2022 Annual Report on Maternal Mortality to
New Hampshire Health and Human Services
Legislative Oversight Committee

Maternal and Child Health Section (MCH)
Bureau of Population Health and Community Services
Division of Public Health Services
Department of Health and Human Services
(DHHS)
October 2022

NH DIVISION OF
Public Health Services
Improving health, preventing disease, reducing costs for all

maternal and child health
Serving Families & Communities

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Definition of Terms and Abbreviations

- **AIM:** Alliance for Innovation on Maternal Health
- **Maternal Death:** is defined as happening while pregnant or up to 42 days of the end of pregnancy from any cause related to or aggravated by the pregnancy
- **MCH:** Maternal and Child Health
- **MMRC:** Maternal Mortality Review Committee
- **MMRIA**: Maternal Mortality Review Information Application
- **NNEPQIN**: Northern New England Perinatal Quality Improvement Network
- **POSC** Plan of Safe Care
- **Pregnancy-associated death:** the death of a person while pregnant or within one year of pregnancy, regardless of cause (may be related or unrelated to pregnancy)
- **Pregnancy-related death:** the death of a person while pregnant or within one year of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.
- **SME:** Subject Matter Experts
- **SUD:** Substance use disorders
- **UNH:** University of New Hampshire
- **DHHS**: Department of Health and Human Services

Executive Summary

RSA 132:30 and the accompanying rules He-P 3013 established a New Hampshire (NH) Maternal Mortality Review Panel, commonly referred to as the Maternal Mortality Review Committee (MMRC). The function of the MMRC is to conduct comprehensive, multidisciplinary reviews of maternal deaths for the purpose of identifying factors associated with the deaths in order to make recommendations for future system changes to improve services for women in the state. The MMRC's goal is to help prevent any future deaths. The desired result of the collection of recommendations developed by the MMRC is the adoption of actions based upon these recommendations leading to improved outcomes for those NH citizens who are pregnant and parenting. A list of current members is attached as Appendix A.

The MMRC generally meets quarterly to review information provided by abstractors and make decisions and provide recommendations. It continues to work diligently in reviewing maternal deaths cases within one year post death. Because the MMRC is multidisciplinary, the resulting recommendations are wide ranging and consider more than the clinical aspects of pregnancy. Recommendations sometimes focus on the community setting or systems and policy changes.

According to the Centers for Disease Control (CDC), maternal death is defined as happening while pregnant or within 42 days of the end of pregnancy from any cause related to or aggravated by the pregnancy.[1] In 2020, there were 861 (23.8 deaths per 100,000 live births) maternal deaths in the United States, an increase as compared to 754 in 2019 (20.1 deaths per 100,000 live births).[2] Three major systems of maternal mortality surveillance evolved in the US, each with different purposes, methods, and corresponding terminology Appendix B.

There were 11 pregnancy associated deaths (while pregnant or up to one year of the end of the pregnancy regardless of cause) in NH in 2020 and 2021, the majority caused by substance use overdose, followed by cardiac and coronary conditions. Similar findings were reported in the previous years and are also consistent with MMRCs across the country. A recent report by CDC, using aggregated pregnancy related death data (while pregnant or up to one year of the end of pregnancy, from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy) in 2017-2019 from MMRCs in 36 US states including NH, indicated similar causes with mental health conditions, hemorrhages, and cardiac among others being the leading underlying causes of pregnancy related or maternal deaths in the US.[3] The recommendations continue to focus on changes necessary to improve aspects of care for those pregnant and postpartum with substance use disorders (SUD).

[1] Pregnancy Mortality Surveillance System | Maternal and Infant Health | CDC
[2] Maternal Mortality Rates in the United States, 2020 (cdc.gov)
[3] Pregnancy-Related Deaths: Data from Maternal Mortality Review Committees in 36 US States, 2017–2019 | CDC

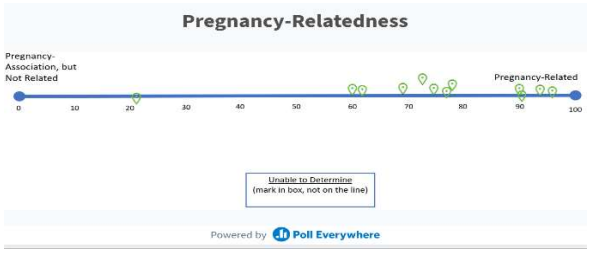
Introduction

This is the annual report on Maternal Mortality submitted to the Health and Human Services Legislative Oversight Committee describing adverse events reviewed by the MMRC as required under RSA 132:30. The cases contained in this report were investigated and abstracted by the DHHS' MCH Perinatal Nurse Coordinator and Dartmouth Health's Northern New England Perinatal Quality Improvement Network (NNEPQIN) Perinatal Outreach Educator. RSA 132:30 enables NNEPQIN and MCH the "functions of collecting, analyzing, and disseminating maternal mortality information, organizing and convening meetings of the panel, and other substantive and administrative tasks as may be incident to these activities." [4] DHHS, MCH is also in the fourth year of CDC's "Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) grant which helps to support the time for thorough investigations and abstractions.

Program Update

This past year has included some significant highlights to the overall functioning of the MMRC.

