Andreea Creanga, MD
Johns Hopkins University

MD MOM

Maryland Maternal Health Innovation Program

- 5-year program to improve maternal health in Maryland

- Collaboration between
  - *Johns Hopkins University*
  - *Maryland Department of Health*
  - *Maryland Patient Safety Center*
  - *University of Maryland, Baltimore County*

- Funded by the Health Resources and Services Administration

MDMOM 5-Year Workplan

Improve Maternal Health Data Availability & Utilization

Disseminate data & recommendations from statewide maternal mortality reviews through briefs and other publications

Establish severe maternal morbidity (SMM) surveillance & review in Maryland

Develop a Maryland Maternal Health Data Center with 2 functions:
- SMM data entry system
- maternal health data dashboard

Innovate in Maternal Health Service Delivery

Provider trainings
- implicit bias
- learning from adverse maternal events
- substance use stigma

Facilitate implementation of trainings and perinatal quality improvement

Establish obstetric telemedicine network to support Level I & II birthing hospitals

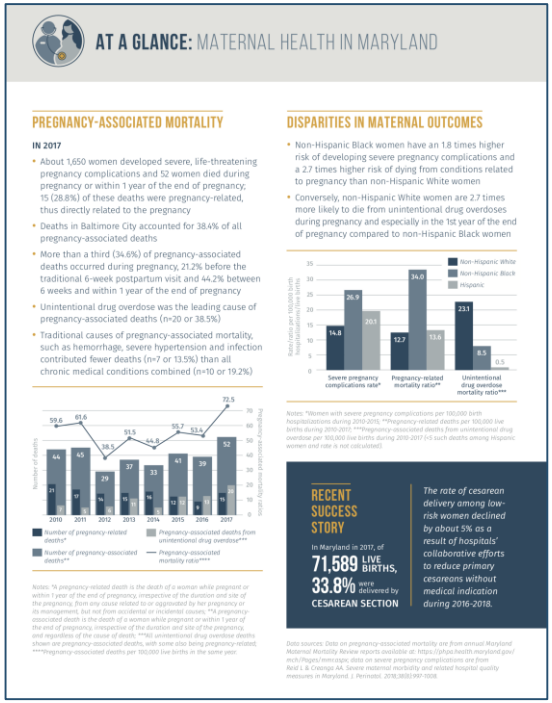
Postpartum warning signs education through home visiting programs

Evaluate the MDMOM Program

Monthly & Annual Reporting to HRSA

Maternal Mortality Data Dissemination

- Developed two data briefs
  - *2-pager with MH data at a glance*
  - *4-pager MMR data brief*
- MDMOM listserv for dissemination



AT A GLANCE: MATERNAL HEALTH IN MARYLAND

PREGNANCY-ASSOCIATED MORTALITY

IN 2017

- About 1,650 women developed severe, life-threatening pregnancy complications and 52 women died during pregnancy or within 1 year of the end of pregnancy; 15 (28.8%) of these deaths were pregnancy-related, thus directly related to the pregnancy
- Deaths in Baltimore City accounted for 38.4% of all pregnancy-associated deaths
- More than a third (34.6%) of pregnancy-associated deaths occurred during pregnancy, 21.2% before the traditional 6-week postpartum visit and 44.2% between 6 weeks and within 1 year of the end of pregnancy
- Unintentional drug overdose was the leading cause of pregnancy-associated deaths (n=20 or 38.5%)
- Traditional causes of pregnancy-associated mortality, such as hemorrhage, severe hypertension and infection contributed fewer deaths (n=7 or 13.5%) than all chronic medical conditions combined (n=10 or 19.2%)

DISPARITIES IN MATERNAL OUTCOMES

- Non-Hispanic Black women have an 1.8 times higher risk of developing severe pregnancy complications and a 2.7 times higher risk of dying from conditions related to pregnancy than non-Hispanic White women
- Conversely, non-Hispanic White women are 2.7 times more likely to die from unintentional drug overdoses during pregnancy and especially in the 1st year of the end of pregnancy compared to non-Hispanic Black women

Non-Hispanic White
Non-Hispanic Black
Hispanic

14.8 26.9 20.1 | 12.7 34.0 13.6 | 23.1 8.5 0.5

Severe pregnancy complications rate* | Pregnancy-related mortality ratio** | Unintentional drug overdose mortality ratio***

RECENT SUCCESS STORY

In Maryland in 2017, of **71,589** LIVE BIRTHS, **33.8%** were delivered by CESAREAN SECTION

The rate of cesarean delivery among low-risk women declined by about 5% as a result of hospitals' collaborative efforts to reduce primary cesareans without medical indication during 2016-2018.

