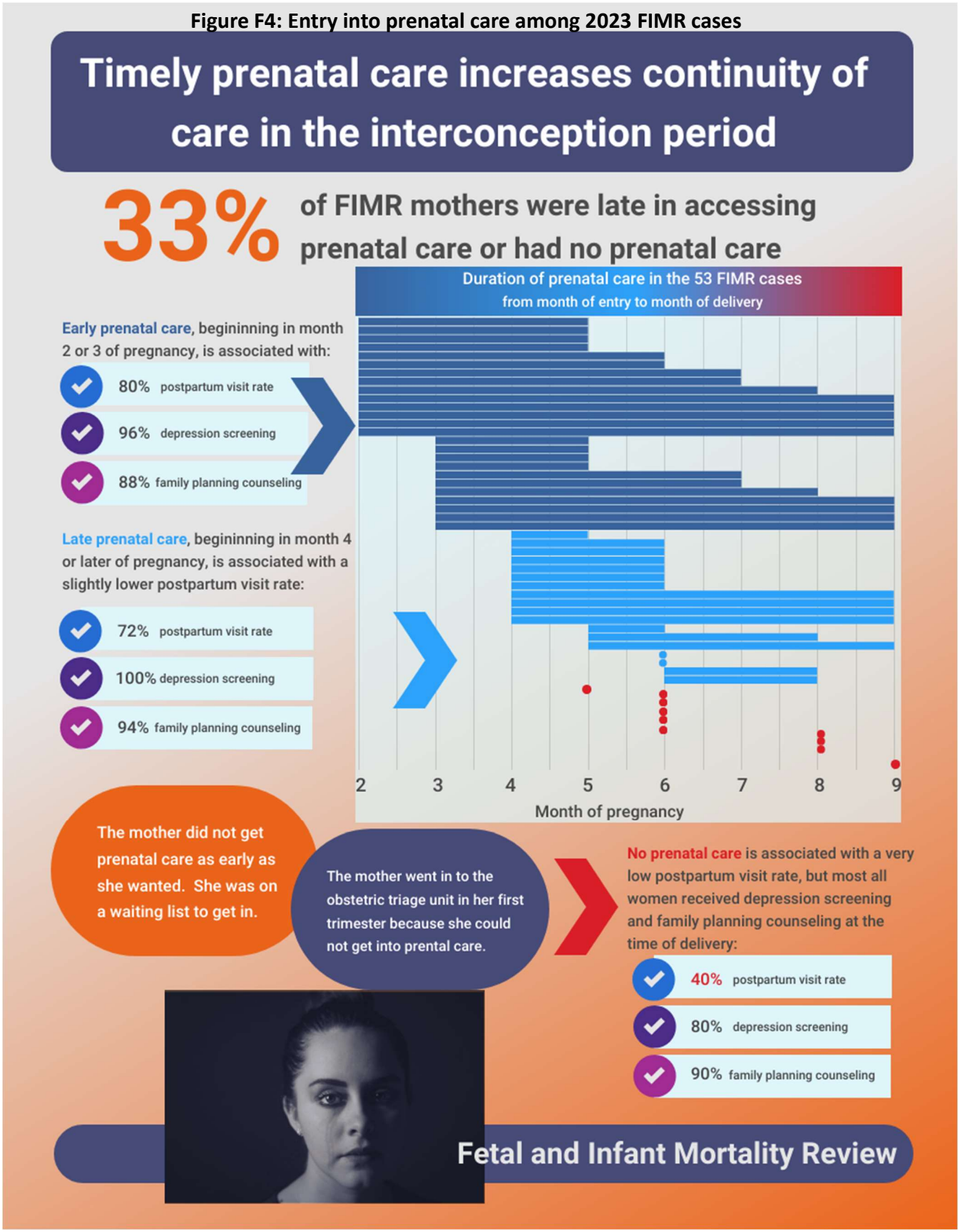
Rationale:

- One-third of FIMR mothers were late in accessing prenatal care or had no prenatal care. (See Figure F4.)
- There is a shortage of obstetric providers, especially in southern Delaware, which is leading to a delay in entering prenatal care.
- Consumer demand for services may be diminished if there is reduced value or perceived quality of care.
- Lack of a postpartum visit has remained an issue even among mothers who experience a pregnancy loss and thus are at higher risk for future poor pregnancy outcomes.

Action Step:

- Share this recommendation with the Community Action Team, DPQC, DHMIC, Community Health Workers, and at any other partner meetings which MCDRC staff regularly attends or is invited to present.

Figure F4: Entry into prenatal care among 2023 FIMR cases



Maternal mental health

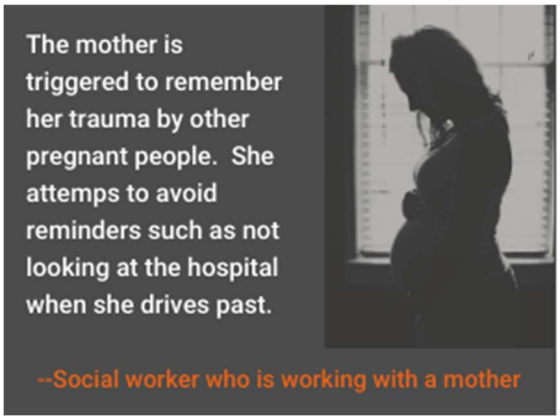
Recommendation: Health care practices and systems should expand the integration of mental health and primary care services to reduce barriers to access.

Rationale:

- Perinatal mood and anxiety disorders (PMAD) are the most common complication of pregnancy.
- The postpartum period is a time of high risk for increased stress, anxiety and physiological changes that put parents at higher risk for depression and anxiety.
- There is a need to increase access to mental health services, screening and treatment wherever pregnant and postpartum persons access care. This includes in the emergency department, urgent care, family medicine, pediatric and women's health care settings.
- FIMR strengths include three examples of increased access to postpartum mental health counseling because of co-located services.

Action Step:

- The MCDRC supports the Delaware chapter of Postpartum Support International's efforts to expand access to trainings on PMAD to all Delaware health care providers as part of the Delaware licensure requirements.



Medicaid MCO care coordination

Recommendation: Increase the awareness and integration of Medicaid managed care organization (MCO) care coordination among women's health providers during the prenatal and postpartum periods. Encourage providers to complete the Obstetric Needs Assessment Form to hasten the identification of pregnant persons by Medicaid MCOs. Educate patients to fill out the notification of pregnancy forms.

Rationale:

- There is little evidence of coordination between women's health providers and Medicaid MCO care coordinators in FIMR records. This is corroborated by our Medicaid MCO partners' experiences.
- Medicaid MCOs cover the majority of births and fetal and infant losses in Delaware. All three Medicaid MCOs offer care coordination for their pregnant patients.