- Increased abstraction efforts including, but not limited to, incarceration records, sentinel event forms, autopsy reports, investigative reports, informant interviews and any other leads discovered.
- Informant interviews, new this past year, are held with family members or close friends of the decedent. These types of interviews provide qualitative data that is not necessarily available in written records and provides context of the events leading to death. The interview questions and consent are attached as Appendix C and were adapted from a CDC ERASE MM resource entitled "Informant Interview Guide".
- This year also initiated the process of using Subject Matter Experts or SMEs (e.g. obstetrician specializing in cardiology or perinatal psychiatrist) that help the MMRC in its review.
- An electronic consensus tool is being utilized during the review process to generate richer, more in-depth conversations. This tool allows participants to initially grade their agreement or disagreement from 0 to 100 anonymously with key questions with required answers like "was the pregnancy related to the death" and "was it preventable" which most committees struggle with. This takes the "temperature of the room" so that a range of perspectives can be discussed more easily. An example is as follows:



[4] Section 132:30 Maternal Mortality Review Panel Established. (state.nh.us)

- Public facing MMRC educational information created by the MMRC and a UNH intern (Appendix D)

Maternal Mortality Review Process

Pregnancy associated deaths are reported to the MMRC through various means including:

- A direct report from a hospital, non-emergency walk-in center, ambulatory surgical center, or birthing center
- Field on the death certificate indicating pregnancy within one year of death
- O-Code on the death certificate (a section containing diagnosis codes related to pregnancy, childbirth, and the six weeks following childbirth)
- Data linkage between the death certificate and maternal information on a certificate of live birth and fetal death records
- Case findings reported to MCH from an MMRC panel member
- Other sources such as medical provider, family member, or media outlet

The process of abstraction begins when MCH initiates a record request. These requests are made to any facility or agency determined to have provided care to the individual in order to facilitate collection of pertinent information necessary for each case review. This collection is done in order to connect the relevant aspects of the decedent's life and subsequent death. Once abstraction is complete, the abstractors de-identify the case(s) in preparation for review. Although de-identified, all members of the MMRC (as per RSA 132:30) sign confidentiality agreements, also attached as Appendix E. This agreement states that review materials and proceedings of review meetings are privileged information for use only by panel members and program staff. General recommendations developed as a result of the cases may be shared with each panel member's respective institution or professional organization.

A de-identified summary of the events of each case are prepared for review. MMRC members are asked to review the summaries prior to the meeting in order to prepare and provide for a more productive use of committee time. The NH MMRC continues to use the process for review of cases found on the CDC's Review to Action website[5], which is a resource of ERASE MM. Review to Action serves as a resource to support the work of MMRCs across the United States. At the meeting the entire MMRC discusses the findings for each case presented and makes recommendations to help avoid future maternal deaths. Decisions of the MMRC are made based on consensus of the committee. During the review, the members of the MMRC are asked to answer key questions about each case being reviewed:

- Was the death pregnancy-related? Or, "If this woman had not been pregnant, would she have died?"
- What was the underlying cause of death?

[5] Homepage | Review to Action

- Was the death preventable? Was there a chance to alter the outcome? A death is considered preventable if the committee determines that there was at least some chance of the death being averted by one or more reasonable changes to patient, family, community, and provider, facility, and/or systems factors.
- What were the factors that contributed to the death?
- If there was at least some chance that the death could have been averted, what were the specific and feasible actions that, if implemented or altered, might have changed the course of events?

The answer to each individual question may be straightforward or difficult to determine depending upon the case under review. However, answering each question for cases the MMRC determines to be pregnancy-related is essential. The NH MMRC often utilizes SMEs to present aspects of the case in making these sometimes difficult decisions. A schematic of the entire process is attached as Appendix F, Figure 1.

After the MMRC makes its decisions on the questions listed above, the information is entered into the Maternal Mortality Review Information Application (MMRIA) database. DHHS has a data sharing agreement with the CDC for MMRIA signed in 2019, the first year of the ERASE MM grant. MMRIA is a CDC confidential system available to individual state MMRCs for comprehensive case abstraction and data aggregation. MMRIA enables the NH MMRC to run aggregate data reports such as timing of death and others in Appendix G, Figures 2-5 and Tables 1-4.

Overview of Pregnancy-Associated Deaths in New Hampshire, 2020 and 2021

The pregnancy associated deaths reviewed for 2020 and 2021 were all New Hampshire residents. There were five pregnancy associated deaths in 2020 and six in 2021. Three of the 2021 deaths are yet to be reviewed as the abstractors attempt to find more information to inform the MMRC. The following tables break down the 2020 and 2021 maternal mortality cases:

Pregnancy Status of 2020 and 2021 Reviewed and Confirmed Cases

Table 1. Pregnancy Status at Time of Death in NH Residents, 2020-2021 (N=11)	
Pregnancy Status	**Number**
Pregnant	2
Postpartum	9

Data Source: MMRIA

Timing of 2020 and 2021 Reviewed and Confirmed Pregnancy Associated Cases

Table 2. Timing of 2020-2021 Deaths	
Months postpartum	**Number**
During pregnancy	2
< 3 months	6
3-6 months	0
6-12 months	3

Data Source: MMRIA

Cause and/or Manner of Pregnancy-Associated Deaths

Table 3. Cause of 2020-2021 Deaths	
Cause	**Number**
Overdose *(acute intoxication by fentanyl and or cocaine. etc.)*	4
Cardiac	2
Medical Causes *(amniotic fluid embolism, hemorrhage, cancer, hypovolemic shock etc.)*	5

Data Source: MMRIA

Achieved/Implemented Recommendations

1. NH became an Alliance for Innovation on Maternal Health (AIM) state
2. Developed Harm Reduction Education in each birthing facility to reduce risk of postpartum relapse and potential for overdose
3. NNEPQIN provided education to prenatal providers about how to obtain Naloxone from Doorway Program to ensure women with SUD or their family members are able to access naloxone.
4. Able to identify if a naloxone discussion took place pre-dishcarge
5. Increased Naloxone education and availability through Doorways program, including hospital's dispensing naloxone at discharge
6. Provided direct education to reduce stigma against people who use substances through NH-AIM webinar series.
7. Provide information to the patient about developing a safety plan/Plan of Safe Care (POSC) at prenatal encounters
8. Provided training for hospitals to implement Association of Women's Health, Obstetric and Neonatal Nurses' (AWHONN) Post-Birth Warning Signs hospital discharge education materials in NH birthing hospitals
9. Members of MMRC provided testimony to the legislature to provide access to full Medication Assisted Therapy (MAT) during incarceration and 3 months following release

