North Dakota Maternal Mortality Review Committee
Report to the North Dakota Legislative Committee on Health
October 2, 2024
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Report Outline

I. Overview of the North Dakota MMRC
   A. 2023-2024 Activities
   B. ND MMRC Membership
   C. Committee Reports
   D. Trends in ND Mortality

II. National Trends in Maternal Mortality

III. North Dakota Maternal Mortality

IV. Maternal Mortality Review Information Application (MMRIA)/CDC Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) Program

V. Challenges and Application
   A. Types of deaths and challenges
   B. Improve data accuracy on ND Vital Records

VI. Objectives
   A. Grant Opportunity
   B. Clinical Research-REMS Program Potential
   C. Continue MMRC Staff education
   D. Augment Committee with addition of Social Worker and a Liason to ND Amerian Indian Health Care
   E. Improve Accuracy of Death Record Completion/Reporting
   F. Continue Nurturing the Relationship with the ND Perinatal Quality Collaborative
   G. Funding

Report Data

I. Overview of ND MMRC

A. 2023-2024 Activities

1. Achieved active status on the CDC Maternal Mortality Review Information Application (MMRIA – pronounced Maria) reporting platform. Will allow sharing of data.
2. Staff attended the CDC MMRIA Maternal Mortality Conference in Atlanta.
3. Received increased MMRC administrative funding from the UNDSMHS Department of Ob/Gyn.
4. Benefited from an increase in Department of Ob/Gyn administrative bandwidth with addition of Administative Assistant.
5. Began preparation for grant opportunities that will arise to advance MMRC activities.
6. MMRC leadership collaborated with the North and South Dakota Perinatal Quality Collaberative (NSDPQC).

B. ND MMR Membership

1. 26 members
   - Culturally inclusive/diverse
   - Professional expertise
   - Geographical representation
   - State and local health organization participation
   - At risk population perspective/input
   - Ad Hoc community consultants/advisors as needed
   - Public member
2. Goal is to add a social worker and a liaison to the American Indian Health system.

C. Sub committees-met in 2023-2024 to evaluate:

1. Death certificate completion and accuracy
2. Post-mortem evaulation access

D. ND Maternal Mortality Trends

1. ND Maternal Mortality 2008-2022

Pregnancy Time	Total Deaths	White	Black	American Indian	Remaining Races
Day 43 to 1 Yr	31	15	0	13	3
Within 42 days	19	12	1	5	1
During Pregnancy	36	25	3	8	1
Total	**86**	**52**	**4**	**25**	**5**

***35.6%** of Maternal Deaths occurred after 42 days

****Total ND Births 2008-2022: **173,745**

*****Total ND Maternal Mortality Ratio: **50.07**

******American Indian Births approximate 7.7-12% of ND births annually

2. Primary Cause of ND Maternal Deaths 2008-2022

Cause	Total	White	Black	American Indian	Other
Accidents	29 (33.3)	16 (30.6)	2 (50)	9 (34.6)	2 (40)
Other	17 (19.5)	11 (21.2)	1 (25)	4 (15.4)	1 (20)
Suicide	9 (10.3)	6 (11.5)	0	2 (7.7)	1 (20)
Heart Disease/CVA	8	5	0	3	0
Homicide	7	4	0	3	0
Cancer	5	3	0	1	1
Cirrhosis	3	1	0	2	0
Covid-19	3	3	0	0	0
Diabetes	3	2	0	1	0
COPD	1	0	1	0	0
Septicemia	1	0	0	1	0
Grand Total:	**86**	**51**	**4**	**26**	**5**

(Percentages of the total of causes)

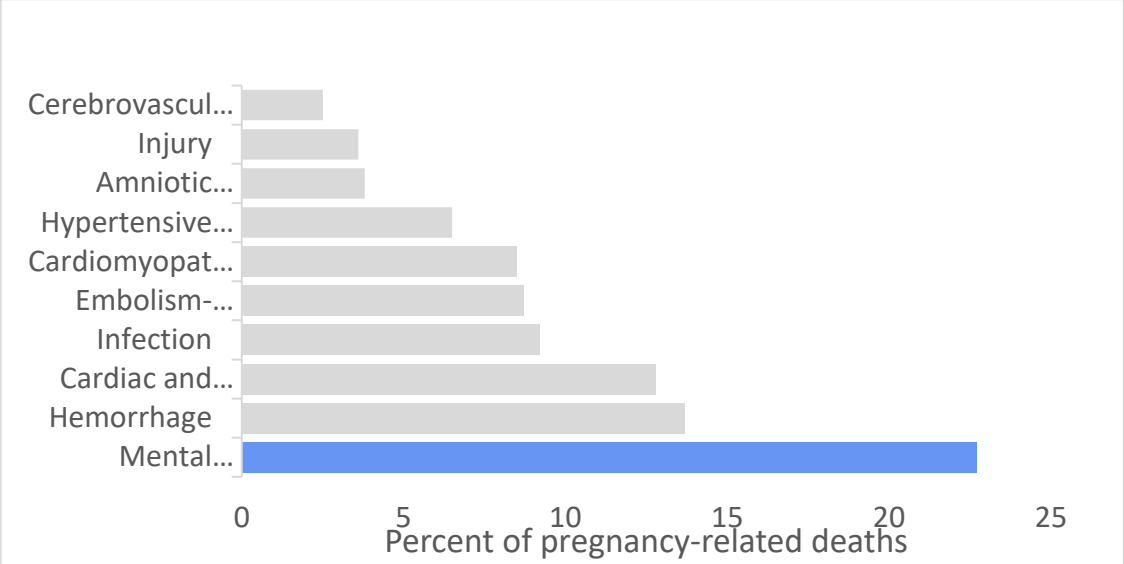
3. Maternal Mortality Disparities

- American Indian/Alaskan Native maternal mortality ratio is 29.7 (CDC).
- All minority populations incur significantly higher maternal mortality rates.
- 7.7-12% of ND births are to American Indian mothers.
- 80% of ND births are to Non-Hispanic White mothers.