MATERNAL MORTALITY REVIEW COMMITTEE

RECOMMENDATIONS

**As stated in the Maryland Maternal Mortality Review Program 2019 Annual Report[1]*

IMPROVE ACCESS AND COORDINATION OF CARE TO ONE YEAR POSTPARTUM

- Extend Medicaid and other insurance coverage to provide postpartum care to one year, including coverage for primary care, specialty care, medications, mental health and substance use treatment services
- Prior to discharge after delivery, create mechanisms to coordinate warm hand-off for patients needing primary care and specialty follow-up as well as those needing behavioral health treatment, including appointments and referrals, and address needs such as transportation and childcare
- Develop mechanisms for improved coordination between obstetric, mental health, and substance use treatment providers
- Establish guidelines for improved communication concerning pregnant and postpartum patients between hospital units, specifically emergency departments and labor and delivery units

REINFORCE SCREENING AND SUPPORT SERVICES FOR SOCIAL PREDICTORS OF MATERNAL DEATH

- Provide training for providers and staff on trauma-informed care
- Provide trauma counseling for patients with behavioral health disorders and intimate partner violence
- Promote universal screening every trimester for substance use, mental health, and intimate partner violence
- Improve access to intimate partner violence counseling and services
- Provide up-to-date resource lists to providers from local government agencies identifying services for substance use, mental health, and intimate partner violence referrals

INCREASE TRAINING AND AWARENESS REGARDING DISPARITIES IN MATERNAL HEALTH

- Provide implicit bias training for obstetric providers and hospital staff
- Require all hospitals with delivery services to internally review and analyze maternal health outcomes data for racial disparities

The Committee continues to support the detailed recommendations related to substance use disorder that were put forward in the Maryland Maternal Mortality Review released in 2018.

**As stated in the Maryland Maternal Mortality Review Program 2018 Annual Report[2]*

- Promote universal screening during pregnancy, at delivery, and postpartum for substance use, mental health, and intimate partner violence
- Document screening tools used, referrals given, and treatment plans in perinatal records
- Reduce unintended pregnancy and encourage reproductive life planning
- Improve communication and collaboration between providers of prenatal care and other providers (mental health, substance use, primary care, oral health, etc.)
- Promote interdisciplinary case management among substance use, mental health, and obstetric providers
- Improve safe opioid prescribing practices
- Encourage Prescription Drug Monitoring Program utilization by providers
- Encourage naloxone co-prescribing and 3rd party prescribing (prescribing for family or friends of individuals at risk of overdose)
- Inform substance use treatment providers about perinatal health

Sources

[1]Maryland Maternal Mortality Review Program. 2019 Annual Report. Available at: https://phpa.health.maryland.gov/mch/Documents/MMR/MMR_2019_AnnualReport.pdf. [2]Maryland Maternal Mortality Review Program. 2018 Annual Report. Available at: https://phpa.health.maryland.gov/documents/Health-General-Article-§13-1207-2018-Annual-Report-Maryland-Maternal-Mortality-Review.pdf

SMM Surveillance & Review

- Initiated 6-hospital SMM surveillance & review pilot program in line with HB-837
  - *Anne Arundel Medical Center*
  - *Howard County General Hospital*
  - *Johns Hopkins Hospital*
  - *Medstar St. Mary's Hospital*
  - *Mercy Medical Center*
  - *Sinai Hospital of Baltimore*
- Pilot evaluation in summer 2021
- Scale-up phase 2021-2024

MDMOM Program Launches a Severe Maternal Morbidity Surveillance and Review Pilot Program in Maryland

In July, the Maryland Maternal Health Innovation (MDMOM) Program launched a hospital-based pilot program in six birthing hospitals to test processes for severe maternal morbidity (SMM) surveillance and review in Maryland. This pilot is the first phase of a larger initiative to establish a statewide SMM surveillance and review program in Maryland. A collaboration between Johns Hopkins University, Maryland Department of Health, Maryland Patient Safety Center, and the University of Maryland, Baltimore County, MDMOM is led by Andreea Creanga, MD, PhD, an associate professor in the Department of International Health at the Johns Hopkins Bloomberg School of Public Health.