Ongoing Recommendations

Public Health Interventions

1. Public education:
    - Birthing hospitals educate women with a history of substance misuse about the

increased risk of overdose in the postpartum period
- Care and safety in the postparturm period up to 1 yr
- Importance of prenatal care especially in the context of SUD
- Community suicide prevention training specific to the perinatal period

2. Increase funding for direct services:
    - Support increased access to maternal health services
    - Law enforcement education re: maternal health issues for de-escalation
    - Enhanced access for those pregnant with SUD who are homeless
    - Access to secure syringe disposal units and clean needles
    - Access to residential treatment keeping mother and baby together

3. Coordination and enhanced communication with colleagues in and out of state

Provider Education and Practice:

1. The provision of healthcare:
    - Utilization of NNEPQIN SUD and AIM patient safety bundle guidelines for SUD
    - Direct referrals from ED for care and treatment
    - Naloxone education and availability, including hospital discharge kits
    - Increased education about post-opioid pain management in context of SUD
    - Post discharge 48 hr check in call; safety plan at each visit
    - Provide separate area for pregnant patients in methadone clinic to reduce stigma
    - Advocacy for incarcerated individuals with SUD, to ensure that Medication Assisted Therapy (MAT), as well as counseling is in place prior to discharge to the community.
    - Closer follow-up after psychiatric hospital discharge for patients on suicide watch
    - Safety should be considered by an inpatient/emergency facility when discharging to home with a history of interpersonal violence

2. Health equity
    - Trauma informed care and stigma awareness training for providers
    - Universal Screening, Brief Intervention, and Referral to Treatment (SBIRT)
    - Assessment of Social Determinants of Health (SDOH) at any point of care
    - Remove barriers to care and services

3. Cardiac risk:
    - Cardiac bundle implementation/coordination with Primary Care Providers
    - Consider baseline EKG, cardio consult, sleep study for patients at high risk for cardiac events
    - Consider ECHO program on management of drug-related cardiac infection

Legal/incarceration:

- Recommendation to legislature to provide access to full MAT during incarceration and 3 months following release
- Require post incarceration transition plan

    - coordination of MAT for above
- Create option for mother and baby to stay together when serving time
- No delays in serving time until after delivery
- DHHS to coordinate actions w/ DOC and county jail system for prevention of overdose/suicide

Follow-up Action from Past Recommendations

One MMRC recommendation was for NH to become an Alliance for Innovation on Maternal Health (AIM) state, which it did in 2020. AIM is a federally funded national alliance out of the American College of Obstetricians and Gynecologists that promotes consistent and safe maternity care to reduce maternal morbidity/mortality. Through collaboration with NNEPQIN, MCH has been working with the State's birthing hospitals and centers, community health centers, and obstetric providers on initiation and implementation of the AIM Patient Safety Bundles.[6] These AIM Bundles are a structured way of improving the processes of care and patient outcomes: a small, straightforward set of evidence-based practices (generally three to five) that, when performed collectively and reliably, have been proven to improve patient outcomes. Structured outcome measures are recorded. NH DHHS has a data sharing agreement with AIM to provide aggregate level data dependent upon the patient safety bundle. NH is focusing its efforts on the patient safety bundle entitled, "Care for Pregnant and Postpartum People with Substance Use Disorder"[7]. Since 2020, monthly provider focused informational webinars have taken place[8]. NH is currently in the process of deciding which patient safety bundle to focus on next, while continuing work on the current one.

Another MMRC recommendation that is also included in the AIM Substance Use Disorder safety bundle is the distribution of naloxone to those with a history of substance use disorder prior to being discharged from the hospital after delivery. Pregnancy is a time of high motivation for self-care and engagement in substance use treatment. Conversely, postpartum is a time of vulnerability, where fatal overdose is more likely, precisely because non-prescribed opioid use and opioid tolerance typically decrease during pregnancy. Naloxone is a life-saving opioid antagonist medication, which reverses opioid overdose. It must be administered immediately after the overdose occurs to be effective. Therefore, distribution of naloxone to family and community members, so that it can be available at the time of need, is an important public health measure to decrease maternal mortality. The NH AIM initiative is providing ongoing technical support and hospital staff education on naloxone distribution.

[6] Patient Safety Bundles For Safer Birth | AIM
[7] Care for Pregnant and Postpartum People with Substance Use Disorder | AIM (saferbirth.org)
[8] New Hampshire Alliance for Innovation on Maternal Health (AIM) & ERASE Maternal Mortality Projects | NNEPQIN

