AIM High: Reducing Harm with Safety Bundles

Lauren Nunally RNC-OB, BSN, MPH
GaPQC Core Team Member
Perinatal Quality Coordinator – Georgia OBGyn Society
WHO definition of health:

“Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”
Health Outcomes

This model reflects that determinants of health directly influence health outcomes.
FACT!

More American women are dying of pregnancy-related complications than any other developed country. Only in the U.S. has the rate of women who die been rising.
Maternal Mortality Is Rising in the U.S. As It Declines Elsewhere

Deaths per 100,000 live births

1990 | 2000 | 2015

U.S.A. (26.4)

U.K. (9.2)
Portugal (9)
Germany (9)
France (7.8)
Canada (7.3)
Netherlands (6.7)
Spain (5.6)
Australia (5.5)
Ireland (4.7)
Sweden (4.4)
Italy (4.2)
Denmark (4.2)
Finland (3.8)
• Rate increased since the 2016 Health of Women and Children Report. (*This is the most recent time that the report was created.)
More Facts

• The lifetime risk of maternal death is greater in the U.S. than in 40 other countries, including almost all other industrialized nations.

• Black women face a disproportionately high risk of dying from pregnancy-related conditions when compared to white women.
Yet Another Fact!

Georgia has one of the highest maternal mortality ratios in the nation.

Source: America’s Health Rankings Health of Women and Children Report released by United Health Foundation
Georgia Maternal Mortality Rate
2002-2012

Source: Georgia Vital Statistics
We Protect Lives.
### Georgia’s Pregnancy-Related Maternal Mortality Ratio

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
</tr>
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<tbody>
<tr>
<td>2001-2006</td>
<td>20.2 deaths/100,000 live births</td>
</tr>
<tr>
<td>2010</td>
<td>23.2 deaths/100,000 live births</td>
</tr>
<tr>
<td>2011</td>
<td>28.7 deaths/100,000 live births</td>
</tr>
<tr>
<td>2012</td>
<td>19.2 deaths/100,000 live births</td>
</tr>
</tbody>
</table>
Startling Facts!

• In Georgia, 58 hospitals do not operate labor and delivery units and half of Georgia counties do not have obstetric services
• Rural hospitals on the brink of closure will close labor and delivery units first
• Since 2012, 10 labor and delivery units have closed in Georgia
Alliance for Innovation on Maternal Health (AIM) Initiative

Purpose:
To reduce maternal deaths and severe maternal morbidity by engaging provider organizations, state-based public health systems, consumer groups, and other stakeholders within a national partnership to assist state-based teams in implementing evidence-based maternal safety bundles.
Alliance for Innovation on Maternal Health (AIM) Initiative

Goal

• To eliminate *preventable* Maternal Mortality and Severe Morbidity in EVERY U.S. Birth facility
The Impact of Safety Bundles in Georgia

• The maternal death rate is growing nationally, but GA is more than three times the national rate.

• Maternal deaths in Georgia increased from 35 per 100,000 live births in 2013 to 46.2 per 100,000 live births in 2015.

Maternal Mortality

• Defined as all deaths occurring to women while pregnant or within one year of giving birth.

• All maternal deaths are reviewed to determine whether they are pregnancy associated or pregnancy related.

• Pregnancy associated deaths are those occurring within the specified time frame but are not related to the current or recent pregnancy (car accident).

• Pregnancy related deaths are from any cause related to or aggravated by pregnancy or its management.

Source: World Health Organization, 2018
Maternal Mortality Review Process

1. Maternal Death
2. Check Mark on Death Certificate
   - Identification
   - ICD-10-CM
   - Data Linkages
3. Cases Selected for Abstraction
4. Review by Committee
5. Committee Recommendations
6. Actionable Items
Georgia MMRC Findings

- Pregnancy-related deaths: 25 (2012) vs. 32 (2013)
## Georgia MMRC Findings

<table>
<thead>
<tr>
<th>Demographic Factors</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent black race</td>
<td>68%</td>
<td>66%</td>
</tr>
<tr>
<td>Percent &lt; 30 years old</td>
<td>64%</td>
<td>50%</td>
</tr>
<tr>
<td>Percent with high school education or less</td>
<td>76%</td>
<td>84%</td>
</tr>
<tr>
<td>Percent covered by Medicaid</td>
<td>N/A</td>
<td>50% (25% unknown)</td>
</tr>
<tr>
<td>Percent of deaths that occurred during pregnancy or within 42 days of delivery</td>
<td>80%</td>
<td>69%</td>
</tr>
</tbody>
</table>
## Leading Causes of Pregnancy Related Deaths

