2021 Annual Report on Maternal Mortality to New Hampshire Health and Human Services Legislative Oversight Committee

Maternal and Child Health Section
Bureau of Population Health and Community Services
Division of Public Health Services
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NH DIVISION OF
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Improving health, preventing disease, reducing costs for all

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We wish to acknowledge and thank past and present members of the Dartmouth Hitchcock Northern New England Perinatal Quality Improvement Network (NNEPQIN) and the New Hampshire Maternal Mortality Review Committee (MMRC) for their participation and service to the Maternal Mortality Review Program (MMRP)

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Executive Summary

RSA 132:30 established a New Hampshire Maternal Mortality Review Panel, commonly referred to as the Maternal Mortality Review Committee (MMRC). The purpose of this committee 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. Recommendations may be in the areas of community, facility, provider and/or patient/family with regard to pregnant women. 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 pregnant and parenting women in New Hampshire (NH).

The MMRC meets between two and four times per year to review information provided by the abstractors and make decisions and recommendations. This process is explained further in this report. The MMRC is working diligently to try and review maternal death cases within one year of the death.

Due to the nature of a multidisciplinary committee, the resulting recommendations are wide ranging and consider more than the clinical aspects of pregnancy. Cases that occur outside of the pregnancy in the postpartum period often elicit recommendations that touch more upon the community setting or systems and policy changes.

According to the Centers for Disease Control (CDC), **maternal death is defined as** the death of a woman while pregnant or within 1 year of the end of pregnancy from any cause related to or aggravated by the pregnancy.[1]

Maternal deaths continue to be of great concern in New Hampshire and throughout the United States. United States statistical data shows that in 2019, 754 women were identified as having died of maternal causes in the United States, compared with 658 in 2018.[2] There were eight (8) maternal deaths in New Hampshire in 2019 compared with six (6) maternal deaths in 2018. New Hampshire's largest percentage of maternal deaths in 2019 were caused by substance use overdose. The 2019 cases show 50% of maternal deaths were from overdose, 25% were from suicide, and 25% were from medical causes, such as hemorrhage, preeclampsia, uterine rupture, ruptured aneurysm, etc. New Hampshire's substance use overdose death demographic is not unique. Other MMRCs throughout the country are finding similar results. The recommendations continue to be around changes necessary to improve aspects of care for pregnant and postpartum women with substance use disorders (SUD).

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[1] Pregnancy Mortality Surveillance System (PMAA)
https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm
[2] Health E-Stats, Donna L. Hoyert, Ph.D., Division of Vital Statistics, April 2021
https://www.cdc.gov/nchs/data/hestat/maternal-mortality-2021/maternal-mortality-2021.htm

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 Department of Health and Human Services' (DHHS) Maternal and Child Health (MCH) Perinatal Nurse Coordinator (PNC) and the Dartmouth Hitchcock Northern New England Perinatal Quality Improvement Network (NNEPQIN) Perinatal Outreach Coordinator (POC). 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." [3]

Program Update

In April 2021, the vacant Perinatal Nurse Coordinator position at MCH, DHHS was filled. This has allowed for more thorough abstraction efforts, to include department of correction records, sentinel event forms, autopsy reports, investigative reports, and any other leads discovered in the process of abstraction.

The MMRC is currently working on adding informant interviews. Informant interviews 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 will further provide context of the events leading to death. The MMRC and NNEPQIN are working closely with the Centers for Disease Control (CDC) through the "Enhancing Reviews and Surveillance to Eliminate Maternal Mortality" (ERASE MM) grant on the most effective way to conduct informant interviews.

Maternal Mortality Review Process

Maternal 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
- Case findings reported to MCH from an MMRC panel member
- Other sources such as medical provider, family member, or media outlet

[3] Chapter 132, Protection for Maternity and Infancy
http://www.gencourt.state.nh.us/rsa/html/x/132/132-30.htm

As is the case across the country, maternal deaths are most likely underreported. In particular, the death of a woman within the year of a pregnancy that did not end in a live birth may not be discovered, because population-wide data sources for this information are limited. This coming year NNEPQIN and the MCH PNC will be providing education to hospitals and birthing centers, emergency rooms, and ambulatory surgical centers to remind them that reporting the death of a woman who either is pregnant, or has been pregnant within one year, to MCH is a legislated requirement.

