



**JACKSON COUNTY HEALTH DEPARTMENT
FETAL INFANT MORTALITY REVIEW
2023 ANNUAL REPORT**

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INTRODUCTION



Fetal and Infant Mortality Review (FIMR) is an action-oriented community process. FIMR assesses, monitors, and works to improve service and delivery systems to reduce infant mortality and improve community resources for women, infants, and families. FIMR is an evidence-based review of fetal and infant deaths (deaths under 12 months of age). Research shows FIMR is an effective perinatal systems intervention. FIMR looks to identify and study factors that are contributing to infant deaths in Jackson County. This is done through examination of medical records, community records, and interviews with families who lost their infants.¹

The purpose of FIMR is to conduct comprehensive multidisciplinary reviews of fetal and infant deaths. This helps understand how a wide array of local social, economic, public health, educational, environmental, and safety issues relate to the tragedy of fetal and infant loss. FIMR is about improvement in system issues and not about individual behavior or assigning blame to the family. Fetal and infant mortality is a multidimensional problem. The goal of the process is to help build safer, more equitable communities and systems that support healthy pregnancies. This allows all infants to be born healthy, grow, and thrive. In addition, FIMR seeks to identify system gaps, and prevent future infant deaths to help more infants reach their first birthday.³

Information obtained is then compiled and de-identified to prevent blaming anyone or any organization. The information is then presented to a multidisciplinary team. Community-based professionals discuss case information to better understand fetal and infant deaths. Team participants are often frontline providers, bringing relevant content and procedural expertise to case review meetings, providing institutional and professional context to help create the full picture of how and why a baby died. The team reviews and identifies areas of improvement in Jackson County service systems and community resources.

Infant mortality has shown to be a strong indicator of the health and well-being of a community because factors affecting the health of entire populations can also impact the mortality rate of infants.³ It can bring the disparities in a given population to light. This report gives a summary of Jackson County's unique data.

See figure 1 for a description of the FIMR process

Figure 1.2



FOR MORE INFORMATION ON FIMR, PLEASE VISIT:

- Michigan Department of Health and Human Services:
 - <https://www.michigan.gov/mdhhs/adult-child-serv/childrenfamilies/familyhealth/fimr>
- National Center for Fatality Review and Prevention:
 - <https://ncfrp.org/>

BRIEF HISTORY

FIMR, in Michigan, started in 1991. Jackson County's FIMR program was established in 2003. We are one of thirteen programs in the state. Funding for our program is provided by the Title V Maternal and Child Health Services Block Grant.

Nationally, there are 162 programs in 27 states. Of those programs, 80% are coordinated by state or local health departments and 68% of total teams are coordinating with State Maternal Child Health Block Grant (Title V) Program (National Center for Fatality Review and Prevention, 2020)

DEFINITIONS

The following terms are used throughout the report. For the purpose of this report, the definitions we use are set by the State of Michigan and the National Center for Fatality Review and Prevention^s

Depression/Mental Illness during Pregnancy

The childbearing parent of the baby displays clinical symptoms of depression, make suicidal attempts or gestures, is hospitalized or under supervised medication, or otherwise is experiencing other indicators of mental illness during pregnancy.

Depression/Mental Illness in Postpartum Period

The childbearing parent of the baby displays clinical symptoms of depression, make suicidal attempts or gestures, is hospitalized or under supervised medication, or otherwise is experiencing other indicators of mental illness. Anxiety disorders share features of excessive fear and anxiety related behavioral disturbances. These disorders include separation anxiety disorder, selective mutism, specific phobia, social anxiety disorder, panic disorder, agoraphobia, generalized anxiety disorder, substance/medication-induced anxiety disorder, and anxiety disorder due to another medical condition.

Fetal Viability

The good-faith professional judgement of an attending health care professional believes there to be a significant likelihood of the fetus's sustained survival outside of the uterus without the application of extraordinary medical measures. It is generally considered to begin at 24 weeks gestation. At the present time there is no worldwide, uniform gestational age that defines viability. With greater knowledge and technological advancement, fetal viability may sometimes be considered at 22 weeks gestation.

History of Abuse (Childbearing Parent)

Disclosure or evidence of past physical, emotional or sexual abuse of childbearing parent, not with current partner or biological non-childbearing parent, not during pregnancy or while infant is alive.

History of Mental Illness (Childbearing Parent)

Just prior to conception, childbearing parent has a history of documented mental illness, suicide attempts or gestures, hospitalizations, supervised medication, or other indicators of mental illness.

Infant Mortality Rates

Calculated by the number of infant deaths per 1000 live births.

Lack of Home Visiting (Eligible)

Lack of evidence-based home visiting despite eligibility. This could apply when there are no services in the area or the childbearing parent declined home visiting.

Live Birth

The complete expulsion or extraction from its mother of a product of human conception, irrespective of the duration of pregnancy, which, after such expulsion or extraction, breathes or shows any other evidence of life including but not limited to one or more of the following:

Breathing

A heart beat

Umbilical cord pulsation

Definite movement of voluntary muscles

Medicaid

Medicaid is a health care program that assists low-income families or individuals in paying for long-term medical and custodial care costs.

Positive Drug Test

The childbearing parent had any positive toxicology screen for substances during pregnancy or at delivery. (Includes marijuana)

Pre-Conception Care

Medical checkup before pregnancy documented including planning pregnancy.

Prematurity

Infant delivered at less than 37 completed weeks gestation.

Private Insurance

Private health insurance refers to health insurance plans marketed by the private health insurance industry, as opposed to government-run insurance programs.

Term Pregnancy

A pregnancy of 37 weeks gestational age or longer, regardless of outcome.

Tobacco Use: Current

Any use by the childbearing parent of any tobacco product during or after pregnancy up until the time of the infant's death.

Unsafe Sleep Location

Infant was placed in near proximity to one or more persons, on the same sleep surface, when found unresponsive. Infant was sleeping on a surface other than one specifically designed for safe infant sleep Consumer Product Safety Commission (CPSC) approved) when found unresponsive. Infant was found unresponsive on bedding softer than a firm crib mattress and/or near pillow, blankets, comforter, waterbed, sheepskin, etc.

