Executive Summary

Missouri’s maternal mortality rate — currently a staggering 40.7 deaths per 100,000 live births, with a state rank of 44th in the nation — represents a call to action for stakeholders to improve maternal health outcomes. The Centers for Disease Control and Prevention also estimates that for every one maternal death, there are 70 more near misses that contribute to severe maternal morbidity. In particular, the fourth trimester (from birth through one year postpartum), presents a significant opportunity to improve care transitions, treatment and extension of insurance coverage.

This issue of Trajectories highlights three actions within the span of control for providers to improve maternal health outcomes — avoiding the Three Delays, implementing evidence-based patient safety bundles and examining the effect of four different bias types. Also found throughout this publication are stories of action and hope — people and organizations working to prevent and mitigate severe maternal morbidity and mortality in Missouri.
A woman’s birth story. Profound, impactful, life-altering. So ingrained, well-known and remembered that time matters not. The birth story lives in her and with her, woven into the overall story of life, recalled and recited in vivid detail regardless of if the birth was last week or 80 years ago. But a birth story is not solely about the actual birth experience — just ask any mother. A woman’s birth story surrounds the entire pregnancy and continues through the first year of life, as significant health, life and social changes occur for the woman and her family — each pregnancy, birth and postpartum experience as unique and individual as the woman herself.

For too many women, their birth stories are not the kind celebrated and memorialized in photographs, Instagram posts and family scrapbooks. Instead, they resound with “isms,” such as racism and sexism, experiencing stigma and judgment due to the many types of bias commonly reported from the patient experience and in medical literature. A lack of access to local maternal care services, and lags and limits in health insurance coverage create potential for adverse outcomes. Maternal-related conditions in and of themselves do not discriminate — the risk is present for all. For many who do seek care, particularly during the postpartum phase, their symptoms often are dismissed or disbelieved, leading to delays in diagnosis and treatment — few making it through these barriers without significant effects on their quality of life or functional capability, or worse, sometimes leading to death. These themes are borne out in the maternal mortality reviews both at the state and national level, woman after woman.

As a state, Missouri has its own birth story, with providers, patients, families and maternal health stakeholders collaborating to significantly impact positive maternal health outcomes. The siloed nature of health care delivery creates difficulty, inefficiency and gaps in care transitions and resource use across the spectrum of maternal care, calling for the creation of networks and use of technology to effectively keep care local, while routing patients for high-risk consults and delivery as medically indicated. The negative impacts of bias issues are well-documented throughout literature and have been cited by multiple government and nongovernment entities, specifically, the National Institutes of Health, U.S. Department of Health and Human Services, Healthy People 2020, and the Institute of Medicine, as an opportunity to improve health care outcomes for women.

The National Public Radio and ProPublica series “Lost Mothers” profiled the historical focus on infant health, with the mother often being ignored or forgotten. Today’s statewide collaborative efforts in Missouri are intent on remembering the mother in the mother-baby dyad by raising awareness of maternal health issues and increasing the consistency of evidence-based interventions to decrease the rate of severe maternal morbidity and mortality. With updates and new support for the Pregnancy-Associated Mortality Review board, as well as engagement in the Centers for Disease Control and Prevention’s Enhancing Reviews and Surveillance to Eliminate Maternal Mortality database and standardized review and reporting process, the ability to identify and target root cause themes, recommendations and actions will be realized. New opportunities through funding sources, grassroots efforts, partnerships and innovation are found across the state and highlighted throughout this publication. As providers and stakeholders in women’s health, we no longer can just shake our heads or turn our backs on patients with medical and social complexity. We are called to build relationships with our patients, families, peers and communities to realize the birth story we all seek — the one where the mother and child are both healthy, safe and supported.
The Evidence

The CDC recently released a report, "Pregnancy-Related Deaths: Data from 14 U.S. Maternal Mortality Review Committees, 2008-2017," outlining several compelling findings that change the perspective and approach to maternal mortality prevention. Key findings from the report include the following:¹

- Approximately one in three deaths among women during or within one year of pregnancy were pregnancy-related.
- Pregnancy-related deaths occurred during pregnancy, at time of delivery and up to one year postpartum.
- Leading causes of pregnancy-related deaths varied by race and ethnicity.
- **Two out of three deaths were determined to be preventable.**

Cardiovascular conditions, hemorrhage, infection, embolism, cardiomyopathy, mental health conditions and preeclampsia/eclampsia accounted for nearly 75% of pregnancy-related deaths. The report further states that between 2008 and 2017, 65.8% (N=233) of total deaths were considered preventable by states reporting maternal mortality review board findings. Racial disparity, specifically among black and white mothers, presents an opportunity to improve care delivery to black women, as the mortality rate is three times more than the rate for white women in Missouri (91.9 versus 32.9 per 100,000 live births).

With a large volume of maternal mortality occurring outside the birthing unit, the need for effective patient handoffs, care transitions and coordination, and patient follow-up is critical to prevention. Provider clinics, emergency departments and critical access hospitals also are key partners in the mission to reduce Missouri’s maternal mortality rate — currently a staggering 40.7 deaths per 100,000 live births, with a state ranking of 44th in the nation.² EDs and CAHs without birthing units often are the first line of care for pregnant and postpartum women, particularly for patients living in maternal care deserts (Figure 1) and without health insurance. Since global pregnancy health insurance coverage through the MO HealthNet Division ends at six weeks postpartum, many at-risk women seek care and treatment in an ED setting. Serving as safety nets, EDs are uniquely positioned to impact the growing number of women dying of pregnancy-related issues in the late-postpartum period (up to one year postpartum).

