Maternal Mortality in Nebraska

Prematurity Summit 2019
September 26th, 2019

Maternal Mortality in Nebraska

- Good News
- Bad News
- The News That We Don’t Know

In 2015, nearly a third of a million women around the world died of causes related to pregnancy.

However, this reflects a drastic decline in historical levels of maternal deaths.
Despite past progress, pregnancy-related deaths in the U.S. have been increasing since 1987. Pregnancy-related death rates vary by maternal race and ethnicity.
Maternal Death – death to a woman while pregnant or within 42 days of termination of pregnancy, regardless of the duration of pregnancy, from any cause related or aggravated by pregnancy or its management, but not from accidental or incidental causes. Used by World Health Organization (WHO) and National Center for Health Statistics (NCHS).

Maternal Mortality – death during pregnancy, childbirth, and the postpartum period (up to 365 days from the end of pregnancy); includes pregnancy-associated, pregnancy-related and pregnancy-associated but not related. Used by the U.S. Pregnancy Mortality Surveillance System.

Maternal Mortality Rate – number of maternal deaths per 100,000 women ages 15-44.

Maternal Mortality Ratio – number of deaths per 100,000 live births.

Pregnancy-related Mortality Ratio – number of pregnancy-related deaths per 100,000 live births.

Nebraska Data


Data Sources: Nebraska Vital Records, Nebraska Health and Human Services, Maternal and Child Health Bureau.
Nebraska Pregnancy-Associated Mortality Causes

Data Sources
- Nebraska Vital Records, Nebraska Child and Maternal Death Review Team

Maternal Death Category
- Total
- Intentional Injury
  - Suicide 9
  - Homicide 6
- Unintentional Injury
  - Fire 1
  - Motor Vehicle Accident 19
  - Accidental Overdose 7
  - Other (fall and heat exhaustion) 2
- Medical
  - Autoimmune Disease 1
  - Cancer 12
  - Cardiac 7
  - Cardiomyopathy 2
  - Cerebrovascular 2
  - Embolism 7
  - Hemorrhage 2
  - Infection 11
  - Metabolic/Endocrine Conditions 4
  - Pre-Eclampsia/Eclampsia 4
  - Pulmonary Conditions 3
  - Unknown 4
- Total 103

Purpose
To understand medical and non-medical contributors to deaths, determine preventability, and make recommendations to reduce death.

Data Sources
- Death certificate linked to fetal death and/or live birth certificates
- Medical and behavioral health records
- Autopsy
- Social service records
- Law enforcement reports

Multidisciplinary team determines
- Whether death was pregnancy-related
- Underlying causes of death
- Pregnancy-related Mortality Ratio

Findings are not necessarily transferable to Nebraska.

Report from Nine Maternal Mortality Review Committees

Colorado (2008—2012)
Delaware (2009—2015)
Georgia (2012—2014)
Hawaii (2015)
Illinois (2015)
Ohio (2008—2015)
South Carolina (2014—2017)
Utah (2014)

Leading Underlying Causes of Pregnancy-Related Deaths

- Pre-eclampsia and eclampsia
- Hemorrhage
- Infection
- Cardiomyopathy
- Maternal heart conditions

Preventable

There is at least some chance of the death being averted by one or more reasonable changes to patient, family, provider, facility, systems of care, and or community factors.

Findings of nine state report, 60% preventable.
### History of Maternal Mortality Reviews in Nebraska

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>1993</td>
<td>Child Death Review Act</td>
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<tr>
<td>2005</td>
<td>Nebraska implements revisions to the US Standard Birth and Death Certificate that includes the pregnancy checkbox</td>
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<tr>
<td>2013</td>
<td>Child and Maternal Death Review Act</td>
</tr>
<tr>
<td>2014</td>
<td>NMA Medical Reviews</td>
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<tr>
<td>2018</td>
<td>NDHHS Maternal Mortality Review Committee (MMRC) of the CMDRT</td>
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<tr>
<td>2019</td>
<td>MMRC reviews 2017 deaths</td>
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### Nebraska MMRC

**Maternal Mortality Review Committee 2019 -2022**

- Robert Bonebrake, MD (MFM), Chair
- Todd Lovgren, MD (MFM)
- Teresa Berg, MD (MFM)
- June Wedergren, MD (OB-GYN)
- Jillian Fickenscher, MD (FP)
- Susan Weekly, RNC-OB, MS (OB)
- Cathleen Peterson-Layne, MD (Anesthesiology)
- Sharon Hammer, MD (Psychiatry)
- Deborah Perry, MD (Pathology)
- Shannon Maloney, PHD (Public Health)

**Statutory requirements**

- Conduct comprehensive, integrated review of all maternal deaths
- Create a system for statewide retrospective review of existing records
- Identify trends
- Recommend systemic changes to prevent future maternal deaths

**Goals**

- Improve the availability, quantity and quality of data on maternal deaths
- Develop and promote actionable recommendations
- Prevent deaths

### MMRC Process

1. **Case Identification (DHHS Staff)**
   - Pregnancy checkbox, OB causes of death to women of reproductive age, death records linked to live birth and fetal death certificates
2. **Record attainment and abstraction (DHHS Staff)**
   - Acquire records pertinent to death
   - Abstract facts into case narrative for in-depth review
3. **In-person Case Review (MMRC members)**
   - Use Committee Decision Form to:
     - Determine if a death was preventable
     - Make case-specific recommendations
4. **Recommendations (MMRC and DHHS Staff)**
   - Deliver recommendations to:
     - Legislature, NPOIC, Public Health

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**Nebraska MMRC**

**Is:**

- Ongoing, anonymous and confidential process of data collection, analysis, interpretation, and action
- Systematic process guided by policies, statutes, rules and best practices
- Focused on moving from data to prevention activities

**Is Not:**

- A mechanism for assigning blame or responsibility for any death
- A research study
- Subject to ethical (IRB) review
- Disclosable

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**Findings are not necessarily transferable to Nebraska.**
Key Review Questions

1. Was the death pregnancy-related?
2. What was the cause of death?
3. Was the death preventable?
4. What were the critical contributing factors to the death?
5. What recommendations and actions address the contributing factors?
6. What is the anticipated impact of these actions?

Examples of Recommendations

- Improve training
- Enforce policies and procedures
- Adopt maternal levels of care/ensure appropriate level of care determination
- Improve access to care
- Improve patient/provider communication
- Improve patient management for mental health conditions

Examples of Recommendations (continued)

- Improve procedures related to communication and coordination between providers
- Improve standards regarding assessment, diagnosis and treatment decisions
- Improve policies related to patient management, communication and coordination between providers, and language translation
- Improve policies regarding prevention initiatives, including screening procedures and substance use prevention or treatment programs

Cascading effects of the MMRC Recommendations

Tip of the proverbial iceberg...

Eliminate preventable maternal deaths

Reduce maternal morbidity

Eliminate preventable maternal deaths
Cascading effects of the MMRC Recommendations

- Deaths
- Near Misses
- Severe Maternal Morbidity
- Maternal Morbidity Resulting in Hospitalization
- Maternal Morbidity Resulting in Emergency Department Visit
- Maternal Morbidity Resulting in Primary Care Visit

Next Steps

- Review data on deaths from 2017
- Increase awareness of Nebraska's MMRC among providers and public health professionals
- Implement the CDC's Maternal Mortality Review Information App to improve the quality and usability of Nebraska's data
- Obtain dedicated funding to support activities

For more information:

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