Thank you for your interest in today’s program, *Moving the Needle on Maternal Health: Updates on Federal and State Initiatives.*

The program will begin at approximately 3:00pm ET.

Audio will be available through your computer speakers, or you may dial in to listen to the event:

Dial: **1-877-407-9036**

*(Note: Your line will be muted upon entry and you will hear hold music until the program starts.)*
DataSpeak

Moving the Needle on Maternal Health: Updates on Federal and State Initiatives

December 20, 2016
Today’s Presenters

- **William Callaghan, MD, MPH**, Senior Scientist in the Office of Epidemiology and Research at MCHB, who will highlight how to access and use the Federally Available Data (FAD) Resource Document with a document tutorial and several examples of possible uses and data analyses.

- **Elliot Main, MD**, Medical Director of the California Maternal Quality Care Collaborative, will present on how the state of California addressed their maternal mortality rate and achieved a significant reduction in maternal deaths through quality improvement.

- **Kimberly Sherman, MPH**, Maternal and Women’s Health Lead for the Division of Healthy Start and Perinatal Services at MCHB, will provide an overview of HRSA’s maternal and women’s health initiatives, highlighting the Women’s Preventive Services Initiative and the Alliance for Innovation on Maternal Health, and discuss how maternal health leaders on the state and community levels can collaborate on these activities.
Previous Events

Click here to access archives:

2016 Series:

- Utilizing the Title V Information System Data and the Federally Available Data Resource Document
- Disparities in the Health and Well-Being of Children and Youth in Rural Areas of the United States
How To Ask A Question

• To ask a question on the Web:
  – Enter your question in the field at the bottom of the “QUESTIONS” box at the bottom of your screen and hit enter. Your question will be sent directly to the moderator.
Accounting for Maternal Mortality and Severe Morbidity in the United States

William M. Callaghan, MD, MPH
Chief, Maternal and Infant Health Branch
Division of Reproductive Health
Centers for Disease Control and Prevention
Overview

• Burden of maternal mortality
  – Why is this so hard to count?
    • Vital Statistics
    • Pregnancy-related Mortality

• Model for population-based severe maternal morbidity

• Model for hospital-based severe maternal morbidity
Vital Statistics
MMR Due to Hemorrhage, Hypertension and Embolisms, 1999-2014

National Vital Statistics System; CDC WONDER
MMR due to other specified pregnancy related conditions (O26.8), 1999-2014

Deaths per 100,000 births

National Vital Statistics System; CDC WONDER
MMR due to other specified diseases and conditions complicating pregnancy, childbirth and the puerperium (O99.8), 1999-2014

National Vital Statistics System; CDC WONDER
Adjusted MMR after removing O26.8 and O99.8, 1999-2014
Pregnancy-related Mortality (PMSS)
Pregnancy-related Mortality, 1999-2013

http://www.cdc.gov/reproductivehealth/maternalinfanthealth/pmss.html

Pregnancy Mortality Surveillance System

Maternal Morbidity
Morbidity: The Problem

- Maternal morbidity is difficult to define
  - Broad range of complications and conditions
  - Broad range of severity

- Maternal morbidity cannot be captured by a defined set of metrics
  - We need to start somewhere
<table>
<thead>
<tr>
<th>Maternal morbidity</th>
<th>ICD-9-CM</th>
<th>Codes</th>
<th>Diagnosi code</th>
<th>Procedure code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute renal failure</td>
<td>584, 669.3</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardiac arrest/ventricular fibrillation</td>
<td>427.41, 427.42, 427.5</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart failure during procedure or surgery</td>
<td>669.4x, 997.1</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shock</td>
<td>669.1, 785.5x, 995.0, 995.4, 998.0</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sepsis</td>
<td>038.0-038.9, 995.91, 995.92</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disseminated intravascular coagulation</td>
<td>286.6, 286.9, 666.3</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amniotic fluid embolism</td>
<td>673.1</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrombotic embolism</td>
<td>415.1x, 673.0, 673.2, 673.3, 673.8</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Puerperal cerebrovascular disorders</td>
<td>430, 431, 432.x, 433.x, 434.x, 436, 437.x, 671.5, 674.0, 997.2, 999.2</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe anesthesia complications</td>
<td>668.0, 668.1, 668.2</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulmonary edema</td>
<td>428.1, 518.4</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adult respiratory distress syndrome</td>
<td>518.5, 518.81, 518.82, 518.84, 799.1</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute myocardial infarction</td>
<td>410.xx</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eclampsia</td>
<td>642.6x</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>99.00-99.09</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hysterectomy</td>
<td>68.3-68.9</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilation</td>
<td>93.90, 96.01-96.05, 96.7x</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sickle cell anemia with crisis</td>
<td>282.62, 282.64, 282.69</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intracranial injuries</td>
<td>800.xx, 801.xx, 803.xx, 804.xx, 851.xx-854.xx</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal injuries of thorax, abdomen, and pelvis</td>
<td>800.xx-809.xx</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aneurysm</td>
<td>441.x</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations on heart and pericardium</td>
<td>35.xx, 36.xx, 37.xx, 39.xx</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cardio monitoring</td>
<td>89.6x</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temporary tracheostomy</td>
<td>31.1</td>
<td>×</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conversion of cardiac rhythm</td>
<td>99.6x</td>
<td>×</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

