

Demystifying Maternal Health Data

Illinois Maternal Health Task Force Data Use Series

12/07/2023



Welcome!

This presentation was coordinated by the Illinois Maternal Health Task Force-Data to Action Committee and is intended to help maternal health partners gain a deeper understanding of the data shared in the *Illinois Maternal Morbidity and Mortality Report (October 2023)*.

Please use the chat function to ask questions as they come up; questions will be addressed at the end of the presentation.

This presentation is being recorded.

Poll questions

1. How comfortable are you discussing maternal health data in general?

Not Comfortable

Comfortable

Very Comfortable

1

2

3

4

5

2. How familiar are you with the information shared in the *Illinois Maternal Morbidity and Mortality Report (October 2023)*?

Not at all familiar

Somewhat familiar

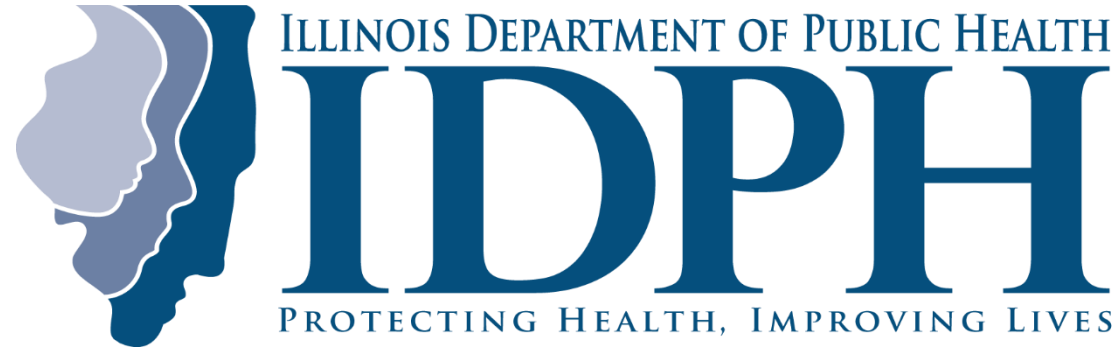
Very familiar

Speaker

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Maternal Mortality Epidemiologist
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Demystifying Maternal Health Data

IDPH Office of Women's Health and Family Services

December 7, 2023

Cara Bergo, PhD MPH

Outline

Maternal Health Indicators

- Maternal Morbidity
 - Chronic Disease During Pregnancy
 - Mental Health Conditions and Substance Use Disorders
 - Severe Maternal Morbidity
 - National Data Sources
- Maternal Mortality
 - Pregnancy-Associated Deaths
 - Pregnancy-Related Deaths
 - National Data Sources

National Maternal Mortality Data Sources

Local-Level Data Availability

For each indicator, we will discuss definition, data source, and availability of stratified data

MATERNAL MORBIDITY

Chronic Disease During Pregnancy

| Indicator | Definition | Data Source |
|--------------|---|-------------------|
| Obesity | Percent of live births with a BMI of 30.0 or higher | Birth Certificate |
| Hypertension | Percent of live births with hypertension diagnosed before or during pregnancy or severe preeclampsia. | |
| Diabetes | Percent of live births with diabetes diagnosed before or during pregnancy. | |

Available at
the county
level

Available
stratified by
demographics

Vital Records- Birth Certificate

What's in there?



Infant

- Demographics
- Physical characteristics
- Abnormal conditions of the newborn
- Congenital anomalies



Mother

- Demographics
- Risk Factors in this pregnancy
- Characteristics of labor and delivery
- Method of Delivery
- Maternal Morbidity

Vital Records- Birth Certificate Data Collection & Availability

- Includes all live births in Illinois and to Illinois residents (regardless of where birth occurred)
- Finalized about a year after the end of the calendar year
 - Example: 2022 births finalized around the end of 2023
- Some statistics from birth certificate are publicly available
 - [Birth Statistics Tables](#)
 - [Illinois Public Health Community Map](#)