Appendix A-NH MMRC membership

Member	Organization Representing
Emily Baker, MD	NH Chapter of the American Congress of Obstetricians and Gynecologists, Obstetrician/Gynecologist with a specialty in Maternal Fetal Medicine
Jessica Bates	NH MCH, DHHS, Administrative Support
Karen Boedtker, RN	NNEPQIN, Perinatal Consultant
Cheri Breyer	Public Member with Lived Experience
Sandy Connolly	Division of Program Quality and Integrity, NH DHHS, Business Systems Analyst
Ann Duckless, MA	National Alliance on Mental Illness, NH Chapter, Expert on Suicide
Daisy Goodman, CNM, DNP, MPH, CARN-AP	NNEPQIN, Director, Perinatal Addiction Treatment Program, Dartmouth Health
Kim Fallon	NH Office of the Chief Medical Examiner, Department of Justice, Chief Forensic Investigator
Tim Fisher, MD, MS	Medical Director of NNEPQIN, Obstetrician/Gynecologist
Victoria Flanagan, RN, MS	NNEPQIN, Perinatal Outreach Educator, MMRC Abstractor
Julia Frew, MD	Dartmouth Health, Perinatal Addiction Psychiatrist
Kris Hering, MSN, RN, NE-BC, FACHE	NH Foundation for Healthy Communities, Vice President of Quality Improvement
Courtney Jones, MD	Chair of the NH Chapter of the American Congress of Obstetricians and Gynecologists, Obstetrician/ Gynecologist
Pam Doubleday, RN	Concord Hospital, Labor and Delivery Nurse
Kristen Kraunelis, LICSW	Mental Health Center of Greater Manchester
David Laflamme, PhD, MPH	NNEPQIN, Epidemiologist
Suzanne LaMontagne	NH Division of Program Quality and Integrity, DHHS, DHHS Sentinel Review Committee
Jaimie LaValley, MSW	Concord Hospital, Obstetrical Social Worker
Kiera Latham, MPH	New England High Intensity Drug Trafficking Area (HIDTA), Overdose Response Strategist
JoAnne Miles Holmes, MPH	NH MCH, DHHS, Injury Prevention Program Administrator
Margaret Minnock, MBA	NNEPQIN, Administrator
Kristine Nikitas, BS	NH Bureau of Drug and Alcohol Services, NH DHHS
Carolyn Nyamasege, PhD, MPH, MS	NH MCH Epidemiologist
Rhonda Siegel, MSEd	NH MCH, DHHS, Administrator of the Maternal and Child Health Section/Title V Director
Lissa Sirois, MPH, RD, IBCLC	NH Bureau of Population Health and Community Services, NH DHHS, Interim Bureau Chief, Expert in Nutrition, WIC and Breastfeeding
Meagan Smith, RN	Association of Women's Health, Obstetric and Neonatal Nurses, NH Section and Director of Nursing, Speare Memorial Hospital
Katherine Stokes, RN, MPH	Dartmouth Health, Labor and Delivery Nurse
Colleen Whatley, RN, MSN	NNEQIN, MMRC Recommendations Facilitator

Appendix B –Systems of Maternal Mortality Surveillance in the United States

Systems of Maternal Mortality Surveillance in the United States

Data Source	National Vital Statistics System	Pregnancy Mortality Surveillance System	Maternal Mortality Review Committees
Timeframe	During pregnancy—42 d	During pregnancy—1 y	During pregnancy—1 y
Source of classification	ICD, 10th Revision codes	Medical epidemiologists, utilizing Pregnancy Mortality Surveillance System codes	Multidisciplinary committees
Terms	Maternal death	• Pregnancy-associated death • Pregnancy-related death • Associated but not pregnancy-related death	• Pregnancy-associated death • Pregnancy-related death • Associated but not pregnancy-related death
Measure	Maternal mortality rate (no. of maternal deaths/100,000 live births)	National pregnancy-related mortality ratio (no. of pregnancy-related deaths/100,000 live births)	State or local-level pregnancy-related mortality ratio (no. of pregnancy-related deaths/100,000 live births)
Purpose	Show national trends and provide a basis for international comparison	Analyze clinical factors associated with deaths, publish information that may lead to prevention strategies	Understand medical and nonmedical contributors to deaths; prioritize interventions that may reduce maternal deaths

Source: A. Challenges and Opportunities in Identifying, Reviewing, and Preventing Maternal Deaths. Obstet Gynecol. 2018 Jan; 131:138-142

- *Pregnancy-associated death: umbrella term for all deaths during pregnancy or within 1 year of pregnancy, regardless of cause*
- *Pregnancy-related death: the death of a woman while pregnant or within 1 year of pregnancy termination–regardless of the duration or site of the pregnancy–from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes*
- *Pregnancy-associated but not related death the death of a woman during pregnancy or within 1 year of the end of pregnancy from a cause that is not related to pregnancy*

Appendix C –Informant Letter, Consent Form and Interview Question Guide

STATE OF NEW HAMPSHIRE

DEPARTMENT OF HEALTH AND HUMAN SERVICES

DIVISION OF PUBLIC HEALTH SERVICES

BUREAU OF POPULATION HEALTH AND COMMUNITY SERVICES

Lori A. Shibinette
Commissioner

Patricia M. Tilley
Director

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www.dhhs.nh.gov

Date

Dear ____;

The Maternal Mortality Program for the State of New Hampshire has learned that you and your family have experienced the tragic loss of your ____, within/following her last pregnancy. We wish to express our sincere condolences on your loss.

This kind of death is considered a "maternal death." The State of New Hampshire conducts a maternal mortality review process for each maternal death to help understand why maternal deaths happen and how to prevent them. You were identified through information we obtained from the Medical Examiner's Investigative Report after the death of ____.

Maternal mortality review processes are explained in detail at this website: reviewtoaction.org/implement/process-review. As part of our review of 's death, we wish to interview family members and/or friends who might provide us with information we cannot otherwise obtain using 's official records, such as how she was feeling, her experiences with health care, etc. This level of information will help us form a deeper understanding of the circumstances surrounding ____'s death. All interviews are confidential. You do not have to participate; the interview is voluntary.

We have attached an informed consent form with complete details about our process. We hope you will take a moment to review it and consider participating in this interview. Please contact Ellen Stickney, Maternal Mortality Nurse Coordinator, using the contact information below, to schedule an interview or ask any questions about the Maternal Mortality Review process. Again, we express our condolences on your loss.

Sincerely,
Maternal Mortality Review Coordinator
New Hampshire Department of Health & Human Services/Maternal Child Health Section
Phone: 603-271-4532//Email:

State of New Hampshire Maternal Mortality Review Committee Informant Interview Consent Form

Purpose of Interview

The State of New Hampshire is reviewing pregnancy-associated deaths to help understand why maternal deaths happen and how to prevent them. We wish to interview family members and/or friends who experienced a loss of a loved one from a maternal death. You were identified through information we obtained from the Medical Examiner's Investigative Report after the death of ____.