Initial outreach begins when the MCH PNC requests records by letter from hospitals and offices in which the decedent had received medical care. 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 woman's life and subsequent death. Either the MCH PNC or the NNEPQIN POC contact each establishment within a few weeks of receipt of the letter and work out a plan to abstract information from the decedent's records. In the past, in-person visits were often the best way to abstract information. However, since the Covid-19 pandemic began, very few, if any, abstraction has been done in-person.

Once abstraction is complete, the MCH PNC and NNEPQIN POC put together the presentation for the MMRC. The MCH PNC continues to use the process for preparation and review of cases found on the CDC's Review to Action website.[4] Review to Action serves as a resource to support the work of MMRCs. The process and the actual forms that the committees use to make determinations on cases are available through Review to Action to assist existing MMRCs in improving the review process, as well as to encourage new committees to build a system to review maternal deaths.

The MCH PNC is also using a resource from Review to Action entitled Informant Interview Guide.[5] This guide helps abstractors develop interview techniques and questions that will help to gather the most valuable information possible. The MCH PNC and NNEPQIN POC have developed a template to use when conducting informant interviews based on this guide.
All members/participants of the MMRC are required to fill out a Confidentiality Agreement. This agreement states that 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.

[4] Review to Action
https://reviewtoaction.org/
[5] Informant Interview Guide for Maternal Mortality Review Committees, 2020
https://reviewtoaction.org/national-resource/informant-interview-guide-maternal-mortality-review-committees

Case Review

The MCH PNC and the NNEPQIN POC take the information collected for each case and de-identify that information after abstraction in order to prepare a summary of the events for the MMRC meeting. De-identified case information is shared with committee members prior to the MMRC meeting. This information includes a summary of all pertinent (and available) records of the decedent's life and death. Committee members are asked to review the information ahead of the meeting in order to prepare and provide for a more productive use of committee time. At the meeting the entire panel discusses the case 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.

Review to Action instructs committees 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?
- 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, 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. Going forward, the MMRC will have a named Subject Matter Expert (SME) present aspects of the case from their area of expertise to assist the committee in making these sometimes difficult decisions.

Maternal Mortality Review Information Application Database

After the MMRC makes its decisions on the questions listed above, the information is entered into the Maternal Mortality Review Information Application (MMRIA) database. MMRIA is a data system available to all state MMRCs to support essential review functions.
Standardized data collection is a first step toward fully understanding the causes of maternal mortality and eliminating preventable pregnancy-related deaths. MMRIA helps MMRCs organize available data and begin the critical steps necessary to comprehensively identify and assess maternal mortality cases.

Along with this work, the CDC offered training on qualitative analysis that was attended by the MCH PNC as well as a clinical MMRC representative from NNEPQIN. This training will be used to form a committee between the MCH PNC and NNEPQIN to code qualitative data from maternal death investigations, which will aid in the formulation of unbiased MMRC recommendations.

Overview of Pregnancy-Associated Maternal Deaths in New Hampshire, 2019

The NH maternal death cases reviewed for 2019 were all New Hampshire residents. Two cases remain in the process of committee decision-making as the abstractors attempt to find more information to inform the MMRC determinations. Both of these cases were reviewed in July 2021, but the committee was not able to determine pregnancy relatedness at that time and requested further investigation. These cases should be completed at the October 2021 MMRC meeting. The following tables break down the 2019 maternal mortality cases:

Pregnancy Status of 2019 Reviewed Maternal Death Cases

Table 1. Pregnancy Status at Time of Death in NH Residents, 2019 (N=8)	
Pregnancy Status	**Number**
Pregnant	1
Postpartum	7

Timing of 2019 Reviewed Maternal Death Cases

Table 2. Timing of 2019 Maternal Deaths	
Months postpartum	**Number**
During pregnancy	1
< 3 months	2
3-6 months	0
6-12 months	4
Unknown – infant not yet identified	1

Cause and/or Manner of Pregnancy-Associated Deaths

Table 3. Cause of 2019 Maternal Deaths	
Cause	**Number**
Overdose	4
Suicide	2
Medical Causes	2

New Hampshire's largest percentage of maternal deaths in 2019 were caused by substance use overdose. The 2019 cases show 50% of maternal deaths were from overdose, 25% were from suicide, and 25% were from medical causes, such as hemorrhage, preeclampsia, uterine rupture, ruptured aneurysm, etc. New Hampshire's substance use overdose death

demographic is not unique. Other MMRCs throughout the country are finding similar results.