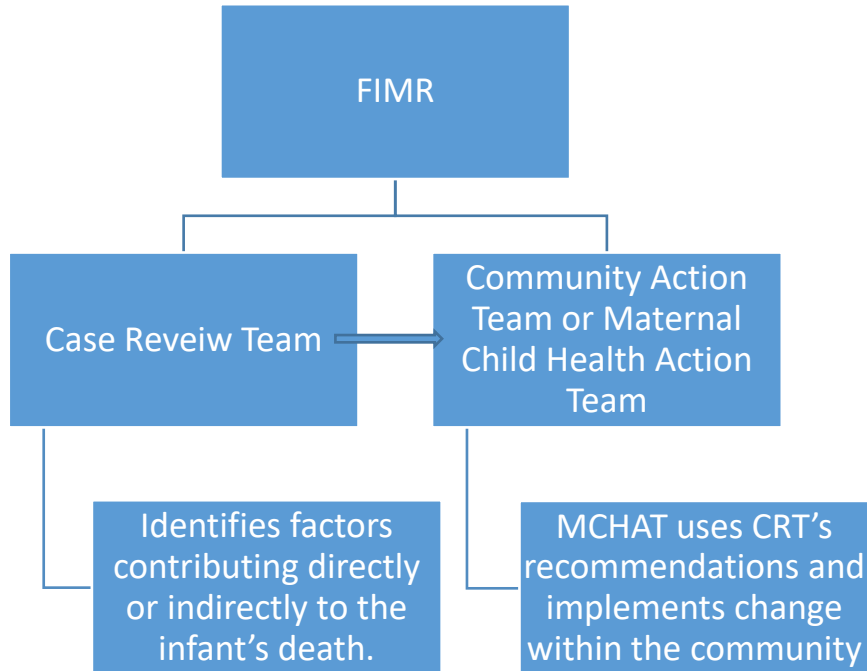
TWO TIERED FIMR PROCESS

Fetal Infant Mortality Review has a two tiered process. In Jackson County, every infant death under one year of age who has taken a breath is reviewed. After all information relating to the case is obtained and de-identified, it is presented to the Case Review Team (CRT). The CRT looks at the case and identifies factors contributing directly or indirectly to the infant's death. These factors can stem from social, economic, cultural, safety, health, and overarching system

disparities. Based on these factors, the team makes recommendations for change within our community.

The second tier of the process is a Community Action Team (CAT). Jackson County's CAT is called the Maternal Child Health Action Team (MCHAT). MCHAT takes recommendations from the CRT and works to implement change within the community. A 2023 goal is to get this team or a similar team back up and running.

Figure 2

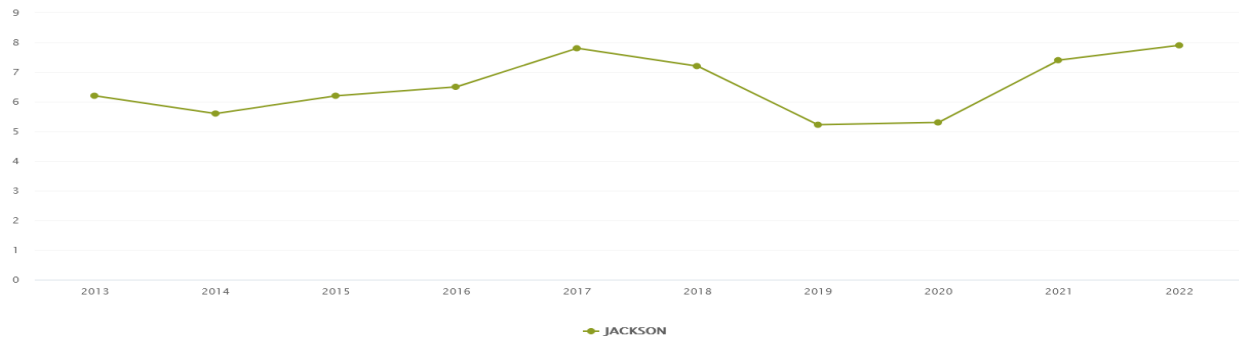


INFANT MORTALITY TRENDS FOR The LAST 10 YEARS

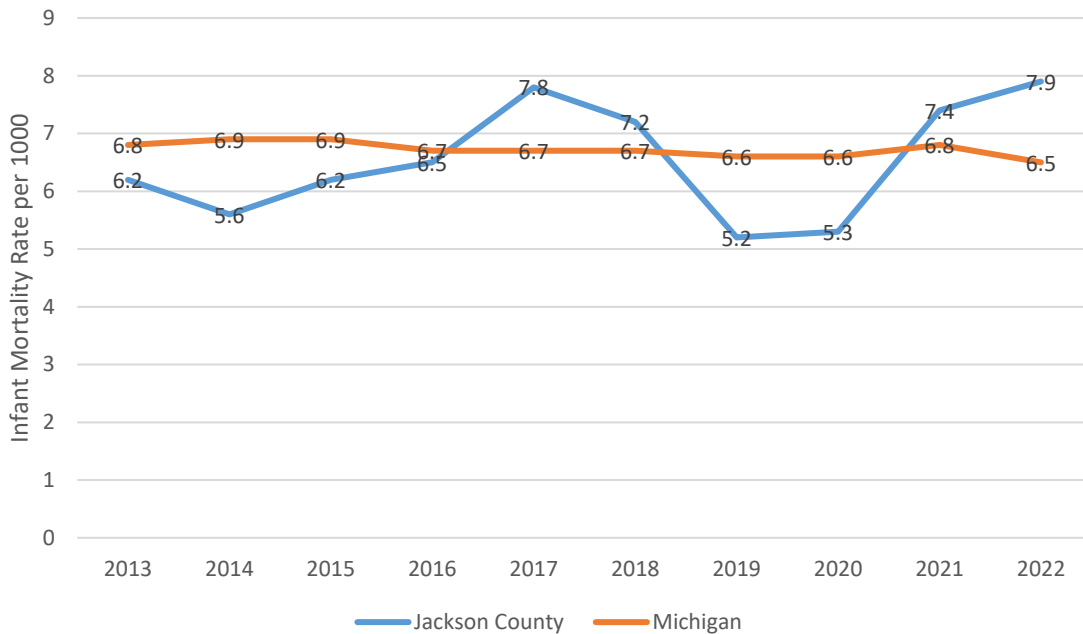
The following graphs show the trends of infant deaths in Jackson County and, where applicable, the state of Michigan and United States.

