National Partnership for Maternal Safety
National Maternal Mortality and Morbidity Initiatives

Kate Menard MD MPH

March 16, 2015
Maternal Mortality Ratios in Selected Countries over the Past 30 Years

Hogan et al, Lancet 2010; 375: 1609–23
U.S. Maternal Mortality

Maternal Deaths per 100,000 Live Births

- Total
- White
- Black


- 16.1
- 13.3
- 8.2
Where Is the “M” in Maternal–Fetal Medicine?

Mary E. D’Alton, MD

In contrast to the generally encouraging trend regarding global maternal mortality, there has been an apparent increase in the maternal mortality ratio in the United States. Although maternal death remains a relatively rare adverse event in this country, programs to reduce maternal mortality also will result in a reduction in maternal morbidity, which is a far more prevalent problem. Progress in the field of maternal–fetal medicine over the past several decades has been largely attributable to improvements in fetal and neonatal medicine. We need to develop an organized, national approach focused on reducing maternal mortality and morbidity. The goal will be to outline a specific plan for clinical, educational, and research initiatives to put the “M” back in maternal–fetal medicine.

(Obstet Gynecol 2010;116:1401–4)

decreasing maternal mortality. More recently, reduction in maternal mortality became one of the eight Millennium Development Goals of the United Nations.²

There has been good news this year in the progress toward the Millennium Development Goals of the United Nations, which targets a reduction in the maternal mortality ratio by 75% from 1990 to 2015. In a comprehensive analysis funded by the Bill and Melinda Gates Foundation, estimates of global maternal deaths have declined from 526,300 in 1980 to 342,900 in 2008.³ Maternal mortality is difficult to measure, particularly in developing countries; thus, there are wide uncertainty intervals around these numbers. Nevertheless, these new estimates provide hope that interventions to reduce fertility rates, increase income and education, and expand access to skilled birthing attendants,


[Graph showing trends in severe maternal morbidity rates from 1998-2011]
• New leadership
• Broad Vision
• Maternal Health Initiative
• The M in MCHB
• Emphasis on Life Course Perspective
Professional Societies

Putting the “M” back in MFM

Maternal Mortality Review

Postpartum Hemorrhage Project
Implementation: Merck for Mothers

- Partners in the US: (BOLD=large scale implementation)
  - American Congress of Obstetricians and Gynecologists, District II
  - Association of Maternal and Child Health Programs
  - Association of Women’s Health, Obstetric and Neonatal Nurses
  - Baltimore Healthy Start
  - California Maternal Quality Care Collaborative
  - Camden Coalition of Healthcare Providers
  - Maternity Care Coalition
  - Northern Manhattan Perinatal Partnership

- Has made an initial commitment of $6 million to programs working to improve maternal health

- Focused on regions where rates of maternal death and severe complications are disproportionately high
Public Health Initiatives

CDC: Maternal Mortality Initiative for strengthening existing or guiding new MM Review committees

COIIN (Collaborative Improvement and Innovation Network) to Reduce Infant Mortality Emphasis on Life Course Perspective

AMCHP Every Mother Initiative

Merck for Mothers MMR Action Learning Collaborative

Enabling and enhancing state MM and SMM reviews
AMCHP’s Every Mother Initiative

Cohort 1

Cohort 2
Perinatal Quality Collaboratives

The “M” on Perinatal
National Maternal Health Initiative:
Strategies to Improve Maternal Health And Safety
May 5th 2013
New Orleans, LA
Great Confluence of Maternal Safety Activity Coming Together in New Orleans

ACOG/CDC
Maternal Mortality Action Committee

SMFM:
M back in MFM group

State Quality Improvement Collaboratives

AWHONN

HRSA: MCHB

CDC

AMCHP

Examples of Current Large-scale Projects Addressing Maternal Mortality & SM
What is the National Partnership for Maternal Safety?