Maternal mortality only represents part of the story. Perhaps the most alarming concern is the rise in severe maternal morbidity. For every American woman who dies from childbirth, 70 nearly die. That adds up to more than 50,000 women who suffer “near misses” and SMM from childbirth each year, according to the CDC. The CDC currently tracks 18 indicators of SMM, including heart attack, stroke, blood clots, air embolism and kidney failure, among others. SMM can include physical or mental illness or disability directly related to pregnancy and/or childbirth. SMM conditions are not always life-threatening but they can have a significant impact on quality of life. The Alliance for Innovation on Maternal Health estimates the number to be even higher, at around 80,000 women. In the U.S., the rate of SMM has been rising faster than the rate of maternal mortality, nearly tripling between 1993 and 2014, according to the CDC. Why are both SMM and mortality increasing? Experts cite risk factors that have increased in recent years: advanced maternal age, obesity, high blood pressure, diabetes and substance use disorders. For instance, the SMM rate among preeclampsia cases (3,145) in Missouri in 2017 was 7.2%, or 230 mothers.³ This rate is based upon documentation and coding, but is believed to be underreported and does not capture postpartum cases outside of the inpatient setting. A high level of inconsistency in health care delivery at the system level and a lack of evidence-based practice implementation at the patient level also contribute. Further, multiple social and community demographic influences are demonstrated, such as domestic violence, poverty, bias and stigma, and lack of adequate insurance coverage.

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¹ Hospital Industry Data Institute, claims-data base, CY 2017 for identified Missouri birthing hospitals.

² Birthing Hospitals

³ Maternity Care Access Levels

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Two out of three deaths were determined to be preventable.
What Should be Done?

The contributing factors within the greatest scope of control for providers and the health care delivery system are avoiding delays in care; consistent, reliable evidence-based practice implementation; and resolving personal bias tendencies for professional growth and health outcomes.

Avoiding Delays in Care

The California Maternal Quality Care Collaborative produced the Three Delays Model initially developed for under-resourced countries to address maternal mortality; however, providers and systems can use this model to mitigate these same delays in care that are just as prevalent in the U.S. (Figure 2).

FIGURE 2: THE THREE DELAYS (3-D) MODEL

Source: CMQCC

The three delays visually represented in the 3-D Model commonly are reported in maternal mortality reviews. Providers, patients and families often miss triggers or fail to adequately screen and assess the reported signs and symptoms. Failure to recognize triggers and fully explore patient symptoms that may be related to pregnancy, in particular, leads to both delays in diagnosis and delays in treatment. Bias plays a significant role in the 3-D Model, as well. The three delays often occur outside of the birthing unit throughout the continuum of care. In addition, failure to refer patients appropriately creates delays. Transportation, birthing unit closures and provider access limitations, along with the relatively slow growth of telehealth in maternal care provision, create maternal care deserts within Missouri, which also impact delays in care.

Practice Consistent, Reliable Evidence-Based Care

AIM² is a national data-driven maternal safety and quality improvement initiative based on proven implementation approaches and evidence-based practice to eliminate preventable severe maternal morbidity and mortality throughout the U.S. AIM works through state teams and health systems to align national, state and hospital-level quality improvement efforts to improve overall maternal health outcomes. The AIM initiative focuses on implementation and highly reliable use of standardized patient safety bundles. Each component of the patient safety bundles has been vetted by subject matter experts in the field of maternal health care and is supported, approved and promoted by The American College of Obstetricians and Gynecologists, and funded by the Maternal and Child Health Bureau of the Health Research and Services Administration. The AIM bundles form the safety standards for recognized interventions for known root causes of maternal morbidity and mortality. Current AIM bundles include the following.

- Maternal Mental Health: Depression and Anxiety
- Maternal Venous Thromboembolism
- Obstetric Care for Women with Opioid Use Disorder
- Obstetric Hemorrhage
- Postpartum Care Basics for Maternal Safety
  - From Birth to the Comprehensive Postpartum Visit
  - Transition from Maternity to Well-Woman Care
- Prevention of Retained Vaginal Sponges After Birth
- Reduction of Peripartum Racial/Ethnic Disparities
- Safe Reduction of Primary Cesarean Birth
- Severe Hypertension in Pregnancy

Aligning with AIM efforts, The Joint Commission published updated maternal safety standards in August 2019 to address prevention, early recognition and timely treatment of obstetric hemorrhage and severe hypertension/preeclampsia. The new standards will appear under

2 Alliance for Innovation in Maternal Health, American College of Obstetricians and Gynecologists. https://safehealthcareforallwoman.org/aim-program/

continued >>
the Provision of Care, Treatment and Services chapter at PC.06.01.01 and PC.06.01.03 in the Comprehensive Accreditation Manual for Hospitals. Some of the standards require TJC-accredited hospitals to implement the following.

- develop written evidence-based procedures to identify and treat the conditions
- stock easily accessed hemorrhage supply kits
- provide role-specific education to all staff and providers who treat pregnant/postpartum patients at least every two years
- conduct response procedure drills at least annually
- educate patients on signs and symptoms that warrant care during hospitalization and after discharge

As previously noted, the CDC estimates that approximately two-thirds of maternal deaths each year — about 420 deaths — likely were preventable. Additionally, multiple studies have shown that more than 50% of maternal deaths evaluated had at least some possible preventability, and that multiple opportunities for improvement and prevention of morbidity and mortality exist at the policy, system, facility, clinician and patient levels. For example, in a study of the relationship between hospital birth volume and progression of severe maternal morbidity to maternal death, investigators found that — after adjusting for patient characteristics and comorbidities — the hospital where the birth took place was the most important contributor to failure to rescue. During pregnancy, vital signs, physiologic indices and laboratory values are altered such that findings that are “normal” for an adult can be grossly abnormal in pregnancy, labor or postpartum, which can lead to failure to recognize clinical deterioration or serious illness. Labor and birth themselves are highly dynamic and situations can change rapidly; thus, patients are at-risk for underuse or omission of recommended interventions in an emergency.

