What’s Being Done to Improve Maternal Health?

Robert J Sokol, MD and Amy Zaagman, MPA
The Problem

- Every year, about 25 women in Michigan die from complications related to pregnancy or childbirth.
- For every woman who dies in childbirth, 100 more suffer severe life-threatening injury, infection or disease – about 2,500 young women/mothers per year.
## Number of Maternal Deaths by Prosperity Region, Michigan, 2011-2015

<table>
<thead>
<tr>
<th>Region</th>
<th>Total Maternal Deaths</th>
<th>Pregnancy-Related Maternal Deaths (of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Upper Peninsula Prosperity Alliance</td>
<td>9</td>
<td>&lt;6</td>
</tr>
<tr>
<td>2 – Northwest Prosperity Region</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>3 – Northeast Prosperity Region</td>
<td>&lt;6</td>
<td>0</td>
</tr>
<tr>
<td>4 – West Michigan Prosperity Alliance</td>
<td>49</td>
<td>7</td>
</tr>
<tr>
<td>5 – East Central Michigan Prosperity Region</td>
<td>18</td>
<td>&lt;6</td>
</tr>
<tr>
<td>6 – East Michigan Prosperity Region</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>7 – South Central Prosperity Region</td>
<td>11</td>
<td>&lt;6</td>
</tr>
<tr>
<td>8 – Southwest Prosperity Region</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>9 – Southeast Michigan Prosperity Region</td>
<td>18</td>
<td>&lt;6</td>
</tr>
<tr>
<td>10 – Detroit Metro Prosperity Region</td>
<td>180</td>
<td>39</td>
</tr>
</tbody>
</table>
Causes of Pregnancy-Related Death

The leading causes of pregnancy-related death are hemorrhage, hypertension-preeclampsia, embolism, amniotic fluid embolism, infection, and an exacerbation of pre-existing chronic conditions.

Pregnancy-Related Mortality

Pregnancy-related mortality is the death of a woman while pregnant or within one year of the end of pregnancy from any cause related to or aggravated by the pregnancy or its management. This does not include accidental or incidental causes.

From 2011 to 2015, 66 women died of pregnancy-related causes in Michigan, which is a rate of 11.6 deaths per 100,000 live births. Because of the relatively small number of deaths, a small increase in deaths can lead to large changes in the rate of mortality. In 2014, 8 women died from pregnancy-related causes. In 2015, this number increased to 13, resulting in the rate nearly doubling from 7.9 to 14.1 deaths per 100,000 live births (Figure 1).

The national pregnancy-related mortality rate was comparable to Michigan’s rate in 2011 (17.8) and 2015 (17.5) per 100,000, respectively. Pregnancy-related mortality in the U.S. remained stable in subsequent years, while Michigan’s rate decreased. National data was not yet available for 2015.

Causes of Pregnancy-Related Deaths

The most common cause of pregnancy-related deaths in Michigan is cardiomyopathy (21%), followed by infection/inflammation (14%) (Figure 2). Less common but significant causes of death include cardiovascular conditions, amniotic fluid embolism, cerebrovascular conditions, embolism, hypertension, and other medical conditions, such as diabetes as a result of chronic conditions such as cancer, epilepsy, and diabetes.

Figure 1. Pregnancy-Related Mortality in MI, 2011-2015

Figure 2. Causes of Pregnancy-Related Deaths in Michigan, 2011-2015
Of the 66 pregnancy-related deaths reviewed from 2011-2015, **44%** were determined to be preventable.
Working Together to Improve Maternal Health in Michigan

Maternal Infant Strategy Group (MISG)

Mother Infant Health and Equity Collaborative (MIHEC)

Regional Perinatal Quality Collaboratives (RPQCs)

Michigan Department of Health and Human Services (MDHHS)

OB Initiatives

Health Plans

Community Input

Community Stakeholders and Local Public Health
• Bureau of Family Health Services
• Epidemiology
• Women, Infants, and Children (WIC)
• Michigan Maternal Mortality Surveillance (MMMS) Committee
Current Focus for MMMS – Improving the Maternal Mortality Surveillance Function

• The committees
  • Medical
  • Injury
• Updating and broadening membership – multi-professional and multidisciplinary
• Improved support from MDHHS (Lynette and Chris)
• Improving efficiency of the review process – getting to current
  • Pre-review for those clearly not pregnancy-related
  • Moving to the CDC record – focus on preventability
• NEED FOR INTERVENTIONS TO IMPROVE PERCEIVED PROBLEMS IN CARE
OB Initiatives

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Health Plans

Mother Infant Strategy Group (MISG)

Improving Practice
AIM Across the United States
MI AIM Mission

ELIMINATE PREVENTABLE PREGNANCY-RELATED MATERNAL DEATH, SEVERE MATERNAL MORBIDITY, AND DISPARITY
MI AIM Organization

- Integrated into MDHHS coordinated program to improve maternal and infant health
- Mostly volunteers
- MHA, ACOG, AWHONN, et al partnering with DHHS
- Steering and Operations Committees
- Working with hospitals and clinicians, as well as governmental and not for profit agencies
- Data managed by state and MHA
Maternal Safety Bundles

What are they?
A “checklist” of items and practices for every birthing suite
Not a national protocol!
Facilities will modify content based on local resources

Uniform structure

• Readiness
  • Every unit - prepare and educate

• Recognition & Prevention
  • Every patient – before event

• Response
  • Every event – team approach

• Reporting/Systems Learning
  • Every unit – systems improvement

Available at: 
safehealthcareforeverywoman.org
with resource links
AIM Patient Safety Bundles & Tools

Severe Hypertension in Pregnancy
Maternal Venous Thromboembolism Prevention
Safe Reduction of Primary Cesarean Birth/Support for Intended Vaginal Birth
Obstetric Hemorrhage
Obstetric Care for Women with Opioid Use Disorder
AIM Patient Safety Bundles & Tools

Patient Safety Bundles with Measures

- Severe Hypertension in Pregnancy
- Maternal Venous Thromboembolism Prevention
- Safe Reduction of Primary Cesarean Birth/Support for Intended Vaginal Birth
- Obstetric Hemorrhage
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The Obstetrics Initiative

Mission: Engage maternity providers and hospitals in a collaborative effort to safely reduce the use of primary cesarean delivery and improve health outcomes of Michigan women and infants.

