An Improved Standard of Care: The Effects of Social and Behavioral Factors on Maternal Mortality and Morbidity

Presenters
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Agenda:

- Findings on maternal mental health, social determinants, and racial disparities
- Understand Peripartum Depression and discuss screening standards
- The reality of screening data and actions to consider when adopting new practices or extending capabilities
Context

Historically acute care has had a heavy focus on clinical protocols and reduction in practice variation. Now it’s time to bring a holistic view of the mother’s healthcare experience, clinical and behavioral, as it is a critical and often overlooked component to the mother’s outcome.
Relias at a Glance

We are a global team of healthcare and industry experts working to help more than 11,000 healthcare and human services customers improve care outcomes through talent and lifelong workforce management.
Maternal Mortality- MMRC Data: Clinical and Behavioral Health
## Timeline on Reactions to Maternal Mortality

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Lancet Journal Article</td>
</tr>
<tr>
<td>2015</td>
<td>USA Today, Boston Globe, &amp; NY Times Articles and more</td>
</tr>
<tr>
<td>2016-2017</td>
<td>Preventing Maternal Deaths Act</td>
</tr>
<tr>
<td>2018</td>
<td>MOMMA's Act &amp; Congressional Inquiry</td>
</tr>
<tr>
<td>2019</td>
<td>Joint Commission Maternal Safety Standards</td>
</tr>
<tr>
<td>2020</td>
<td>CDC Hear Her Campaign</td>
</tr>
<tr>
<td>2021...</td>
<td>CDC MMRC Reports Expanded Work on Maternal Mental Health &amp; SDOH</td>
</tr>
</tbody>
</table>

**CURRENT STATE: MATERNAL MORTALITY (US)**

2016-2017

USA Today, Boston Globe, & NY Times Articles and more

2018

Preventing Maternal Deaths Act

2019

MOMMA’s Act & Congressional Inquiry

2020

Joint Commission Maternal Safety Standards

CDC Hear Her Campaign

2021...

CDC MMRC Reports Expanded Work on Maternal Mental Health & SDOH
U.S. Mortality Rate is more than **2x the rate in 10 other high-income countries**

Maternal Mortality Ratios in Selected Countries 2018 or Latest per 100,000 live births

<table>
<thead>
<tr>
<th>Country</th>
<th>Rate (per 100,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ</td>
<td>1.7</td>
</tr>
<tr>
<td>NOR</td>
<td>1.8</td>
</tr>
<tr>
<td>NETH</td>
<td>3</td>
</tr>
<tr>
<td>GER</td>
<td>3.2</td>
</tr>
<tr>
<td>SWE</td>
<td>4.3</td>
</tr>
<tr>
<td>SWIZ</td>
<td>4.6</td>
</tr>
<tr>
<td>AUS</td>
<td>4.8</td>
</tr>
<tr>
<td>UK</td>
<td>6.5</td>
</tr>
<tr>
<td>CAN</td>
<td>8.6</td>
</tr>
<tr>
<td>FRA</td>
<td>8.7</td>
</tr>
<tr>
<td>US</td>
<td>17.4</td>
</tr>
</tbody>
</table>


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During Pandemic Years, Mortality Rates in Black Women were 3x the mortality rates of White Women

Maternal Mortality Rates by race-ethnicity US 2018-2020 per 100,000 live births

Source
## Current State: Maternal Mortality (US)

### Evidence-Based Protocols and Reduction in Practice Variance are used to address High Risk Areas in Obstetrics

<table>
<thead>
<tr>
<th>Condition</th>
<th>% of pregnancy-related deaths in the US 2014-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Cardiovascular Conditions</td>
<td>15.5</td>
</tr>
<tr>
<td>Sepsis</td>
<td>12.7</td>
</tr>
<tr>
<td>Cardiomyopathy</td>
<td>11.5</td>
</tr>
<tr>
<td>Hemorrhage</td>
<td>10.7</td>
</tr>
<tr>
<td>Thrombotic Pulmonary or other Embolism</td>
<td>9.6</td>
</tr>
<tr>
<td>Cerebrovascular Accidents</td>
<td>8.2</td>
</tr>
<tr>
<td>Hypertensive Disorders of Pregnancy</td>
<td>6.6</td>
</tr>
<tr>
<td>Amniotic Fluid Embolism</td>
<td>5.5</td>
</tr>
<tr>
<td>Anesthesia Complications</td>
<td>0.4</td>
</tr>
<tr>
<td>Other Noncardiovascular Medical Conditions</td>
<td>12.5</td>
</tr>
</tbody>
</table>

Mental Health as a cause of death is as significant as other High-Risk causes of Maternal Mortality

Table 3. Leading underlying causes of pregnancy-related deaths, overall and by race-ethnicity, data from 14 maternal mortality review committees, 2008-2017.*

In non-Hispanic Black population, Cardiovascular and Cardiomyopathy were the leading underlying causes. In non-Hispanic White population, Mental Health was the leading underlying cause.
Poll

At what period in time after pregnancy is the highest rate of death for women?