A converging of initiatives and leadership toward one goal:
Decrease maternal morbidity and mortality in the United States
The National Partnership for Maternal Safety

Mary E. D’Alton, MD, Elliott K. Main, MD, M. Kathryn Menard, MD, and Barbara S. Levy, MD

Recognition of the need to reduce maternal mortality and morbidity in the United States has led to the creation of the National Partnership for Maternal Safety. This collaborative, broad-based initiative will begin with three priority bundles for the most common preventable causes of maternal death and severe morbidity: obstetric hemorrhage, severe hypertension in pregnancy, and peripartum versus thromboembolism. In addition, three unit-improvement bundles for obstetric services were identified: a structured approach for the recognition of early warning signs and symptoms, structured internal case reviews to identify systems improvement opportunities, and support tools for patients, families, and staff that experience an adverse outcome. This article details the formation of the National Partnership for Maternal Safety and introduces the initial priorities.

A sentinel alert entitled “Preventing Maternal Death” proposed various initiatives to decrease maternal mortality including case reporting and review, health care provider education, team training and drills, and thromboembolic prophylaxis.

During the past 2 years, several organizations, including the American College of Obstetricians and Gynecologists (the College), the Centers for Disease Control and Prevention, the Society for Maternal-Fetal Medicine, the Health Resources and Services Administration, the Association of Women’s Health, Obstetric, and Neonatal Nurses, and the American College of Nurse-Midwives have collaborated to identify priorities for maternal safety. Universal recognition of the need for action to reduce U.S. maternal mortality and morbidity led to the creation of the National Partnership for Maternal Safety. This report outlines a national initiative for every birthing facility in the United States to have a safety program in place for the most common preventable causes of maternal death and severe morbidity.

MATERNAL MORTALITY SURVEILLANCE IN THE UNITED STATES

Over the past 20 years, the U.S. pregnancy-associated mortality ratio has doubled to 11.5 per 100,000. Despite a decline in global maternal mortality, there has been an apparent increase in the maternal mortality ratio and the rate of severe maternal morbidity in the United States. This increase has initiated multiple recent calls to action for an organized national approach to decrease maternal mortality and morbidity. In 2010, the Joint Commission issued a Sentinel Alert entitled “Preventing Maternal Death” and proposed various initiatives to decrease maternal mortality including case reporting and review, health care provider education, team training and drills, and thromboembolic prophylaxis.

This report outlines a national initiative for every birthing facility in the United States to have a safety program in place for the most common preventable causes of maternal death and severe morbidity.
ACOG-CDC Work Group

- ACOG-CDC Maternal Mortality/Severe Morbidity Action Meeting occurred in Atlanta, November 2012
- Participants identified key priorities
  - 6 multidisciplinary working groups were formed
  - Prelim products presented in New Orleans 2013

### Core Patient Safety Bundles

<table>
<thead>
<tr>
<th>Bundle</th>
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<tbody>
<tr>
<td>Obstetric Hemorrhage</td>
</tr>
<tr>
<td>Severe Hypertension in Pregnancy</td>
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<tr>
<td>Venous Thromboembolism Prevention in Pregnancy</td>
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</tbody>
</table>

### Supplemental Patient Safety Bundles

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Maternal Early Warning Criteria</td>
</tr>
<tr>
<td>Facility Review</td>
</tr>
<tr>
<td>Family and Staff Support</td>
</tr>
</tbody>
</table>
### Maternal Mortality and Severe Morbidity

Approximate distributions, compiled from multiple studies

<table>
<thead>
<tr>
<th>Cause</th>
<th>Mortality (1-2 per 10,000)</th>
<th>ICU Admit (1-2 per 1,000)</th>
<th>Severe Morbid (1-2 per 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTE and AFE</td>
<td>15%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Infection</td>
<td>10%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Hemorrhage</td>
<td>15%</td>
<td>35%</td>
<td>55%</td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>15%</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Cardiac Disease</td>
<td>25%</td>
<td>15%</td>
<td>5%</td>
</tr>
</tbody>
</table>
National Partnership for Maternal Safety: 3 Maternal Safety Bundles in 3 Years

“What every birthing facility in the US should have…”

- Obstetric Hemorrhage
- Preeclampsia/Hypertension
- Prevention of VTE in Pregnancy

