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

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We wish to acknowledge and thank past and present members of the 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) in New Hampshire.

Table of Contents

Executive Summary

RSA 132:30 established a New Hampshire Maternal Mortality Review Committee (MMRC) to conduct comprehensive, multidisciplinary reviews of maternal deaths for the purpose of identifying factors associated with the deaths and to make recommendations for the future in the areas of community, system, facility, provider and/or patient/family around pregnant women. The desired result of the collection of recommendations developed by the MMRC is to see action upon these recommendations leading to improved outcomes for pregnant and parenting women in New Hampshire (NH).

The past year has been a particularly difficult one for the Maternal Mortality Review Program (MMRP) as it has been for all programs during the COVID 19 pandemic. Collection of information for review of cases as well as the actual review meeting has seen a complete revision of process due to the pandemic. The review committee had its first virtual meeting in September of 2020 in accordance with the Governor's emergency order #12 pursuant to Executive Order 2020-04 as extended pursuant to Executive Order 2020-05.

In September of 2019, the MMRP was awarded a grant from the Centers for Disease Control and Prevention (CDC) entitled "Enhancing Reviews and Surveillance to Eliminate Maternal Mortality" (ERASE MM). This grant enables the MMRP to progress toward improvement opportunities around pregnant and postpartum care in New Hampshire based upon the recommendations of the MMRC. Through collaboration with the Perinatal Quality Collaborative for the State, the Northern New England Perinatal Quality Improvement Network (NNEPQIN), NH is beginning two large quality improvement projects with hospitals and with community organizations working with pregnant and postpartum women. This work includes the initiation of an Association of Women's Health, Obstetric and Neonatal Nurses' (AWHONN) *Post Birth Warning Signs* education initiative and implementation of several of the Alliance for Innovation on Maternal Health's (AIM) bundles (https://safehealthcareforeverywoman.org/patient-safety-bundles/) in the 17 NH birth hospitals.

The leading cause of pregnancy-associated deaths in the time period from 2016 through 2017 was accidental drug overdose as reported in the 2019 Health and Human Services Legislative Oversight Committee Maternal Mortality report. The maternal deaths discussed in this report all occurred in 2018 and continue to be driven by accidental overdose. The focus of the MMRC is to develop actionable recommendations around the cases reviewed. Due to the nature of the maternal deaths that are occurring in NH, those recommendations, once again, continue to have been around changes necessary to improve aspects of the care of pregnant and postpartum women with substance use disorders (SUD).

Introduction

This is the annual report on Maternal Mortality established under New Hampshire Maternal Mortality Review Committee (MMRC) as required under RSA 132:30. The cases contained in this report were investigated and abstracted by the Northern New England Perinatal Quality Improvement Network (NNEPQIN) Perinatal Outreach Coordinator (POC) and the New Hampshire Perinatal Nurse Coordinator (PNC) in the Maternal Mortality Review Program (MMRP), Maternal and Child Health Section (MCH), Bureau of Population Health and Community Services, Division of Public Health Services, NH Department of Health and Human Services (DHHS). 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. The activities of NNEPQIN and its employees or agents shall be subject to the same confidentiality provisions as those that apply to the panel." NNEPQIN members provide the clinical expertise for the assessment of medical information obtained for review of cases.

Initial outreach is done when the PNC requests records from hospitals and offices in which the decedent had received medical care by letter and a copy of that letter is sent to the NNEPQIN POC. These requests are made to any facility or agency determined to have provided care to the individual in order facilitate an in-person case abstraction to collect only the pertinent information necessary. This collection is done in order to connect the relevant aspects of the woman's life and subsequent death. Either the PNC or POC will contact each establishment within a few weeks of receipt of the letter and schedule a day for an in person visit to abstract information from the electronic patient record. In person visits did not occur in 2020 due to the COVID 19 pandemic.

<u>Program Update</u>

The MMRP received a grant from the Centers for Disease Control and Prevention (CDC) entitled "Enhancing Reviews and Surveillance to Eliminate Maternal Mortality" (ERASE MM) grant, in the fall of 2019. Over the year since receipt of this grant, a contract was established between the NH DHHS and the NNEPQIN. The contract serves to formalize the collaboration between the two to improve the care of pregnant and postpartum women in the State. Through this contract, NNEPQIN has obtained the services of a medical abstractor professional, to assist MCH's PNC in the collection, abstraction and entry of maternal death cases into the Maternal Mortality Review Information Application (MMRIA). The abstractor, the POC, also works with the PNC to prepare for and present cases to the MMRC.