- Patients can earn incentives by filling out the notification of pregnancy forms and participating in Medicaid MCO care coordination services.

Action Step:

- The MCDRC will work on establishing a Memorandum of Understanding with Medicaid MCOs to enable the sharing of MCO care coordination information in the FIMR case abstraction process. More thorough record review will help FIMR CRTs understand the scope of MCO care coordination services and identify opportunities to better integrate these services within the larger health care system.

Maternal Mortality Review

What is MMR?

MMR is a multidisciplinary in-depth case review process that looks into every pregnancy associated death, that is the death of any Delawarean during pregnancy or up to one year after the end of the pregnancy, irrespective of cause.

What does MMR do?

The MMR Committee determines if the death was likely pregnancy related--if the death is due in any way to the person's being pregnant--and if there are improvements to the maternal health system of care that could prevent the occurrence of future deaths. Delaware's MMR is supported by the Centers for Disease Control and Prevention's (CDC) Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) grant, and all the data from Delaware's cases are de-identified and contribute to national statistics on maternal mortality.

What are key takeaways from 2023 MMR cases?

- Many pregnancy associated deaths in Delaware involve both mental health conditions and substance use disorder, and overdose has been the #1 underlying cause of death for the last four years of review.
- Pregnancy associated deaths involve many overlapping risks including trauma history in the women's lives, social risks and health risks.
- Coordinated care that is patient-centered is important to address the multiple issues affecting women at highest risk for pregnancy associated deaths.

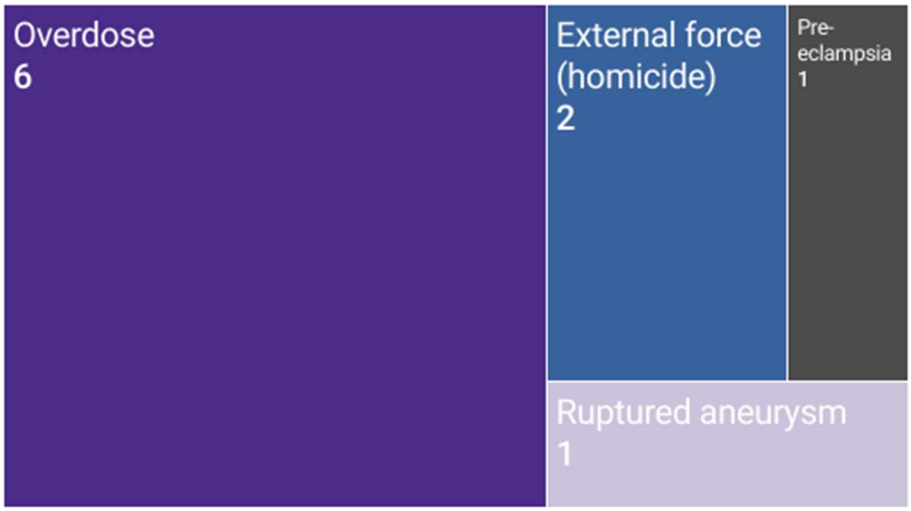
2023 Cases Reviewed

The Maternal Mortality Review Committee (MMRC) reviewed ten cases in 2023 representing pregnancy associated deaths that occurred between calendar years 2019 and 2023. Three cases involved women who were White non-Hispanic, four were Black non-Hispanic, two were Hispanic women, and one woman was biracial. Eight women were on Medicaid. Cases represented residents from all three counties in proportions comparable to the distribution of live births in Delaware. (See 2023 MCDRC Annual Report Data Addendum for more details.) In two of the ten cases, members of the women's family were interviewed, and their perspectives provided invaluable insight into the women's lives and experiences.

For the last four years of reviews, acute drug intoxication or overdose has been the number one underlying cause of death in MMR cases. In 2023 cases, six of the ten were due to overdose (Figure M1). Two other deaths were homicides, and two deaths had underlying medical causes. Three deaths were determined to be pregnancy-related, meaning that the deaths were likely causally linked to the women being pregnant or a complication of pregnancy. The MMRC determined that eight deaths were potentially preventable, that in these cases there was at least some chance that the death may have been averted by a reasonable change to a risk (contributing) factor.

Figure M1: Underlying cause of death among MMR cases (n=10)

For the fourth year in a row, **overdose** was the most common cause of death in cases reviewed by the MMR Committee.

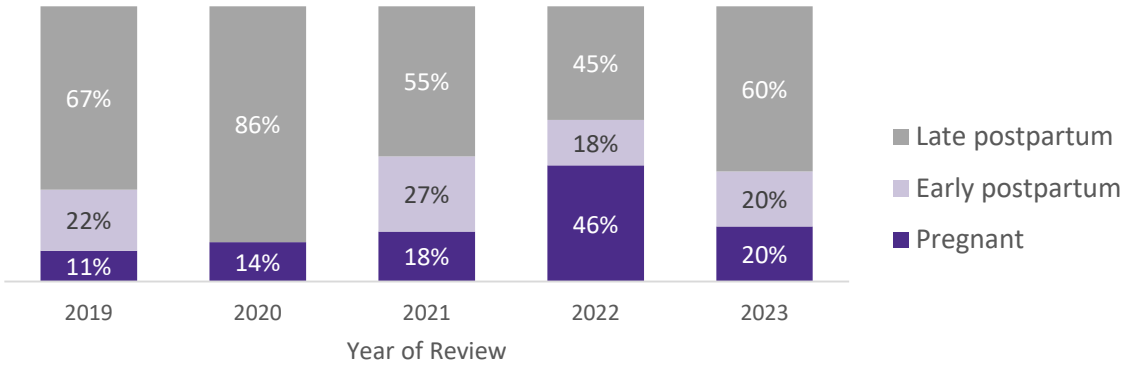


MMR=Maternal Mortality Review

Similar to the past several years, most MMR cases represent deaths that occurred in the late postpartum period, between six weeks and one year after the end of the pregnancy (Figure M2). Among 2023 cases, six occurred in the late postpartum period, two occurred while the woman was still pregnant, and two deaths occurred on the day of delivery or up to six weeks after delivery (early postpartum).

Figure M2: Timing of death in MMR cases by year of review

Most deaths reviewed by the MMR Committee occur in the **late postpartum**, beyond six weeks after the end of pregnancy.