In 1999, Knox and colleagues laid the foundation for what is now a nationwide AIM maternal safety movement with their early application of high reliability theory to the inpatient birth setting. Two important facets of high reliability are standardization and effective teamwork, including “mindful interdependence.” These concepts are integrated into the national and regionally developed maternal safety bundles, which are designed around the “4Rs” to enhance readiness for, recognition of, response to and reporting (learning from) safety threats and maternal complications.

Recent reports from Premier noted a 24% decline in deaths during in-hospital deliveries from 2008 to 2018 across more than 900 hospitals. The mortality disparity gap between black and white women also substantially narrowed, finding that delivery-related deaths for black mothers decreased by 80% throughout the 10-year period. The report identifies reliable implementation of maternal patient safety bundles as the contributing factor to the improvements in maternal outcomes. Severe maternal morbidity, however, continues to increase with a widening disparity gap, with the need to focus interventions outside of the traditional birthing unit focus.

“My years of caring for patients as an obstetrician and gynecologist make me believe that we can work with our hospital, physician and nursing colleagues to significantly improve our outcomes — so that a newborn or families do not suffer the loss of a mother at the time surrounding a pregnancy. This vital work embodies our most essential core values within our mission to protect health and keep people safe in Missouri.”

– Randall Williams, M.D., FACOG, Director of the Missouri Department of Health and Senior Services
Bias – No Place in Health Care

Even with systems in place to provide evidence-based, well-coordinated maternal care, bias remains a persistent and troubling factor, leading to many of the following outcomes.

- racial disparities
- unwillingness by patients to seek care and be transparent with care providers about health concerns
- dismissal and disbeliefs of patient-reported symptoms
- lack of trust with care providers and lack of eventual care plan compliance
- delays in diagnosis and treatment
- delays or complete lack of appropriate consults, referrals and follow-up care
- increased maternal morbidity and mortality

Bias-related actions by individuals and societal systems has a known detrimental health impact across populations. Common biases seen in the health care setting include, but are not limited to, implicit, explicit, confidence and confirmation. In its top five initiatives, NIH has prioritized eliminating health care disparities and encourages health care practitioners to consider how biases, stereotypes and discrimination may contribute to such disparities.⁹

Implicit bias refers to the individual attitudes or stereotypes that affect understanding, actions and decisions in an unconscious manner. These biases, which encompass both favorable and unfavorable assessments, are activated involuntarily and without an individual’s awareness or intentional control. The implicit associations harbored in the subconscious cause feelings and attitudes about other people based on characteristics such as race, ethnicity, age and appearance. These associations develop throughout the course of a lifetime beginning at a very early age through exposure to direct and indirect messages.

Key Characteristics of Implicit Biases:

- Everyone possesses implicit biases, even people with avowed commitments to impartiality such as judges.
- Implicit and explicit biases are related, but distinct mental constructs. They are not mutually exclusive and may even reinforce each other.
- Implicit associations do not necessarily align with declared beliefs or even reflect stances an individual explicitly endorses.
- Implicit biases generally favor an individual’s own in-group, though research has shown that implicit biases still can be held against in-groups.
- Implicit biases are alterable. The implicit associations that have formed gradually can be unlearned through a variety of de-biasing techniques.⁸

IOM also concluded that unrecognized or unknown biases toward members of a certain social demographic may affect communication and the care offered to those individuals.⁸ In an effort to reduce health care disparities, health care professionals must be aware of these implicit biases, as they
may directly affect the care provided to specific vulnerable populations. Examples may include the following.

- minority ethnic populations
- immigrants
- the poor
- low health-literacy individuals
- sexual minorities
- children
- women
- the elderly
- the mentally ill
- the overweight
- the disabled

Explicit bias refers to the attitudes and beliefs about a person or group on a conscious level. Much of the time, these biases and their expression arise as the direct result of a perceived threat. When people feel threatened, they are more likely to draw group boundaries to distinguish themselves from others. When people perceive their biases to be valid, they are more likely to justify unfair treatment or even violence. This unfair treatment can have long-term negative effects on its victims’ physical and mental health. Expressions of explicit bias (e.g., discrimination, hate speech, etc.) occur as the result of deliberate thought. Thus, they can be consciously regulated. People are more motivated to control their biases if there are social norms in place which dictate that prejudice is not socially acceptable.

Confidence bias also may have great impact on health care outcomes. It is created when a health care provider has excessive faith in themselves, their judgment and their average experiences. Because of confidence bias, the risk of vulnerability to bias and error often is ignored. Ninety-percent confidence intervals, often cited in health care literature, are common methods to indicate confidence in a given interventional solution; however, studies have shown that when caregivers provide a 90% confidence interval around some given estimate, the truth often falls inside their confidence intervals less than 50% of the time, suggesting they did not deserve to be 90% confident of their accuracy to begin with.

Decades of research on judgment and decision-making have documented these heuristics and the biases they create.

Overcoming confidence bias by balancing overconfidence and underconfidence requires self-reflecting, acknowledging limitations and opportunities to use resources, listening to patients and co-workers, and following evidence-based practices to a high level of reliability. Overcoming confidence bias takes a combination of courage and intellectual humility, which leads to actively open-minded thinking.

Confidence bias occurs from the direct influence of personal desires on beliefs — essentially, people have a susceptibility to believe what they want to believe. This error leads the individual to stop gathering information when the evidence gathered, whether complete or not, confirms the personal views or prejudices. Information is embraced that confirms that view, while ignoring or rejecting information that casts doubt on it. Confirmation bias suggests that individuals do not perceive circumstances objectively. They pick out those bits of data that make them feel good because they confirm the prejudices.