- <3-5% of ND births are to all other racial and ethnic mothers.
- 93% of pregnancy-related deaths to American Indian or Alaska Native persons determined by MMRCs to be preventable vs. 80% of Caucasian deaths (CDC).
- Rurality is an additive factor in the discrepant mortality rates among American Indians-though their mortality rates were higher for both rural and urban areas.

II. National Trends in Maternal Mortality

A. Cause of Maternal Death-US National



*Some estimates place mental health cause of maternal deaths at 32-34% when including traumatic death (suicides, homicides) and drug related deaths

B. The leading underlying causes of pregnancy-related death include:

1. Mental health conditions (including deaths to suicide and overdose/poisoning related to substance use disorder) (23%).
2. Excessive bleeding (hemorrhage) (14%).
3. Cardiac and coronary conditions (relating to the heart) (13%).
4. Infection (9%).
5. Thrombotic embolism (a type of blood clot) (9%).
6. Cardiomyopathy (a disease of the heart muscle) (9%).
7. Hypertensive disorders of pregnancy (relating to high blood pressure) (7%).

C. National Trends-Total Maternal deaths

Year	Deaths
2018	658
2019	754
2020	861
2021	1,205
2022	817

D. National Maternal Mortality

1. Maternal Mortality Rate: Maternal deaths per 100,000 live births:

Total	22.2	*(17.4)
Asian	13.2	*(13.3)
Black	49.5	*(37.3)
White	19.0	*(14.9)
Hispanic	16.9	*(11.8)
*Percentage of Total SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality, and natality data files.		

E. US Maternal Deaths Disparity

	2018	**2019**	**2020**
Total	658 (*17.4)	754 (*20.1)	861 (*23.8)
Black	37.3%	44.0%	55.0%
White	14.9%	17.9%	19.1%
Hispanic	11.8%	12.6%	18.3%
*Maternal Mortality Rate (Maternal deaths per 100,000 live births) per CDC			

III. North Dakota Maternal Mortality

A. 2022 ND Maternal Deaths

1. Total 2022 maternal deaths = 6.
2. Maternal deaths meeting CDC Criteria = 1 (*Pregnancy Related).
3. Maternal deaths with possible pregnancy association (**Pregnancy Associated) = 5 (still under investigation-records pending).
4. Traumatic deaths = 2.
5. Five cases-not yet fully reviewed.
6. Initial impression:

- Traumatic death-suicide
- Sepsis
- Cardiac arrest-unsure of pregnancy status
- Overdose
- Indeterminate as to whether pregnant

*Pregnancy Related-Death occurring during pregnancy or within 1 year of the termination 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 (CDC).

**Pregnancy Associated-Death occurring during pregnancy or within 1 year of the termination of the pregnancy, regardless of the cause.

B. 2023 Maternal Deaths (5 cases - not yet fully reviewed)
   1. Initial impression:
      - Traumatic death-suicide
      - Sepsis
      - Cardiac arrest-unsure of pregnancy status
      - Overdose
      - Indeterminate as to whether pregnant

IV. Maternal Mortality Review Information Application (**MMRIA**)/CDC Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (**ERASE MM**) Program
   A. Provides enhanced discernment as to the following:

1. Was the death pregnancy-related?	2. What was the cause of death?	3. Was the death preventable?
4. What factors contributed to the death?	5. What are the recommendations to address those contributors?	6. What is the anticipated impact of those actions if implemented?

B. Process of Discernment
    1. Death Certificates are sent to the Department of Vital Records by reporting provider.
    2. Certificates are documented and determination is made as to pregnancy.
    3. Records documenting maternal mortality are sent to the MMRC for review.
    4. Initial review is by the Case Review Analyst, Steffen P. Christensen, MD – Department of Ob/Gyn Fargo.
    5. Any cases identified by the analyst undergoes further investigation (i.e., record request, interview of family and others involved with the case, coroner's report, etc.).

C. Further discernment of cases is determined on an individual basis and then is examined by the MMRC Review Panel. A report is given annually to the entire MMRC, Legislature, ACOG, Medical Community.

V. Challenges
A. Increasing number of deaths related to mental health diagnosis (recent statistics nationally place this cause at 32-34% of all deaths).
B. Suicides/Homicides.
C. Drug overdoses (difficult to discern accidental vs. intentional).
D. Still barriers to obtaining information on deaths (death record completion often inaccurate).
E. ND Division of Vital Records is enhancing screening capacity to improve data accuracy.

VI. Objectives
A. Grant Funding (identify and write for grant opportunities when available).
B. REMS (Research Experience for Medical Students). Expand program research potential for both department and students.
C. Continue MMRC staff education per CDC.
D. Improve accuracy of death record completion/reporting.
E. Continue nurturing the relationship with the ND Perinatal Quality Collaborative as the reporting and data collection.
F. Refine the discernment capacity of the review committee.

G. Promote the addition of a maternal mortality core curriculum component to medical student education during Phase 1 (years 1-2) taught by the UNDSMHS Department of Pathology and Forensic Medicine.
H. Identify and achieve funding sources necessary to accomplish objectives.
    1. UNDSMHS Department of Ob/Gyn
    2. Grant opportunities
    3. Legislature