Maternal Mortality in Georgia: Through the Public Health Lens

Presenter: Maria Fernandez

Healthy Mothers, Healthy Babies Annual Meeting
Oct 7, 2014
IN 2013

MATERNAL MORTALITY
85 WOMEN DIED

GEORGIA RANKS # 50
NATIONALLY

AWHONN 2013
Overview

Inform

Protect

Prevent

COLLECTIVE IMPACT
Evolution of Maternal Mortality Definition

1900-1979: ICD
Death of a pregnant woman or recently pregnant woman as a result of complications of pregnancy or childbirth.

1979: ICD Expansion
Explicit ICD codes broadened. Parameters added to focus on time of death within 42 days postpartum.

1975 - 1980

1992
Other states add separate pregnancy question to track time of death.

2003-present
5 supplemental fields added to death certificate to determine death timing in relation to pregnancy.

1999-2003
ICD-10 change include direct obstetric deaths, indirect obstetric deaths, late maternal death and pregnancy-related death. Results in CDC DRH, NVSS and ICD using different terms for similar concepts.
INFORM:
Epidemiology of Maternal Mortality
Worldwide Maternal Mortality: 1990-2013

Maternal mortality ratio per 100,000 live birth
Globally and by WHO region, 1990–2013

Globally:
- 980 in 1990
- 196 in 2013

Regional Trends:
- North & South America: 392 in 1990, 196 in 2013
- South-East Asia: 588 in 1990, 392 in 2013
- Africa: 784 in 1990, 588 in 2013
- Europe: 392 in 1990, 196 in 2013
- Eastern Mediterranean: 784 in 1990, 588 in 2013
- Western Pacific: 588 in 1990, 392 in 2013

We Protect Lives.
United States Maternal Mortality: 1987-2010


*Note: Number of pregnancy-related deaths per 100,000 live births per year.*
Maternal Mortality: United States

For women in the United States, each year:

- **50,000** suffer severe morbidities due to pregnancy-related complications
- **650** die due to pregnancy-related complications

This means that for every 1 woman who dies due to a pregnancy-related condition, another 76 women experience a severe co-morbidity.

70% in 20 years
Georgia Maternal Mortality Rate 2002-2012

Ratio (Per 1,000) live births

Source: Georgia Vital Statistics

We Protect Lives.
Georgia Maternal Mortality Initiatives
Georgia Maternal Mortality Initiatives

1. **Partnership with Emory University**
   - Working with Emory to expand midwifery training programs

2. **Medicaid Policy Changes**
   - P4HB to increase family planning
   - Payment for LARCs at delivery

3. **Maternal Mortality Review Committee**
   - Partnership with the Georgia OB/Gyn Society to lead the MMRC
MMRC Members

Chair-
Dr. Michael Lindsay

Coordinator: Debbie Sibley

Chart Abstractors

Clinicians

Public Health Practitioners

Mental Health Providers

We Protect Lives.
Purpose of the MMRC

• Identify all maternal deaths in Georgia
• Review maternal deaths that are/may be pregnancy-related
• Determine modifiable factors related to the death
• Develop non-punitive actionable recommendations
• Reduce maternal death
Case review criteria

Maternal Death

• Death must have occurred to a woman who was either pregnant at time of death or within one year

Pregnancy-Related Maternal Death

• Suicides and drug overdoses within six months
• Motor vehicle accidents within six months
• Intentional and unintentional injuries not routinely reviewed
Maternal Death

Pregnancy Related Mortality

Pregnancy Associated Mortality
Maternal death identification process

- Deaths Identified
  - Check Mark Death Certificate
  - Mandatory Reporting
  - Vital Records Linkage
MMRC Process

1. Death
2. Select cases for abstraction
3. Reviewed by Committee
4. Committee recommendations
5. Actionable items
6. Notification
Limitations on identification process

Identification of maternal deaths are complicated

- What happens if a mom was a resident of a different state at delivery?
- Do you capture deaths related to induced terminations?