How to Reduce the Impact of Bias

The first step in reducing the impact of bias is to accept that everyone has biases — both favorable and unfavorable. The second is to work to understand what may be impacting the ability to provide unbiased health care delivery. Focus efforts on self-reflection, training and education to raise awareness, and the acronym PRR — Pause, Reflect, Reconsider — to determine if the actions and decisions are objective and evidence-based, or if a bias may play a role. The Implicit Association Test measures attitudes and beliefs that people may be unwilling or unable to report. It measures relationships between different concepts (e.g., gender, ethnicity) and an individual’s subconscious assessment (e.g., good/bad). While not a scientifically perfect test, it does give individuals an opportunity to identify implicit bias. The IAT is part of Project Implicit, a collaborative investigation effort between researchers at Harvard University, the University of Virginia and the University of Washington.

A major project using the IAT resulted in several key findings.

- implicit bias is pervasive
- people often are unaware of their implicit bias
- implicit bias predicts behavior
- people differ in levels of implicit bias
- once these biases are identified, health care providers should seek out resources, strategies and skills to prevent unconscious attitudes and stereotypes from influencing the course of treatment

Increasing awareness and understanding of trauma-informed care, and the impact of traumatic life experiences and stress on individual health care behaviors, mental health and health care outcomes, also helps inform providers and mitigates bias from further negatively impacting patients and communities. In December 2018, MHA published a Trajectories on this topic with additional information and resources.
Innovating Health Care and Support for Maternal Patients

While it is clear that Missouri’s birth story must improve, many bright spots exist in Missouri through the work of passionate, committed and innovative people working to improve care for the maternal population. Spotlights of several of these initiatives follow.

Missouri Maternal-Child Learning and Action Network

The Missouri Maternal-Child Learning and Action Network launched in 2018 and continues to be integral in driving momentum to improve maternal health outcomes. Through peer-to-peer networks and passionate engagement, the current group of 55 subject matter experts provides guidance and oversight to deploy broad and sustainable evidence-based practices for all pregnant and postpartum patients in Missouri. The vision of healthy moms, healthy babies, healthy Missouri is a call to all stakeholders in women’s health care to assess current practices, collaborate and innovate to improve care, and close the gap on health care disparities. The MC LAN currently includes four subcommittees working to address specific areas and gaps: 1) data management and review, 2) funding strategy, 3) education — maternal and neonatal teams, and 4) peer outreach strategy. The MC LAN convenes three times annually, and participants serve 2 ½-year terms. Members serve as peer support, faculty for collaborative efforts and leaders throughout the state. To effect care delivery change across the care continuum and throughout local communities, the MC LAN seeks community-based organizations with a stake in maternal and infant health outcomes to support focused efforts in 2020. Interested providers and organizations may contact Alison Williams at awilliams@mhanet.com.

Missouri AIM

The Missouri AIM Collaborative was awarded in April 2019, and a kickoff meeting was held in October 2019 to launch the Severe Hypertension in Pregnancy maternal patient safety bundle to facilitate broad statewide implementation of consistent, evidence-based practices. The current Missouri AIM Collaborative includes three options — one for birthing hospitals/birthing centers, one for EDs/nonbirthing hospitals and one for provider clinics. The bundle was modified to each setting, and an ED algorithm for severe hypertension was adapted and developed to support consistent, timely and accurate triage, treatment and referral in the ED setting. The algorithm positions the ED team to rapidly identify at-risk patients, initiate lifesaving treatment, and coordinate transfer and referral to obstetric care providers.

Since patients with maternal-related conditions and female health care needs present throughout the hospital and care continuum, implementing standardized, facilitywide care assessments, algorithms and treatments based on evidence-based practice is an important consideration in settings outside of the traditional birthing unit. Use of drills and simulations also are recommended to ensure staff and provider preparedness to respond. In particular, education and standardized medication boxes and protocols especially have been effective in the ED. Collaboration between the obstetrics and ED departments to identify and promptly care for maternal patients is a critical driver to improved maternal and neonatal outcomes. Additional patient safety bundle collaboratives are planned in the future to increase highly reliable care. Pending are the results from a statewide baseline survey, which will be used to identify the saturation level of available AIM bundles to-date, and support resource and technical support strategy development. Bundle topics include, but are not limited to, maternal depression and anxiety, OUD, postpartum basics, severe hypertension, and obstetric hemorrhage.

Missouri’s journey to AIM would not be possible without the collective vision, effort and collaboration of the Missouri Department of Health and Senior Services, MHA, and March of Dimes Missouri. Additionally, multiple associations and government agencies committed support to reducing maternal morbidity and mortality, including the Missouri Section of ACOG; Missouri Chapter of the American Academy of Pediatrics; Missouri Department of Social Services MO HealthNet Division; Missouri Chapter of the Association of Women’s Health, Obstetric and Neonatal Nurses; and Nurse Practitioners in Women’s Health Association. Interested providers and organizations may contact Alison Williams at awilliams@mhanet.com.
Helping Moms Prevent and Recover From Opioid Use Disorder

