PRECONCEPTION AND INTERCONCEPTION CARE RESOURCE WORKBOOK

MISSOURI PQC Perinatal Quality Collaborative | MHA

Acknowledgements

Improving the health outcomes of maternal and infant populations is a critical priority in Missouri. The Missouri Perinatal Quality Collaborative serves as a statewide convener, resource, and change agent to support decreased variations in care and outcomes, support optimized use of evidence-based practice, and support clinical-community integration — all noted gaps in achieving equitable and improved health.

These efforts would not be possible without the collective vision and collaboration of the Missouri Department of Health and Senior Services, Missouri Hospital Association, and members of the Missouri Maternal-Child Learning and Action Network. MC LAN members represent a diverse group of stakeholders from clinical backgrounds, professional associations, government agencies, community-based organizations and community representatives who have committed support to reducing maternal morbidity and mortality in Missouri, including the March of Dimes, Missouri Section of the American College of Obstetricians and Gynecologists, Missouri Chapter of the American Academy of Pediatrics, Missouri Primary Care Association, Missouri DHSS, Missouri Department of Social Services MO HealthNet Division, Missouri Foundation for Health, Missouri Chapter of the Association of Women's Health, Obstetric and Neonatal Nurses, Nurse Practitioners in Women's Health Association, Missouri Chapter of the Amniotic Fluid Embolism Foundation, Generate Health, St. Louis Integrated Health Network, Bootheel Perinatal Network, Healthy Blue MO, Home State Health, United Healthcare, Nurture KC, Promise 1000, M-Brace Birthing, SafiMoms365, the Doula Foundation and Simply Strategy. These partners successfully aligned efforts to bring Alliance for Innovation on Maternal Health initiatives to Missouri in 2019 and connect directly to the Missouri Pregnancy-Associated Mortality Review Board, which identifies leading causes of morbidity and mortality.

The MO PQC also acknowledges the contributions of AIM, the national, cross-sector commitment designed to lead in developing and implementing patient safety bundles to promote safe care for every U.S. birth. Founded in 2014 through a cooperative agreement funded by the Health Resources and Services Administration and executed by ACOG, the AIM program provides expert technical support and capacity building to multidisciplinary state-based teams, most often perinatal quality collaboratives, leading targeted rapid-cycle quality improvement via implementation of patient safety bundles. An AIM patient safety bundle is a structured way of improving the process of care and patient outcomes: a small, straightforward set of evidence-based practices that, when performed collectively and reliably, have been proven to improve patient outcomes. Patient safety bundles are developed by expert multidisciplinary working groups, supported by the AIM staff at ACOG. Working groups include representatives appointed by professional member organizations, known experts and researchers specializing in the clinical topic, and patients with lived experience. The bundle development process includes design of measure and metrics for implementation and multiple levels of review from engaged stakeholders.[1]

The MO PQC leverages AIM patient safety bundles as one option to support implementation of evidence-based practice and care delivery redesign for birthing units, providers and communities throughout the state.

This publication was produced with grant funding provided by the Missouri Department of Health and Senior Services and the Perinatal Quality Collaborative under contract number CS230931001.

The Evidence

In the health care field, the spotlight is often directed toward pregnancy and childbirth, given their profound impacts on both maternal and child well-being. However, the journey toward parenthood begins long before conception making preconception and interconception health critically important.