Chronic Disease During Pregnancy- National Data

- National, state and county level birth certificate data accessed at CDC Wonder
- Can access two time frames:
 - Provisional natality data for 2023- last month
 - Natality for 2016-2022
- Provides data for:
 - Pre-pregnancy diabetes
 - Gestational diabetes
 - Pre-pregnancy hypertension
 - Gestational hypertension
 - *Many other indicators!*
 - **SMM is not available**
- Advanced query system allows queries to be stratified by:
 - Urbanization
 - Maternal/ paternal characteristics
 - Pregnancy history & prenatal care characteristics
 - Risk factors
 - Labor and delivery characteristics
 - Maternal morbidity
 - Infant characteristics

Mental Health Conditions & Substance Use Disorder

| Indicator | Definition | Data Source |
|-------------------------|--|-------------------------|
| Mental Health Condition | Percentage of live births with a mental health condition diagnosis on hospital delivery record | Hospital Discharge Data |
| Substance Use Disorder | Percentage of live births with a substance use disorder diagnosis on hospital delivery record | |

Available at the county level

Available stratified by demographics

May be under-reported

Severe Maternal Morbidity

| Definition | Data Source |
|--|---|
| A group of potentially life-threatening unexpected maternal conditions or complications that occur during labor and delivery | Hospital Discharge Data Includes only <u>delivery</u> hospitalization records |
| Report uses CDC indicator (20 conditions, does not include transfusion) | |
| Differs from other indicators used in hospitals (4+PRBC & ICU) | |

Calculation: $\frac{\text{number of severe maternal morbidity cases}}{\text{number of total deliveries}} \times 10,000$

Available at
the county
level*

Available
stratified by
demographics

- 13 • *Even with 5-year data aggregated, only about half of IL counties have enough data to report

Hospital Discharge Data (HDD)

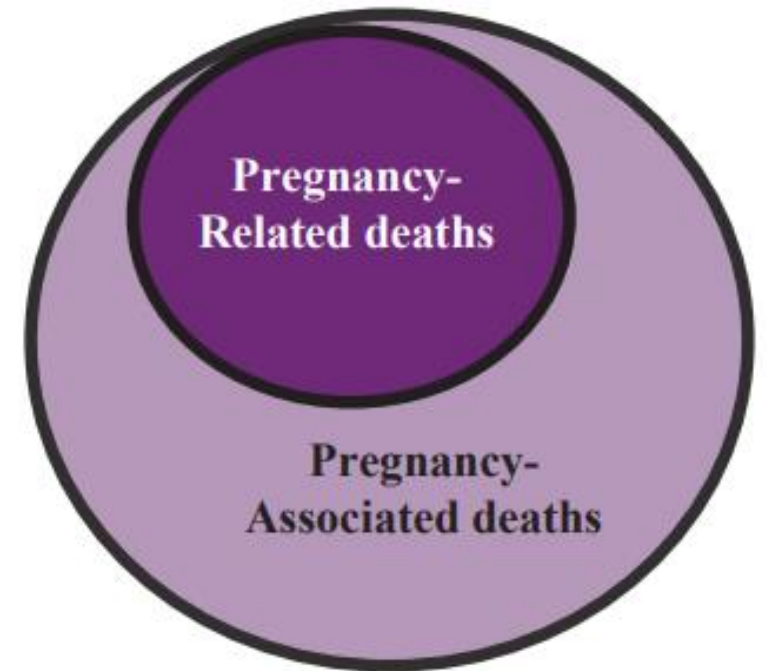
- Billing discharge data from all Illinois acute care hospitals, specialty hospitals and ambulatory surgical treatment centers
 - Does not include community health centers and urgent care
- Organized as each hospitalization as a line of data, not by patient
- IDPH has linked HDD for maternal delivery hospitalizations with birth certificate information
- Data are finalized about a year after calendar year
- Many indicators from HDD are publicly available through different sources such as the [public health community map](#), the [opioid data dashboard](#), the [hospital report card](#), etc.
- SMM as an HDD indicator is not available through public query system



MATERNAL MORTALITY

Definitions

- **Pregnancy-Associated Death:** The death of a woman during pregnancy or within one year of the end of a pregnancy from any cause.
- **Pregnancy-Related Death:** The death of a woman during pregnancy or within one year of the end of a 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



Vital Records- Death Certificate

What's in there?