NNEPQIN is also taking the lead with MCH on the implementation of the Association of Women's Health, Obstetric and Neonatal Nurses' (AWHONN) *Post Birth Warning Signs* in the 17 NH birth hospitals as well as working with home visiting Family Support Specialists to share this important information with pregnant and postpartum women. In August of 2020, NNEPQIN staff, MCH's PNC, Epidemiologist and Administrator, all began to meet weekly to discuss the work of the grant. An application was also put forth for NH to become an Alliance for Innovation on Maternal Health (AIM) state (out of the Council for Patient Safety in Women's Health Care and funded by the Maternal and Child Health Bureau-Health Resource Services Administration) and was accepted. AIM provides support to state Perinatal Quality Collaboratives to utilize "bundles" for maternal quality improvement initiatives. NNEPQIN has chosen to focus on safety bundles that address the drivers of maternal deaths that are evident from the work of the MMRP. The bundles will be Maternal Mental Health, Obstetric Care for Women with Opioid Use Disorder, and Reduction of Peripartum Racial/Ethnic Disparities.

Another aspect of the CDC grant ERASE MM centers on the complications associated with cross border sharing of data on maternal death cases. A subcontract through the grant with NNEPQIN is to have a legal consultant research cross border issues between bordering states. The goal is to learn what policy changes could be made to ensure that all records are accessible to be able to provide the MMRC with a complete body of information in order to provide appropriate recommendations to support efforts to make improvements for NH women.

MCH's PNC and Epidemiologist attended a training conducted by the CDC Foundation in June 2019. This group has been instrumental in gathering information from states regarding the Maternal Mortality Review Committees' processes and with this information developing a website for new and already established Review Committees to obtain information to improve and standardize reviews. This training focused on the use of the MMRIA as well as next steps in moving MMRC recommendations to action. This training brought together Coordinators and members of review committees from a multitude of states.

Definition of Maternal Death according to the CDC Foundation's *Review to Action* at https://reviewtoaction.org.

- ***Pregnancy-associated death:***
  - The death of a woman while pregnant or within one year of the termination of pregnancy, regardless of cause. These deaths make up the universe of maternal mortality; within that universe are pregnancy-related deaths and pregnancy-associated, but not related deaths.

- ***Pregnancy associated, but not related:***
  - The death of a woman during pregnancy or within one year of the end of pregnancy, from a cause that is not related to pregnancy.

- ***Pregnancy-related:***
  - The death of a woman during pregnancy or within one year of the end of pregnancy, from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

Methods

Case Finding

Here is a full list of methods of identification of maternal death cases per RSA 132:30:

- Direct report from a hospital, non-emergency walk-in care center, ambulatory surgical center, or birthing center;
- Field on death certificate indicating pregnancy within one year of death;
- O-code on death certificate;
- Data linkage between death certificate and maternal information on certificate of live birth;
- Exploratory data linkage between Medicaid claims and death certificate;
- Case finding from a panel member and reported to the Department;
- Medical examiner's report and

- Other source such as medical provider, family member, or media outlet.

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.

Case Review

The PNC and the POC, from DHHS and NNEPQIN respectively, take the information collected for each case and de-identify information after abstraction in order to prepare the summary of the events for the MMRC meeting. The MMRC generally has met on a semi-annual basis to review the maternal death cases. This year, due to the COVID 19 pandemic, the MMRC met only once. For each of the cases, the entire panel discusses the case findings which includes all aspects of the decedent's life and death including potential opportunities where an intervention may have altered the outcome. Due to the nature of a multidisciplinary committee, the resulting recommendations are widely based and do not only consider the clinical aspects of pregnancy. Also, those cases that occur outside of the pregnancy in the postpartum period will elicit recommendations that touch more upon the community setting or systems and policy changes.

The 2016 maternal mortality cases were the first cases in New Hampshire that were researched and deliberated by the committee using a system developed by the CDC Foundation. This process is explained on the website *Building US Capacity to Review and Prevent Maternal Deaths*. The PNC continues to use this process for preparation and review of cases. A link within this website is the *Review to Action* website. *Review to Action* provides details around the work of MMRCs. The process and the actual forms that the committees use to make determinations on cases are available to assist existing MMRCs to improve the review process as well as to encourage new committees to build a system to review maternal deaths. In addition, NH is fully using the MMRIA for storage and analysis of data. The CDC Foundation is committed to bringing MMRCs together to use a uniform method of reviewing maternal deaths. If all committees are able to answer the same key questions about maternal death cases, this will lead to nationwide improvement opportunities around safety in pregnancy and the postpartum period. In order to achieve this goal the CDC Foundation developed MMRIA. New Hampshire continues to be actively involved with the CDC Foundation's mission. New Hampshire is using the MMRIA application to store and analyze data as well as the process of review that can be found in the *Review to Action* website. The objective of the review of cases by the MMRC is to arrive at a consensus on six key decisions about each case. These are as follows:

1) **Pregnancy relatedness of the death**
Based upon the definitions in III

2) **Committee agreement with the cause(s) of death**
Immediate; Contributing; Underlying cause

3) **Preventability**
Patient/Family; Community; Provider; Facility; Systems

4) **Critical contributing factors to the death**
List of potential factors provided for the committee

5) **Recommendations that address the contributing factors**

For future prevention efforts

6) **Anticipated impact of the recommendations**

These decisions allow for future conversations about strategies for actionable change. The recommendations focus on five aspects of a woman's life and pregnancy. These are patient/family, community, provider, facility, and systems based on each case.