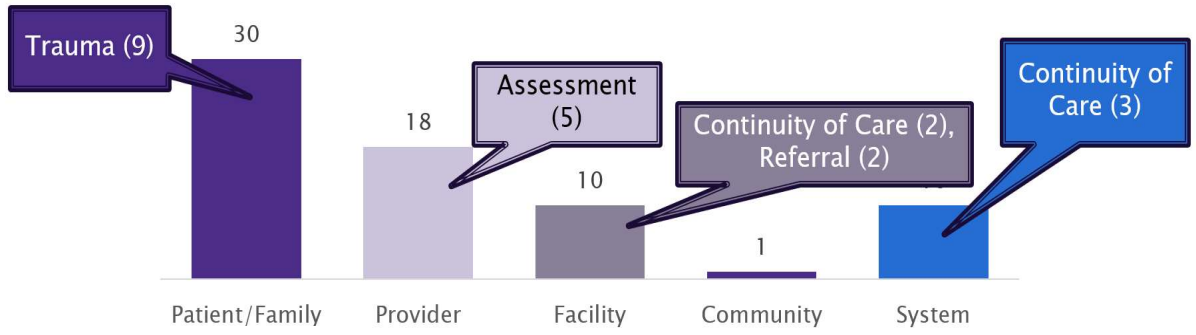
MMR=Maternal Mortality Review

The MMRC identifies contributing factors that may have increased the chances of the death. These contributing factors can be associated with risk factors for the individual patient or family involved, or factors that involve the provider, facility, community or health care or social service system. Among 2023 MMR cases, 69 contributing factors were identified across the ten cases reviewed. Most of them were linked to the patient/family level where a history of trauma was the single most common

issue identified. At other levels, there were different issues most frequently identified. Figure M3 shows the number of common contributing factors by level. For each contributing factor identified at the time of case review, a corresponding recommendation is drafted. The MMRC members reviewed the full year's data on contributing factors and draft recommendations at an annual retreat. Based on the discussion at the retreat and voting on top priorities, three overarching recommendations were identified and are listed below. Appendix B lists the other recommendations that were deemed high priority based on MMRC members' voting.

Figure M3: Number of contributing factors identified in 2023 MMR cases by level

Patient/family risk factors are commonly noted in MMR cases, particularly a history of **trauma**. Lack of **continuity of care** and inadequate **assessment** of risk were the most common factors at the provider, facility and system levels.



MMR=Maternal Mortality Review

2023 Priority Recommendations

Team-based care

Recommendation: A team-based, collaborative care plan--with input from the patient and providers--should be the standard approach to optimize a patient's health issues across physical, mental and social domains. The care plan would be a living document designed to follow a patient across multiple sites of care and to promote regular, timely communication between providers and between each provider and the patient.

Action Step:

- Share this recommendation with the Community Action Team, DPQC, DHMIC, Community Health Workers, and at any other partner meetings which MCDRC staff regularly attends or is invited to present.

Care Coordination

Recommendation: Care coordinators and peer support specialists can help navigate patients through the health care system and transition across different levels and sites of care, ensuring fewer patients are lost to follow up.

- All health care team members should know how to access or refer to care coordinators and peer support specialists to ensure follow up and communicate the care plan.

Action Step:

- Share this recommendation with the Community Action Team, DPQC, DHMIC, Community Health Workers, and at any other partner meetings which MCDRC staff regularly attends or is invited to present.

Quality of care

Recommendation: Providers should communicate laboratory results back to the patient and develop a plan to address any abnormal results in a timely manner.

Action Step:

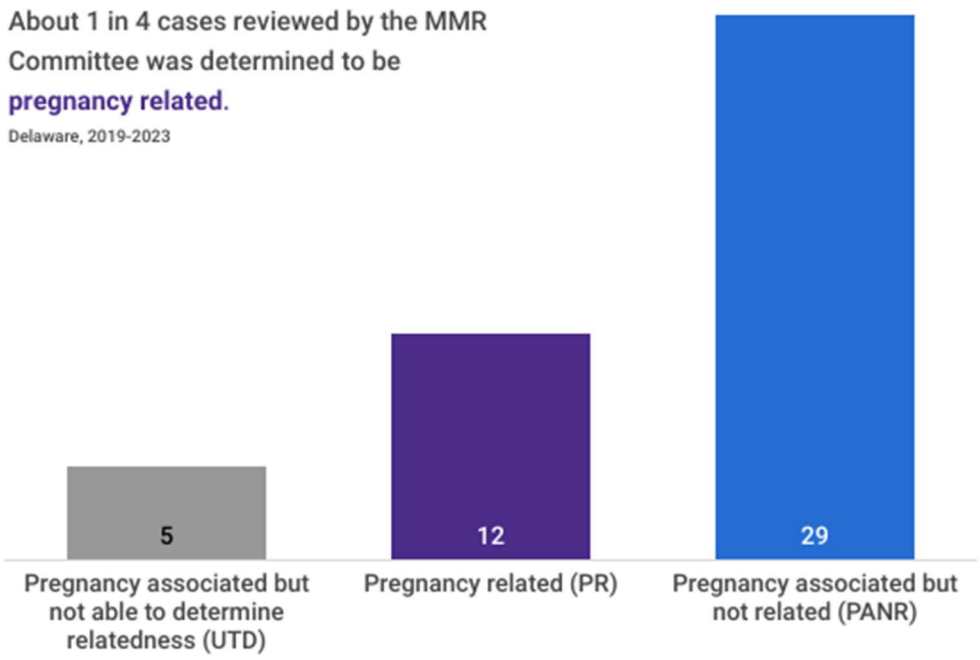
- The MMRC has noted a lack of follow up on abnormal laboratory results as an issue that will be tracked in future cases.

2019-2023 Five-year Analysis of MMR Cases

The Delaware MMRC reviewed 46 pregnancy associated cases in the last five years. These cases represent deaths occurring between calendar years 2017 and 2023. About one in four cases (26%) were deemed to be pregnancy related (Figure M4). In five cases, pregnancy relation was unable to be determined (UTD), and 63% of cases were pregnancy associated but not related (PANR). Racial disparities in maternal mortality exist in Delaware and are similar to national statistics reported by the CDC. The Pregnancy Mortality Surveillance System reports a national pregnancy related mortality ratio (PRMR) of 17.6 deaths per 100,000, with Black non-Hispanic women experiencing deaths at 2.8 times

the White non-Hispanic ratio.[13] Preliminary data for 2020 reveals an increase in the PRMR to 24.9 with Covid-related deaths accounting for much of that increase. While there were increases in race-specific PRMRs across the board, the Black: White disparity ratio increased to 3.1.[14] In Delaware, Black non-Hispanic women are disproportionately represented among both pregnancy related cases and pregnancy unrelated cases (Figure M5). While Black non-Hispanic women made up 28% of those persons giving birth in Delaware in 2021, they made up 50% of PANR/UTD cases—cases that are not related to pregnancy—and 42% of pregnancy related cases. Hispanic women of any race also experienced higher numbers of pregnancy related deaths than would be expected based on their portion of live births in Delaware. One-third of pregnancy related cases reviewed in the last five years involved Hispanic women.