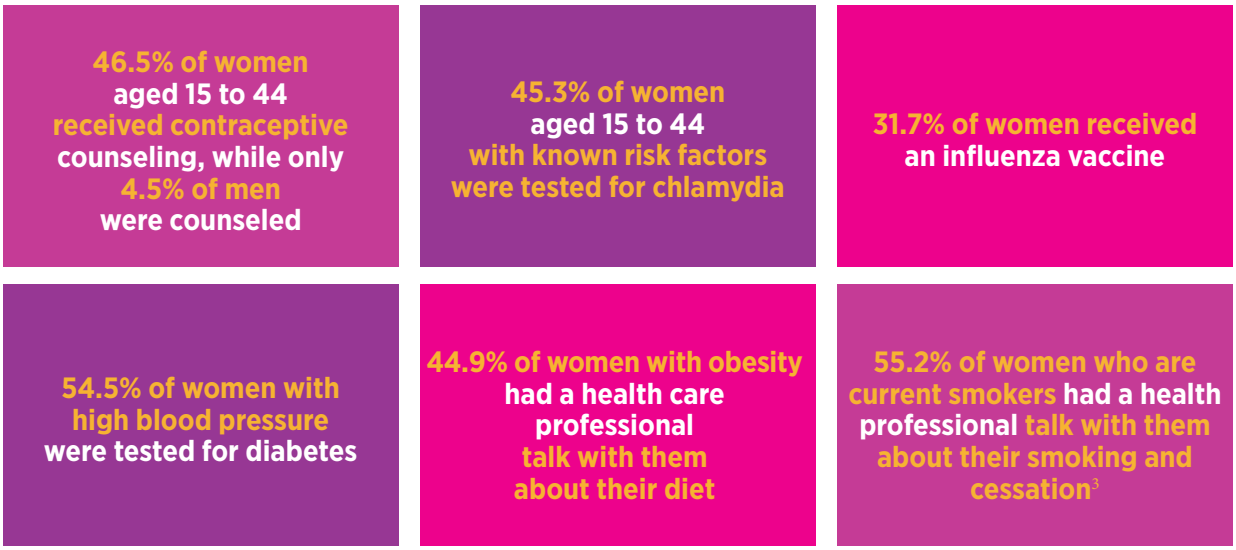
Preconception health encompasses the health of individuals, both biological males and females, during their reproductive years, with a focus on optimizing their health status prior to conception. The goal of prepregnancy care is to reduce the risk of adverse health effects for the birthing person, fetus and neonate by working with the birthing person to optimize health, address modifiable risk factors and provide education about healthy pregnancy behaviors.[2]

Trends of maternal and infant mortality and morbidity in the U.S. highlight a pressing need to prioritize birthing people's health care. Disparities in outcomes between Black and white populations are stark and widening, reflecting deeply entrenched systemic injustices against people of color in America. Additionally, individuals with disabilities, diverse gender identities, those in remote areas and non-English speakers face heightened risks of neglect and harm, underscoring systemic shortcomings that are both unjust and preventable.

While ensuring high-quality prenatal and postpartum care is crucial, addressing modifiable risk factors before pregnancy is equally essential to improving birth outcomes. These factors include optimizing interconception intervals, avoiding teratogenic medications, managing infections, reducing substance exposure, addressing chronic diseases and promoting nutritious diets.

Routine health prevention and promotion guidelines exist, but women are not routinely receiving this care. The following data in the boxes below from the Centers for Disease Control and Prevention illustrate this point.

Interconception health, on the other hand, addresses the period between pregnancies, aiming to address any health issues that arose during previous pregnancies and ensure the best possible outcomes for subsequent pregnancies. All birthing people of reproductive age who have been pregnant, regardless of the outcome of their pregnancies (miscarriage, abortion, preterm, full-term delivery), should receive interconception care as a continuum from postpartum care to a subsequent pregnancy to promote overall health and wellness. The initial components of interconception care should include the components of postpartum care, such as reproductive



life planning, screening for depression, vaccination, managing diabetes or hypertension if needed, education about future health, assisting the patient to develop a postpartum care team, and making plans for long-term medical care. In patients with chronic medical conditions, interconception care provides an opportunity to optimize health before a subsequent pregnancy.[4] Together, these concepts form a crucial continuum of care that spans well beyond the nine months of gestation.

Severe maternal morbidity and mortality continue to increase in the U.S., largely due to chronic and newly diagnosed medical comorbidities. Interconception care can improve chronic disease control before, during and after pregnancy. A crucial and time-sensitive intervention can decrease SMM and MM, and improve overall health.[5] Through education, screening, counseling and interventions tailored to individual needs, health care providers can empower individuals to take proactive steps toward optimizing their health either before embarking on the journey of parenthood or to improve health before future pregnancy. Moreover, integrating preconception care into routine health care visits and promoting a holistic approach to reproductive health can help bridge the gap between traditional prenatal care and the broader spectrum of preconception and interconception health needs.