Limitations

- A complete set of medical records is not always available for collection when care was provided out-of-state. This issue did not affect the cases reviewed in 2018. However, this situation has occurred in other years and continues to be limiting for many Maternal Mortality Review teams across the country. One aspect of the work plan for the CDC ERASE MM grant is a contract with legal counsel with an expertise in health policy to be able to research the legality of sharing of information cross borders. In certain cases the issue of cross border medical care may prevent a maternal death case from being reviewed. When unable to obtain records from bordering hospitals or medical offices, there is often insufficient information to complete a review.

- Pregnancy-associated deaths that are the result of an alleged homicide are not reviewed until the criminal case is closed, which could lead to long delays in the maternal mortality process. The deaths reviewed for 2018 maternal deaths did not include any case of homicide.

Overview of all Pregnancy-Associated Maternal Deaths in New Hampshire, 2018

The NH maternal death cases reviewed for 2018 were all NH residents. Two cases remain in the investigation stage and are expected to be reviewed at the next MMRC meeting. Table 1 and Table 2 illustrate the breakdown of the timing of those cases that have been reviewed.

Pregnancy Status of 2018 Reviewed Maternal Death Cases

Table 1. Pregnancy Status at Time of Death in NH Residents, 2018 (N=6)	
Pregnancy Status	**Number**
Pregnant	3
Postpartum	3

Timing of 2018 Reviewed Maternal Death Cases

Table 2. Timing of 2018 Maternal Deaths	
Months postpartum	**Number**
During pregnancy	3
< 3 months	1
3-6 months	1
6-12 months	1

The maternal deaths that occurred in 2018 differed in the timing of the deaths from the combined years of

2016-2017. The 2016-2017 maternal deaths had a higher percentage that occurred in the postpartum period. The 2018 maternal deaths were 50% in the postpartum period and 50% during pregnancy. Table 2 shows the breakdown of timing of the deaths within the entire perinatal period.

Cause and/or Manner of Pregnancy-Associated Deaths

The maternal deaths that occurred in 2018 that have been reviewed by the MMRC are all due to causes related to overdose or by medical issues exacerbated in pregnancy related to prior substance use. The cases of illicit drug use with the cause of death as overdose were all reported to be accidental.

Pregnancy Related Maternal Deaths that Occurred in New Hampshire in 2018

Summary 2018 Maternal Mortality Review Committee Determinations-Pregnancy Relatedness	
Pregnancy-associated (total)= 2018 cases reviewed	6
A. Pregnancy-associated, but not pregnancy-related	3
B. Pregnancy-related	2
C. Committee unable to determine if pregnancy-related	1

The MMRP reviews the circumstances of each pregnancy- associated death and then comes to a consensus and categorizes each death as "pregnancy-related" or "pregnancy- associated, but not related". In order to determine relatedness this question, "If this woman was not pregnant would she have died?" is discussed in the review of each case. As defined earlier in this report, maternal deaths that occur while pregnant or within one year of the termination of pregnancy, regardless of cause are pregnancy-associated. One determination made by the MMRC after listening to the presentation of each case is the pregnancy- relatedness as listed above under Case Review. A death is considered pregnancy-related when the death occurs during pregnancy or within one year of the end of pregnancy, from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy. Therefore, the category of pregnancy- associated but not related in summary table above indicates that the review committee found the death was not directly related to the fact that the woman was pregnant. The determination of pregnancy relatedness is often difficult for the committee to determine when discussing deaths caused by overdose. The committee has the information collected around the mother's life and death however true determination of "If she were not pregnant would she have died?" causes much deliberation. This decision has not only been difficult for the NH MMRC but for all committees who are reviewing maternal overdose deaths. To address this difficult aspect of the review, the Utah MMRC leaders developed criteria to refer to when the committees is making a determination regarding pregnancy relatedness in cases of overdose and mental health diagnosis. Because of the collaboration of the CDC Foundation and the states that are utilizing the *Review to Action* process and the MMRIA system, the Utah MMRC shared this criteria with the CDC and other MMRC. Many states have adopted the criteria for use with these difficult cases. The NH MMRC is one of those who have adopted this criteria. The NH MMRC began referring to the criteria during review as of the November 2019 committee meeting. These are just some of the questions that have come up in deliberation:

- Is the adjustment to motherhood a driver of a relapse to drug use?
- Does postpartum depression play a role in relapse?
- Is overdose due to usage of the same amount of a substance without understanding the

physiological changes of pregnancy and how the postpartum body metabolizes the substance?