Pregnancy Related Maternal Deaths that Occurred in New Hampshire in 2019

Summary 2019 Maternal Mortality Review Committee Determinations-Pregnancy Relatedness	
Pregnancy-associated cases reviewed	8
A. Pregnancy-associated, but not pregnancy-related	3
B. Pregnancy-related	2
C. Committee unable to determine if pregnancy-related	2
D. Pending Determination	1

2019 Case Recommendations

The following recommendations are based on the 2019 cases reviewed by the MMRC.

Recommendations – Substance use Disorder Care:

1. Upon discharge following delivery, the birthing facility should provide a Narcan prescription along with harm reduction education for the patient, reminding them that if substances are being used, never to use alone, and if Narcan is needed to call 911.
    a. This work has begun (see AIM Safety Bundle information above).
2. Providers who have patients with Substance use Disorder (SUD) should discuss the risk of use after a period of abstinence, where fatal overdose is more likely, precisely because non-prescribed opioid use and opioid tolerance typically decrease during pregnancy.
3. The MMRC discussed harm reduction, which led to the recommendation that providers caring for pregnant women with a history of SUD should provide information to the patient about developing a safety plan/Plan of Safe Care at each encounter with the patient.
    a. NH RSA 132 – 10-e and 10-f requires the development of a Plan of Safe Care for all infants affected by prenatal drug or fetal alcohol exposure to support pregnant/parenting people, infants, and their families per federal and state requirements. A Plan of Safe Care is a critical tool – not only for every infant born exposed to prenatal substance exposure but for all pregnant/parenting people and their infants. The plans are developed collaboratively with the pregnant/parenting person and work to coordinate existing supports and referrals to new services to help families stay supported and connected when they leave the hospital.
4. Advocacy for incarcerated individuals with substance use disorder, to ensure that Medication Assisted Therapy (MAT), as well as counseling is in place prior to discharge to the community.

Recommendations – Suicide Cases:

1. Safety should be considered by an inpatient/emergency facility when discharging to home with a history of interpersonal violence.
2. The discharge coordinator of any facility (psychiatric hospital, inpatient hospital stay, emergency department, etc.) who discharges a patient who was on a suicide watch, should ensure close follow-up (within 24 hours of discharge) or transfer to a partial hospital program, and ensure medication/treatment education is provided to patients and caretaker(s).

Recommendations – Medical Cases:

1. An educational program focusing on screening and management of cancer during pregnancy could be developed/presented by NNEPQIN.