Infant Mortality Rate in Jackson County⁶

INFANT MORTALITY (RATE PER 1,000) - 2013-2022



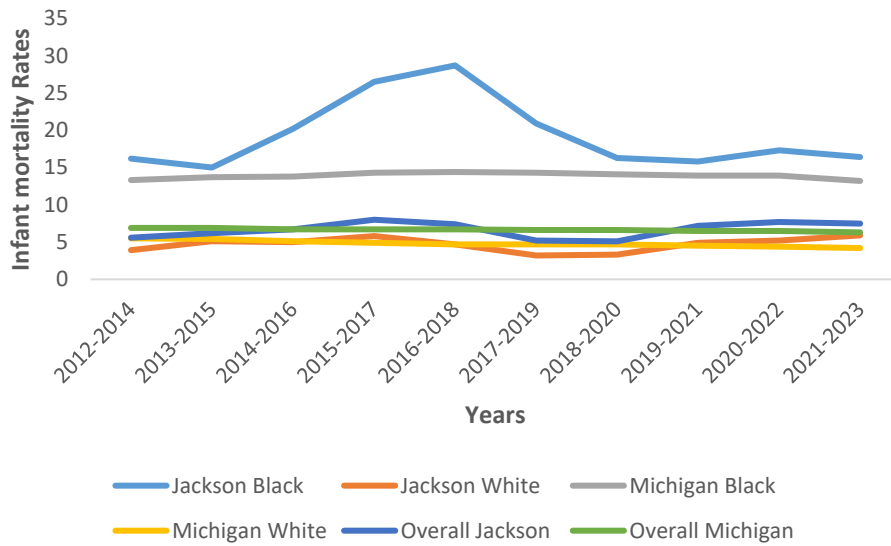
Infant Mortality Rate in Jackson County, Michigan⁶



RACIAL DISPARITIES

Black infants continue to be at a higher risk of death compared to white infants. In both Jackson County and throughout the State of Michigan, the death rate of black infants remains more than three times higher than white infants for 2023. The graph below shows the moving average infant mortality rates for Jackson and Michigan and is broken down further by race.⁶

**Three-Year Moving Average Infant Mortality Rates for Jackson County & Michigan
2012–2023**

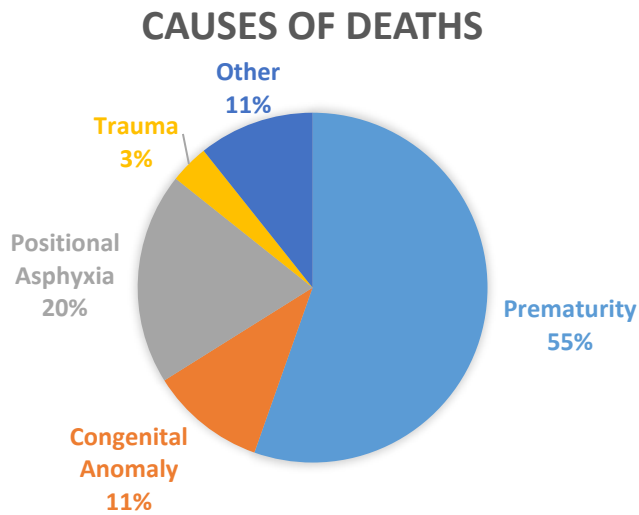


**Overall Jackson and Overall Michigan are white and black combined*

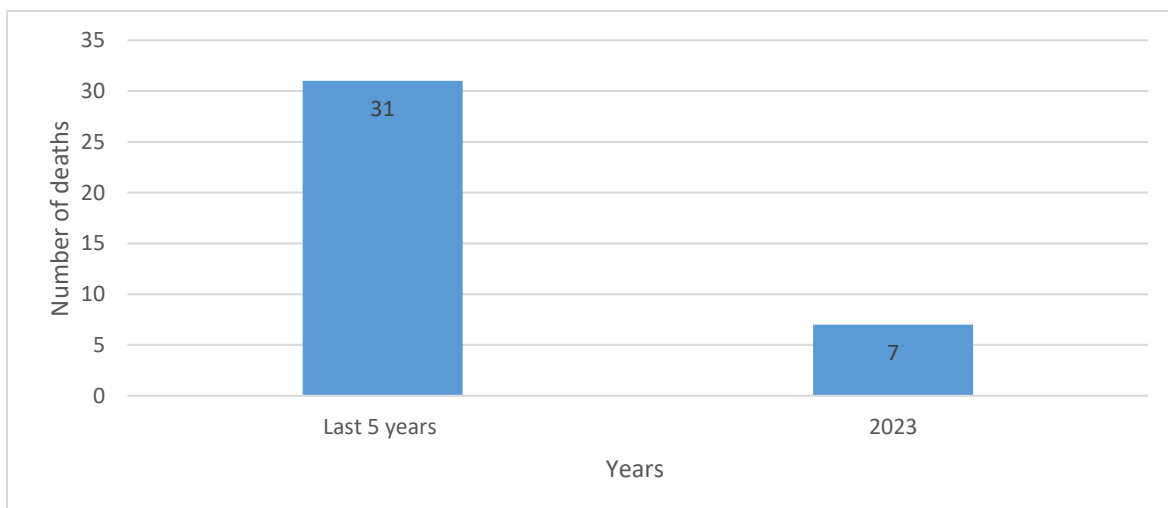
CAUSES OF DEATH

This section looks closer at what is causing the deaths of Jackson County's infants. All information is obtained through Jackson County case investigation by the FIMR nurse. The following graph shows the causes of death categories for infants in Jackson County for the last five years. There has been a total of 56 infant deaths in Jackson County from 2019 to 2023.

Other includes: deaths related to (Interstitial Lung Disease, and neonatal Hypoxia).