1. 0 - 42 days
2. 43 - 150 days
3. 43 - 365 days
Age, Education, Timing of Death are significant considerations for Maternal Mortality

### Characteristics of pregnancy-related deaths
data from 14 maternal mortality review committees, 2008–2017 (N=454)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at death</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–19</td>
<td>21</td>
<td>4.8</td>
</tr>
<tr>
<td>20–24</td>
<td>92</td>
<td>20.9</td>
</tr>
<tr>
<td>25–29</td>
<td>98</td>
<td>22.2</td>
</tr>
<tr>
<td>30–34</td>
<td>117</td>
<td>26.5</td>
</tr>
<tr>
<td>35–39</td>
<td>77</td>
<td>17.5</td>
</tr>
<tr>
<td>≥40</td>
<td>36</td>
<td>8.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Education</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High school or less</td>
<td>229</td>
<td>53.5</td>
</tr>
<tr>
<td>Some college</td>
<td>86</td>
<td>20.1</td>
</tr>
<tr>
<td>Associate or Bachelor degree</td>
<td>77</td>
<td>18.0</td>
</tr>
<tr>
<td>Advanced degree</td>
<td>36</td>
<td>8.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Timing of Death</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>During pregnancy</td>
<td>91</td>
<td>23.9</td>
</tr>
<tr>
<td>Day of delivery</td>
<td>59</td>
<td>15.5</td>
</tr>
<tr>
<td>1–6 days postpartum</td>
<td>70</td>
<td>18.4</td>
</tr>
<tr>
<td>7–42 days postpartum</td>
<td>71</td>
<td>18.6</td>
</tr>
<tr>
<td>43–365 days postpartum</td>
<td>90</td>
<td>23.6</td>
</tr>
</tbody>
</table>

3 in 4 died between pregnancy and first 42 days Post-Partum

47.9% Aged 15–29 years old

53.5% High School Degree or less

Mental Health Conditions
Was identified as an underlying cause for 20–29 age group
Distribution of **Critical Factors** among Pregnancy-Related Deaths

**System of Care Factors**
- Lack of coordination in patient management
- Lack of communication between patient providers

**Provider Factors**
- Failure to perform clinical assessment
- Wrong or delayed diagnosis, delayed treatment
- Lack of communication between patient and providers
- Lack of follow-up by the providers

**Patient Factors**
- Absence of social support systems
- Inability to recognize the need to seek care
- Disruptive relationships and housing
- Lack of adherence to medication(s)
421 Deaths from 2008–2017

46 deaths were attributed to mental health with the distribution:

+ 62%: suicides
+ 24%: unintentional poisonings/overdoses
+ 67%: history/current substance use

MMRC: Take a Holistic View of a Patient’s Lived Experiences

43 days to 365 days post partum
How Social Determinants of Health Affect Maternal Mortality

Social Determinants of Health
Relationship between SDOH and Maternal Outcomes

High School Degree holders or less have a mortality rate that is 2x that of College Degree holders.

Lack of insurance is associated with higher risk of cardiovascular, respiratory, and severe sepsis-related death, and in-hospital mortality.

Non-Hispanic Black women are dying at nearly 3x the rate of non-Hispanic white women.
Section II: Maternal Mental Health

Peripartum Depression and Mental Health
Poll

Do you follow up with mothers that are at risk?