By Tiffany S. Bowman, MSW,
Opioid Project Manager, Missouri Hospital Association

The rise of opioid use and misuse has been well documented both nationally and in Missouri. However, the rate of prescribing for women, women of color and postpartum women; the subsequent short- and long-term effects of in-utero exposure; and the long-term impact on the family unit has been highlighted far less. Indeed, opioid use and misuse is one of the single largest contributors to maternal morbidity and mortality. The effects on the infant-mother dyad, overwhelming increases in the foster care system and oversaturated SUD treatment providers all contribute to the impact on Missouri communities. Nationally, neonatal abstinence syndrome has increased four-fold, with a nearly 250% increase in Missouri. MHA, several state agencies and multiple community-based partners have collaborated to design strategies for supporting community and evidence-based strategies for Missouri women struggling with OUD, and specifically opioid use during pregnancy. The Engaging Patients in Care Coordination model, which provides recovery coaching and a warm hand-off at the time a patient is seen in the ED for an overdose, withdrawal or opioid misuse, has been expanded to include pregnant and parenting women. The Behavioral Health Network of Greater St. Louis and partners envisioned the EPICC model to serve people dealing with OUD at a critical and life-changing juncture. With the support of BHN St. Louis and with leadership from MHA, the EPICC project has expanded to the Kansas City metro area and to Columbia — with plans for future launch in Springfield/Branson and Jefferson City. Further efforts in all three regions include raising awareness and striving to increase referrals of obstetric and postpartum patients to OUD/SUD treatment. Currently, the project receives just under 10% of referrals for pregnant women. To increase referrals for this specific segment of the population, MHA engaged local departments of public health, federally qualified health centers, and obstetrics departments. Preserving the mother-infant dyad, and supporting women to make the changes they deem necessary for reducing opioid misuse and exposure, are central themes in EPICC programming.

Other accomplishments of the maternal opioid project include the completion of a NAS assessment to evaluate the adoption of evidence-based prescribing guidelines by Missouri providers, which have been synthesized in an infographic. Further, a guidance document — created in partnership with the Opioid Communities of Practice, led by the St. Louis County Health Department — provides evidence-based opioid prescribing practices, information on trauma-informed care and harm reduction, and advocacy for universal screening, including evidence-based screening tools for substance use and mental health among pregnant women (interview-based) and an emphasis on the Screening, Brief Intervention and Referral to Treatment model. Finally, a team of statewide partners, including MHA staff, provide ongoing technical assistance to several HRSA planning and implementation grantees, targeting OUD in rural settings. Each grantee has unique project plans designed for their specific rural community, but many are implementing EPICC as a component of the project.

The coordinated efforts of MHA, partner organizations and funding entities have woven together to form a concerted effort to better address this specific link to maternal morbidity and mortality. Continuation and expansion of these efforts are needed to decrease stigma, opioid misuse, in-utero exposure and possible NAS.
Home Visits Key to Care Delivery, Referrals and Safe Transitions for Moms and Families

Dr. Sharmini V. Rogers, MBBS, MPH, Administrator, Section for Healthy Families and Youth, Division of Community and Public Health, Missouri Department of Health and Senior Services

The Missouri Department of Health and Senior Services Early Childhood Home Visiting Program contracts with implementing agencies in 25 counties and St. Louis City to provide evidence-based home visiting services to low-income (185% of Federal Poverty Level or lower) pregnant women and/or primary caregivers with children from birth to kindergarten entry. Home visitors provide one-to-one assistance to enrolled pregnant women and primary caregivers to educate on maternal and child health topics, provide direct support in developing and achieving personal goals to improve health and well-being, and complete screenings and referrals universally for all enrolled women and/or primary caregivers for maternal depression and intimate partner violence.

Recognizing the importance of identifying maternal depression symptoms and assisting women with accessing care, professional development was provided to home visitors and supervisors in March 2019. This has resulted in an increase of approximately 17% overall in completed referrals for positive maternal depression screenings. Completed referrals for positive intimate partner violence screenings also have doubled in the past year, ensuring that a safety plan is established and connections are made with resources. A third performance measure directly related to maternal morbidity and mortality is the completion of tobacco cessation referrals for all enrolled primary caregivers. In the past year, home visitors provided referral information and direct support to assist primary caregivers in their tobacco cessation efforts.

Additionally, TEL-LINK provides Missourians with access to confidential information and referrals on maternal and child health services. The operators at TEL-LINK provide information and referrals concerning a wide range of health services throughout several Missouri communities. A YouTube video provides an example of the services TEL-LINK provides.

Rural Health Care: Continuity of Care in the Bootheel

By Christy LeGrand, MBA, Development Officer/Grants Administrator Foundation, Saint Francis Healthcare System

HRSA recently announced that Saint Francis Healthcare System was awarded the Rural Maternity Obstetrics Management Strategies grant. The grant, one of only three awarded nationwide, focuses on the six Missouri Bootheel counties of Dunklin, Mississippi, New Madrid, Pemiscot, Scott and Stoddard, and is called the Bootheel Perinatal Health Network Project. The first year of the initiative involves planning, with implementation during years two through four.

When Pemiscot Memorial Hospital in Hayti, Mo., (Pemiscot County) discontinued obstetrics services in 2014, and Twin Rivers Regional Medical Center in Kennett, Mo., (Dunklin County) closed in 2018, many women had no services or faced traveling long distances for maternal care. A maternal care desert was created.

The award brings together multiple organizations representing more than 20 entities in a joint effort to improve maternal and infant health in the Bootheel. Co-leads on the grant with Saint Francis include Missouri Delta Medical Center of Sikeston, Mo., and the Bootheel Network for Health Improvement that includes the six Bootheel counties. Other network members partnering include Pemiscot Memorial Health Systems, Poplar Bluff Regional Medical Center, SoutheastHEALTH, SSM Health — St. Mary’s Hospital, SEMO Health Network, Bootheel Counseling Services, FCC Behavioral Health, Gibson Recovery Center, Building Blocks Home Visiting Program and Missouri Bootheel Regional Consortium.
Goals of the Bootheel Perinatal Health Network Project include the following:

- Create a seamless, sustainable network that improves access to, and continuity of, maternal and obstetric care in rural southeast Missouri.
- Increase the delivery and access to a continuum of care — preconception, pregnancy, labor and delivery, and postpartum services — for mothers and babies.
- Utilize telehealth resources to increase access to primary care within the local FQHCs as well as level four perinatal specialists and subspecialists.
- Develop a diversified model of sustainability.
- Encourage replicability through dissemination of project results.