Although Maryland has a process in place for maternal mortality surveillance and review, there is currently no standardized process to review and evaluate SMM—any potentially life-threatening condition or complication during hospitalization for delivery. A systematic, ongoing process for case identification, clinical review and analysis of SMM at the hospital- and state-level is needed to identify strategies to improve service delivery and quality of care for pregnant and postpartum women in the state. To date, only Illinois has a formal statewide SMM surveillance and review process in place, but several other states are working to establish such programs.

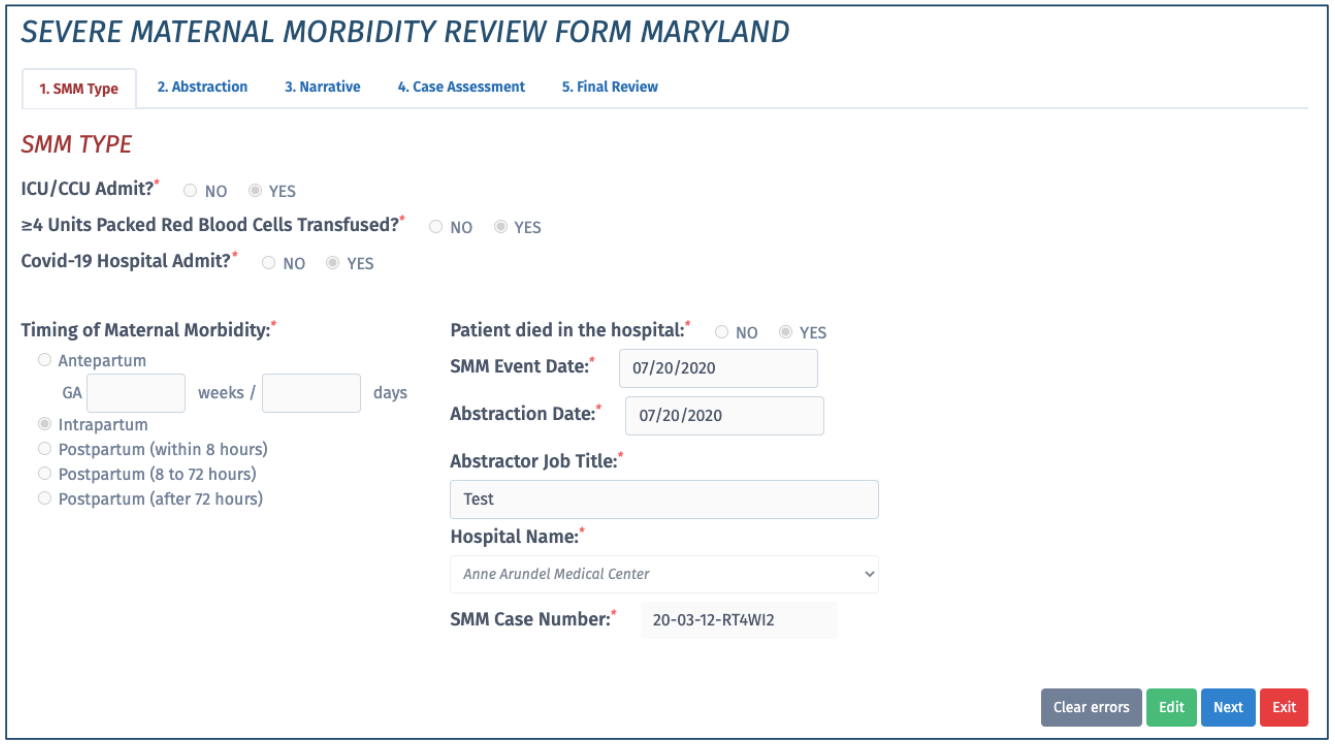
"Hospital-based SMM surveillance and review should serve as the backbone for quality improvement initiatives in obstetrics. Because the MDMOM Program aims to improve the quality of maternal health in the state, SMM surveillance is the first activity that we designed and are now testing with the help of colleagues in six birthing hospitals in the state. Of key interest is identification of factors that, if changed, would have prevented the severe morbidity from occurring. If we know what these factors are and can address these in future patients, we can reduce the burden of preventable SMM in our hospitals in the state. This is our end goal," says Creanga.

Pilot testing will be conducted in six birthing hospitals offering various levels of maternity care between July 2020 and March 2021. The hospitals included are Anne Arundel Medical Center, Howard Country General Hospital, Johns Hopkins Hospital, MedStar St. Mary's Hospital, Mercy Medical Center, and Sinai Hospital of Baltimore.

