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

SFY2014- 2015

New Hampshire Newborn Screening Program
Maternal and Child Health Section
Bureau of Population Health and Community Services
Division of Public Health Services
Department of Health and Human Services

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I. Introduction

RSA 132:30 established a maternal mortality review panel (MMRP) to conduct comprehensive, multidisciplinary reviews of maternal deaths in New Hampshire for the purpose of identifying factors associated with the deaths and to make recommendations for system changes to improve services for women in the state.

This is the second annual report on Maternal Mortality as required under RSA 132:30 V.

II. Definition of Maternal Death

NH Administrative Rule He-P 3013.02 defines maternal death as any of the following:

- **Pregnancy-associated** death means the death of a woman while pregnant or within one year of the end of pregnancy, irrespective of cause.
    - **Pregnancy-associated, but not pregnancy-related** means the death of a woman while pregnant or within one year of the end of pregnancy due to a cause unrelated to pregnancy. For example, the death of a woman from a motor vehicle collision.
    - **Pregnancy-related** death means the death of a woman while pregnant or within one year of the end of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by her pregnancy or its management, but not from accidental or incidental causes. For example, the death of a woman from postpartum hemorrhage or amniotic fluid embolism.

III. Methods

Case Findings

Maternal deaths in New Hampshire may be identified and reported to the New Hampshire Department of Health and Human Services through the following sources:

- Direct report from a hospital, non-emergency walk-in care center, ambulatory surgical center, or birthing center (Maternal Mortality Initial Report form, Appendix A)
- Data linkage through a death certificate
- Case finding from a panel member and reported to the department
- Medical examiner's report
- Other source such as a medical provider or family member

As is the case across the country, maternal deaths are most likely under-reported[1].

[1] Theron, I. *Underreporting of Maternal Deaths on the Death Certificates and the Magnitude of the Problem of Maternal Mortality*. American Journal of Public Health. 2005 March; 95(3): 478–482.

Case Review

According to RSA 132:30, the Commissioner of the Department of Health and Human Services may delegate the Northern New England Perinatal Quality Improvement Network (NNEPQIN) the function of collecting, analyzing, and disseminating maternal mortality information. The NNEPQIN abstraction team was asked to conduct comprehensive multidisciplinary reviews of each maternal death in collaboration with the Division of Public Health Services (DPHS), Bureau of Population Health and Community Services, Maternal and Child Health Section.

The Maternal Mortality Case Review Panel Abstraction Form (Appendix B) is completed by a primary reviewer. A secondary reviewer may also be used if specific expertise in neurology, cardiology, pathology, substance use disorders, infectious disease, injury prevention, etc. is needed on a specific case. The NNEPQIN Abstraction Team reviews each case, analyzes the data, and makes specific recommendations related to each case. All information that may identify the patient, clinicians, or institutions is removed prior to being viewed by the MMRP.

The MMRP meets on a semi-annual basis to review a summary of each maternal death including specific recommendations. After each case is presented, the entire panel discusses the appropriateness of care and deliberates until consensus on the following questions is reached:

- Was the death pregnancy-associated, but not pregnancy-related; or was it pregnancy-related?
- Was the death preventable?
- What public health and/or clinical strategies might prevent future deaths?

Limitations

Records that may have provided additional information, but which were not available to the reviewers included care that was provided out-of-state. In addition, alleged homicide cases may not be reviewed until the criminal case is closed.

IV. Case Finding Data Linkage

Two methods of case-finding by electronic searches of public health databases have been developed and put into regular practice.

Method #1: On or about the first of every month, death records are analyzed to determine responses to Indicator #36 (below). Deaths that occur in New Hampshire are reported to the Division of Vital Records Administration (DVRA) within a few days. Deaths of NH residents that occur out-of-state are eventually reported to NH DVRA; however these are not as timely.

Death Certificate Worksheet Pregnancy Indicator

36. If Female:
    - Not Pregnant within past year
    - Not Pregnant, but Pregnant within 42 days of death
    - Not Pregnant, but Pregnant 43 days to 1 year before death
    - Unknown if Pregnant within the past year
    - Pregnant at time of Death

A small number of maternal deaths in New Hampshire have been identified using Method #1. Records flagged by this indicator have often been incorrectly coded as pregnant at data entry. NH DPHS notified the NH Division of Vital Records Administration about these apparent findings and the records were amended as appropriate. Since maternal deaths are rare events, a flagged record is more often incorrectly flagged than correctly flagged.