Please note, if you are taking legal action as a result of ____'s death, we will not ask you to participate in an interview until all legal matters have settled. If there is no current legal action, and you voluntarily agree to participate, one of the two Registered Nurses co-facilitating the review will ask you questions about her health, family, and use of health care and social services. The interview will take place by phone, in your home, or in a quiet place that you choose where you are comfortable, and it can be scheduled at a time that is convenient for you. This interview may take about an hour or a bit longer.

Description of Potential Risk

Talking about the death of your loved one is difficult and may bring up strong emotions for you. The interviewer is Registered Nurse who has expertise in pregnancy-associated deaths and co-facilitates the review. The interviewer can provide you or your family with information on available services to help you cope with your feelings about your loss. <u>You may stop the interview at any time, if you do not want to continue. Your participation is voluntary</u>. There is no cost for being interviewed, other than your time and effort.

Description of Potential Benefits

Participating in this interview may be emotional for you. However, some people find the interview to be a positive experience. You may find that talking about the death of your loved one can help with your grief. The information you provide during this interview may result in recommendations to prevent other maternal deaths.

Alternative Procedures

You may choose to participate or not participate. You do not have to be interviewed.

Confidentiality of Records

We will not let anyone know your name or what you told us. All information that identifies you, the family or the health providers will be kept confidential outside the review process staff and consultants. All of New Hampshire's maternal mortality review process staff and consultants have signed oaths of confidentiality. Only those who are doing the investigative work (two RN abstractors) will be aware of your daughter's name. Everything presented to the Maternal Mortality Panel is de-identified to protect the privacy of the family. All records are kept in secure files. Confidentiality and anonymity will be protected to the full extent permitted by law. The interviewer may not disclose protected records information to you, such as medical history and medical test results. The interviewer may not share his/her own thoughts/feelings about ____'s

death with you.

Mandated Reporters

Interviewers are mandatory reporters and must disclose to authorities if any danger to children or adults is observed.

Compensation

You will not be paid or otherwise compensated for participating in the interview.

Voluntary Participation

Again, your participation in this process is completely voluntary. You do not have to be interviewed. You do not have to answer any question you do not wish to answer. You are also free to end the interview at any time.

Questions

If you have questions about the interview or New Hampshire's process of reviewing pregnancy-associated deaths, you may call _____, RN, Maternal Mortality Review Coordinator at (603) 271-4532.

Consent

The purpose of the interview was fully explained to me.
I voluntarily agree to participate in the interview as part of New Hampshire's maternal mortality review process. I understand that all information obtained from the interview will be strictly confidential to the fullest extent allowable by law and identifying information will not appear in any publications or reports or be given to anyone outside the review process.

Participant Name: _____
Signature: _____
Date: _____

Interviewer's Name: _____
Interviewer's Signature: _____
Date: _____

INFORMANT INTERVIEW GUIDE

INTRODUCTION

Name, **title**, I work with New Hampshire's Maternal Mortality Review Committee and am one of two abstractors. We are a NH Legislated Committee, and our role is to investigate all maternal deaths in NH. The goal of our work is to bring recommendations back to the legislature that may help prevent future maternal deaths, when possible.

I wish to recognize the loss of your ____, _____, and express our deepest condolences.

CONSENT

I would like to go over the consent with you to make sure you understand the purpose of this interview and what you can expect. I will be recording this interview so that I will be able to review it and transcribe it correctly.

After reviewing this, if you consent to be interviewed, would you please sign the consent for my records? If you do not wish to be recorded, we can do the interview without that.

BEGIN

Before we begin, I want to remind you that we want to know <u>your</u> point of view, so there are no right or wrong answers to these questions. If you do not feel comfortable answering a question, please just say "pass" and we will move on. You only need to answer questions that you <u>want</u> to answer. If you want to stop the interview at any time, please just let me know.

There may be pauses between questions. I want to give you time to answer the question, and it will help me take notes on what you are saying.

Please know that I will not share your _____'s name or any identifying information with the committee or any media. All documents I produce as part of this interview will be kept in a secure and locked location for my reference only. _____'s story will be presented to the committee anonymously.

OPENING

1. What is your relationship to _____?
2. How long have you known her?
3. Before we being, is there anything you would specifically want me to know about her?

COVID RELATED QUESTIONS

1. Did she have Covid-19 at any time prior to her death?
2. Did she have a support person with her at the hospital when giving birth?

3. What were her thoughts on wearing masks?
4. How did she feel about getting a vaccine for Covid-19?
5. Did she receive a Covid-19 booster shot?
6. Did she have increased stress due to the pandemic?