Figure M4: Pregnancy relation in MMR cases reviewed 2019-2023

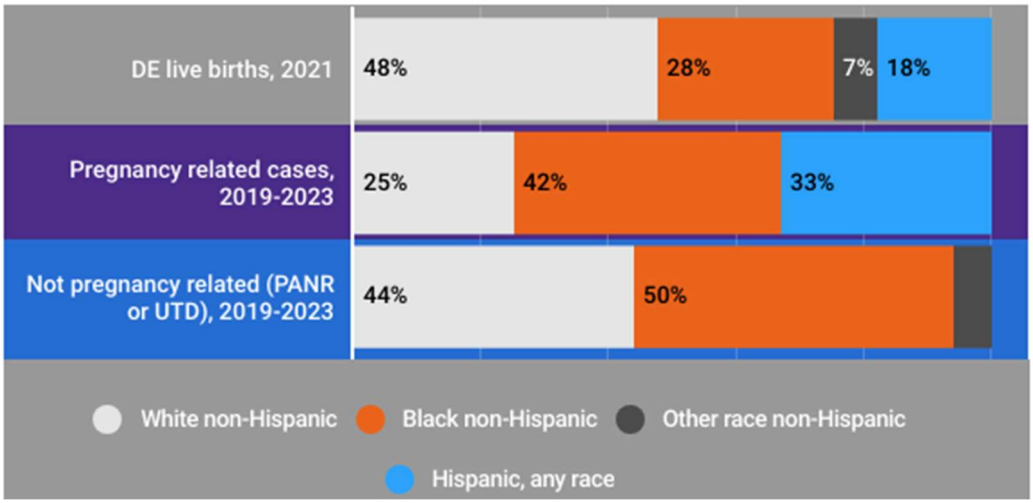


MMR=Maternal Mortality Review

[13] CDC. Pregnancy Mortality Surveillance System. Accessed at https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm on 4/12/24.
[14] CDC. "National ERASE MM Program and Science Updates from the CDC." MMRIA User Meeting, April 10-11, 2024. Atlanta, GA.

Figure M5: Race and ethnicity of MMR cases compared to women delivering in Delaware

Black non-Hispanic women experience a higher rate of pregnancy associated death, and **Hispanic women** made up a larger than expected portion of the pregnancy related deaths reviewed in the last five years.



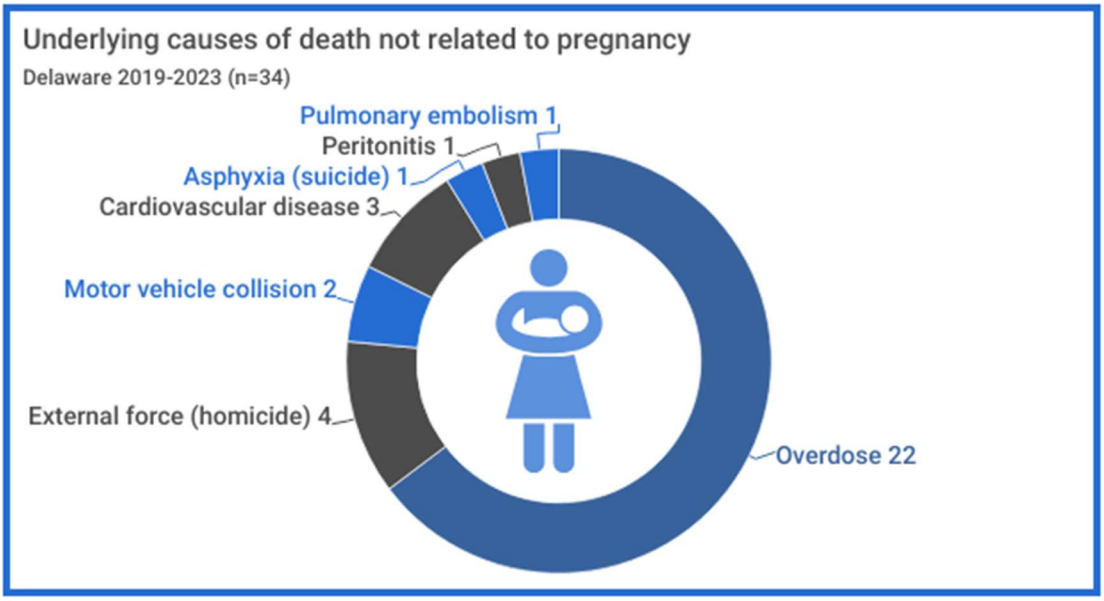
MMR=Maternal Mortality Review. PANR=Pregnancy associated but not related. UTD=unable to determine.

The underlying cause of death for cases not related to pregnancy and pregnancy related cases is depicted in Figure M6. In both categories, overdose was the number one cause of death, making up two-thirds of cases that are not related to pregnancy and one-third of pregnancy related cases. Hypertensive disorders of pregnancy, including such conditions as pre-eclampsia and eclampsia, was the second leading cause of pregnancy related deaths.

Timing of death varies notably by pregnancy relation. Most pregnancy related cases occur in the early postpartum period, 1-42 days after delivery, while most pregnancy unrelated cases occur in the late postpartum period, 43 days – 1 year after the end of the pregnancy (Figure M7). A similar proportion of pregnancy related and unrelated cases, about one in four, occur during pregnancy.

Figure M6: Underlying cause of death by pregnancy relation

Overdose is the most common cause of death among cases not related to pregnancy as well as pregnancy related cases.