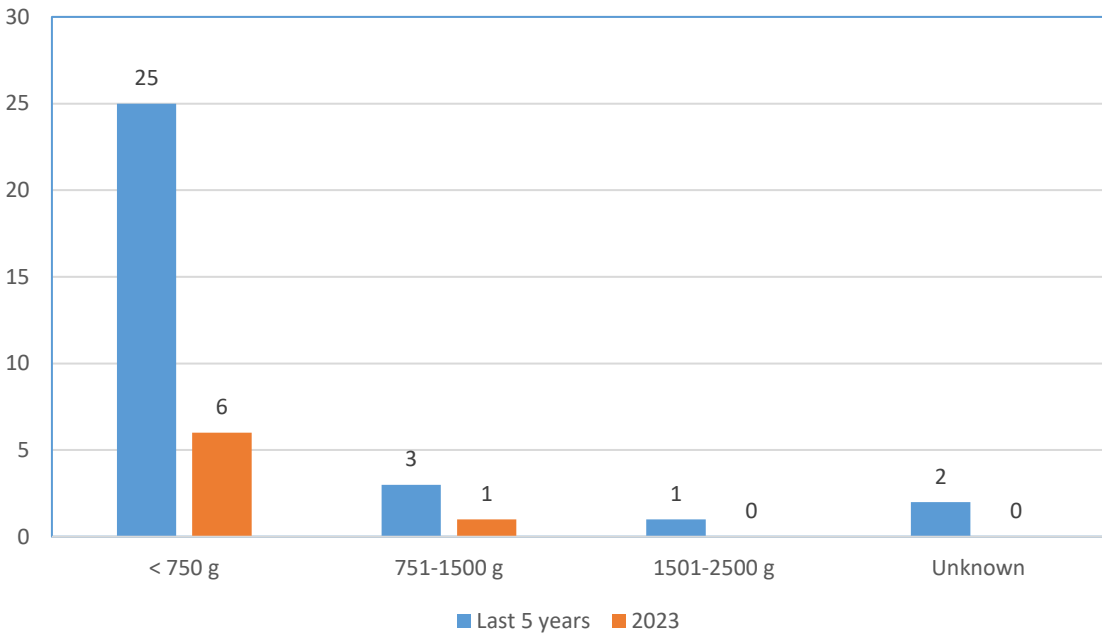


PREMATURITY DEATHS

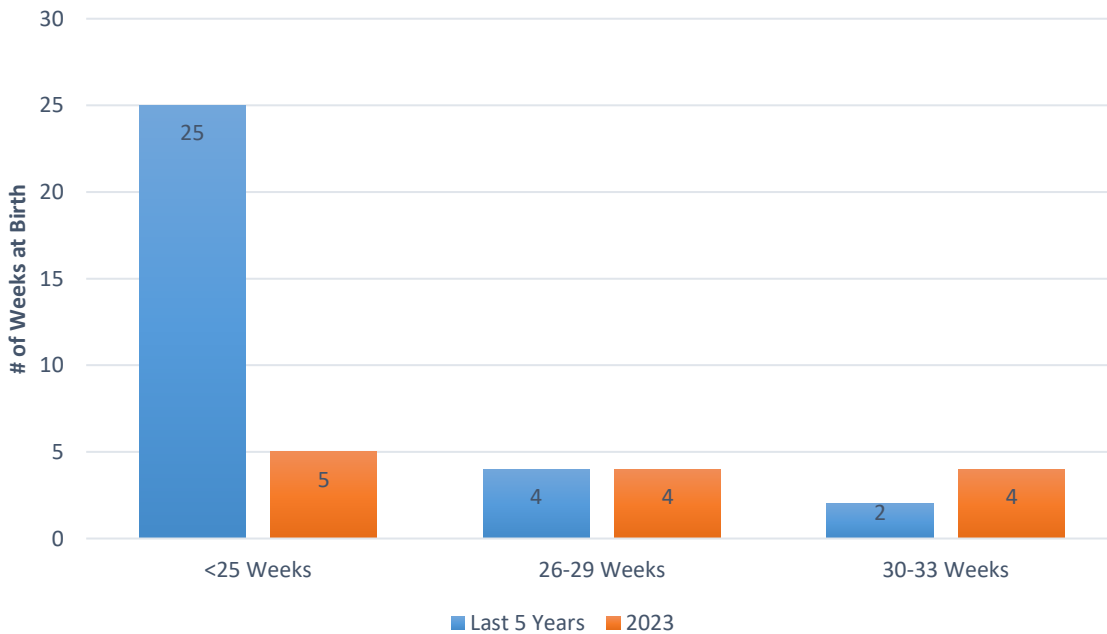


31 Prematurity related deaths in the last five years. Six in 2023

Weight at Birth



Gestational Age at Birth for the Last Five Years & 2023

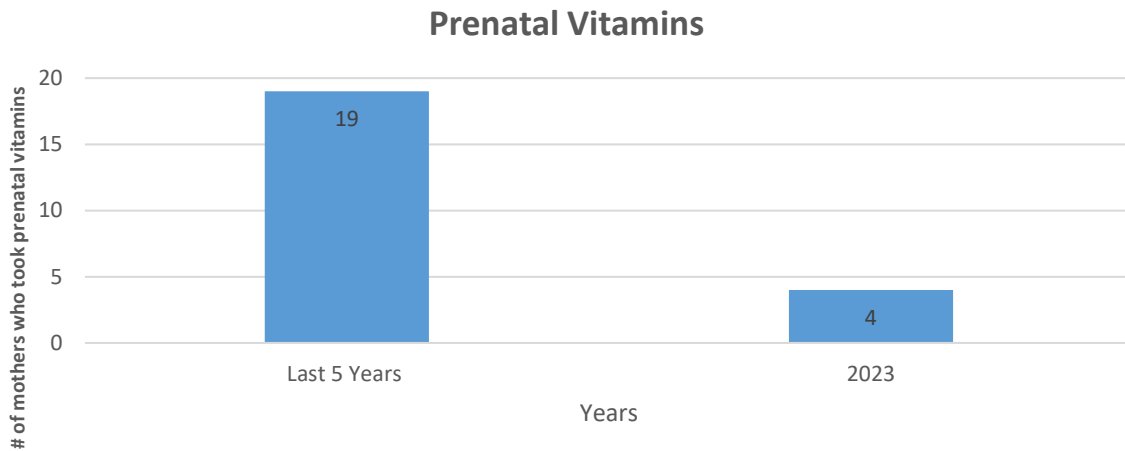


The following data is related to the 31 prematurity deaths for the last five years:

45% of mothers smoked cigarettes during pregnancy

22.6% of mothers consumed alcohol during pregnancy

22.6% of Mothers used illicit drugs during pregnancy

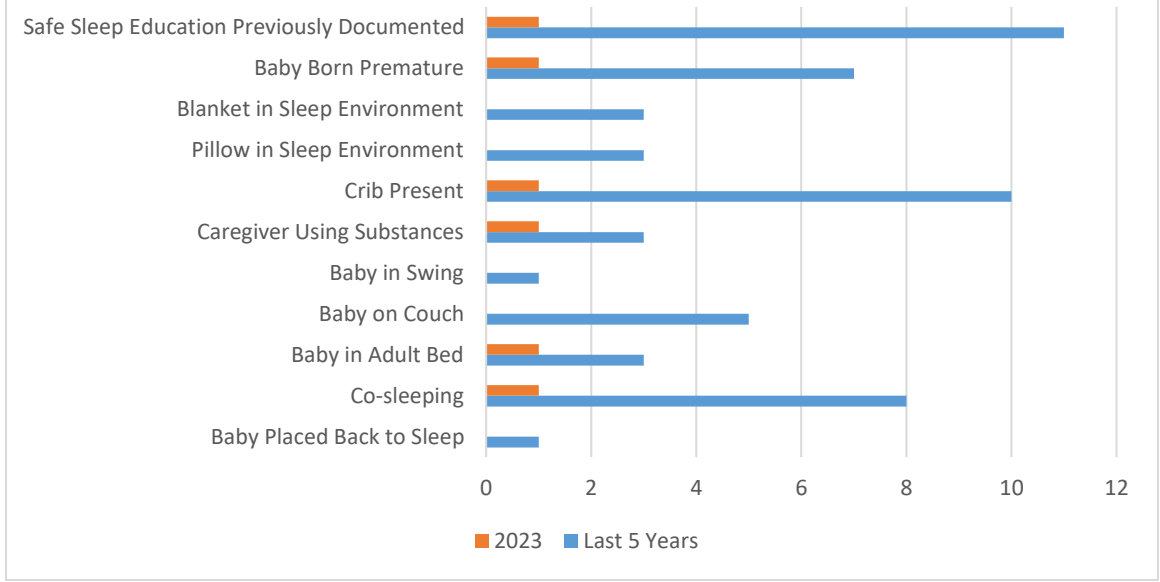


SLEEP RELATED DEATH

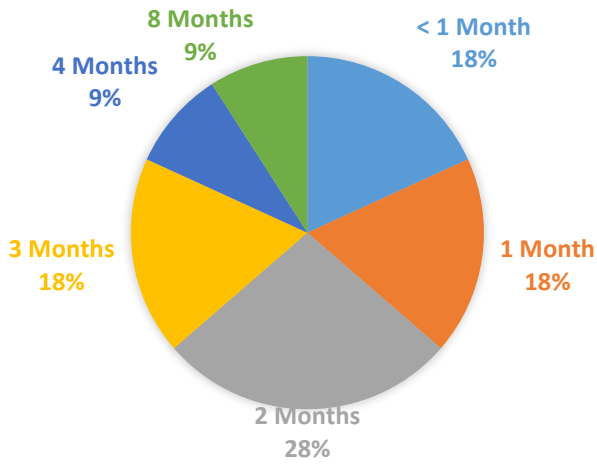


Jackson County has lost 11 infants in the last five years to sleep related causes. One of which was in 2023.

Sleep Related Deaths For The Last Five Years & 2023



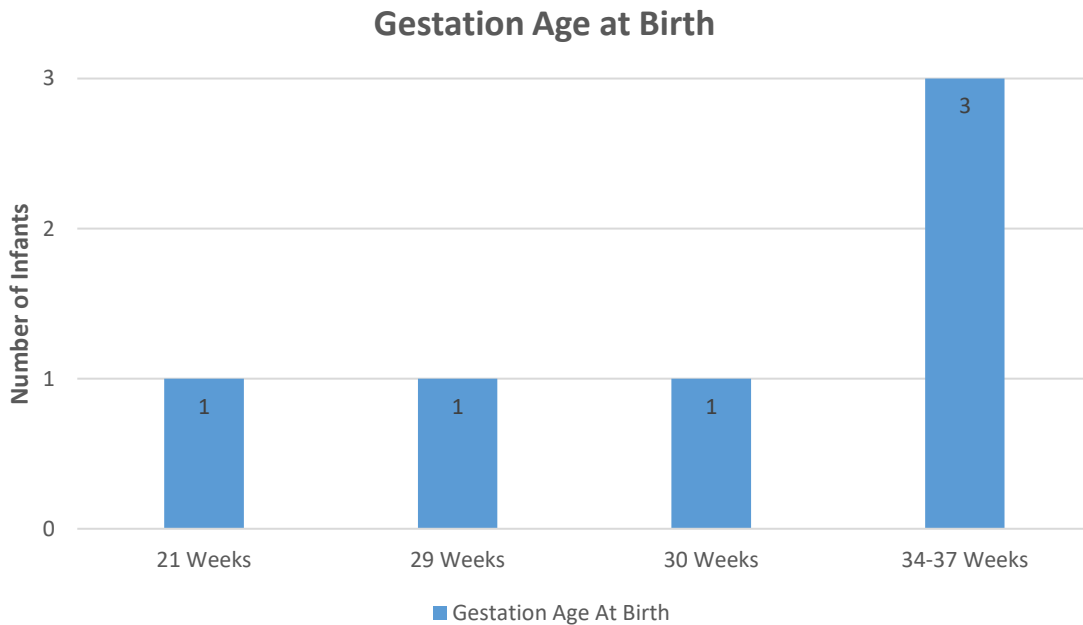
Sleep Related Deaths for the Last Five Years 2019-2023



CONGENITAL ANOMALIES DEATHS



In the last five years, there have been six deaths related to Congenital Anomalies in Jackson County. Two of which occurred in 2023.



In 2023, Jackson County lost 11 infants. Seven due to prematurity (green), one due to positional asphyxia (blue), one due to homicide (red), one due to neonatal hypoxia (yellow), and one due to Interstitial Lung Disease (purple).

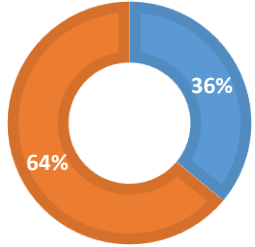


The following charts focus specially on the 11 deaths that Jackson County experienced during 2023:

Alcohol Consumption: None of the infants had mothers who consumed alcohol during the pregnancy.