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemorrhage</td>
<td>28%</td>
<td>Cardiomyopathy  25%</td>
</tr>
<tr>
<td>Hypertension</td>
<td>16%</td>
<td>Hemorrhage 16%</td>
</tr>
<tr>
<td>Cardiomyopathy</td>
<td>16%</td>
<td>Embolism 16%</td>
</tr>
<tr>
<td>Embolism</td>
<td>16%</td>
<td>Cardiovascular and Coronary Conditions 6%</td>
</tr>
</tbody>
</table>
Maternal Deaths: A Closer Look

Figure 5. Leading Underlying Causes of Pregnancy-Related Deaths, by Race-Ethnicity

- Hemorrhage
  - non-Hispanic Black: 10.5%
  - non-Hispanic White: 14.4%
- Cardiovascular and Coronary Conditions
  - non-Hispanic Black: 12.8%
  - non-Hispanic White: 15.5%
- Infection
  - non-Hispanic Black: 8.1%
  - non-Hispanic White: 13.4%
- Cardiomyopathy
  - non-Hispanic Black: 10.3%
  - non-Hispanic White: 14.0%
- Embolism
  - non-Hispanic Black: 5.2%
  - non-Hispanic White: 9.3%
- Preeclampsia and Eclampsia
  - non-Hispanic Black: 5.2%
  - non-Hispanic White: 11.6%
- Mental Health Conditions
  - non-Hispanic Black: 1.2%
  - non-Hispanic White: 11.3%

Source: Report from Nine Maternal Mortality Review Committees, 2018
Racial Disparities

Between 2001-2011 the Georgia pregnancy-related maternal mortality ratio was 4 x higher in Black, non-Hispanic women than in White, non-Hispanic women

- 39.1 deaths/100,000 live births for Black, non-Hispanic women
- 9.6 deaths/100,000 live births for White, non-Hispanic women

Is This Really A Concern?

• According to the 2016 U.S Census, the “White” population makes up 77% of the U.S population

However.....

• Racial and ethnic minorities are expected to comprise more than one-half of the US population by 2050

• Women of color were overrepresented among deliveries involving severe maternal morbidity, as compared with white women
Drivers of Health Disparities

Occurs at 3 levels:

• Patient
• Provider
• System
Recommendations

• Make reducing racial and ethnic disparities a priority
• Recognize and acknowledging racial bias and stereotypes
• Harvard Race Implicit Association (IAT) Test
  https://implicit.harvard.edu/implicit/user/agg/blindspot/indexrk.htm
Recommendations

• Raising awareness of the prevalence and effects of racial and ethnic disparities
• Recognition of provider bias
• A “zero tolerance” policy for racial bias and disparate care
• Culturally sensitive education
Recommendations

• Collaboration with local public health authorities to address disparities
• Advocate for local, state, and national policies to improve women’s health care and reduce disparities.

Medical Providers

• Equitable health care requires a multidisciplinary approach.
• Standardization of obstetric care is proven to lower maternal mortality rates.
• Avoiding delays,
• Consistent approach to managing complications and emergencies
• Appropriate care and reduce severe morbidities

Medical Providers (cont’d)

• An understanding of culturally derived mistrust of the health care system

• Be aware of the existence of and contributors to health disparities and be willing to work toward their elimination.
Nursing Staff

Code of Ethics - Principles

• Nonmaleficence
  – Do no harm

• Beneficence
  – preventing harm
  – removing harm
  – promoting good

Ref: ANA The Code of Ethics for Nurses with Interpretive Statements
Nursing Staff (cont’d)

• Self awareness of personal bias, unconscious or implicit bias
• Education on diversity, healthcare disparities, and cultural competence
• Work toward a goal of respectful and consistent care

Source: Many Nurses Lack Knowledge Of Health Risks To Mothers After Childbirth
Perinatal Quality Collaboratives

- Perinatal Quality Collaboratives (PQCs), are state or multi-state networks of teams working to improve the quality of care for mothers and babies through evidence based quality improvement initiatives.

- The CDC’s Division of Reproductive Health is currently providing support for state-based PQCs in Colorado, Delaware, Florida, Georgia, Illinois, Louisiana, Massachusetts, Minnesota, Mississippi, New Jersey, New York, Oregon, and Wisconsin.
GaPQC: Background

• Launched in November 2012 by a group of neonatologists, obstetricians, midwives, public health professionals and other stakeholders.

• The purpose of the GaPQC is to identify and implement quality improvement (QI) strategies to improve maternal and neonatal care and outcomes in Georgia.

• Past initiatives include screening for Critical Congenital Heart Disease (CCHD) and increasing post-partum long acting reversible contraception (LARC) insertions.
GaPQC Structure

Leadership Committee
Subcommittee Chairs
GOGS  GA-AAP  GHA  DPH

Subcommittees
Maternal  Neonatal  Data  Health Equity  Operations

Advisory Committee
- ACNM
- ACOG
- AWHONN
- Baby Luv
- BMMA
- DBHDD
- DCH
- DPH
- Emory MSACD
- GA-AAP
- GHA
- GOGS
- HMHB
- MMRC
- MOD
- Morehouse School of Medicine
- PSI
- Preeclampsia Foundation
- Birthing Hospitals
- CMOs
- Maternal Fetal Medicine
- Neonatologists
- Primary Care
- Physicians/Midwives
- Nurses/Doula
- Regional Perinatal Centers
Alliance for Innovation on Maternal Health (AIM)

• AIM is a national data-driven maternal safety and quality improvement initiative based on proven implementation approaches to improving maternal safety and outcomes in the U.S.