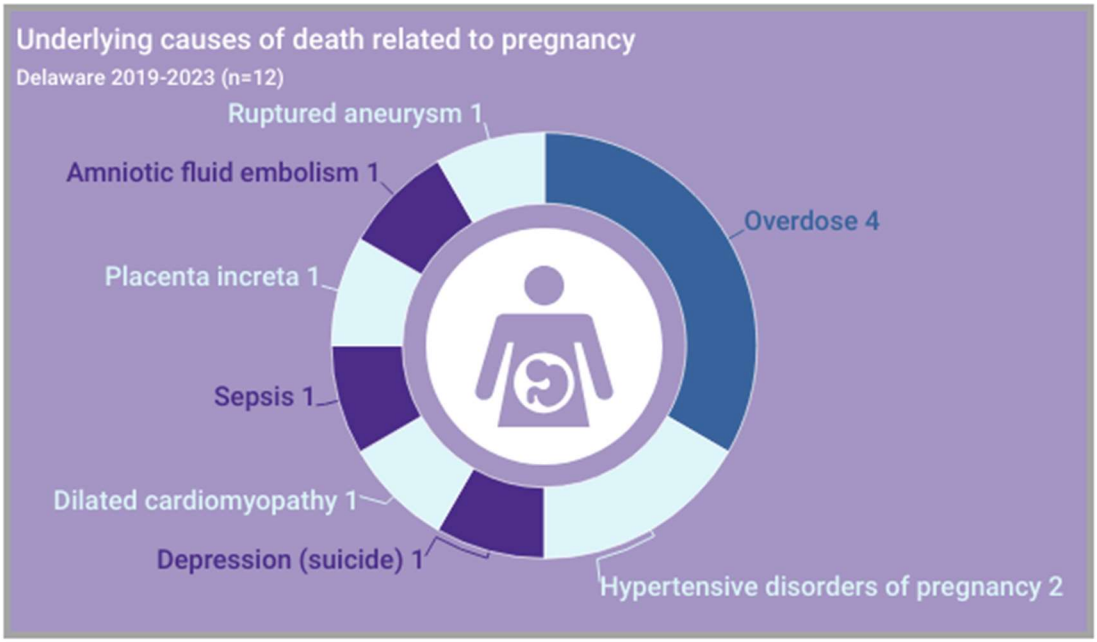
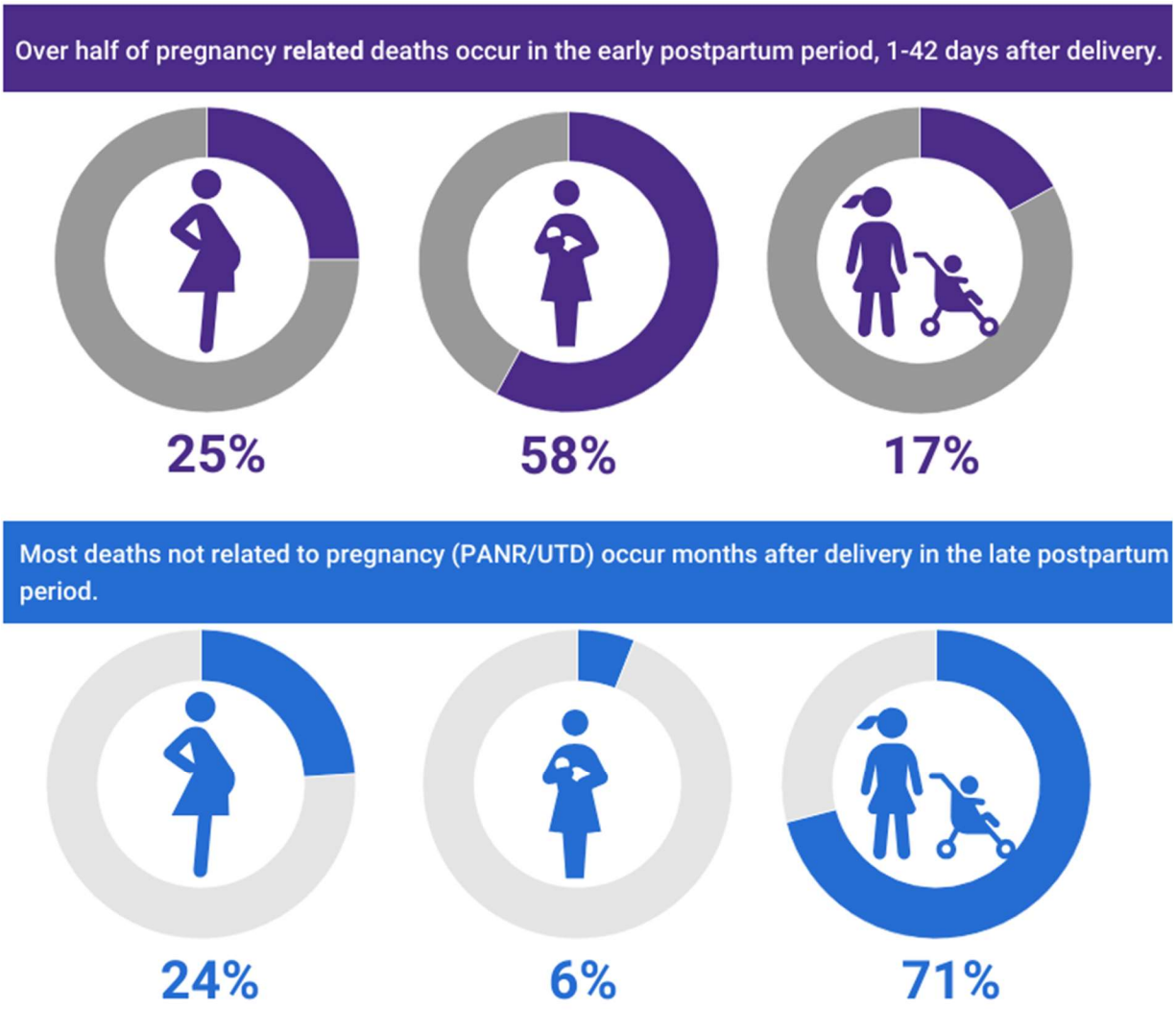
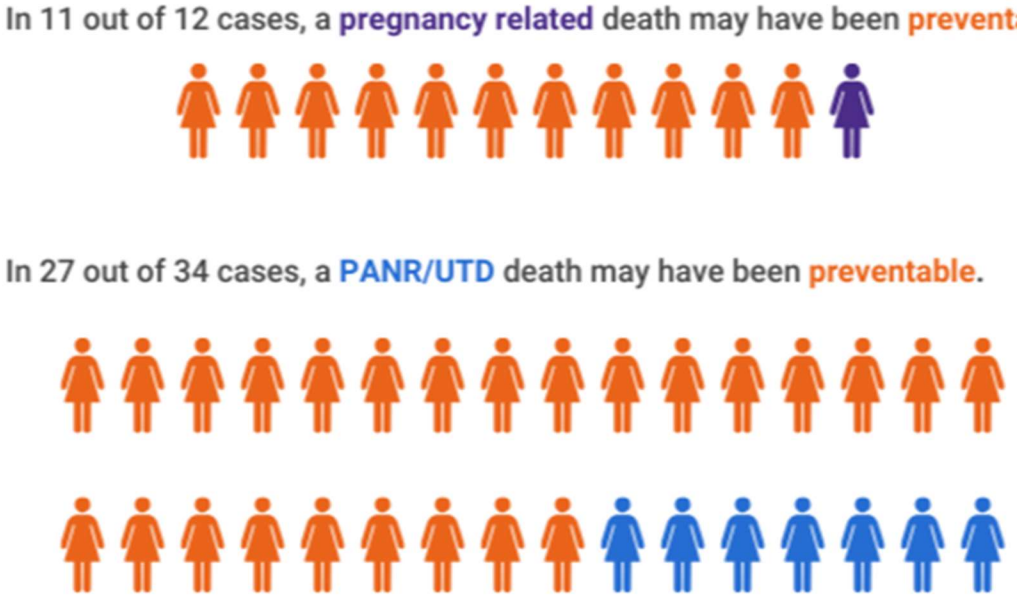