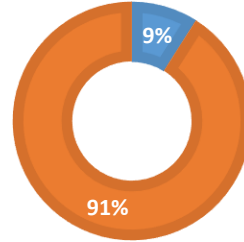
GENDER

Boys Girl



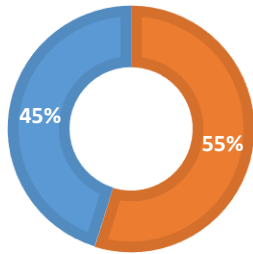
RACE

Black White



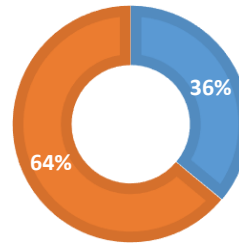
MEDICAL INSURANCE

Medicaid Private



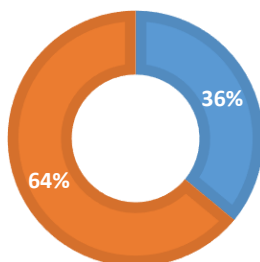
MARITAL STATUS

Single Married

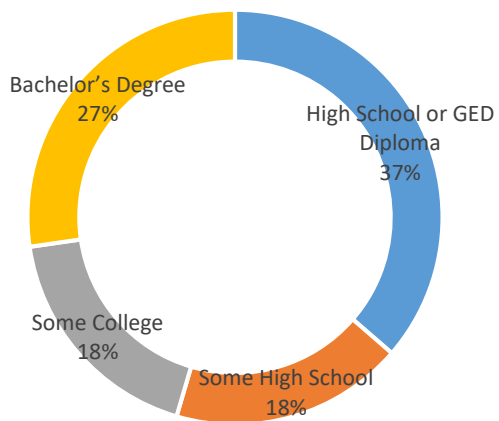


TOBACCO SMOKE

■ Mothers Who Smoked ■ Non-Smoker



Mother's Education Level



■ High School or GED Diploma ■ Some High School ■ Some College ■ Bachelor's Degree



Source: <https://unsplash.com/photos/group-of-people-sitting-beside-rectangular-wooden-table-with-laptops-faEfwCdOKIg>

CASE REVIEW TEAM

The Jackson County FIMR Case Review Team (CRT) consists of a diverse group of health professionals, social service professionals and community members.

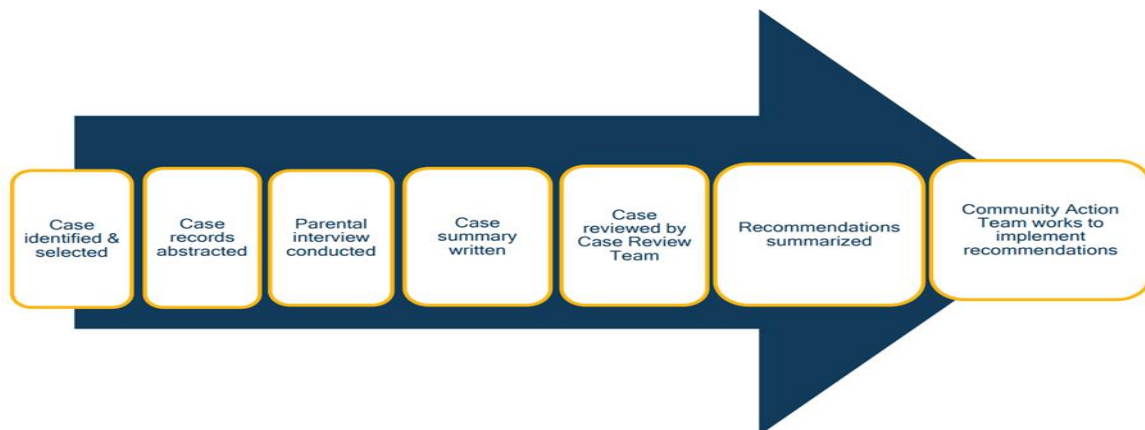
While reviewing infant deaths in Jackson County, the team's goal is to identify ways to improve Jackson community's service systems for pregnant persons, infants, and families with young children; i.e. identifying gaps in the system. The team can identify trends occurring over time and also makes incidental findings that may not be directly related to the cause of death. The CRT is not determining cause of death nor to fault-find/assign blame for the death.

In 2023:

-25 Infant deaths were reviewed (deaths occurred during 2021 through 2023)

-17 Recommendations were made

Figure 3.²



2023 CASE REVIEW TEAM MEMBERS

Audra Brummel MPH, CHES®; Infant Health Consultant/Michigan Fetal

Infant Mortality Review Coordinator, Michigan Department of Health & Human Services

Jessica Domenico, BSN, RN; Case Manager Women and Children's Services, Henry Ford Jackson Hospital

Whitney Elliot, BSN, RN; Emergency Department, Henry Ford Jackson Hospital

Jessica Figueroa, LMSW; Case Manager, Henry Ford Jackson Hospital

Angie Jacobs, MSN, NNP-BC; Neonatal Nurse Practitioner Henry Ford Health Jackson Hospital

Laura Marks, RD; Women, Infants, & Children, Jackson County Health Department

Melissa Osterberg, RN, BSN; Special Care Nursery, Henry Ford Jackson Hospital

Ann McClure, LMSW; Community Health Coordinator/Maternal Infant Health Program Coordinator/Jackson County Health Department

Cindy Wolfinger BSN, RN, CPN; Clinical Services Coordinator Health Nurse, Jackson County Health Department

Holly Flickinger, Deputy Health Officer; Community Health, Education, Promotion, Jackson County Health Department

Beth Squire, MSW; Children's Protective Services Supervisor, Jackson County Department of Health and Human Services

Joy Sterrett, RN, C-FMC; Perinatal Bereavement Coordinator/Labor and Delivery Nurse, Henry Ford Health Jackson Hospital

Kathleen Lavery, Certified Nurse Midwife, Everyday Blessings Midwifery

CRT PROCESS

The team meets every other month to review cases that have been prepared by the FIMR nurse. All information is de-identified prior to its review. After the review of every fetal and infant death, CRT determines "present" and "contributing" factors to the case.⁵ A list of factors is provided by the National Center for Fatality Review and Prevention; they are divided into the following sections:

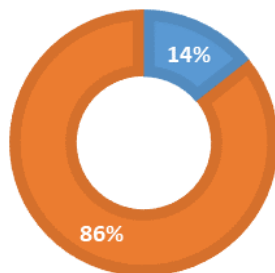
- Pre-/Inter-/Post-conception Care
- Partner/father of Baby/Caregiver
- Medical: Childbearing parent
- Family Transition
- Family Planning
- Mental Health/Stress
- Substance Use
- Family violence/Neglect
- Prenatal Care/Delivery
- Culture
- Medical: Fetal/Infant
- Payment for Care
- Pediatric Care
- Service Provided
- Environment
- Transportation
- Injuries
- Documentation
- Social Support
- Other

Present factors are issues that were present in that case while contributing factors were issues that the CRT felt was a contributing factor in the death of the infant - not necessarily causative, but played a strong role in determining the outcome. By identifying, present and contributing factors, the team is able to help identify gaps in our system.