• National partnership of organizations with the mission to reduce severe maternal morbidity by 100,000 events and maternal mortality by 1000 deaths by 2018.

• Data submitted from four states that implemented the hemorrhage and hypertension bundles in 2015 showed a decrease ranging from 8.3 to 22 percent in maternal morbidity.

American College of Obstetricians and Gynecologists, 2014
Maternal Safety Bundles

Why Safety Bundles?

What are Safety Bundles?

• Hospital-based quality improvement
• Tools to improve outcomes of hemorrhage or severe hypertension
• Set of hospital-based protocols, policies, practice changes, drills, and system of data tracking
• Represent national consensus

Source: Council on Patient Safety in Women’s Health Care
AIM Bundle Components

**Readiness**
- Checklists
- Response teams
- Equipment
- Education

**Recognition and Prevention**
- Assessment
- Measurement
- Early Recognition Systems

**Response**
- Emergency management plan
- Support plan

**Reporting/Systems Learning**
- Debriefing
- Multidisciplinary review
- Quality Improvement Committee

American College of Obstetricians and Gynecologists, 2015.
GaPQC – AIM Safety Bundles
Participation

• Initial goal to enroll 10 hospitals per year to the AIM bundles
• Staff will be provided with technical assistance, quality improvement tools, and educational resources.
• Outcome data will be analyzed and shared with partnering hospitals to measure the impact of bundle implementation.
• Facilities are not charged a fee to participate!
Hospital Participation Update

As of September 1, 2018

• 48 participating hospitals
  – 42 AIM hospitals
  – 12 VON hospitals

• % of GA births covered – 64% (84K births)

• Total # of birthing hospitals in GA – 75
Current Initiatives - Neonatal

- 2017- Joined VON as a statewide collaborative with 8 participating hospitals
  - 2018 - Continued work with 12 participating hospitals
  - 2019 - Sustain mode

- NAS Needs Assessment Survey deployed May 2018
Current Initiatives - Maternal

CY – 2018

- AIM OB HMG Cohort #1
- AIM OB HMG Cohort #2
MOVING FROM HERE... TO THERE

• Start small - with the most important first
  – crash cart
  – hemorrhage cart
  – protocols
  – staff education
• Risk Assessments
• MEWS
• QBL, CBL practices
• Massive transfusion protocols
• EHR Integration
But we’ve done this before…

• Implementing initiatives is common place in hospital, but do you know the effectiveness?

• The data collection and analysis process utilized in the AIM bundles facilitates an understanding of the effectiveness of initiatives and provides factual data
Implementing the Bundles

• Should not be managed as a task list

• Requires planning, strategies and buy-in by stakeholders
  – RN’s, MD’s, other disciplines (anesthesia, pharmacy, blood bank, materials management)

• A change of culture
CHALLENGES

• Staff buy in
• Change processes
• Understanding what, why, how and who
• QI/Data collection
• Resources to implement
  – Human
  – Time
  – Knowledge/expertise
Support Systems

• Many facilities are already implementing several of these standards
• Standardization of processes
• Sharing/shamelessly stealing best practice
• Staff involvement
• Patient education
GaPQC Ongoing Support

• Hospital staff are provided with technical assistance, quality improvement tools, and educational resources.
  – Monthly learning webinars
  – Monthly technical calls to champions in individual hospitals

• Outcome data is analyzed and shared with partnering hospitals to measure the impact of bundle implementation.

• AIM National Team Support

• AIM Partner States
Data Analysis
Baseline Survey

**Process Measures**
- Unit Drills
- Provider Education
- Nurse Education
- Risk Assessment
- Quantified Blood Loss

**Structure Measures**
- Patient, Family and Staff Support
- Debriefs
- Multi-disciplinary Case Review
- Hemorrhage Cart
- Unit Policy and Procedure
- EHR Integration
Future Initiatives

CY - 2019
• AIM OB HMG Cohort #3
• AIM HTN in Pregnancy Cohort #1
References


References


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SMFM Special Report: Putting the “M” back in MFM: Addressing education about disparities in maternal outcomes and care American Journal of Obstetrics and Gynecology, 218, (2), 2018,

United States Census Bureau https://www.census.gov/quickfacts/fact/table/US/PST045217

World Health Organization 2018 http://www.who.int/news-room/fact-sheets/detail/maternal-mortality