Note: The bundles represent outlines of highly recommended protocols and materials important to safe care BUT the specific contents and protocols should be individualized to meet local capabilities. Example materials are available from perinatal collaboratives and other organizations.
Creating the Collaborative for Change

Maternal Safety

- Obstetricians (ACOG/SMFM/ACOOG)
- Nurses (AWHONN)
- Midwives (ACNM)
- Nurse Practitioners (NPWH)
- Birthing Centers (AABC)
- Hospitals (AHA, VHA)
- Blood Banks (AABC)
- OB Anesthesia (SOAP, ASA)
- Family Practice (AAFP)
- Perinatal Quality Collaboratives (many)
- Federal (MCH-B, CDC, CMS/CMMI)
- State (AMCHP, ASTHO, MCH)

Safety, Credentials (TJC)

Safe health care for every woman

COUNCIL ON PATIENT SAFETY IN WOMEN’S HEALTH CARE
Obstetric Hemorrhage Patient Safety Bundle

Approved by Council on Patient Safety and posted on website: July 2014

Awaiting final editorial approval for co-publishing:
Obstet Gynecol (ACOG)
JOGN (AWHONN)
Anes Analg (SOAP)
J Midwifery (ACNM)
Am Fam Phys (AAFP)
## Current Status of Bundles

### Status as of Feb 2015

<table>
<thead>
<tr>
<th>Core Patient Safety Bundles</th>
<th>Council</th>
<th>Published</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstetric Hemorrhage</td>
<td>July 2014</td>
<td>Final Submitted</td>
</tr>
<tr>
<td>Severe Hypertension in Pregnancy</td>
<td>Feb 2015</td>
<td>TBS Apr 2015</td>
</tr>
<tr>
<td>Venous Thromboembolism Prevention in Pregnancy</td>
<td>Feb 2015</td>
<td>TBS Apr 2015</td>
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<table>
<thead>
<tr>
<th>Supplemental Patient Safety Bundles</th>
<th>Status</th>
<th>Published</th>
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</thead>
<tbody>
<tr>
<td>Maternal Early Warning Criteria</td>
<td>Complete</td>
<td>Oct 2014</td>
</tr>
<tr>
<td>Facility Review</td>
<td>Complete</td>
<td>May 2014</td>
</tr>
<tr>
<td>Family and Staff Support</td>
<td>In progress</td>
<td>TBS Apr 2015</td>
</tr>
</tbody>
</table>
# National Partnership Publications

<table>
<thead>
<tr>
<th>Title</th>
<th>Journal/Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putting the &quot;M&quot; back in maternal-fetal medicine</td>
<td>Am J Obstet Gynecol. 2013 Jun</td>
</tr>
<tr>
<td>Facility-based identification of women with severe maternal morbidity: it is time to start</td>
<td>Obstet Gynecol. 2014 May</td>
</tr>
<tr>
<td>The maternal early warning criteria: a proposal from the national partnership for maternal safety.</td>
<td>Obstet Gynecol. 2014 Oct</td>
</tr>
<tr>
<td>Obstetric Care Consensus: Levels of Maternal Care</td>
<td>Obstet Gynecol /Am J Obstet Gynecol. 2015 Feb</td>
</tr>
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</table>
Revision of Sentinel Event Definition for Obstetrics: Jan 2015

Added cases of severe temporary harm and for OB defined as Severe Maternal Morbidity....
1. Transfusion of ≥4 units of packed red cells
2. Admission of the mother to an ICU

• BUT: excluded cases as the result of the natural course of the underlying condition (eg transfusions for previas)
• ALL cases should go to a multidisciplinary systems review committee (not peer review) for initial assessment

The Joint Commission. Comprehensive Accreditation Manual for Hospitals, Update 2, January 2015: Sentinel Events: SE-1. Also see the ACOG/TJC clarification. Available at: http://www.jointcommission.org/assets/1/6/CAMH_24_SE_all_CURRENT.pdf
Maternal Mortality Rate, California and United States; 1999-2010