Goals

• Build a community of maternity providers committed to safely reducing the cesarean delivery rate of low-risk births with improved or stable maternal and neonatal morbidity.

• Promote evidence-based processes to improve the quality of obstetric care.

• Utilize the OBI Registry’s Obstetric Reports as reliable, actionable data to identify opportunities for quality improvement in maternal and neonatal outcomes and focus on effectiveness of care.

• Provide educational webinars and a centralized resource of evidence-based labor and delivery practices that support intended vaginal birth for low-risk patients.

• Improve the culture of care, awareness, & education around pregnancy and safe birth processes.
AIM Patient Safety Bundles & Tools

Patient Safety Bundles with Measures

- Severe Hypertension in Pregnancy
- Maternal Venous Thromboembolism Prevention
- Safe Reduction of Primary Cesarean Birth/Support for Intended Vaginal Birth
- Obstetric Hemorrhage
- Obstetric Care for Women with Opioid Use Disorder
AIM Patient Safety Bundles & Tools

Additional Bundles and Safety Tools

Severe Maternal Morbidity Review
Support After a Severe Maternal Event
Postpartum Care Basics for Maternal Safety
Reduction of Peripartum Racial/Ethnic Disparities
Immediate Postpartum LARC
Michigan Collaborative for Contraceptive Access (MICCA)

- Partnership between UM, MDHHS Bureau of Family Health Services, MSU
- Launching demonstration project 2019-2021 with 6-10 Michigan hospitals

Goal: Embed ACOG guidelines into practice

- Improve prenatal contraceptive counseling
- Increase access to immediate postpartum LARC
- Ensure exceptional patient experience of care
Severe Maternal Morbidity (SMM) in Michigan Before and After MI AIM

<table>
<thead>
<tr>
<th></th>
<th>Before Kickoff</th>
<th>Last 2 Quarters</th>
<th>IMPROVEMENT</th>
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<tbody>
<tr>
<td></td>
<td>2011-2015</td>
<td>2017-2018</td>
<td></td>
</tr>
<tr>
<td>All delivering women</td>
<td>1.83</td>
<td>1.68</td>
<td>7.7%</td>
</tr>
<tr>
<td>Excluding transfusion</td>
<td>0.81</td>
<td>0.65</td>
<td>18.2%</td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>12.08</td>
<td>9.49</td>
<td>21.4%</td>
</tr>
<tr>
<td>Preeclampsia excluding transfusion</td>
<td>7.68</td>
<td>5.76</td>
<td>24.9%</td>
</tr>
<tr>
<td>Hemorrhage cases excluding transfusion</td>
<td>7.16</td>
<td>5.51</td>
<td>25.7%</td>
</tr>
</tbody>
</table>
MI AIM: Where Are We Now and Where Are We Headed?

- MI AIM Webinars
  - Monthly informational and discussion webinar 4th Tuesday 4-5pm
- Maternal Infant Health Summit
- Individual and ongoing meetings with hospitals, as needed
- More participation and more partners
- Addition of one or more bundles, e.g. disparity
Maternal Infant Strategy Group

**Purpose:** To create synergy between the varied organizations and providers that are working to improve the health and well-being of Michigan’s families before and during pregnancy and birth and for the first year thereafter.
MISG Membership

- Matthew Allswede, MD
- Vernice Anthony, RN, MPH
- John Barks, MD
- Colleen Barry, MD
- Charles Barone, MD
- Lynette Biery, PA-C, MSc
- Brittany Bogan, FACHA, CPPS
- Nicki Britten, MPH
- Renee Canady, PhD, MPA
- Debra Darling, RN, BSN, CCP
- Stephanie Flom, MD
- James Forshee, MD
- Kiddada Green, MAT
- Herman Gray, MD
- Sonia Hassan, MD
- Teresa Holtrop, MD, FAAP
- Joneigh Khaldun, MD
- Elizabeth Kushman, MPH
- Karen MacMaster, MPA
- David Neff, MD
- Cheryl Larry-Osman, RN, MS
- Lisa Peacock, RN MSN
- Ninah Sasy, MSA
- Dawn Shanafelt, MPS, BSN, RN
- Robert Sokol, MD
- Amy Zaagman, MPA
• Statewide population health plan to address the primary causes of preventable maternal and infant mortality and morbidity and reduce disparities

• Key objectives:
  • Explicitly address disparities
  • Align public and private sector work
  • Integrate interventions across the maternal infant dyad
• Held quarterly; the next meeting is on May 9 in Detroit, Michigan
• Provides an opportunity to hear about the ongoing work of MDHHS, the Regional Perinatal Quality Collaboratives, OB initiatives, and partners
Call to Action

01. Connect with OB Initiatives
02. Attend Improvement Plan COP Webinars
03. Attend MI AIM Webinars
04. Attend MIHEC Meetings
MI AIM Designation Awards

Recognizing Michigan hospitals that are committed to improving the quality of care for moms.

MI AIM
MICHIGAN ALLIANCE FOR INNOVATION ON MATERNAL HEALTH

http://www.miaim.us