http://www.cdc.gov/reproductivehealth/maternalinfanthealth/severematernalmorbidity.html
Challenges for Population-based Surveillance

• **Validation:** Do codes really capture what we want?
  – Transfusion is the predominant indicator
  – Some state inpatient databases capture number of units (e.g. Mhyre et al. *Obstet Gynecol* 2013;122:1288-94)

• **ICD-10:** 68,000 codes compares to 13,000 in ICD-9
  – Very tough to map directly
  – e.g. one code for transfusion in ICD-9 but potentially 160 codes in ICD-10

Current Commentary

Facility-Based Identification of Women With Severe Maternal Morbidity

*It Is Time to Start*

William M. Callaghan, MD, MPH, William A. Grobman, MD, MBA, Sarah J. Kilpatrick, MD, PhD, Elliott K. Main, MD, and Mary D’Alton, MD

- **Facility surveillance AND REVIEW:**
  - Transfusion ≥4 units
  - ICU admission

*Obstet Gynecol* 2014;123:978-81
Alignment

- The “M” in MFM
- National Partnership to Eliminate Preventable Maternal Mortality
  - CDC
  - AMCHP
  - Support: Merck for Mothers
- Alliance for Innovation in Maternal Health (AIM)

http://www.safehealthcareforeverywoman.org/maternal-safety.html
Thank You
wgc0@cdc.gov

For more information please contact Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov    Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Working Together to Improve Women’s Health

December 20, 2016
Maternal Health Data Speak

Kimberly Sherman
HRSA/MCHB
MCHB’s National Maternal Health Strategy

Our Goal:
To promote coordination and collaboration within HRSA, across HHS agencies, and with professional and private organizations to improve women’s and maternal health.

Our Priorities:
- Improving women’s health before, during, and after pregnancy
- Improving systems of maternity care, including clinical and public health systems
- Improving the quality and safety of maternity care
- Improving public awareness and education
- Improving research and surveillance
Select MCHB Initiatives

Community Level

• National Healthy Start Program
• Maternal, Infant & Early Childhood Home Visiting Program

State/National Level

• Alliance in Innovation in Maternal health (AIM)
• Women’s Preventive Services Guidelines
• Infant Mortality Collaborative Innovation & Improvement Network (IM CollIN)
<table>
<thead>
<tr>
<th>Award Recipient</th>
<th>ACOG Council on Patient Safety in Women’s Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Period</td>
<td>2014 – 2018</td>
</tr>
<tr>
<td>Goal</td>
<td>Coalition Maternal Health Safety Bundles State Partnerships</td>
</tr>
</tbody>
</table>
AIM

Purpose: To improve the quality and safety of maternity care practices across 8 states with high rates of maternal mortality and severe maternal morbidity.

**AIM Objectives**

- Develop a partnership of national stakeholders
- Complete the Maternal Health Safety Bundles
- Facilitate Widespread Adoption of the Bundles
AIM Strategies

1. Promote consistent message through partner organizations
2. Engage birth facilities through hospital and birth center associations and risk management organizations
3. Engage state public health and perinatal associations
4. Provide tools and technical assistance for self-evaluation and quality improvement planning
5. Provide step by step implementation training
6. Provide real time data to promote quality improvement initiatives.
What’s in a safety bundle?