Figure M7: Timing of death by pregnancy relation



As part of their deliberation process, the MMRC considers whether some change at any level—from the patient, provider, facility, community and system of care—could have possibly averted the death. If the answer is yes, this death is considered preventable. Ninety percent of pregnancy related cases were determined to be potentially preventable, and only a slightly lower percent of pregnancy unrelated cases (80%) was potentially preventable (Figure M8).

Figure M8: Preventability by pregnancy relation

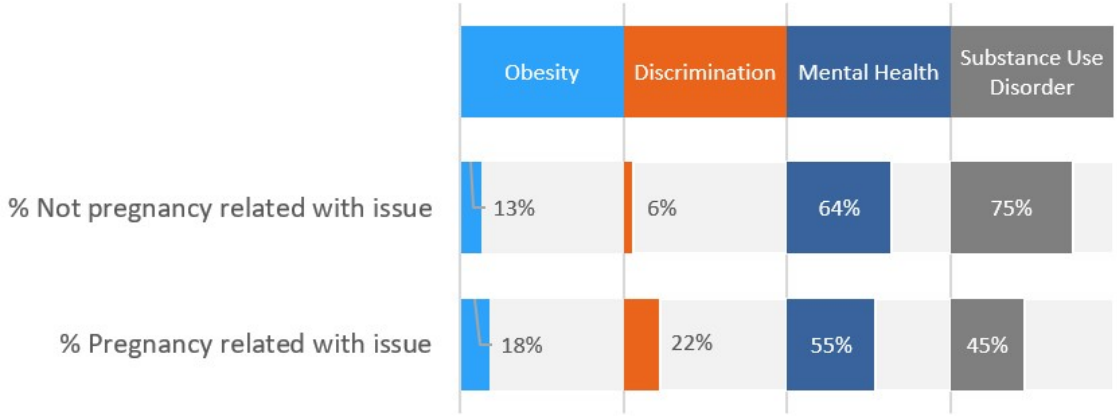


PANR=pregnancy associated but not related. UTD=unable to determine.

The CDC-guided approach to reviewing MMR cases involves ascertaining if one of four factors contributed to the death: obesity, discrimination, substance use disorder (SUD) and a mental health condition other than SUD. The proportion of pregnancy unrelated (PANR or UTD) and pregnancy related cases with one of these factors contributing is shown in Figure M9. Discrimination was determined to contributory in one-fifth of pregnancy related cases. The occurrence of mental health and SUD are most often co-occurring in pregnancy associated cases. Of the six pregnancy related cases with mental health contributing, five also had SUD contributing. Of the pregnancy unrelated cases with mental health contributing (n=18), all but one also had SUD contributing. This overlap of SUD and a mental health condition has been a clear trend seen over many years of MMR data and describes a group of women at high risk for maternal mortality.

Figure M9: Factors contributing to death by pregnancy relation

Discrimination is higher in pregnancy related cases. The co-occurrence of mental health and substance use disorder are highly prevalent in all pregnancy associated cases.



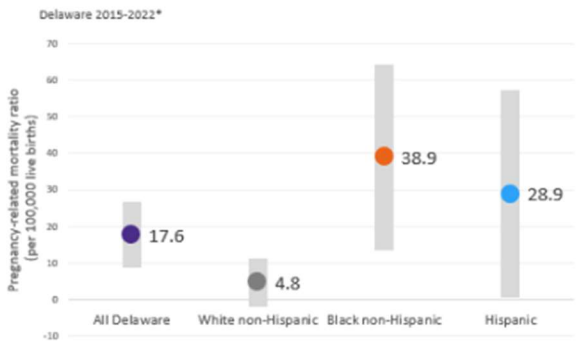
Maternal Mortality Review

Death from a pregnancy complication, a chain of events initiated by pregnancy, or the pregnancy's effect on an unrelated health conditions (such as diabetes) is known as a **pregnancy related death.**

In a population, pregnancy related deaths are measured as the number of deaths per 100,000 live births. This indicator is called the pregnancy related mortality ratio.

The Delaware pregnancy related mortality ratio is on par with the national ratio of 17.6 deaths per 100,000 live births[1]

The Delaware **PRMR** hides a wide racial disparity, though small population size limits the inferences we can make about the exact magnitude of the differences by race and ethnicity.



*2022 Delaware live births are not yet available, so 2021 numbers were used to calculate PRMR.
Note: some race/ethnicity categories are not reported due to small numbers and unstable ratios.
95% confidence intervals are shown by gray bars.

[1]CDC. Pregnancy Mortality Surveillance System, 2019 US PRMR.

Most commonly identified factors contributing to a pregnancy related death include . . .

Knowledge about the significance of a health event, importance of treatment or follow up

Lack of **clinical skill or quality of care**

Delay in referring or accessing care

Poor communication leading to disjunct care

Based on 2015-2022 pregnancy related cases reviewed by the Delaware MMRC

Leading causes of pregnancy related deaths in the US 2017-2019 vary by race and ethnicity

Data from MMRCs in 36 states[2]

White non-Hispanic

35% of pregnancy related deaths are due to **Mental health conditions***

&

12% **Hemorrhage**

Black non-Hispanic

16% of pregnancy related deaths are due to **Cardiac and coronary conditions**

&

14% **Cardiomyopathy**

Hispanic Any Race

24% of pregnancy related deaths are due to **Mental health conditions***

&

21% **Hemorrhage**

*Mental health conditions include deaths related to substance use disorder.

[2]CDC. Pregnancy-related deaths: data from maternal mortality review committees in 36 US states, 2017-2019.

Solutions will likely require health systems, insurers, hospitals, providers and community-based partners working together to deliver more **Coordinated Team-based Care.**

Community Action Team

In 2023 the MCDRC was awarded a supplemental ERASE MM grant from the CDC. This funding propelled the implementation of the Community Action Team (CAT), a longstanding part of the Commission's statute, but one that had, up to this point, been unfunded. The CDC grant is integral in supporting the position of a CAT Coordinator. Additionally, with the amendment to § 301, Title 31 of the Delaware Code via HB 340 the year prior, there was timely, strong political will and broad community by-in to expand the function of the MCDRC to encompass action planning and implementation.