1. We follow up with all mothers
2. We follow up only with mother that identified with risk factors
3. We do not follow up after discharge
Peripartum Depression

23% Common but underdiagnosed

Often not recognized

+ Changes in sleep, appetite, and libido may be attributed to normal pregnancy
+ Providers lack awareness
+ Screening not routinely implemented
+ Stigma and shame can make mothers less likely to report symptoms

Complications

+ Impaired maternal-infant bonding
+ Suicide (2 - 3.7 per live birth)
+ Unlikely to remit spontaneously

Source
Economic Impact of PPD

Perinatal mood and anxiety disorders
+ $31,800 per mother-child pair
+ $14 billion for the US as a whole

Higher annual direct total all-cause medical and pharmaceutical spending
+ $19,611 versus $15,410
+ Driven primarily by more outpatient visits

Financial Impact on Affected vs Unaffected Households
+ $36,049 versus $29,448 medical and pharmaceutical spending during the first year following childbirth
+ Average of 16 more more outpatient visits

Source

Screening for PPD

2016 Recommendation

+ Conduct depression screening for the general population
+ Including pregnant and postpartum women

Recommendation

+ Screen at least once during perinatal period for depression and anxiety

On-the-Ground Reality

+ Screening is sporadic
+ Less than 2 in 3 mothers are screened

Source

Screening for Mental Health with the EPDS

Edinburgh Postnatal Depression Scale (EPDS)

Since you are either pregnant or have recently had a baby, we want to know how you feel. Please place a check mark (✓) on the blank by the answer that comes closest to how you have felt in the past 7 days— not just how you feel today. Complete all 10 items and find your score by adding each number that appears in parentheses ( ) by your checked answer. This is a screening test; not a medical diagnosis. If something doesn't seem right, call your health care provider regardless of your score.

Below is an example already completed.

<table>
<thead>
<tr>
<th>Question</th>
<th>Possible Answers</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have felt happy:</td>
<td>Yes, all of the time (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, most of the time (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, not very often (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, not at all (4)</td>
<td></td>
</tr>
<tr>
<td>2. I have looked forward with enjoyment to things:</td>
<td>As much as I ever did (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rather less than I used to (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Definitely less than I used to (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hardly at all (4)</td>
<td></td>
</tr>
<tr>
<td>3. I have blamed myself unnecessarily when things went wrong:</td>
<td>Yes, most of the time (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, some of the time (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not very often (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, never (4)</td>
<td></td>
</tr>
<tr>
<td>4. I have been anxious or worried for no good reason:</td>
<td>No, at all (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hardly ever (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, sometimes (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, very often (4)</td>
<td></td>
</tr>
<tr>
<td>5. I have felt scared or panicky for no good reason:</td>
<td>Yes, quite a lot (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, sometimes (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, not much (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, not at all (4)</td>
<td></td>
</tr>
<tr>
<td>6. Things have been getting to me:</td>
<td>Yes, most of the time I haven't been able to cope at all (1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, sometimes I haven't been coping as well as usual (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, most of the time I have coped quite well (3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, I have been coping as well as ever (4)</td>
<td></td>
</tr>
</tbody>
</table>

Total possible points: 30

Question 10 = suicide risk assessment
Intervening on Depression & Suicide Risk

<table>
<thead>
<tr>
<th>EPDS Score</th>
<th>Depression Risk</th>
<th>Follow Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;8</td>
<td>Low</td>
<td>Psychoeducation</td>
</tr>
<tr>
<td>9-11</td>
<td>Moderate</td>
<td>Psychoeducation, rescreen in 2 weeks, community services</td>
</tr>
<tr>
<td>12-13</td>
<td>High</td>
<td>Psychoeducation, rescreen in 2 weeks, further assessment, treatment plan, refer for services</td>
</tr>
<tr>
<td>&gt;14</td>
<td>Probably present</td>
<td>All of the above and establish continuity of care</td>
</tr>
<tr>
<td>+ Question 10</td>
<td>Suicide Risk</td>
<td>Complete full suicide risk screening and safety plan</td>
</tr>
</tbody>
</table>

- Psychoeducation
- Referrals for outpatient treatment
- Integrated treatment plan pre-discharge
- Referral to psychiatry for medication management
- Suicide risk assessment via Columbia Scale
- Safety planning
## Integrating Behavioral Health Clinicians in the Treatment Team

### Case Management
- Identify and connect patient with community resources
- May facilitate referral to outpatient mental health services
- May complete some basic assessments, not typically responsible for diagnose or treatment intervention

### Behavioral Health
- Primary responsibilities include assessing, diagnosing, intervening, and treatment planning
- Can provide on-site therapy services
- Responsible for documenting patient condition and following up as needed
- Integrated psychotherapy be effective in as little as 15 minute
## Contributing Factors + Health Outcomes