CLINICAL FACTORS

1. Do you know how many times she had been pregnant in her life? (including miscarriages and abortions?
2. How many living children did she have?
3. Do you know if she had any physical complications with a previous pregnancy? (High blood pressure, seizures, diabetes, blood clots, bleeding, depression/anxiety, C-section recovery issues, infection, severe tears, a baby in the NICU, a stillbirth, etc.?)
4. Do you know if she had any physical complications with this pregnancy? (High blood pressure, seizures, diabetes, blood clots, bleeding, depression/anxiety, C-section recovery issues, infection, severe tears, a baby in the NICU, etc.?)
5. Were you concerned about her health before, during, or after her pregnancy?
6. Were you aware of any increased problems with pain that were directly related to her pregnancy or postpartum period?
7. How was this being treated?
8. What can you tell me about the health care she received while she was pregnant?
9. What kind of provider did she see for her prenatal care? (Midwife, OB doctor, DO?)
10. Did she have any difficulty making/keeping prenatal visits?
11. Do you know if she had any difficulty making/keeping her postpartum visits?
12. Did her OB provider ever tell her to go to any other doctors, clinics, or hospitals at any time while she was pregnant?
    a. Was she able to see the provider/clinic she was referred to?
13. Can you tell me about the health care she got after she had her baby?
    a. Did she see her doctor or midwife a few weeks after she had her baby?
    b. Do you know how she felt about the care she received?
    c. Did she have challenges getting to her postpartum appointments?
    d. Was she having complications or other health concerns after she had her baby that caused her to see a doctor?
14. What is your understanding of the cause of her death?
15. Do you know what transpired before she died?
16. Do you think her death was related to her pregnancy? In other words, do you think if she had not been pregnant or had her baby she would have died?
17. Were you aware of any traumatic events she was dealing with? (prior stillbirth, preterm delivery, prior/current infant with a birth defect or disease, removal of a child or children from custody, or relationship problems related to her pregnancy or postpartum time?)

SUBSTANCE USE DISORDER

1. Were you aware if she had a problem with substance misuse?
2. Was she was using drugs during her pregnancy?
3. Did she ever express being worried that if she did not stop using drugs, that DCYF would take the baby away?
4. If so, do you know if she was trying to wean herself off the drugs without medical help in order to prevent this from happening?
5. Do you know if she was enrolled in any treatment programs for her drug use?
6. Do you know if she had any trouble accessing medical care to treat her drug use?
7. If she was in a substance misuse treatment program, do you know if this was motivated by her pregnancy?
8. Did she ever indicate that she no longer wanted to follow the substance use treatment plan once she delivered the baby?

SOCIAL DETERMINANT FACTORS

1. What was her financial status? Did she have good housing, a car/transportation, food, heat, etc.?
2. Was she living in a safe environment?
3. What kind of financial support did she receive/if any when she left the hospital after delivery?
4. Did she experience anxiety, depression, or other mental health challenges during or after her most recent pregnancy? How was she coping?
5. Was she seeing a provider or a counselor for her emotional or mental health? If so, what was her experience like with them?
6. Did she have any difficulty accessing mental health treatment?
7. How were her relationships with others affected by her emotional or mental health?
8. How would you describe the relationship she had with the father of her baby?
9. Sometimes traumatic experiences affect how women experience pregnancy and childbirth. Do you know if she any history of abuse?
10. Did I leave anything out about her life and health experiences that you would like to share now?

1. What do you think could be done better to help keep women like her from dying? For instance:
    a. What advice would you give to doctors, midwives, nurses, or other health care providers who take care of women like her?

2. We prepared a list of resources that might be helpful. (give them handouts)

Thank you so much for talking with me. Before I leave, I would like to check and ask how this interview experience has been for you, and ask whether you have suggestions for me or the maternal mortality review process to better improve how we gather information about maternal deaths like her.

Appendix D – MMRC educational information

New Hampshire
Maternal Mortality Review Committee (MMRC)

MMRC Goals

REVIEW deaths of pregnant and recently pregnant people in order to



RECOMMEND systematic changes that will

IMPROVE services for pregnant and post-partum individuals in NH

Key Terms

Maternal Death: Death that occurs during pregnancy, delivery, and up to a year after the end of pregnancy.

Pregnancy-Associated Death:
Death during or within one year of pregnancy by any cause.

Pregnancy-Related Death:
Death during or within one year of pregnancy that is caused by the pregnancy.



Pregnancy-Associated, but Not Related Death:
Death during or within one year of pregnancy that is not pregnancy related.

Preventability: The MMRC may label a death "preventable" if there was some chance of the death being prevented by one or more changes to patient, family, doctor, facility, system, or community factors.

More key terms and information may be found at www.ReviewToAction.org

Committee Membership

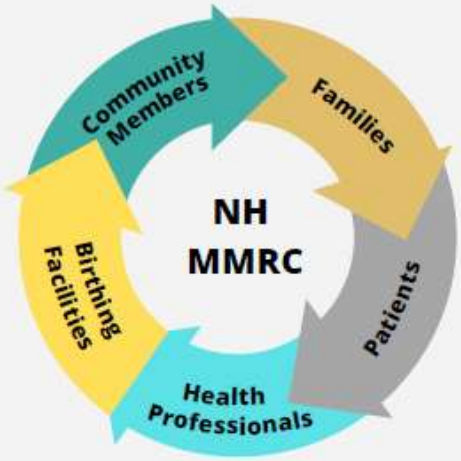
The MMRC includes volunteers with expertise in public health, medicine, epidemiology, nursing, and mental health who meet 2-4 times / year.

Committee Collaboration

Collaboration is at the core of annual NH MMRC recommendations:

To improve the lives of pregnant and parenting individuals, it is important to understand the role of all stake-holders, including those in the diagram.

After review of NH maternal deaths, the MMRC works collaboratively to make recommendations that will reduce maternal death and illness.



Leading Causes of NH Maternal Deaths



Substance Use Disorders



Heart Complications



Suicide & Mental Illness



& Other Causes

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maternal and child health
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Please Reference NH Statute Sections: 132:29, 132:30, and 132:31

Naloxone Saves Lives of Pregnant & Postpartum People

From 2017-2020, 62% of NH pregnancy-associated deaths were due to opioid[1] overdose

Pregnancy: high motivation for self-care and substance use disorder treatment

what happens here MATTERS

Postpartum: increased chance for fatal overdose due to lowered substance tolerance

NH Actions Upon Discharge Following Delivery



Discussion between the patient, health professionals, and family members regarding the likelihood for fatal overdose



Birthing facility provides a **Naloxone** prescription with education for all patients and family or community members, especially those at-risk



Health professionals caring for pregnant women with a history of substance use develop and share a **Plan of Safe / Supportive Care**

Community Member Actions



Get trained to help during opioid overdose emergencies with Get Naloxone Now



Learn the risks related to substance use following periods of little or no use



Take part in your loved one's Plan of Safe Care such as further treatment

"Alicia's" Experience



"Alicia", a straight-A student athlete, became addicted to opioids after a sports injury

During pregnancy:
Alicia took part in a substance use disorder treatment program

After pregnancy:
Alicia developed postpartum depression & began using non-prescribed opioids again

During a near-death overdose:
Alicia's sister administered Naloxone, saving her life

Alicia went on to receive treatment

Accessing Naloxone

If you, your friends, or your family members use opioids, having **Naloxone** ("Narcan") on hand and knowing how to use it can save lives.
Call 911 first if you think someone has overdosed.