Below you will see some of the most significant present and contributing factors from the 25 cases CRT reviewed during 2023.

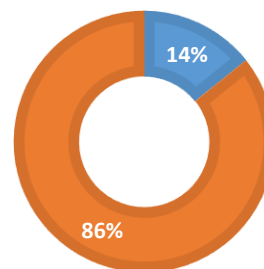
Infant with Unsafe Sleep Location

■ Present ■ Contributing



Prematurity

■ Present ■ Contributing



Tobacco Use During Pregnancy

Tobacco use during pregnancy was present 36% of the time. However, it was not a contributing factor to infant's death.

Positive Drug Test During Pregnancy

Positive drug test during pregnancy was present 20% of the time. However, it was not a contributing factor to infant's death.

History of Abuse Towards Childbearing Parent

History of abuse towards childbearing parent was present 36% of the time. However, it was not a contributing factor to infant's death.

Mental Health/Stress Specific

History of Mental Illness (Childbearing Parent)

History of Mental Illness was present 48% of the time. However, it was not a contributing factor to infant's death.

Depression/Mental Illness During Pregnancy

Depression/Mental Illness During Pregnancy was present 48% of the time. However, it was not a contributing factor to infant's death.

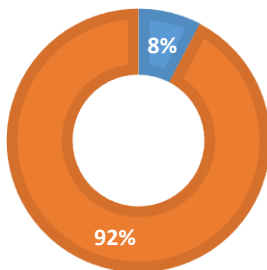
Depression/Mental Illness in Postpartum Period

Depression/Mental Illness in Postpartum period was present 20% of the time. However, it was not a contributing factor to infant's death.

Services Specific

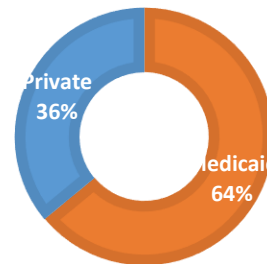
Preconception Visit

■ Yes ■ No



Payment for Care

■ Medicaid ■ Private



Lack of Home Visiting (Eligible)

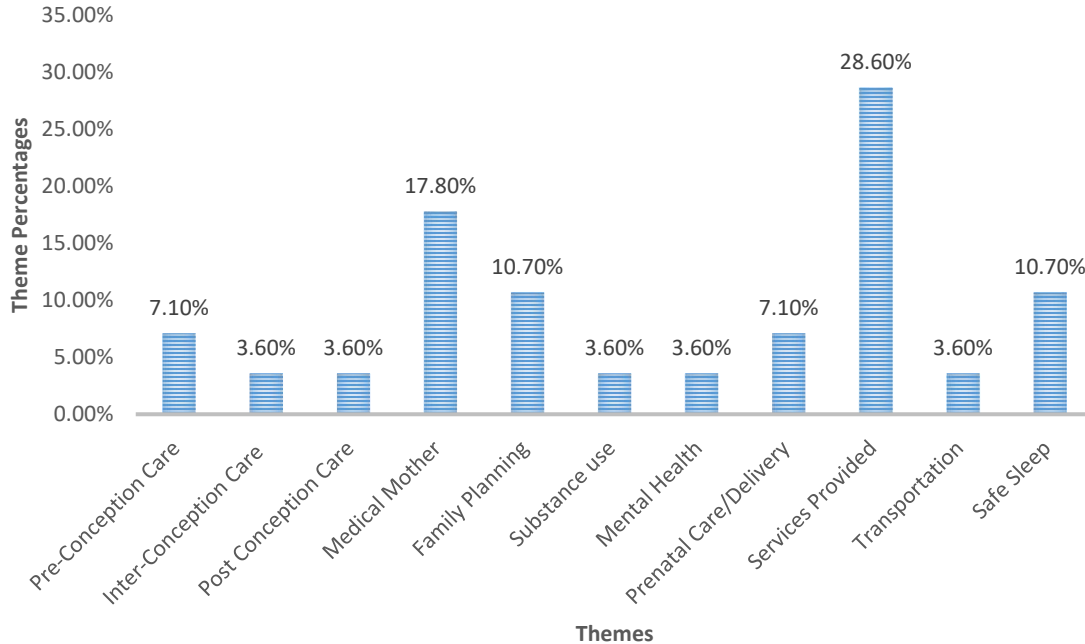
Lack of Home Visiting (Eligible) was present 40% of the time. However, it was not a contributing factor to infant's death.

Based on the gaps identified in each case, CRT makes recommendations to improve care and outcomes within Jackson community. Recommendations are currently submitted to the State of Michigan and the National Center for Fatality Review and Prevention. Every recommendation is matched to a specific theme(s) prior to submission to the state of Michigan. This allows easier tracking of common trends that are occurring within our community. The theme options are:

- Pre-Conception Care
- Inter-conception Care
- Post Conception Care
- Medical Mother
- Family Planning
- Substance Use
- Mental Health
- Payment for Care
- Medical Fetal/Infant
- Prenatal Care/Delivery
- Pediatric Care
- Environment
- Family Violence/Neglect
- Service Provided
- Injuries
- Social Support
- Father of Baby
- Family Transitions
- Culture
- Transportation
- SUID
- Safe Sleep
- Discrimination
- Systemic Racism
- Interpersonal Racism
- Other

The graph below shows the themes that correlated with the 2023 CRT recommendations in Jackson County.