Demographics

Cause of
Death

Pregnancy
Status

Coroner
Information

Location of
Death

Illinois Review Committees

MMRC

Maternal Mortality Review Committee

- Established in 2000
- Reviews deaths suspected to be medically related to pregnancy



MMRC-V

Maternal Mortality Review Committee on Violent Deaths

- Established in 2015
- Reviews deaths resulting from homicide, suicide, drug overdose, or other drug-related causes

Both committees serve as advisory bodies to the state Perinatal Advisory Committee and to IDPH

Illinois MMRC Process



Maternal Mortality Review Data Sources



Medical records



Autopsy or coroner report



Police reports



EMS Records



Prescription Monitoring Program



Vital Records



Community Vital Signs Dashboard



MMRC Decision Form

Key Discussion Questions for the MMRCs

What was the **cause of death**?

Was the death **pregnancy-related**?

Was the death **preventable**?

What **critical factors** contributed to this death?

What are **recommendations** to prevent future deaths?

Pregnancy Related Mortality Ratio (PRMR)

Calculation: $\frac{\text{number of pregnancy-related deaths}}{\text{number of live births}} \times 100,000$

Allows for comparisons of the likelihood of mortality for different groups

Standardized by the population size, making it more meaningful than case counts for comparing the likelihood of death for different groups

Comparing Morbidity & Mortality

| | Severe Maternal Morbidity | Maternal Mortality |
|---------------------------|---|---|
| Purpose | Surveillance | Identify factors and recommendations to prevent future deaths |
| Timing | Delivery hospitalization only | Any time during pregnancy to one year postpartum |
| Identification | Hospital discharge billing records | Death certificates, linkages, obituaries, newspaper articles, causes of death |
| Causes Included | Severe medical complications (mostly obstetric) | Any, including medical, mental health, injury, violence, etc. |
| Leading Cause | Hemorrhage | Substance Use Disorder |
| Prevention Level | Provider & Hospital | Provider, Hospital, Community, Systems |
| Timeliness of Data | ~1 year after calendar year | 2-3 years after year of death |

NATIONAL MATERNAL MORTALITY DATA

National Vital Statistics System (NVSS)

Identification

Maternal deaths occur while pregnant or within **42 days** of being pregnant

Death Record: Pregnancy Checkbox and Cause of death assigned code numbers

Purpose

Show national trends

Provide a basis for international comparison

Strengths

Strongest source of historical data, dating back to 1900

Reliable basis for international comparison

Relies on readily available data from death certificates

Challenges

Constrained by the limited codes in the ICD

Does not capture sufficient detail to inform prevention strategies

Death records alone relies upon the certifier accurately reporting causes of death

Pregnancy Mortality Surveillance System (PMSS)

Identification

Death while pregnant or within 1 year of the end of pregnancy from any cause related to or aggravated by the pregnancy

NVSS + Medical epidemiologists, utilizing Pregnancy Mortality Surveillance System codes