A medicine that can rapidly reverse an opioid overdose.

To obtain Naloxone in NH:

1. **Call 211 or visit www.thedoorway.nh.gov to be connected with a Doorway**
2. Ask your doctor to write a prescription for Naloxone or visit a pharmacy
3. Visit **www.anyoneanytimenh.org** for more resources

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[1] Opioids: A class of drugs used to reduce pain. Such drugs include illegal drugs (eg. heroin), synthetic opioids (eg. fentanyl), and pain relievers available legally by prescription (eg. oxycodon).

NH Health & Community Solutions for Pregnancy-Associated Deaths by Suicide

For many people, pregnancy & postpartum is a time of increased access to healthcare.

So how can WE use this time to identify and intervene for suicide risk?

1 Universal Screening for Mental Health Conditions:

Health professionals can regularly use screening tools to assess patient mental health.
National Institute of Mental Health "Ask Suicide-Screening Questions"
Columbia Suicide Severity Rating Scale

2 Consider Safety when Discharging All Patients:

Health professionals can closely monitor patients when they are discharged to a home with a history of violence, depression, or previous suicide attempts.
Families can reduce firearms access.

3 Education of Parents & Caretakers:

Health professionals can provide medication and treatment education to caregivers.
Families can participate in mental health treatment for their loved one.

Community Resources

NH Rapid Response: Call or Text 833-710-6477
Suicide Prevention & Crisis Lifeline: Dial 988
24/7 access to mental health and/or substance use crisis support

Find Your Community Health Center
www.nhcbha.org
Ten NH community health centers currently provide mental health services

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Heart Risks for Pregnant & Postpartum People

Are you or is someone you know pregnant?

How about in the past year?

Stay educated about possible heart complications

Heart (cardiovascular) disease can pose a threat to pregnant and recently pregnant people. Knowing the signs to watch for and steps to take saves lives.

Six Signs to Watch For

(mid pregnancy - 5 months after pregnancy)



Lasting Cough



High blood pressure



Sleepiness



Swollen ankles or neck veins



Short of Breath



Skipping Beats or Racing Heart

Steps to Take

If you are experiencing frequent symptoms, contact your doctor or visit the emergency room. Don't forget to inform the provider of your current or recent pregnancy.

Minimize Risk



Avoid cigarettes



Exercise regularly



Eat a balanced diet



Avoid alcohol

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Appendix E – Confidentiality Agreement

CONFIDENTIALITY AGREEMENT
FOR
MATERNAL MORTALITY REVIEW PANEL

Confidentiality Assurances:

- Review materials and proceedings of review meetings are privileged information for use only by panel members and program staff. At no time after the review should the panel member discuss the case or specific comments. General recommendations developed as a result of the case may be shared with each panel member's respective institution or professional organization.
- Reviewers may not photocopy case review materials. All case review materials will be collected at the close of review deliberations and returned to the program office.

Breach of Confidentiality:

- Inappropriate disclosure of review proceedings is considered a breach of confidentiality and represents an improper intrusion into the privileged nature of the proceedings. Breach of confidentiality ignores the rights of applicants to their proposed work and invades the privacy of fellow review committee members and onsite review teams. A significant result of such a breach of confidentiality could be legal exposure, as well as to disqualify a current reviewer from continuing with the current proceedings and to bar that reviewer from participating in **future** reviews.

I hereby agree to these provisions:

Print Name: _____

Authorized Signature: _____

Witness: _____

Date: _____

Appendix F – Schematic of MMRC Process

Figure 1. New Hampshire MMRC Case Abstraction and Review Process



The MCH Epi verify a flagged maternal death from DVR or other sources

One way to verify is by linking birth certificate and fetal deaths data to confirm whether pregnancy-associated or false positive

The death certificate details are reported to the perinatal nurse coordinator (PNC) who sends out letters to obtain hospital records, investigative reports, autopsy, perinatal records etc. Other cases are verified by the PNC

The abstractors enters the collected information on MMRIA based on the required fields.