Each pilot hospital will establish a hospital-based SMM review committee to test and evaluate the new surveillance process. The committees will identify cases that meet the surveillance case definition; abstract

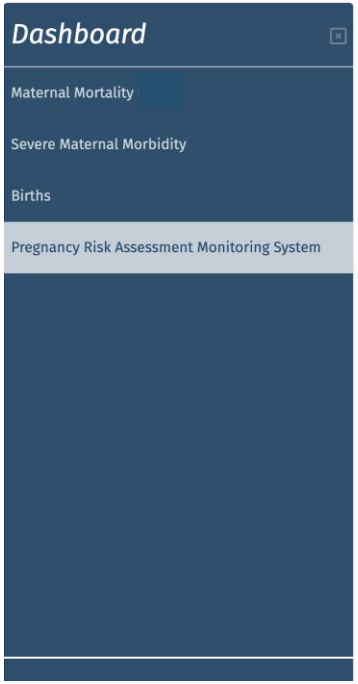
SMM Data Entry System

- Used by all hospitals
  - *web-based, password-protected data entry platform*
  - *real-time logic, skip patterns, input validation features*
  - *~50 cases identified, abstracted, and entered since August 1*



Maternal Health Data Dashboard

- Development phase October 2020 - March 2021
- Data sources include births, maternal mortality, severe maternal morbidity, PRAMS + Leapfrog surveys, re-admission data
- Key indicators stratified by key socio-demographic & clinical characteristics



Percentage of women who received a postpartum visit

Age group

YEAR	ALL DELIVERIES	<20	20-24	25-29	30-34	35+
2010	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
2011	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
2012	91.4	86.2	86.6	91.5	94.1	93.4
2013	89.1	74.5	84.6	89.2	92.2	90.8
2014	90.7	84.4	84.0	89.4	95.0	93.7
2015	90.4	85.7	87.7	87.5	94.9	90.8
2016	89.0	62.8	84.8	89.6	92.6	89.7
2017	90.2	80.3	82.6	88.3	95.2	91.7

Detach

MDMOM
Maryland Maternal Health Innovation Program

HOSPITAL INITIATIVE

MOTHERS ARE DYING OF PREVENTABLE CAUSES IN MARYLAND

- Over 80% of maternal deaths are preventable or potentially preventable.
- Significant racial/ethnic disparities exist in maternal morbidity and mortality.
- Unintentional drug overdose is the leading cause of death in the year following pregnancy.
- Each year, approximately 1,500 mothers experience a life-threatening complication.

The MDMOM Hospital Initiative will promote equity and safety through quality improvement activities that address the conditions placing Maryland mothers' lives at risk.

ONLINE TRAININGS

MDMOM.org will host three trainings on its learning management system, accessible for free to the clinical staff of Maryland's birthing hospitals.

- **Breaking Through Implicit Bias in Maternal Healthcare** is a one-hour module co-developed by Quality Interactions and March of Dimes. It presents the cognitive basis for implicit bias, the effects of structural racism on maternal health outcomes, and strategies to improve patient interactions.
- **Learning from Adverse Maternal Outcomes in Maryland** is a one-hour module developed by MDMOM with support from Dr. William Callaghan, a national expert on maternal health. It presents de-identified cases from the Maryland Maternal Mortality Review and the Maryland Severe Maternal Morbidity Surveillance and offers strategies for early recognition and management of severe pregnancy complications.
- **Managing Bias in the Care of Patients with Substance Use Disorder** is a one-hour module developed by MDMOM with support from Dr. Mishka Terplan, a national expert on substance use in pregnancy. It presents evidence of bias in the care of childbearing people with substance use disorder and strategies for bias mitigation.

SKILL BUILDING SESSIONS

To further support clinical practices that promote equity and safety, the MDMOM team will offer interactive case-based learning and skill-building sessions that expand on each of the three online trainings.

EQUITY & SAFETY TOOLKIT

MDMOM will introduce a toolkit of best practices, guidance and resources for Maryland birth hospitals to reduce disparities in maternal health. MDMOM team members will support hospital quality improvement leaders to stratify their data by race/ethnicity and implement tailored toolkit interventions.