The goal of the CAT is to foster a public-private maternal child health collaborative to implement recommendations from the FIMR and MMR programs based on the principles of true community engagement and community empowerment. The ultimate aim of the CAT is to strengthen Delaware communities in supporting healthy pregnancies and families by understanding and improving the factors that affect fetal, infant and maternal mortality.

In July 2023 the MCDRC hired a CAT Coordinator who is a master's prepared registered nurse with more than 25 years of program development and management experience with diverse community partners. The coordinator's initial efforts involved ensuring the application process for CAT membership was robust in nature. The CAT Coordinator completed an assessment of the original application process. This added step was key in ensuring efforts to recruit members were comprehensive, representing a cross-section of stakeholders as well as birthing persons from the community with lived experience. These efforts remain an ongoing process of the CAT.

Once the application process was finalized, the CAT Coordinator was charged with developing a preliminary charter which served to outline roles and responsibilities of members as well as thinking through how the overall structure of the CAT would fit into the work of the MCDRC to bring FIMR and MMR findings and recommendations to action.

The first CAT kickoff meeting was held on September 20 and brought together stakeholders and community partners in the maternal child health field across the state (Figure T1). CAT members represent a multi-sectoral collaboration, bringing professional and lived experiences to inform the implementation of FIMR and MMR recommendations (Figure T2). The second CAT meeting began the process of prioritizing FIMR and MMR recommendations by applying the dual lenses of feasibility and impact. In 2024, work will continue to set the CAT action agenda based on the identified priority recommendations, incorporating findings from this 2023 annual report, and convening implementation teams to plan and execute the action agenda. Here again, the CDC ERASE MM funding will support a budget for action planning and implementation.

Figure T1: Community Action Team members represent a variety of perspectives both in their personal and professional lives

Figure T2: The CAT is purposefully convened to represent **many sectors** that create the conditions for healthy families and communities to thrive across the state

CAT=Community Action Team

Conclusion

There are exciting opportunities for expanding the pathways for prevention and improvement to achieve better health outcomes for women and children in Delaware. The work of the MCDRC is one part of a larger effort to align resources, knowledge and expertise to make strategic changes with maximum impact. While progress is being made, some recurring issues persist as evinced by recommendations put forth this year that are similar to years past. There are also new and emerging challenges to face with a more diverse, multicultural population that underscores the central role that community-based partners play to deliver accessible and quality care. It will continue to take collaborators, colleagues and communities to move this work forward. The findings, recommendations and data in this report is put forth to inform maternal child health efforts, program planning and policy priorities to ensure that no woman or child dies from preventable causes.

Appendix A: Additional FIMR Recommendations

Fourth Trimester

Recommendation: Continue education for all providers treating postpartum patients on the importance of the fourth trimester and reimbursement opportunities made possible through the expansion of Medicaid in Delaware to cover the full 12 months postpartum. Educate patients early and at every visit on the importance of keeping their postpartum appointments and initiating interconception care. Integrate the use of mobile apps to support continuity of care and patient education on what to look out for at various times in pregnancy and postpartum.

Rationale:

- Lack of a postpartum visit has remained an issue even among mothers who experience a pregnancy loss and thus are at higher risk for future poor pregnancy outcomes.
- Many FIMR mothers have multiple comorbidities that require continued management in the postpartum period.
- Consumer demand for postpartum services may be diminished by a lack of perceived value for these services and prior experiences of disrespectful or poor-quality care.

Public education campaign on marijuana

Recommendation: State agencies should work with community partners to develop a public messaging campaign about the effects of marijuana use during pregnancy and while caring for an infant. The campaign should encompass a nonpunitive approach to build families' trust and engage in providing education that is unbiased and comes from trusted sources. A public education campaign about marijuana use in pregnancy/postpartum should be culturally appropriate and consumer-focused:

- Social media messaging will better reach young people.
- Community-designed messages and community advocates to convey them will ensure better relevance and acceptance of the information.
- Partners in the public education effort may include:
    - Home visiting programs
    - The Fetal Alcohol Spectrum Disorder Coalition
    - The Breastfeeding Coalition of Delaware
    - The Community Health Worker Association of Delaware
    - Doulas
    - Healthy Delaware (the Quitline)

Rationale:

- Marijuana is the most common positive substance on drug screen in FIMR cases.
- Marijuana is not often discussed as part of prenatal education as documented in FIMR record review.

- Marijuana has effects on the developing fetus including long-term neurodevelopmental effects.[15]
- Any substance use by caregivers puts their infant at increased risk for an unsafe sleep incident.
- Delaware's legalization of marijuana may increase the prevalence of its use in women of childbearing age.
- The concentration of tetrahydrocannabinol (THC) in cannabis products is increasing, resulting in higher risk of addiction and mental health disorders.[16]
- Legalization does not equate to safety of use in pregnancy. The messaging around marijuana needs to be adapted for the changing sociolegal climate. Delaware may be able to look at other states' examples of educational campaigns following marijuana legalization.

Translation services

Recommendation: Expand access to high quality translation services in all health care settings.

Rationale:

- FIMR cases reflect a growing number of foreign-born women and undocumented immigrants who are receiving care in Delaware. Care of this culturally diverse population may require more interpreters, more community-based programs, and new types of programs to meet the increased need for services.

Postpartum doula services

Recommendation: The MCDRC supports the efforts of the DHMIC's Doula Ad Hoc Committee to extend doula reimbursement to the postpartum period.

Rationale:

- There is a drop off in services and contacts with women in the postpartum period, yet it is a period of increased health risks and psychosocial stress.

[15] Baranger, D. A. A., Paul, S. E., Colbert, S. M. C., Karcher, N. R., Johnson, E. C., & Hatoum, A. S. (2022). Association of mental health burden with prenatal cannabis exposure from childhood to early adolescence: longitudinal findings from the Adolescent Brain Cognitive Development (ABCD) Study. In JAMA Pediatrics (Vol. 176, Issue 12, pp. 1261–1264). American Medical Association. https://doi.org/10.1001/jamapediatrics.2022.3251.

[16] Freeman, T. P., Craft, S., Wilson, J., Stylianou, S., ElSohly, M., Di Forti, M., & Lynskey, M. T. Changes in delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD) concentrations in cannabis over time: systematic review and meta-analysis. In Addiction (Vol. 116, Issue 5, pp. 1000-1010).