Kansas City Missouri Perinatal Recovery Collaborative

By Kate Mallula, Senior Project Manager, University of Missouri-Kansas City

SUD during motherhood affects the whole family and requires a comprehensive, compassionate and family-centered response. However, the service system often is disjointed, resulting in families being separated without receiving the resources to sustain recovery and improve the family’s health and wellness. Lack of streamlined SUD screening and referral processes for pregnant and postpartum women compound risk factors and constrain this population’s access to specialized care. Medicaid claims data from 2018 show that only 29% of mothers with an SUD diagnosis received treatment in that year. Of the bi-state area’s 30 residential SUD facilities, only four allowed women to have children in care, and only three specialized in serving postpartum women. Further, only one of the 15-day treatment programs and seven of 99 intensive outpatient facilities were for postpartum women. To identify, access and complete these limited treatment options, postpartum women often require additional direct service supports and more intentional collaboration among agencies to maintain stable recovery.

In response to the growing impact of substance use on families in the bi-state metropolitan area, The Kansas City Missouri Perinatal Recovery Collaborative was formed in June 2018 by Mid-America ATTC. KCMO PRC is a collective of professionals who represent child development, child welfare, housing, social services, health care, criminal justice, and SUD treatment and recovery. By convening monthly, the KCMO PRC works to develop, grow and nurture a coordinated, multisystem network of services and programs to support pregnant and parenting mothers as they navigate the dual journey of parenting and recovery.

A key strategy for improving the continuum of care for postpartum women and their families is implementing standardized screening, referral and care coordination protocols across systems of care, including in outpatient OB clinics and birthing centers, and for SUD treatment and social service providers. KCMO PRC members currently use the AIM Maternal OUD Safety Bundle as a blueprint for building a continuum of care based on best practices for supporting women with perinatal substance use.

Unlike other safety bundles that focus on clinical protocols internal to a hospital, the OUD Bundle requires extensive collaboration with external community providers in the continuum of SUD care. Currently, KCMO PRC members are identifying opportunities for relationship-building and improved coordination among the numerous service systems with whom postpartum women may interact during the course of a pregnancy or after delivery. Intentional alignment across systems now is especially imperative given that postpartum women are a population of focus within maternal and child health, health care, and the child welfare fields. KCMO PRC also is in the very early stages of exploring ways to share data to develop a more precise scope of need and nuanced understanding of how social determinants of health may impact the ability of postpartum women to access treatment. Ultimately, the group aims to ensure that all postpartum women, regardless of where or when they first seek care, receive the support they need to create healthy lives for themselves and their families.
Advancing Equitable Outcomes for Black Women and Babies

By Kelly McKay, MSW, LMSW, Program Coordinator, Enhanced CenteringPregnancy®, Saint Louis Integrated Health Network

In December 2016, the Equity in Infant and Maternal Vitality transdisciplinary team received a 2 ½-year grant from the Missouri Foundation for Health to design and pilot an enhanced model of group prenatal care for African-American women. The group prenatal care providers at the time of the pilot study included Affinia Healthcare, Barnes-Jewish Hospital, St. Mary’s Hospital in partnership with St. Louis University School of Medicine, Washington University School of Medicine and FLOURISH STL.

Since beginning this initiative, five sites in the St. Louis area have added group prenatal care to their women’s health services: Family Care Health Centers — Carondelet and Forest Park Southeast, Jamaa Birth Village, CareSTL Health-Riverview, and Mercy Clinic Family Medicine/Good Shepherd Children and Family Services.

The collective is focused on four goals to advance equity in women’s health.

- Bridge and integrate medical and behavioral health services within prenatal and postpartum care to advocate for whole person wellness.
- Bridge and integrate trauma-informed care and racial equity to create shared accountability to address the impact of racism and discrimination on health outcomes.
- Work within multi-institution and multidisciplinary teams to advance women’s health through intensive trainings, evaluation, curriculum enhancement and operationalization of racial equity.
- Actively integrate community collaborators most impacted by maternal and infant health inequities to develop, implement, evaluate and lead overall initiative strategies.

Significant racial disparities are observed within women’s health care. Existing clinical interventions and the prevailing medical model are unable to close the gap. The culture of medical practice is broadened by elevating and integrating perspectives from communities and health care institutions to develop innovative solutions, practices and new approaches to care delivery. Our work supports building an evidence base to answer: Why is there a racial disparity in women’s health? What can St. Louis do to reduce racial disparities in women’s health?

The pilot included both qualitative and quantitative data sets as follows.

Interviews were conducted with health care providers who participated in facilitating enhanced group prenatal care or standard group prenatal care. Themes from health care providers who participated in facilitating the enhanced group prenatal care included the following.

- strategies to facilitate discussions on implicit bias
- strategies to address power dynamics between the patient and health care provider to increase equitable and respectful care
- increase in active listening and skills to integrate behavioral health tools

In addition, interviews were conducted with patients four to 12 weeks after attending one of the three modalities: 1) enhanced group prenatal care, 2) standard group prenatal care, or 3) standard individual care. The most widely mentioned increase in knowledge was breastfeeding. The most widely mentioned benefit was alleviating their stress. Additionally, enhanced group prenatal care patients demonstrated a trend in lower rates of preterm birth (37 weeks or less), a higher rate of breastfeeding at hospital discharge and higher birth weight (average 6.9 pounds) as compared to standard group prenatal care and standard individual care patients. Enhanced group prenatal care patients also demonstrated trends that indicate an increase in buffering capacity against trauma and stress, such as a decrease in depression, which could account for the intervention’s reduction in adverse pregnancy outcomes. Although the results are not statistically significant, Equity in Infant and Maternal Vitality Phase Two will include an increased sample size and inclusion of all 12 sites.