**Readiness**
Is your team ready for an emergency?

**Recognition**
How does your team recognize patients at risk?

**Response**
What is your team’s response to an emergency?

**Reporting**
How does your team improve and learn?
## Maternal Health Safety Bundles

### Currently Available
- Obstetric Hemorrhage
- Severe Hypertension in Pregnancy
- Maternal VTE Prevention
- Patient, Family, and Staff Support After a Severe Event
- Safe Reduction in Primary Cesarean Births

### In Development
- Reducing Disparities in Maternity Care
- Postpartum Visit/Interconception Care
- New --- October 2016 Obstetric Care of Opioid Dependent Women
Bundle Implementation

AIM State Teams

• Focus on states with high MM/SMM
• Teams involve public health, hospitals, providers, payers
• Enrollment process

Hospital Systems

• Organizations engaged with birth hospitals for quality improvement
• Have capacity to collect and transmit hospital data
Current Activities

**AIM States**
- Oklahoma
- Maryland
- Illinois
- Florida
- Michigan
- Mississippi
- Louisiana
- New Jersey

**Project Expansion**
- North Carolina
- Utah
- California
- Northern Mariana Islands
- Premier, Inc.
- National Perinatal Information Center
- Trinity Health Care
- AIM Malawi

AIM Implementation: 563 Birthing Facilities
To Learn More...

http://www.safehealthcareforeverywoman.org/aim.php
Women’s Preventive Services Initiative
Women’s Preventive Services Initiative

To improve adult women’s health across the lifespan by engaging a coalition of health professional organizations to recommend updates to the HRSA-supported Women’s Preventive Services Guidelines.

https://www.hrsa.gov/womensguidelines/

Authority: Title V, § 501(a)(2) of Social Security Act (42 U.S.C. 701(a)(2)), as amended.
<table>
<thead>
<tr>
<th>Award Recipient</th>
<th>American College of Obstetricians &amp; Gynecologists (ACOG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Period</td>
<td>March 2016 – February 2021</td>
</tr>
<tr>
<td>Year 1 Deliverable</td>
<td>Updated Recommendations Due December 2016</td>
</tr>
</tbody>
</table>
WPSI Project Framework

Advisory Panel

- Multidisciplinary Steering Committee
- Implementation Steering Committee
Project Aims

**Aim 1:** Establish a process for developing and regularly recommending updates to the guidelines for women’s preventive services;

**Aim 2:** Obtain participation by health professional organizations on developing recommended guidelines for women’s preventive services;
Project Aims

**Aim 3:** Review and synthesize existing guidelines and new scientific evidence for women’s preventive services;

**Aim 4:** Develop recommended guidelines for women’s preventive services;

**Aim 5:** Disseminate HRSA-supported guidelines for use in clinical practice.
Year 1 Topics for Review

- Screening for Gestational Diabetes
- HPV Testing
- STI Counseling
- HIV Counseling and Testing
- Breastfeeding Support, Supplies, and Counseling

- Screening and Counseling for Interpersonal and Domestic Violence
- Well Woman Visits
- Contraceptive Methods and Counseling
- Breast Cancer Screening for Average Risk Women
http://www.womenspreventivehealth.org/
Discussion & Input

- Gaps
- Issues
- Resources
Contact Information

Women’s Health Team
Division of Healthy Start & Perinatal Services
Maternal and Child Health Bureau (MCHB)
Health Resources and Services Administration (HRSA)
Email: wellwomancare@hrsa.gov
Phone: 301.443.0543
Web: mchb.hrsa.gov
Twitter: twitter.com/HRSAgov
Facebook: facebook.com/HHS.HRSA
Turning Data Into Action: Improving Maternal Outcomes at the State Level

Elliott K. Main, MD
Medical Director
California Maternal Quality Care Collaborative
main@CMQCC.org No Disclosures or Conflicts to Report
CMQCC’s Key Stakeholders/ Partners

State Agencies
✓ CA Department of Public Health, MCAH
✓ Regional Perinatal Programs of California (RPPC)
✓ DHCS: Medi-Cal
✓ Office of Vital Records
✓ Office of Statewide Health Planning and Development (OSHPD)
✓ Covered California

Membership Associations
✓ Hospital Quality Institute (HQI)/ California Hospital Association (CHA)
✓ Pacific Business Group on Health (PBGH)
✓ Integrated Healthcare Association (IHA)