Death certificates are not always complete and/or accurate

Fetal death certificates are not routinely completed
Findings from MMRC
Georgia 2012 Maternal Mortality
Maternal Mortality, Georgia 2012

- Pregnancy-Associated: N = 24
- Pregnancy-Related: N = 61

Total: N = 85
Maternal mortality by timing of death
Georgia, 2012

<table>
<thead>
<tr>
<th>Timing of Death</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>While Pregnant</td>
<td>17</td>
</tr>
<tr>
<td>1-42 days post-partum</td>
<td>16</td>
</tr>
<tr>
<td>43-365 days post-partum</td>
<td>52</td>
</tr>
</tbody>
</table>

- **Total**
- **Pregnancy-Associated**
- **Pregnancy-Related**
Maternal mortality by race
Georgia, 2012

- White
- Black
- Hispanic
- Other
Maternal mortality by age
Georgia, 2012

Frequency

- Total
- Pregnancy Associated
- Pregnancy Related

Less than 20 yrs old
20-24 yrs old
25-29 yrs old
30-34 yrs old
35+ yrs old

We Protect Lives.
Maternal mortality by education
Georgia, 2012

Frequency

Less than 12 years  HS  Some College  College  College+
Pregnancy Associated
Pregnancy Related
Total
Maternal mortality by marital status
Georgia and payor, 2012

- Married:
  - Pregnancy-Related: 10
  - Pregnancy-Associated: 22
- Single:
  - Pregnancy-Related: 14
  - Pregnancy-Associated: 37

- Medicaid:
  - Pregnancy-Related: 13
  - Pregnancy-Associated: 31
- Private:
  - Pregnancy-Related: 2
  - Pregnancy-Associated: 5
- Self Pay:
  - Pregnancy-Related: 0
  - Pregnancy-Associated: 0
- Other:
  - Pregnancy-Related: 0
  - Pregnancy-Associated: 13

We Protect Lives.
Maternal mortality by occupation: Georgia, 2012

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Pregnancy-Associated</th>
<th>Pregnancy-Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Administration</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Artist</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Customer Service</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Homemaker</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Labor</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Medical Professional</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Self-employed</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Student</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Teacher</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Unemployed</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>
Maternal mortality by mode of delivery: Georgia, 2012
N=68

<table>
<thead>
<tr>
<th>Mode of Delivery</th>
<th>Total</th>
<th>Pregnancy Associated</th>
<th>Pregnancy Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal</td>
<td>27</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Cesarean</td>
<td>37</td>
<td>26</td>
<td>11</td>
</tr>
</tbody>
</table>
Leading Causes of Maternal Mortality
Maternal mortality by cause of death: Worldwide

- Hemorrhage: 25%
- Infection: 15%
- Eclampsia: 13%
- Obstructed Labor: 7%
- Unsafe Abortion: 13%

Percentage of all pregnancy-related deaths
Maternal mortality by cause of death: United States

- Cardiovascular disease: 15%
- Infection: 14%
- Cardiomyopathy: 13%
- Hemorrhage: 12%
- Thrombotic pulmonary embolism: 12%
- Hypertensive disorder of pregnancy: 10%
- Cerebrovascular accident: 9%
- Amniotic fluid embolism: 6%
- Anesthesia complications: 5%
- Other causes: 1%

Percent of all pregnancy-related deaths
Maternal mortality by cause of death:

Georgia

- Cardiac: 21%
- Embolism: 17%
- Seizure disorder: 13%
- Hemorrhage: 8%
- Hypertension: 8%
- Drug overdose: 8%

Percent of all pregnancy related deaths
An In-Depth Review of Initially Identified Cases
Chronic Diseases Apparent During the Prenatal Period, Georgia 2012
N = 34

- Depression: 5
- Diabetes: 4
- Epilepsy: 6
- Hypertension: 10
- Sickle Cell: 2
- Other: 11
Maternal Mortality by pre-pregnancy weight: Georgia 2012 (N=17)
Georgia Maternal Mortality Health Promotion Initiatives
Chronic Disease & Pregnancy Awareness

http://youtu.be/K02elLJotaU
Cardiac Brochure

Cardiac Conditions and Pregnancy

Women diagnosed with cardiac conditions such as congenital heart defects, chronic high blood pressure and irregular heart rate have an increased risk for complications due to pregnancy, including death. Pregnancy increases the amount of blood circulating in the body and greatly increases the pressure put on the heart. Be sure to talk about delaying pregnancy until your chronic disease is under control.