RECOMMENDATION THEMES FOR REFERRALS 2023



2023 RECOMMENDATIONS

- Increase education on taking medications as prescribed and only quitting with physician guidance.
- Increase safe sleep education at prenatal and well-child appointments.
- Change the name of safe sleep education to encapsulate the potential severe outcomes of not following safe sleep guidelines.
- Routine toxicology screening on all babies born to mothers with known or suspected substance use.
- Include further explanations into the dire consequences of unsafe sleep practices during education and have caregivers utilize the verbal teach back method to check their understanding.
- Increase local transportation resources to promote appointment compliance
- Increased communication between providers and patients after testing with specific timeframes in place so family gets all information in a timely and efficient manner.
- When Child Protective Services (CPS) cases are handed off to new workers, more than one worker reviews the case together to ensure nothing is missed or a worker and supervisor review it together.
- Postpartum genetic follow up in all deliveries with genetic abnormalities and increased preconception counseling for all future pregnancies.

- Increased education and awareness related to the urgent maternal warning signs.
- Increasing the number of behavioral health providers in the county in efforts to increase immediate availability of services to people in need vs the months long wait list we currently have.
- Increased education to mom's, both prenatally and postpartum, on birth control options and family planning along with all risks associated with future pregnancies when moms are higher risk.
- Increased education/awareness to community providers on treatment of STIs.
- The creation of more consistent documentation related to STI treatment.
- Heavier education on chromosomal testing, specifically when multiple losses occur.
- Increased education during pregnancy about experiencing infections and the complications they can potentially have on the pregnancy.
- Increased timeliness in follow-up imaging after abnormal ultrasounds.

2022 TOP RECOMMENDATIONS

- Increase availability of visiting home nurse for newborns and their families
- Provide a dietician consult to all pregnant women
- Improve screening/education related to alcohol use at prenatal appointments
- Routine umbilical cord toxicology screening (including alcohol) on all newborns born to moms with known or suspected substance use during pregnancy
- Increase safe sleep education/reinforcement during well-child visits; specifically related to use of "co-sleepers"
- Increase postpartum family planning education during prenatal visits and before discharge from the birth hospital
- Increase safe sleep education provided prenatally in OB offices
- Increase provider's confidence and awareness on when to place a CPS referral

There were no recommendations made in 2021 due to the FIMR position being vacant

2020 TOP RECOMMENDATIONS

Limited recommendations made in 2020 and no recommendations in 2021 due to the COVID-19 Pandemic and unfulfilled FIMR nurse role.

- Develop education and consistent messaging on effects of marijuana on pregnancy and baby.
- Make a Medicaid Navigator referral when mom's Medicaid is inactive.
- Resolve transportation issues for care
- Inform physicians, nurses, and social workers about WIC eligibility for 6 months after any delivery: term birth, prematurity, still birth, and miscarriage.

2019 TOP RECOMMENDATIONS

- Encourage proper recording of birth information.
- Tertiary care to discuss all birth outcomes with local OB providers and provided mom's with local bereavement information.
- Provide mom with information regarding breastfeeding vs. bottle feeding in a non-judgmental way.
- Universal drug screen on all births (particularly deliveries before 38 weeks).
- Incorporate dental assessment & dental cleaning evaluation on Hollister.
- Ensure all pregnant moms receive Tdap vaccine with each pregnancy no matter what the time frame was from the last Tdap.
- Encourage private providers to use texting for appointment reminders and social media for the importance of prenatal visits. Find an app that gets women's health issues across.
- Encourage autopsy on babies born prior >22 weeks gestation of mothers known to be drug users or with positive drug screen

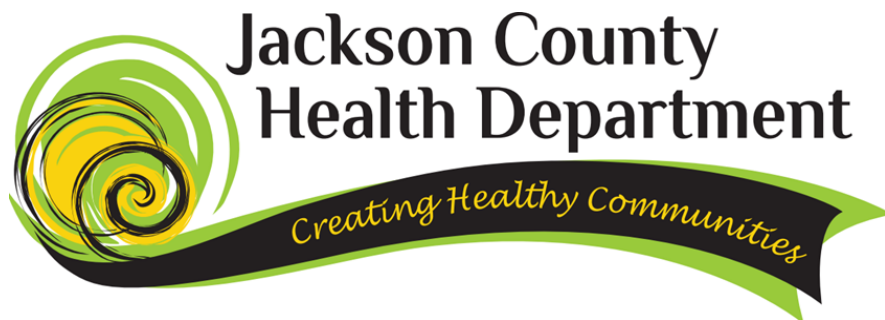
FIMR ACCOMPLISHMENTS

- 25 Infant Deaths investigated and reviewed by CRT (this includes deaths dating back to 2021)
 - 17 Recommendations for change
 - 4 Infant Safe Sleep Presentations to Jackson College LPN and Nursing students
 - 1 Infant Safe Sleep Presentation to Spring Arbor University Nursing Students
 - 2 Infant Safe Sleep Presentations provided to high school “Health Tech” students and high school “Careers in Education” students.
 - 1 Infant Safe Sleep Presentation to the Emergency Department
 - 1 Infant Safe Sleep Presentation to caregivers
 - 3 Infant Safe Sleep Presentations to Local Fire Departments.
 - 1 Infant Safe Sleep Presentation to St. John's United Church of Christ Food Pantry
 - 1 Infant Safe Sleep Presentation to MSHHS Foster Parents
 - 1 Infant Safe Sleep Presentation to Family Services and Children's Aid
 - 1 Infant Safe Sleep Presentation to Jackson Pediatric Associates
 - 2 Infant Safe Sleep Presentations to the local hospital’s residents and nurses
 - 5 Facebook Posts about Infant Safe Sleep
 - 1 Press Release on Infant Safe Sleep
 - Infant Safe Sleep Education and resources provided at Community Baby Shower
 - Provided infant safe sleep resources for Women, Infants, & Children (WIC), Maternal Infant Health Program (MIHP), Community Health Education & Promotion and Immunization/Sexual Health Clinic
 - Infant Safe Sleep Education and resources provided to Center for Family Health Managers
 - Infant Safe Sleep Education and resources provided to Center for Family Health Car Seat Event
- Pack and Play Program
 - 38 Pack and Plays and fitted sheets provided free of charge to community members as a safe sleep space for their infant. Pack and Plays purchased through Cribs for Kids.

SOURCES

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REPORT COMPILED BY



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