Professional Groups (California sections of national organizations)
◆ American College of Obstetrics and Gynecology (ACOG)
◆ Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN)
◆ American College of Nurse Midwives
◆ American Academy of Family Physicians

Public and Consumer Groups
◆ California HealthCare Foundation (CHCF)
◆ March of Dimes (MOD)
◆ California Hospital Accountability and Reporting Taskforce (CHART)

Key Medical and Nursing Leaders
✓ UC, Kaisers, Sutter, Sharp, Dignity Health, Scripps, Providence, Public hospitals
CMQCC: Major Areas of Activity

- Maternal Mortality and Morbidity Reduction
- Maternal Data Center
- Large-Scale Implementation Projects
- Maternity Quality Measures
Maternal Mortality Rate, California and United States; 1999-2008

California: ~500,000 annual births, 1/8 of all US births

HP 2020 Objective – 11.4 Deaths per 100,000 Live Births


Produced by California Department of Public Health, Center for Family Health, Maternal, Child and Adolescent Health Division, March, 2015.
Pregnancy-Related Mortality in California
Causes, Characteristics, and Improvement Opportunities

Elliott K. Main, MD, Christy L. McCain, MPH, Christine H. Morton, PhD, Susan Holthy, MPH, and Elizabeth S. Lawton, MHS

- Pregnancy-related mortality should not be considered a single clinical entity.
- The five leading causes exhibit different characteristics, degrees of preventability, and contributing factors, with the greatest improvement opportunities identified for hemorrhage and preeclampsia.
Provider Contributing Factors in Maternal Deaths (California)

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

# Maternal Mortality and Severe Morbidity

<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>10-15%</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>
Obstetric Hemorrhage and Preeclampsia: Summary

✓ Most common **preventable** causes of maternal mortality
✓ Far and away the most common causes of Severe Maternal Morbidity (>80%)
✓ Large drivers of maternity costs (UCLA Study: >$100M annually for our State Medicaid program, EACH)
✓ High rates of provider “quality improvement opportunities”

OB Hemorrhage Response Plan

These tools are adapted for each hospital's resources.
Will implementation of a bundle change outcomes?

How can you scale-up a project to a large state?
California Approach to Reduce Maternal Mortality and SMM

- Hemorrhage Taskforce (2009)
- Multi-hospital QI Collaborative(s) (2010-11)
  Test the “tools” and implementation strategies
- State-wide Implementation (2013-2014)
- Preeclampsia Taskforce (2012)
- Preeclampsia QI Toolkit (2013)
- Multi-hospital QI Collaborative (2013-2014)
- Cardiovascular Detailed Case Analysis (2013)
- Cardiovascular QI Toolkit (2015)
The California Partnership for Maternal Safety

Supported by funding from Merck through its Merck for Mothers Program

- 40 Active Mentor Leaders
- 20 Teams of 6-8 hospitals
- 126 Participating Hospitals
- 13,600 Healthcare Providers
- Impacting 264,000 Births

CPMS: Our goal is to ensure that 100% of hospitals with maternity services in California are ready to respond to the two most common obstetric emergencies by implementing patient safety bundles for postpartum hemorrhage and preeclampsia.
Maternal Mortality Rate, California and United States; 1999-2008

HP 2020 Objective – 11.4 Deaths per 100,000 Live Births

Maternal Mortality Rate, California and United States; 1999-2013

Reduced Maternal Morbidity

✓ Significant reduction in Severe Maternal Morbidity (SMM) among women with Obstetric Hemorrhage (before/after)

✓ No reduction in HEM SMM rates in control hospitals during the same time period

Full results embargoed until the Society for Maternal Fetal Medicine (SMFM) Annual Meeting in Late January 2017
Lessons for Effective Large-Scale QI Projects:

1. Partner with everyone
   a. Public Health + Clinical Medicine
   b. National efforts + State efforts

2. Share the Data!
   a. Maternal Mortality Reviews are important starter

3. Be in for the long haul

main@CMQCC.org
Question & Answer Period

• To ask a question **on the Web:**
  – Enter your question in the field at the bottom of the “QUESTIONS” box at the bottom of your screen and hit enter. Your question will be sent directly to the moderator.

• To ask a question **via phone:**
  – Press *1 to indicate that you have a question.
Additional Questions

• If you have any additional questions, you can email them to:

  dataspeak@altarum.org
Thank you for participating. Please click on this link to complete feedback on today’s program.

(the link will open in a new window)