### Economic Stability
- Employment
- Income
- Expenses
- Debt
- Medical Bills
- Support

### Neighborhood + Physical Environment
- Housing
- Transportation
- Safety
- Parks
- Playgrounds
- Walkability
- Zip Code/Geography

### Education
- Literacy
- Language
- Early Childhood Education
- Vocational Training
- Higher Education

### Food
- Hunger
- Access to Healthy Options

### Community + Social Context
- Social Integration
- Support Systems
- Community Engagement
- Discrimination
- Stress

### Health Care System
- Health Care Coverage
- Provider Availability
- Provider Linguistic + Cultural Competency
- Quality of Care

### Health Outcomes
- Mortality, Morbidity, Life Expectancy, Health Care Expenditures, Health Status + Functional Limitations

(Kaiser Family Foundation, 2020)
Screening Tools

Edinburgh Postnatal Depression Scale (EPDS)
The Patient Health Questionnaire (PHQ-9)
Columbia Suicide Risk Severity Scale
CMS Accountable Health Communities Health-Related Social Needs (HCRSN) Screening Tool

KEY

+ Prioritize patient health and safety
+ Minimize friction with patient
+ Remove administrative burden

Source
The management of depression during pregnancy: a report from the American Psychiatric Association and the American College of Obstetricians and Gynecologists. General hospital psychiatry 31(5): 403-413
Behavioral Health Practice Considerations

+ Inequity and disparities between highly-resourced and under-resourced communities
+ Assessing and diagnosing practices
+ Documentation practices
+ Intervention and treatment recommendations

(CDC, 2021; World Economic Forum, 2020; Kaiser Family Foundation, 2020)
Treatment Options

Existing

+ Antidepressants
+ Psychotherapy
+ Connecting to resources
+ Group therapy

Challenges

+ Shortage of mental health providers
+ Reluctance to accept referral due to stigma
Managing Gaps in Mental Health Services

- Examine scope of mental health and psychiatric services
- Expand number of behavioral health clinic
- Increase training on mental health for all staff
- Review mental health documentation practices and ensure BH and medical documentation are in the same system
Mental Health Resource Toolkit

• Mental health crisis number: 988
• National, Local and Facility Resources
• Emergency/hotline numbers
• Local mental health resources
• Support Groups
• Lactation Support
• Parenting Classes
• Food and Clothing
PPD Screening Data Directs Actions and Opportunities to Improve Outcomes
Poll

Do you have a list of community resources/referrals related to PPD, suicide ideation, food and clothing, SUD readily available to give with the mother at discharge?

1. Yes
2. No
3. Unsure
An Overview of CoCM

Patient → Behavioral Health Care Manager (BHCM) → Primary Care Provider → Psychiatric Consultant

Exchange info on treatment plan in PCP’s EHR
Collaborative Care (CoCM)

Initiate treatment at Primary Care Setting

+ Evidence-based model
+ Addresses barriers upfront
+ Utilizes a familiar setting

5 Key Components

+ Population-based care
+ Measurement-based treatment to target
+ Care management
+ Psychiatric consultations
+ Brief psychological therapies

Success with CoCM

+ Shown success in women’s health settings in 2 randomized trials
+ Shown increased Provider satisfaction and confidence to manage behavioral health problems

Source
The management of depression during pregnancy: a report from the American Psychiatric Association and the American College of Obstetricians and Gynecologists. General hospital psychiatry 31(5): 403-413
HHS through CMS is taking critical steps to improving maternal mortality and morbidity.

1. Under this proposal, CMS would initially give this designation to hospitals that report “Yes” to the *Maternal Morbidity Structural Measure*. The *Maternal Morbidity Structural Measure* is an attestation specified to capture whether hospitals are: (1) participating in a structured state or national Perinatal Quality Improvement (QI) Collaborative; and (2) implementing patient safety practices or bundles as part of these QI initiatives.

2. CMS is proposing the collection and screening of social drivers of health, health equity measures, two perinatal eCQMs—Cesarean Birth and Severe Obstetric Complications—available for self-selection beginning with the CY 2023 reporting period/FY 2025 payment determination followed by mandatory reporting beginning with the CY 2024 reporting period/FY 2026 payment determination.
Time to Act is Now!

Know Your Patients, Know Your Data

Integrate Universal mental health screening and coordination of care into obstetric care

Take a closer look at the late postpartum period.

Know your communities

Educate your staff

Social Determinants of Health

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Questions?

Please use the Q&A widget to submit questions.
THANK YOU