The pilot work has been recognized through award of first place in The National Improvement Challenge on Reduction of Peripartum Racial and Ethnic Disparities by the Council on Patient Safety in Women’s Health Care. This work also was presented at the 8th International Conference on Patient- and Family-Centered Care: Promoting Health Equity and Reducing Disparities.

Currently in progress is the development of the Birth Equity Index — a mixed methods approach with quantitative and qualitative data to examine the collective impact of contextual indicators on black infant mortality and racial inequity in mortality rates — in collaboration with the National Birth Equity Collaborative, with Dr. Joia Crear-Perry providing consultation and technical assistance.

For further information on the Equity in Infant and Maternal Vitality work, please contact Kelly McKay at KMckay@stlouisihn.org.
Maternal Mortality and the HOPE Registry: How Missouri is Making a National Impact

By Karen L. Florio, D.O., MFM; Anna Grodzinsky, M.D., MS; Laura Schmidt, M.D. and John Spertus, M.D., MPH

The rising maternal mortality rate in the U.S. constitutes a true public health crisis. The number of women dying during childbirth has garnered both national and international attention. Cardiovascular disease, including a spectrum of cardiac conditions with a high incidence of cardiomyopathy, has emerged as the leading cause of maternal mortality in the U.S. In-depth review of maternal mortality in California from 2002 to 2006 indicated that only a small fraction of the women had a known diagnosis of CVD prior to death. However, most women who died had presented to care with cardiac-related symptoms either during pregnancy or shortly after childbirth. One-fourth of the deaths were judged preventable if heart disease had been included in the differential diagnosis, and timely diagnosis and treatment had occurred. Although cardiac disease complicates only 4% of all pregnancies, it is responsible for more than 25% of maternal deaths. If the true gauge of success of a nation’s delivery of health care is the maternal mortality rate, then it is clear that we are failing; however, this issue is relevant to the management of patients from all racial and socioeconomic backgrounds.

In 2018, U.S. Representatives Diana DeGette (D-Colo.) and Jaime Herrera-Buetler (R-Wash.) began researching the etiologies of this concerning mortality trend and were unable to discern the causes of pregnancy-associated deaths. They soon realized that individual states would require federal assistance to prompt improvement in maternal outcomes. Without a cohesive data monitoring system, the problem would remain unsolved. The congresswomen put forth a bill to federally fund state-level maternal mortality review committees through AIM. In conjunction with ACOG and CDC, the Preventing Maternal Death Acts (H.R.1318) would allocate funding to each AIM state for data monitoring and collection to find and address root causes of maternal morbidity and mortality.

The problem is too vast to tackle at a local level or by individually led physician-scientists, as the solution requires sizable funding and manpower to develop research initiatives and to maintain state-led maternal review committees. Funding traditionally granted to investigator-led research initiatives is through NIH and requires years to obtain. Given the far-reaching implications of the rising maternal death rate, the breadth of data collection and analysis needed to better understand the associated factors, and the urgency with which this gap needs to be addressed, federal- and state-based agencies should be key advocacy and funding partners.

Currently, no consensus exists on the care of pregnant women with heart disease, and significant gaps remain in knowledge regarding the best management approach. In an effort to address this gap and decrease maternal mortality, a framework has been developed for the first nationwide, multidisciplinary, prospective registry following pregnant women with heart disease. The Heart Outcomes in Pregnancy: Expectations for Mom and Baby Registry was developed in partnership with cardiologists at Massachusetts General Hospital and will enroll 1,000 women from 50 centers across the country to prospectively study the determinants of adverse maternal, fetal and neonatal outcomes associated with cardiovascular-related issues. This registry not only will provide researchers with access to clinical outcomes data, but also SDOHs and perceived biases that are known to adversely impact patients’ morbidity and mortality. The pilot of this study has a planned launch of January 2020, with plans to complete enrollment of all sites by 2026 on a rolling basis. By serving as the HOPE Registry coordinating and data analytic center, Missouri will serve to change the course of maternal health care in the U.S. and positively influence the lives of mothers and babies. For more information on the HOPE Registry, visit saintlukeskc.org/HOPEregistry.
Jamaa Birth Village

By Brya Johnson, Program Coordinator and Lead Staff Doula, Jamaa Birth Village

Brittany “Tru” Kellman began her journey to become a midwife in June 2015. From there, she launched a community campaign and founded a nonprofit in October 2015. In January 2016, she began “Midwife Thursdays” from her Ferguson, Mo., home. In this same space, she hosted the first doula training in April of that same year. In June 2016, Jamaa Birth Village moved into the current building at 8 Church St., Ferguson, Mo., and in this space, celebrated four years of supporting families in the St. Louis region.

The mission of Jamaa Birth Village is to provide affordable access to midwives, doulas and childbirth education for at-risk women in the St. Louis region in an effort to lower premature births and infant mortality through a network of health professionals and peers. In addition, the organization seeks to provide culturally congruent care to families at-risk of experiencing adverse perinatal outcomes. Since inception, Jamaa Birth Village has been integral in the community and collaborated with several partners to ensure sustainability of services, including the following.

- March of Dimes Grant in February 2017
- Launched the St. Louis Doulas of Color Collective in January 2018
- Missouri Humanities Council Grant for the Missouri Midwives Project in June 2018
- Community Baby Shower held in 2018
- Awarded two families the “Jamaa Family of the Year” awards during an annual gala

In 2019, Kellman became the first and only black Certified Professional Midwife in Missouri, and Jamaa Birth Village experienced opportunities to expand both in physical footprint and in services provided to the local community.

- began demolition and renovation on the new birthing village in Ferguson, Mo.
- launched Jamaa Birth Village Doula Training Curriculum
- launched the Equal Access Midwifery Clinic to serve underinsured/uninsured pregnant women from the St. Louis area
- launched the Jamaa Birth Village Apothecary to provide herbal knowledge to the community

Jamaa Birth Village Programs include the following.