Appendix B: Additional MMR Recommendations

- Hospital staff should review, acknowledge and initiate treatment when indicated for abnormal laboratory tests.
- Providers should document communication to the patient of any abnormal labs and a plan to address them.
- Perinatal care providers should have a standard set of pre-eclampsia/postpartum discharge instructions to educate patients on warning signs.
- There is an opportunity for Delaware Medicaid and Medical Assistance (DMMA) to educate providers about the availability of MCO-based care coordination services and how to access them.
- Perinatal staff should be regularly trained on team communication in a coordinated, collaborative approach.
- Health services should be team-based with specialists brought on to address specific diagnoses including SUD and trauma history for a holistic approach to care.
- Providers and facilities should ensure that critical inpatient clinical consultations are completed before discharge or included in plans for outpatient care.
- Providers should screen for behavioral health symptoms/risk at the first prenatal visit and throughout postpartum as needs may change over the course of care.
- Care coordinators and peer support specialists may improve opportunities to co-manage patients seen by different providers at different sites.
- Hospitals, clinics and care providers should screen for social determinants of health including intimate partner violence at the first prenatal visit and throughout postpartum.
- Providers should refer patients for SUD treatment when discharge planning and offer a warm hand off to follow up for best engagement.
- Delaware should consider ways to offer mental health providers, i.e., licensed clinical social workers and counselors, educational loan forgiveness programs to retain them in the state.
- The MCDRC will work with Medicaid MCOs to set up a memorandum of understanding to better learn about care coordination opportunities for high-risk patients.
- Delaware needs more long-term wraparound SUD treatment with housing services to provide stable living situations and better access to treatment services.
- Offer peer support services when a patient accesses the system without continuity of care or has factors that put them at risk to return to substance use.

Appendix C: Commissioners and Review Panel Members

Maternal and Child Death Review Commission

Role	Designee
Department of Justice	Kelly Singleton
State Police	Corporal Andrea Warfel
Delaware Medicaid and Medical Assistance	vacant
Department of Services for Children, Youth and their Families	Trenee Parker
Department of Education	Cassandra Codes-Johnson
Office of the Child Advocate	Tania Culley
Division of Substance Abuse and Mental Health	Mary Wise
Office of the Medical Examiner	Gary Collins
Division of Public Health	Mawuna Gardesey
SDY Panel Chair	Mary Ann Crosley
SDY Advanced Panel Chair and Pediatrician	Amanda Kay
CDR Panel Chair and OB/GYN	Philip Shlossman
MCDRC Co-Chair, FIMR New Castle Chair	Aleks Casper
FIMR Kent/Sussex Chair	Bridget Buckaloo
MCDRC Chair, MMR Chair and Perinatologist	Garrett Colmorgen
Neonatologist	David Paul
Delaware Nurses Association	Nancy Forsyth
Licensed Mental Health Professional	Fran Franklin
Police Chiefs Council	Chief Laura Giles
New Castle County Police Department	Lt. Mike Bradshaw
Child Advocate, non-profit	Patti Dailey-Lewis
Maternal Advocate, non-profit	Doris Griffin
Certified Nurse Midwife	Michelle Drew

CDR Panel Members
Nicole Alexander, AA
Kaitlyn Angermeier, OTR/L
Angela Birney
Kevin Bristowe, MD
Ann Covey, BSN, RN, NCSN
Lt. Aaron Dickinson (Dover PD)
Lt. Robert Roswell (Dover PD)
Philip Shlossman, MD, Chair
Cpt. Darren Short (DSP)
Tina Ware, MM/PA
Lt. Dwight Young (Milford PD)

SDY MDT/First Level Panel Members
Olufolake Remi Adepoju, APRN, DNP
Nicole Alexander, AA
Angela Birney
Cassandra Codes-Benjamin, MPA
Mary Ann Crosley, RN, Chair
Greer Firestone
Sgt. Hector Garcia (NCC PD)
Sgt. John Jefferson (DSP)
Stewart Krug
Det. Ron Mullin (Wilmington PD)
Tina Ware, MM/PA

SDY Advanced
Aaron Chidekel, MD
Gary Collins, MD
Ember Crevar, MD
Stephanie Deutsch, MD
Stephen Falchek, MD
Aisha Frazier, MD
Karen Gripp, MD
Amanda Kay, MD, Chair
Bradley Robinson, MD
Joel Temple, MD
Takeshi Tsuda, MD

FIMR New Castle County
Jalisa Anderson
Mychal Anderson-Thomas
Heather Baker
Aleks Casper, Chair
Megan Coalson
Shané Darby
Dara Hall
Barbara Hobbs, Co-Chair
Ellen McClary
Alethea Miller
Hazel Morales-Ayala
Nancy O'Brien
Kim Petrella
Tomaro Pilgrim
Rosita Quinones
Blanca Sandoval
Adriana V. Sosa
Andrea Swan
Patricia Fiorelli
Lesley Tepner
Breanna Thomas
Kimberly York

FIMR Kent/Sussex
Christina Andrews
Linda Brauchler Spires
Bridget Buckaloo, Chair
Megan Coalson
Kathy Doty
Maureen Ewadinger
Dara Hall
Nanette Holmes, Co-Chair
Ellen McClary
Alethea Miller
Carrie Snyder
Andrea Swan
Sara Watson
Melody Wireman
Kimberly York

MMR Committee

Jessica Alvarez
Christina Andrews
Heather Baker
Deanna Benner
Bridget Buckaloo
Melanie Chichester
Margaret Chou
Patricia Ciranni
Megan Coalson
Garrett Colmorgen, Co-Chair
Shané Darby
Lindsey Davis
Michelle Drew
Fran Franklin
Dara Hall
Sarah Hall
Tracy Harpe
Matthew Hoffman
Vanita Jain, Co-Chair
Susan Kelly
Pamela Laymon
Starr Lynch
April Lyons
Douglas Makai
Alethea Miller
Delsy Morales
Hazel Morales-Ayala
Rita Nutt
Megan O'Hara
Trenee Parker
Kim Petrella
Cheryl Scott
Philip Shlossman
Carrie Snyder
Joseph Tegtmeier
Lesley Tepner
Michael Vest
Maria Webster
Mary Wise
Leah Woodall

MCDRC Staff and Contractors

Kimberly Liprie, Executive Director
kimberly.liprie@delaware.gov

Lise Esper, Records Technician
Johanna Gerisch, Fatality Review Assistant
Lianne Hastings, Fatality Review Coordinator
Joan Kelley, FIMR Program Coordinator
Lisa Klein, MMR Program Coordinator
Cynthia McAlinney, Medical Abstractor
Meena Ramakrishnan, Epidemiologist
Courtney Rapone, Outreach Coordinator
April Lyons-Alls, Community Action Team Coordinator