Purpose

Analyze **clinical** factors associated with deaths

Publish information that may lead to prevention strategies

Strengths

Clinically relevant national measure of burden of maternal deaths

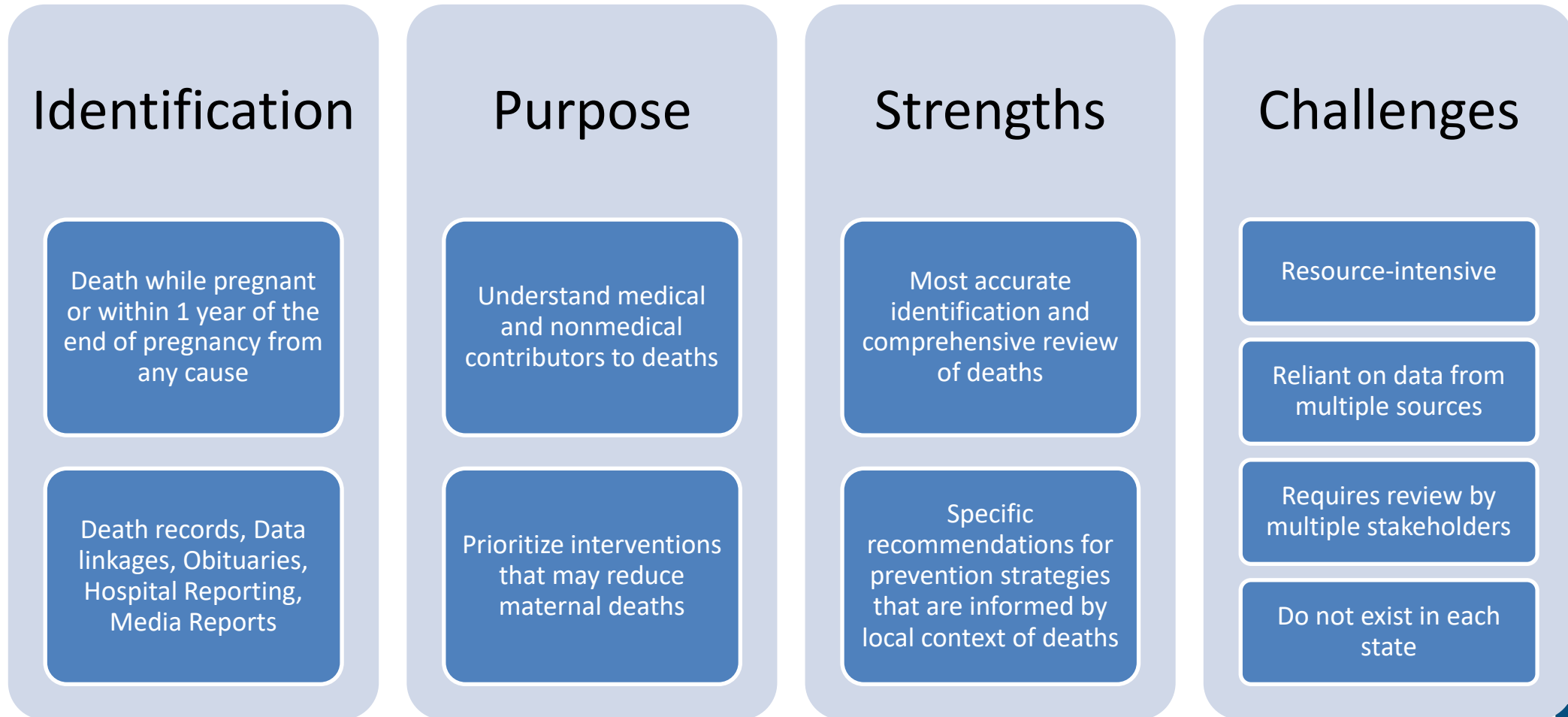
30-year history

Challenges

Limited to information primarily derived from death and birth certificates

Does not capture detailed information on contributors to deaths

Maternal Mortality Review Committees (MMRC)



Comparing Nationally

| Data System | Leading Cause of Death | 2019 PRMR | Described |
|------------------------|---------------------------------|-------------------|---|
| NVSS | None Reported | 20.1 | Trend, Age & Race |
| PMSS | Other cardiovascular conditions | 17.6 | + Geography, Cause of death, |
| MMRC- 36 states | Mental Health Conditions | None Reported | + Education, timing of pregnancy, preventability |
| Illinois MMRC | Substance Use Disorder | 27 (2018-2020) | + Contributing Factors & Recommendations Also, Discrimination, Trauma, SDOH, ED Use, and many others |

AVAILABILITY OF LOCAL DATA

Indicators Available at the Local Level



Available

- Chronic Disease
- Hypertension
- Diabetes
- Obesity
- Mental Health Conditions
- Substance Use Disorder
- Severe Maternal Morbidity

Available on Maternal Health County Profile: Reach out to your regional health officers (RHO)



Not Available

- Maternal Mortality
 - Rare event
 - Many counties and areas of the state, cannot be released due to low counts
 - Lack of stability of rates
 - Comprise the privacy of the deceased and their families

Comments? Questions?