QUALITY INTERACTIONS

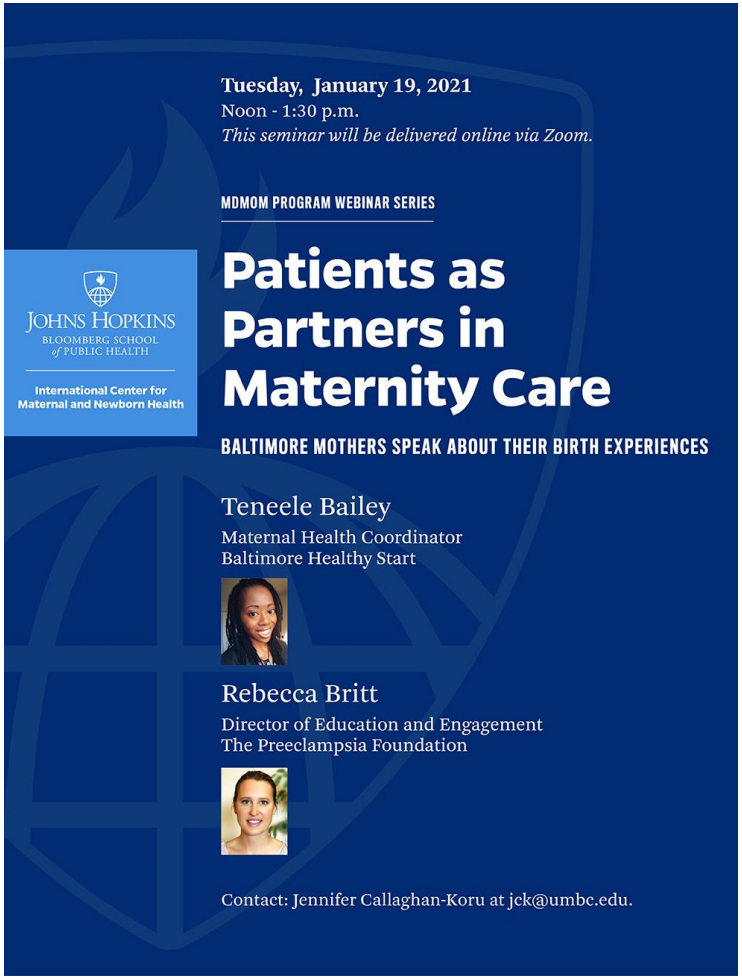
MARCH OF DIMES

MDMOM
Maryland Maternal Health Innovation Program

- JHM's Office of Diversity, Inclusion and Health Equity
- Equity consultants

Quality Improvement Activities

- Seminar/meeting/conference announcements
- MDMOM Webinars
  - *Clinical guidance*
  - *Patient voices*
  - *Data from maternal health surveillance in Maryland*
- Covid-19 resources for perinatal health providers & pregnant/ postpartum women
- Listserv for MDMOM & MPSC for communications
- Reprotox subscription for hospitals



Obstetric Telemedicine (TM) Network

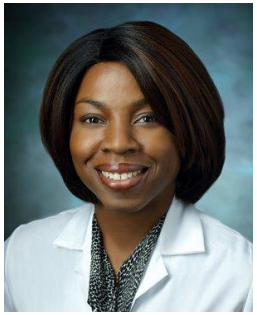
- Landscape analysis completed in September 2020
  - *7 of 17 Level I/II currently offer obstetric services through TM*
  - *Level IV hospitals have interest & technical capabilities to support implementation of an obstetric TM network*
  - *Implementation of such network is needed and feasible in Maryland*

- Design meetings on-going
  - *Develop project plan in collaboration with TM offices at JHU & UMMS*
  - *Establish agreements with pilot sites (Level I/II hospitals + federally-qualified health centers)*
  - *Hire network coordinators at JHU & UMMS*
  - *Purchase needed equipment*

- Goal is to start the pilot program by end of September 2021

Maternal Warning Signs Education

- MDMOM is supporting implementation of warning signs education by home visiting programs and community clinics
- Building on new ACOG/AIM materials & expert clinical input with implementation tools
- Developing patient video & training for staff



- *Dr. Shari Lawson, General Obstetrics & Gynecology Division Director, Johns Hopkins Medicine*

MDMOM Program Evaluation

- Developed provider implicit bias tool to evaluate implicit bias trainings
  - *Conducted surveys with ACNM & AWHONN membership in 9 states*
- Baseline, mid-line and endline surveys to explore changes in providers' attitudes and practices between 2021 and 2024
  - *Baseline data collection starting in March 2021*
- Interest in assessing patients' perspectives through surveys
  - *We welcome ideas for doing this without added burden to hospitals*
- On-going program-related data analyses using EHR & hospital discharge data to inform program initiatives

Thank you!

contact@mdmom.org