SOURCE: State of California, Department of Public Health, California Birth and Death Statistical Master Files, 1999-2010. Maternal mortality for California (deaths ≤ 42 days postpartum) was calculated using ICD-10 cause of death classification (codes A34, O00-O95,O98-O99) for 1999-2010. United States data and HP2020 Objective were calculated using the same methods. U.S. maternal mortality rates are published by the National Center for Health Statistics (NCHS) through 2007 only. Rates for 2008-2010 were calculated using NCHS Final Birth Data (denominator) and CDC Wonder Online Database for maternal deaths (numerator). Accessed at http://wonder.cdc.gov/ucd-icd10.html on Apr 17, 2013 8:00:39 PM. Produced by California Department of Public Health, Center for Family Health, Maternal, Child and Adolescent Health Division, April, 2013.
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Provider Contributing Factors in Maternal Deaths (California)

From detailed chart reviews of maternal deaths
(CA-Pregnancy Associated Mortality Review Committee; CDPH-MCAH)

Comprehensive Maternal Hemorrhage Protocols Reduce the Use of Blood Products

<table>
<thead>
<tr>
<th></th>
<th>BEFORE Intro. (2 mos)</th>
<th>5 mos AFTER Intro. (2 mos)</th>
<th>10 mos AFTER Intro. (2 mos)</th>
<th>Difference (BEFORE vs. 10mos AFTER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Deliveries</td>
<td>10,433</td>
<td>10,457</td>
<td>11,169</td>
<td>+7%</td>
</tr>
<tr>
<td>Stage II Hemorrhage (per 1,000 births)</td>
<td>7.0</td>
<td>9.5</td>
<td>9.6</td>
<td>+37%</td>
</tr>
<tr>
<td>Stage III Hemorrhage (per 1,000 births)</td>
<td>2.7</td>
<td>3.1</td>
<td>4.8</td>
<td>+77%</td>
</tr>
<tr>
<td>PRBC (N)</td>
<td>232</td>
<td>189</td>
<td>197</td>
<td>-15% (p=0.02)</td>
</tr>
<tr>
<td>Total Blood Prod (includes coags) (N)</td>
<td>375</td>
<td>354</td>
<td>297</td>
<td>-25% (p&lt;0.01)</td>
</tr>
<tr>
<td>TBP per 1,000 births</td>
<td>35.9</td>
<td>33.9</td>
<td>26.6</td>
<td>-27% (p&lt;0.01)</td>
</tr>
</tbody>
</table>

Shields et al AJOG 2014 (29 hospitals, Dignity Health)
Consensus Guidelines

Urgent development of national management guidelines:

• Hypertensive disorders in pregnancy
• Postpartum hemorrhage
• Prevention of venous thromboembolism
• Diagnosis and management of placenta accreta
• Management of the obese obstetrical patient
• Management of cardiac disease in pregnancy

Safe Prevention of the Primary Cesarean Delivery
Levels of Maternal Care

Abstract: In the 1970s, studies demonstrated that timely access to risk-appropriate neonatal and obstetric care could reduce perinatal mortality. Since the publication of the Toward Improving the Outcome of Pregnancy report, more than three decades ago, the conceptual framework of regionalization of care of the woman and the newborn has been gradually separated with recent focus almost entirely on the newborn. In this current document, maternal care refers to all aspects of antepartum, intrapartum, and postpartum care of the pregnant woman. The proposed classification system for levels of maternal care pertains to birth centers, basic care (level I), specialty care (level II), subspecialty care (level III), and regional perinatal health care centers (level IV). The goal of regionalized maternal care is for pregnant women at high risk to receive care in facilities that are prepared to provide the required level of specialized care, thereby reducing maternal morbidity and mortality in the United States.
Levels of Maternal Care (LOMC)

Uniform designations of LOMC that are complimentary but distinct from levels of neonatal care
First ever ACOG/SMFM guidance that establishes levels of care specific for the pregnant woman
Additional endorsement and support from AABC, ACNM, AWHONN, Commission for the Accreditation of Birth Centers, AAP, ASA, SOAP

Emphasizes role of Level III/IV (Regional) Centers to support education and quality improvement among their referring facilities