They develop case narratives for use in MMRC meetings

Case Reviews

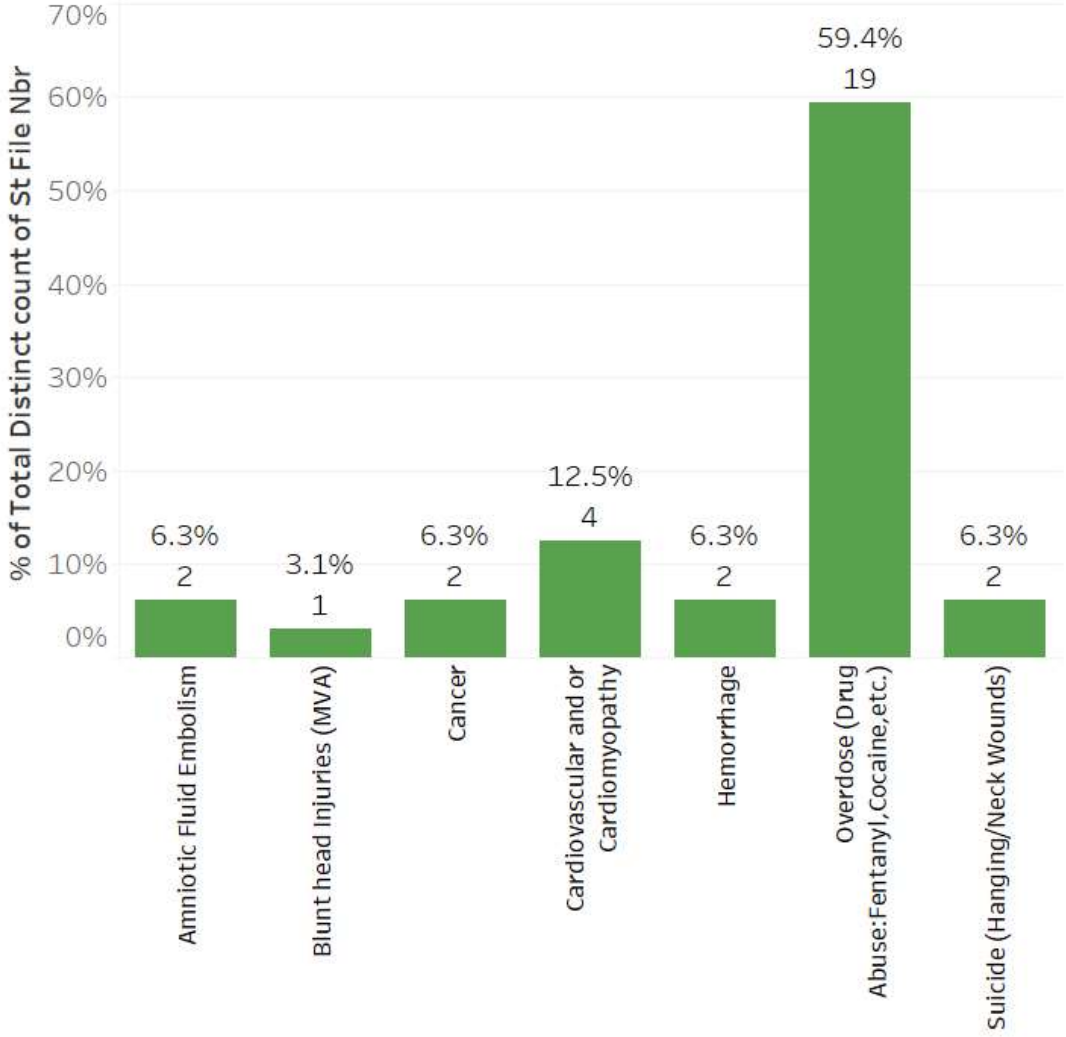
MMRC meets every quarter to review case summaries of the abstracted maternal deaths to determine circumstances surrounding death, preventability and suggest recommendations for each case.

Reporting

Yearly data for all cases entered in MMRIA is aggregated and generated for comprehensive analysis and visualization using Tableau. Findings are shared with relevant stakeholders and legislative committees.

Appendix G – MMRIA Informed Tables and Figures

Figure 2: Causes of Pregnancy associated on all confirmed deaths which occurred in NH (2017-2021 data)



Data Source: MMRIA

Figure 3 Frequency of selected committee determinations on circumstances surrounding death for reviewed cases

Committee determinations	Yes	No	Probably	Unknown
Did obesity contribute to the death?	2	23	1	0
Did discrimination contribute to the death?	0	13	0	7
Did mental health conditions contribute to the death?	13	7	5	1
Did substance use disorder contribute to the death?	15	7	2	2
Was this death a suicide?	2	19	0	5
Was this death a homicide?	0	25	0	0

Data Source MMRIA aggregates

Table 1. Education attainment for 2017-2021 cases

Education attainment of the mother	Number of deaths	Percentage
High school diploma equivalent or less	18	56.3
Completed some college	4	12.5
Associate or bachelor degree	9	28.1
Completed advanced degree	1	3.1
Total	**32**	**100**

Data Source: MMRIA

Table 2. Age group category for 2017-2021 cases

Age group of the mother (years)	Number of deaths	Percentage
<25	5	15.6
25-29	6	18.8
30-34	14	43.8
35-39	2	6.2
40 and more	5	15.6
Total	**32**	**100**

Data Source: MMRIA

Table 3. MMRC determinations on pregnancy relatedness for 2017-2021 cases

MMRC determinations, reviewed cases	Number of deaths	Percentage
Pregnancy Associated not Related	12	37.5
Pregnancy Related	17	53.1
Awaiting Review, Under investigation	3	9.4
Total	**32**	**100**

Data Source: MMRIA

Table 4. Timing of death in relation to MMRC for 2017-2021 cases

Death timing	Number of deaths	Percentage
During pregnancy	9	28.2
Within 42 days of pregnancy	7	21.8
Within 43 days to 1 year of pregnancy	12	37.5
Missing	4	12.5
Total	**32**	**100**

Data Source MMRIA

Figure 4. History of social and emotional stress for 2017-2021 reviewed cases

Social or emotional stressor	Number of deaths
Child Protective Services involvement	6
History of childhood trauma	4
History of domestic violence	4
History of psychiatric hospitalizations or treatment	7
History of substance use	16
History of substance use treatment	12
Pregnancy unwanted	1
Prior suicide attempts	6
Recent trauma	1
Unemployment	7
Other	3
Unknown	2
None	3

Data Source: MMRIA aggregates

Figure 5. Deaths considered preventable by MMRC

MMRC preventability determination	Number of deaths
Preventable	18
Not Preventable	5
Unable to Determine Preventability	0
Total	**23**

Data Source: MMRIA aggregate