Chronic Disease Poster

Chronic Diseases and Pregnancy

How do chronic diseases put my health at risk during pregnancy?

Risks to you
- Preeclampsia
- Eclampsia
- HELLP Syndrome
- Cardiomyopathy
- Gestational Diabetes

Risks to your baby
- Premature birth
- Low birth weight
- Cesarean delivery

Planning your pregnancy with both your cardiologist and your OB/GYN can decrease your risk of complications during and after pregnancy. All women should ask their doctor:

I want to get pregnant within the next year:
- Is my chronic disease controlled enough to conceive pregnancy?
- How can I motivate sue do not become pregnant until my chronic disease is controlled?
- Are the medicines I'm currently taking safe for pregnancy?

I do not want to get pregnant within the next year:
- Can you help me identify the best birth control method for me?
- Are there other steps I should be taking to remain as healthy as possible?
SCD Brochure

Sickle Cell and Pregnancy

- How can sickle cell put my health at risk during pregnancy?

<table>
<thead>
<tr>
<th>Risks to you</th>
<th>Risks to your baby</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Congestive heart failure</td>
<td>- Premature birth (born too soon)</td>
</tr>
<tr>
<td>- Kidney disease</td>
<td>- Low birth weight</td>
</tr>
<tr>
<td>- Anemia</td>
<td></td>
</tr>
<tr>
<td>- Increased number of infections (ex: UTI)</td>
<td></td>
</tr>
<tr>
<td>- Death</td>
<td></td>
</tr>
</tbody>
</table>

In some severe cases, these conditions can put the mother or baby at risk of death.

Planning your pregnancy with both your sickle cell doctor and your OB/GYN can decrease your risk of complications during and after pregnancy.

- All women should ask their doctor:
  - I want to get pregnant within the next year. Am I healthy enough to consider getting pregnant?
  - Are the medicines I'm currently taking safe for pregnancy?
  - Should I meet with a genetic counselor to discuss the risk of passing sickle cell to my child?
  - I do not want to get pregnant within the next year. Can you help me identify the best birth control method for me?
  - Are there other steps I should be taking so I can stay as healthy as possible?

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Diabetes Brochure

Diabetes and Pregnancy

Women diagnosed with diabetes are at an increased risk for complications due to pregnancy, including death. Pregnancy hormones can increase insulin resistance and may require additional medication to manage high blood sugar. Be sure to ask your doctor today about delaying pregnancy until your chronic disease is under control.
Georgia Maternal Mortality Gap
October: Domestic Violence Month
Prevent
Prevention Strategies

• Expansion of midwives
• Increase family planning
• Risk screening through prenatal care
  • Early detection of problems can lead to better preparation at birth
  • If no risks are found could provide a false sense of security
MMRC current action item

AMCHP Grant
• Every Mother’s Initiative grant ($30,000: 1 year)

Focused on risk factors
• Chronic diseases

Two arms
• Provider education
• Patient education
Protect
Maternal Mortality Law

SB 273 – Senator Burke

• Requires public health to establish a maternal mortality review committee
• Provide legislative findings
• Provide data
• Provide confidentiality and limited liability of reviews
Collective Impact
Collective Impact

• The risk factors associated with whether a woman lives or dies as a result of pregnancy are the same risk factors that are associated with if a baby lives or dies.

• Understand and address the role of social determinants on maternal death
  • Housing?
  • Education?
  • Finances?
How you can help?

Providers:
• Report maternal deaths
• Join our perinatal quality collaborative
• Every woman, every time

Public:
• Encourage healthy behaviors and lifestyles
• Encourage early and regular prenatal care
• End domestic violence
• Address mental health concerns
• Advocate for paid maternity leave
Food for thought

• What role does the father play in preventing maternal death?
• Social support decreases infant death, what about maternal death?
• What about the mom after the baby is born?
  – Program support is usually focused on baby
  – Family support is usually focused on baby
• How can we better focus on women who were recently pregnant, and not just mothers?
Pregnancy is SPECIAL, Let’s make it SAFE
~Safe Motherhood