Summary of Maternal Mortality Review Committee Meetings

Traditionally, the MMRC has met in the spring and in the fall each year. In 2020, due to the COVID 19 pandemic, the committee was able to meet one time in September 2020. This meeting was the first MMRC assembled virtually. The meeting took place in accordance with the governor's state of emergency plan for meetings in which sensitive information is discussed as in the case of death reviews. The meeting was well attended and the plan is to continue the MMRC meetings in this virtual format through the remainder of the state of emergency. In response to the meeting that did not occur in the spring of 2020, there will be additional virtual meetings in 2021 to ensure that the review of maternal death cases are completed in a timely manner. When reviews are completed within a year of two of the death, the recommendations speak to the current drivers of maternal deaths in the State. Going forward, a "Who, What and When" format of the recommendations are likely to lead to the best outcomes for NH's current mothers and families. This change is discussed in the next section.

Recommendations

These recommendations developed by the MMRC, came from the deaths that occurred in 2018. Because of the collaboration with the CDC and the work of the ERASE MM grant, the facilitator of the MMRC meetings will be working with the members around the development of recommendations that are developed in a format to encourage action. This format has begun with the 2020 virtual review meetings. These meetings will include deaths that occurred in 2019. All recommendations will include a "who, what and when" in order to direct the action that will take place from the MMRC recommendations. **Who** in the state will take on the task/ change/ implementation, **what** is the task/ change/implementation and **when** is the task/change/implementation intended to occur. Past recommendations made by the committee, until this change in process, were discussed and thought through by the MMRC and as seen in the 2018 recommendations in this report, provided beneficial insight into ideas for improvement. These ideas will continue development through discussion between this multidisciplinary committee members but the format of the recommendations will be one that encourages a specific plan of action.

2018 Case Recommendations

Recommendations -Women of Childbearing Age:

- Enhance outreach to homeless individuals, prioritizing access to women's services
- Promote standard management of patients with warning signs for substance misuse (ex- early refills), including face to face assessment, screening for presence of substance use disorders, and linkage to SUD treatment services

Recommendations -Prenatal and Post-Partum Care:

- Provide education to healthcare teams to reduce stigma against people who use substances
- Develop statewide provider education materials about hazards of co-prescribing benzodiazepines and opioid agonist medications
- Promote warm handoff from PCP to OB to facilitate engagement in prenatal care

Recommendations- Education for Providers

- Introduce assessment of social determinants needs, case management, and linkage to services directly from ED for patients with substance use disorder (SUD)-related complaints
- Standardize perinatal education for women with OUD about increased risk for overdose after period of abstinence
- Provide naloxone kits at discharge from inpatient stay; standardize postpartum discharge instructions

Past Recommendations Relevant to 2018 Cases

Recommendations - Pregnant Women with History of Substance Use Disorder:

- Harm reduction education for all pregnant patients with a substance use disorder.
- Provider education on SHOUT as used in the "Zero Suicide" approach.
- Social workers/ medical personnel utilize immediate access to treatment for SUD using 211
- Provider and patient education about benzodiazepine/ opioid interaction.

Example: Reference information in the Greater Manchester Mental Health brochure

- Promote use of the Northern New England Perinatal Quality Improvement Network's (NNEPQIN) Substance Use Guidelines.

Example: Consider echocardiogram for patients with injection drug related infection

- Pregnant women who are incarcerated received Medicated Assisted Treatment (MAT)
- Planning and collaboration between prison and community providers for pregnant patients around post- release treatment transition

Recommendations –Women in Recovery in Postpartum Period

- Prioritize keeping mother and baby together in safe environment for both, rather than separation/foster placement.
- Provide access to residential treatment which accepts children as an alternative to separation/foster placement for vulnerable women with complex dual diagnosis
- Provide access to higher level of care (residential care which accepts children) for women who are struggling with complex co-occurring disorders

Recommendations –Public Education

- Provide public education re: importance of prenatal care especially for women who use substances
- Provide public education re: importance of engaging in treatment for SUD for pregnant women

Existing Campaigns:

Today Is For Me
AWHONN Post Birth Warning Signs
Hear Her - CDC campaign

Conclusion

The MMRC will be adding additional meetings for the upcoming year and they are expected to be virtual pending a change in the Covid-19 state of emergency. There will be at least three meetings and potentially four to ensure that the 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. The collaboration with NNEPQIN around our CDC grant will move NH toward education and change that will make a difference in the general well-being of women before, during, and after pregnancy. The review of the 2018 deaths 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 will be a significant effort toward change. The implementation will begin the progress toward integrating the supports needed by our mothers with substance use disorders. The AIM bundles will initiate change throughout each stage of the perinatal period.

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