- Equal Access Midwifery Clinic
- Jamaa Succeeds (goal-oriented program with access to a community health worker)
- MOMS Support Group (peer support for expectant or postpartum mothers)
- birth and postpartum doula care
- chiropractic care
- baby-wearing consultations
- water birth prep/kit rentals
- childbirth education options
- doula trainings

As a direct response to the maternal-infant health crisis in St. Louis and to provide consistent wraparound client services, future endeavors include the completion of Jamaa’s New Home, resulting in an increase from two rooms to 12 rooms. Plans are underway to expand the Equal Access Midwifery Clinic and the Centering Pregnancy model of group-centered prenatal care, as well. For additional information about Jamaa Birth Village, please call 314-643-7703, or email info@jamaabirthvillage.org. Brittany “Tru” Kellman, Executive Director and CPM at tru@jamaabirthvillage.org or Brya Johnson, Program Coordinator & Lead Staff Doula at brya@jamaabirthvillage.org.
Title V & LPHA Tobacco Cessation Efforts

By Martha Smith, Missouri Child Health Services Program Manager

The Missouri Title V Maternal Child Health Block Grant Program is the lead entity entrusted with providing MCH services through various programs and initiatives, and in collaboration with local public health agencies and other entities catering to the needs of MCH populations across the state. Through the federal fiscal year 2016-2020 MCH Title V five-year needs assessment, prevention and reduction of smoking among women of childbearing age and pregnant women was identified as a state priority. Missouri has one of the highest smoking rates in the U.S., and smoking during pregnancy continues to be a significant public health concern. Women who smoke during pregnancy are more likely to experience a fetal death or deliver a low birthweight baby. Smoking rates are particularly high among Medicaid clients, and since the cost of nearly half of all births in Missouri are covered by Medicaid, the high rates of smoking during pregnancy among this subgroup are especially concerning as it leads to the need for more intensive neonatal care.

Secondhand smoke — a mixture of mainstream smoke (exhaled by the smoker) and the more toxic sidestream smoke (from the lit end of a nicotine product) — is classified as a “known human carcinogen” by the U.S. Environmental Protection Agency, the U.S. National Toxicology Program and the International Agency for Research on Cancer, and is a risk factor for preterm birth and low birthweight.

Pregnancy offers the opportunity for many patient and care provider interactions, as well as for teachable moments.

Promoting and providing tobacco cessation resources can have a positive impact on the MCH population and can increase the number of quit attempts by pregnant women. Missouri’s Title V tobacco control initiatives include strategies to address both tobacco cessation and the dangers of secondhand smoke. Title V programs work closely with local public health agencies and other partners to provide data and assist them in developing and implementing effective work plans to address ongoing challenges that affect maternal and child health, including smoking among women of childbearing age.

Through contracts funded by the Title V MCH Block Grant, the MCH Services Program supports a leadership role for LPHAs within coalitions and partnerships to build MCH systems and expand the resources those systems use to respond to priority MCH issues. LPHAs are required to use contract funding to expand or enhance activities that improve the health of the MCH population, as well as to address local MCH issues. Ten FFY 2019-2021 LPHA MCH Services Contract Work Plans (Audrain, Chariton, Clinton, Cole, Franklin, Lafayette, Monroe, Ozark, Springfield-Greene and Sullivan counties) are focused on promoting tobacco avoidance and cessation among women of childbearing age and pregnant women, and identifying and eliminating tobacco-related disparities among the MCH population. The work plans are developed based on the Life Course Perspective and use the Spectrum of Prevention Model to influence policy and legislation, change organizational practices, foster coalitions and networks, educate providers, promote community education, and strengthen individual knowledge and skills.
Building Capacity and Knowledge Through Show-Me ECHO

By Lindsey Beckmann, Associate Director of Outreach, Communication & Education, Missouri Telehealth Network/Show-Me ECHO

Show-Me Extension for Community Healthcare Outcomes uses videoconferencing technology to connect a team of interdisciplinary experts with primary and rural care providers. The discussions with, and mentoring from, specialists help equip the providers to give their patients the right care, in the right place, at the right time. Clinicians who participate in Show-Me ECHO collaborate with specialists in a case-based learning environment to develop advanced clinical skills and best practices. The ECHO sessions are approved for AMA PRA Category 1 Credit(s)™.

The Show-Me ECHO program, through the Missouri Telehealth Network, currently supports two ECHOs for maternal care providers. The Challenges in Rural Obstetrics for Women and Neonates ECHO and the High Risk OB Partnership for Excellence ECHO has empowered and supported providers in urban and rural Missouri to improve care and outcomes for mothers and babies. The two maternal teams mentor and support urban and rural health care teams that treat pregnant women through the following.

- keeping patients’ care local when appropriate
- building relationships with participants to empower, support and educate providers, systems and care teams
- sharing evidence-based knowledge and best system-based practices
- providing a safe and nurturing forum for exchanging knowledge and sharing experiences
- increasing awareness of how SDOHs impact at-risk and disparaged populations

Maternal care providers are encouraged to join a one-hour online videoconference twice per month to discuss and share clinical case presentations with a multidisciplinary expert team and peers. The following lists examples of topics to be discussed.

- aspirin and risk of preeclampsia
- spontaneous pre-term birth
- gestational diabetes
- barriers for access to care
- multiple monochorionic
- depression and anxiety
- substance use disorder
- hypertension
- hemorrhage
- prioritization of needs
- genetic screening
- grief and loss
- comorbid conditions in early pregnancy
- trauma-informed care
- contraception planning

To learn more or to register for the ECHOs, visit [www.showmeecho.org](http://www.showmeecho.org).
References


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