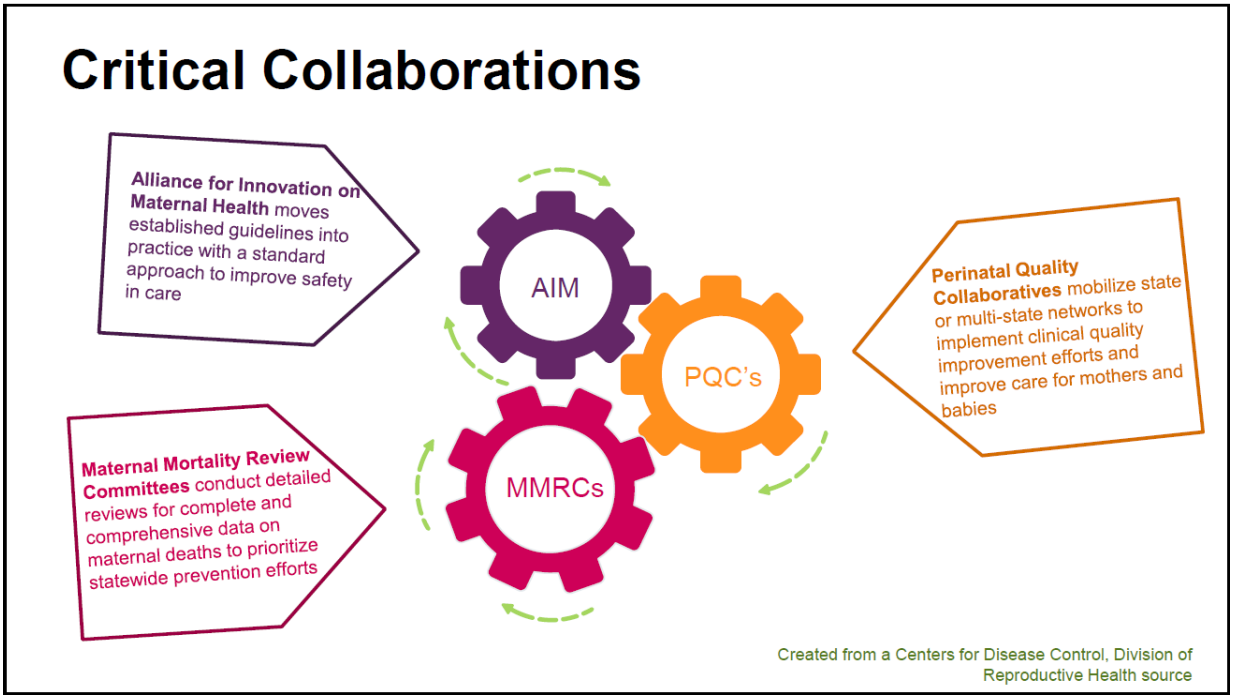
Follow-up Action from Past Recommendations

A specific outcome from a recommendation from the MMRC was to become an Alliance for Innovation on Maternal Health (AIM) state. AIM is a national alliance that promotes consistent and safe maternity care to reduce maternal morbidity/mortality. Through collaboration with NNEPQIN, New Hampshire has been working with the State's 16 birthing hospitals, community health centers, and obstetric providers on initiation 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.

Another outcome of MMRC recommendations and an AIM Safety Bundle is the distribution of naloxone to women with a history of substance use disorder prior to being discharged from the hospital after delivering their infant. 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.

As shown in the diagram below, the MMRC, AIM, and DH-NNEQIN are a critical collaboration that work together to protect pregnant and postpartum women from preventable maternal death.

[6] AIM Patient Safety Bundles
https://safehealthcareforeverywoman.org/patient-safety-bundles



Based on another recommendation from the MMRC, a subcontract with NNEPQIN provided through the CDC grant allowed a legal consultant to research maternal mortality cross border data-sharing issues between bordering states. This report was shared with the CDC in September 2021, and the final version should be completed by October 2021. In the coming year, MCH and NNEPQIN will discuss what policy changes might be recommended, based on this report, in order to ensure that complete information from perinatal records is accessible to the MMRC. The inability to obtain records for maternal deaths of New Hampshire residents that died in another state, makes thorough investigation of a maternal very difficult, if not impossible. This information will assist the MMRC in making recommendations that will provide improvements for New Hampshire's perinatal community with the goal of preventing future maternal deaths.

Conclusion

The MMRC added an additional two meetings in 2021 (total of four) to ensure that maternal deaths are reviewed in as timely a manner as possible. Timeliness of the review of cases ties closely with the timeliness of action upon recommendations. New Hampshire is moving towards education and change that will make a difference in the general well-being of women before, during, and after pregnancy.

The review of the 2019 deaths again shows the need for support of women with substance use disorders, history of substance use disorders and co-occurring mental health conditions. The partnership between the Maternal Mortality Review Program and NNEPQIN around the work of AIM is assisting in a significant effort toward change. Monthly webinars produced with NNEPQIN/AIM provide education to providers and stakeholders throughout the state

on the recommendations made by the MMRC.
Continued work on instituting the recommendations of the MMRC must be a top priority for New Hampshire in the coming years to help reduce the risk of death in our perinatal population.