Method #2: Quarterly, a data linkage is performed using an algorithm that attempts to match maternal information from live birth records with a death record within a one-year time window (pregnancy-associated). Death records eligible for entry into the matching algorithm include females aged 10 to 55 years old. A small number of maternal deaths have been found using this method. A live birth must have occurred for this data linkage to be possible (i.e. deaths during pregnancy cannot be identified using this method).

IV. Reported Maternal Deaths

A limited number of maternal mortality cases have been reported to DHHS. Maternal death is fortunately rare in the United States and New Hampshire hospitals may not have been aware of the requirement of RSA 132:31 to report known cases. DHHS has provided additional education and outreach to healthcare providers and direct reports have increased.

2012: 2 cases

2013: 1 case

Number of cases investigated in this report period: 11 cases (six 2013 cases, five 2014 cases)

V. Summary of Activities for SFY14- 15

A NNEPQIN Review was conducted on May 7, 2014. Six maternal deaths were discussed. Several case abstraction forms were incomplete and additional medical records needed to be obtained prior to making recommendation or presenting the cases to the MMRP. Because of this, the MMRP did not meet in 2014.

The NNEPQIN abstraction process was revised to make case abstraction more efficient by having the Perinatal Program Manager and the NNEPQIN point person begin the initial data abstraction to determine if additional medical records are needed before giving the file to the NNEQPIN lead investigator. This new process was further evaluated during the January 2015 NNEPQIN meeting. Based on the findings of the January 2015 NNEPQIN meeting, a full MMRP meeting was held June 30th of 2015.

Specific maternal death data and policy recommendations as a result of the June 30th 2015 MMRP cannot be shared in this report this time as the number of maternal deaths was too small to ensure confidentiality. It is anticipated that sufficient data will be collected by Spring 2016 to provide aggregate death data and policy recommendations. In conclusion, DHHS continues to provide high-quality maternal mortality surveillance and case reviews in New Hampshire in accordance with RSA 132:29-32.

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Maternal Mortality Review Panel
Initial Report

Appendix A

As Per Authority RSA 132:29, VII
Secure Fax- 603-271-4519

Initial Report	
1. Hospital, Ambulatory Surgery Center or Birth Center Name:	
2. Date Initial Report Sent to the Department:	
3. Name of Patient:	
4. Date Maternal Death Occurred:	
5. Mother's Date of Birth:	6. Infant's Date of Birth: Or N/A
7. Patient Admitting Diagnosis:	
8. Other institutions where care took place, including prenatal care (if known):	
9. Brief Description of Event:	
10. Facility Contact Person Name, Title: Contact Information: Email:	11. Facility CEO Name, Title: Contact Information: Email:

MATERNAL MORTALITY REVIEW PANEL
CASE ABSTRACTION

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Appendix B

Case #	**Date of Death:**
1: Cause of Death:	
2: DOB: Age at death:	3: Pregnant at time of death: Yes ☐ No ☐
4: Trimester when prenatal care began: Number of visits: Location where prenatal care received:	5: Gravida: Para: *Include information from this pregnancy/delivery
6: BMI at start of pregnancy:	7: If patient was born outside of US where? # of years living in US:
8: Type of contraception most recently used:	9: Was the woman breastfeeding in last 24 months?
10a: Was this woman receiving other DHHS services including home visiting services?	
10B: Did family participate in MCH post-mortem interview or medical record review? Yes, interview only Yes, medical record review only Yes, both No, refused No, other:_____	
11: Payer Source: ☐ Medicaid ☐ Private insurance ☐ Self Pay ☐ No data available ☐ Other:	12: Racial / Ethnic group: ☐ White ☐ African-American ☐ Latina (Hispanic) ☐ Asian ☐ Native American ☐ Unknown ☐ Other:
13: Marital status: ☐ Married ☐ Single ☐ Separated ☐ Divorced ☐ Widowed	14: Education Level ☐ Less than 12 years ☐ 12 years ☐ 13-15 years ☐ 16+ years