Chat

Use the chat function to type in your question for the presenters

Raise Your Hand To Ask Your Question Verbally

Click on reactions → raise your hand

Once called upon, unmute your line and ask your questions



Poll Question

**Enter email addresses to receive follow up information
on the webinar**

Evaluation

- We have built in a couple of minutes to complete the evaluation.
- https://uic.ca1.qualtrics.com/jfe/form/SV_2gU6dQAzOMmNgWO



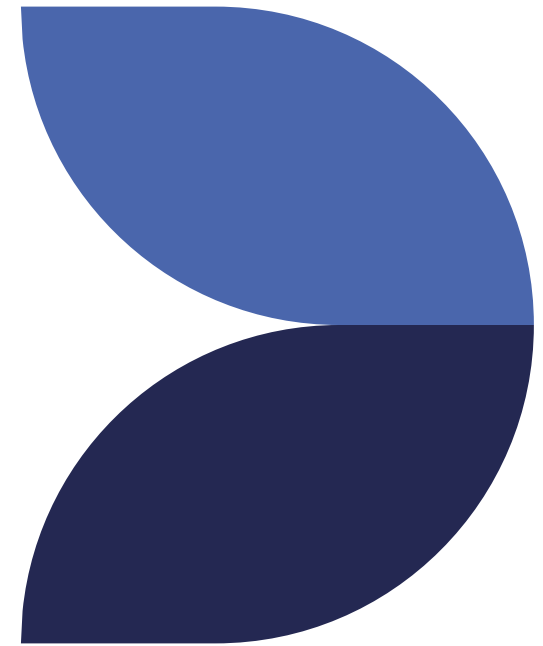
Please contact: cara.bergo@illinois.gov

Illinois Maternal Mortality Report:

<https://dph.illinois.gov/content/dam/soi/en/web/idph/publications/idph/topics-and-services/life-stages-populations/maternal-child-family-health-services/maternal-health/mmmr/maternal-morbidity-mortality-report2023.pdf>

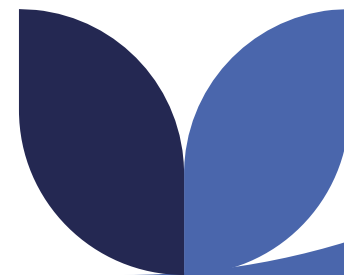
Frequently Asked Questions

Maternal Mortality



Why is there such a lag in providing maternal mortality data?

- Births must be followed for one year
- Information from multiple sources takes time to request and compile
- Combining at least two years' worth of data provides better estimates



Why is the national maternal mortality data more current than Illinois data?

The National Center for Health Statistics (NCHS) uses a shorter time frame (42 days postpartum vs one year) and only one source of data making it the timeliest.

The CDC's Pregnancy Mortality Surveillance System (PMSS) uses the one-year time frame and linkages between multiple data sources making it slower than NCHS. However, medical epidemiologists, rather than a multidisciplinary committee, review deaths speeding up data reporting.



Can the Illinois MMRC data be compared to other states?

Each state conducts its maternal mortality review a bit differently so there is slight variation from state to state.

Generally, states that are engaged with the efforts of the CDC ERASE-MM Program and submit data to the centralized Maternal Mortality Review Information Application (MMRIA) are considered comparable.



Why is county-level maternal mortality data not available?

Maternal deaths are a rare event.

For many counties and areas of the state, the data cannot be released due to low counts which affect the stability of rates and also may comprise the privacy of the deceased and their families.



Q & A