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CASE ABSTRACTION

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15: Death before 24 weeks gestation: ☐ Fetal death with maternal death ☐ Fetal death prior to maternal death o Intrauterine fetal demise o Spontaneous Abortion/mole o Therapeutic abortion o Ectopic gestation	16A: Death after 24 weeks gestation ☐ Antepartum ☐ Intrapartum ☐ Within 24 hours post-partum ☐ 1-6 days postpartum ☐ 7-30 days postpartum ☐ 31-42 days post-partum ☐ 43-365 days post-partum
16B: When did complications start? (May be different from question 16A) ☐ Antepartum ☐ Intrapartum ☐ Within 24 hours post-partum ☐ 1-6 days postpartum ☐ 7-30 days postpartum ☐ 31-42 days post-partum ☐ 43-365 days post-partum	16C: Was an autopsy done? Yes ☐ No ☐
17: Gestation at time of delivery / death: Birth weight:	18: Status of infant(s) ☐ Live birth ☐ Stillbirth ☐ Early neonatal death (<7 days of age) ☐ Late neonatal death (7 – 27 days of age) ☐ Postneonatal death (28 – 364 days of age) ☐ Cause of death (if applicable):

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19: Maternal Risk factors:	
☐ Anemia-Hgb less than 11g ☐ Antenatal hospital admissions ☐ Asthma ☐ Cancer (type) ☐ Cardiac condition ☐ Chronic Medical condition(s) ☐ Diabetes ☐ Domestic Violence (history of or current) ☐ Eating disorders ☐ Ectopic risk factors (IUD, prior ectopic, prior tubal ligation, h/o PID) ☐ Epilepsy ☐ Hepatitis B positive ☐ Hepatitis C positive ☐ Hypertension (>160/95) or requiring medication ☐ HIV positive ☐ Lupus ☐ Mental health illness ☐ Prior Cesarean Section ☐ Renal disease (chronic, serious) ☐ Rh Sensitization (Titer >1/8) ☐ Smoker PPD: ☐ Social issues (ex: homeless, poverty) ☐ Substance abuse (including alcohol, prescription and street drugs) ☐ Thrombophilia ☐ Uterine abnormality or incompetent cervix ☐ Other:	Comment / elaborate on all risk factors identified:
20: Antenatal Hospital admissions:	

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21: Maternal complications during pregnancy / delivery / post-partum	
☐ Acute asthma exacerbation ☐ Amniotic fluid embolism ☐ Cerebrovascular accident (thrombotic or hemorrhagic) ☐ Hemorrhage ☐ Htn crisis ☐ Infection (Type): ☐ Multiple gestation ☐ Narcotic overdose ☐ Peripartum cardiomyopathy ☐ Placenta previa ☐ Pre-eclampsia / eclampsia ☐ Sepsis ☐ Suicide attempt or hospitalization related to suicidal thoughts ☐ Systemic viral infection (Varicella, primary herpes simplex) ☐ Venous thrombosis / pulmonary thromboembolism ☐ Other:	Include details related to identified maternal complication:
22: Mode of delivery: ☐ Spontaneous Vaginal ☐ Operative vaginal delivery ☐ Cesarean Section o Elective o Scheduled o Unplanned non-emergent o Unplanned emergent	23: Was this a pregnancy-associated death? ☐ Yes ☐ No If yes, was this: ☐ Pregnancy-related death ☐ Pregnancy-associated, but not pregnancy related death * Completed by NNEPQIN Case Review participants using CDC definitions
24: Summary of what happened:	

25: Was the care and services provided by the hospital/ birth center and / or the clinicians in accordance with professionally recognized standards?	26: Was there any failure in clinical management or occurrence of sub-standard care that caused or contributed to this death?

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27: Issues identified (patient factors/ task factors/practitioner factors/ team factors/working conditions/):
28: List information sources used during review:

Maternal Mortality Review Panel Conclusions:

Was this death preventable?

What public health and / or clinical strategies might prevent future deaths?