Missouri's Call to Action

The Missouri PAMR Board reviews all deaths of women and birthing people while pregnant or within one year of the end of the pregnancy. Pregnancy-associated death is the overarching term used when referring to maternal deaths. Within this broad categorization are more specific terms to describe the cause of death, including pregnancy-related death, pregnancy-associated, but not related (PANR) death and pregnancy-associated, but unable to determine relatedness.[6] See definitions below.

Pregnancy-related death: Death occurring during or within one year of the end of pregnancy from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiological effects of pregnancy[6]

PANR: Death during or within one year of pregnancy from a cause that is not related to pregnancy[6] (e.g., pregnant person who dies in a natural disaster)

Pregnancy-associated, but unable to determine relatedness: Cases when the board was unable to determine if a death was pregnancy-related or PANR[6]

Maternal morbidity: Any health condition attributed to and/or aggravated by pregnancy and childbirth that negatively impacts women's health short-term or long-term (Updated June 2024).[6]

Maternal mortality: The World Health Organization defines a maternal death as "a death while pregnant or within 42 days of the end of the pregnancy from any cause related to or aggravated by pregnancy or its management, but not from accidental or incidental causes."[7] In Missouri, the term maternal mortality is used to describe the death of a person during pregnancy, childbirth and the postpartum period up to 365 days from the end of a pregnancy (Updated June 2024).[6]

A 2023 study on preconception health in the U.S. found that preconception health was worse in the South and Midwest as compared to other regions. More than three-quarters of the sample population had poor nutrition, and more than half had an unhealthy body weight. Disparities existed by rurality and region, age, race or ethnicity, relationship status, insurance status, education and income, with the worst preconception health scores noted in households with an annual income lower than $15,000.[8]

Preconception care and interconception care can provide opportunities to address many chronic health conditions that complicate pregnancies and contribute to maternal

morbidity and mortality. One key condition is obesity. Obesity is associated with an increased risk for nearly all pregnancy complications and with a higher incidence of congenital anomalies.[9] In Missouri, the pregnancy-related mortality ratio was highest among pregnant people who were overweight/obese with obesity contributing to one in six (17%) pregnancy-related deaths.[6]

One of the primary reasons for maternal mortality is hypertensive disorders of pregnancy, which affect 12% to 22% of pregnancies. In Missouri, there were 6,691 cases of chronic hypertension, 18,610 cases of gestational hypertension and 1,294 cases of eclampsia during pregnancy. Black birthing people had the highest rates of all forms of HDP.[10]

Diabetes in any form during pregnancy can have detrimental effects on both birthing people and their babies. To mitigate adverse outcomes, preconception care, interconception care and prenatal care play crucial roles in ensuring the health of both birthing person and baby. Health care providers can assist by monitoring blood sugar levels and offering personalized recommendations for effectively managing this condition.

Preconception and interconception care also can focus on mitigating health conditions that contribute to maternal morbidity. Severe maternal morbidity is a broad term encompassing unexpected negative outcomes during labor and delivery that have significant short-term or long-term health consequences for birthing people. These acute conditions may involve blood transfusions, renal failure and hysterectomy, among others. **Attention to chronic medical conditions during the preconception or interconception periods can improve chronic disease control before, during and after pregnancy and is crucial in decreasing maternal morbidity and mortality and improving long-term health, especially because 36% of patients aged 18 to 49 years have at least one chronic medical condition.**[5]

To summarize, preconception care should cover the following elements.

- family planning services
- preventive health screenings
- management of chronic health diseases
- review of prescription and nonprescription medications
- review of immunization status
- assessment of need for sexually transmitted infection screening
- discussion of exposure to certain diseases and travel restrictions
- encouragement of folic acid supplementation
- nutritional assessment for meeting recommended daily allowances
- encouragement to attain a safe body mass index

Interconception care also should include the previous elements, along with proactive discussions and guidance given during the prenatal period, during the inpatient hospital discharge and appropriate follow-up postpartum visits that provide a warm handoff for continuing care.

The MO PQC encourages all stakeholders in maternal-infant health to take action to reduce SMM and MM by planning for obstetric patients and their health care needs during and after pregnancy. The purpose of this toolkit is to provide a framework for evidence-based care.

Birthing organizations interested in learning more about preconception and interconception care may register with the MO PQC.

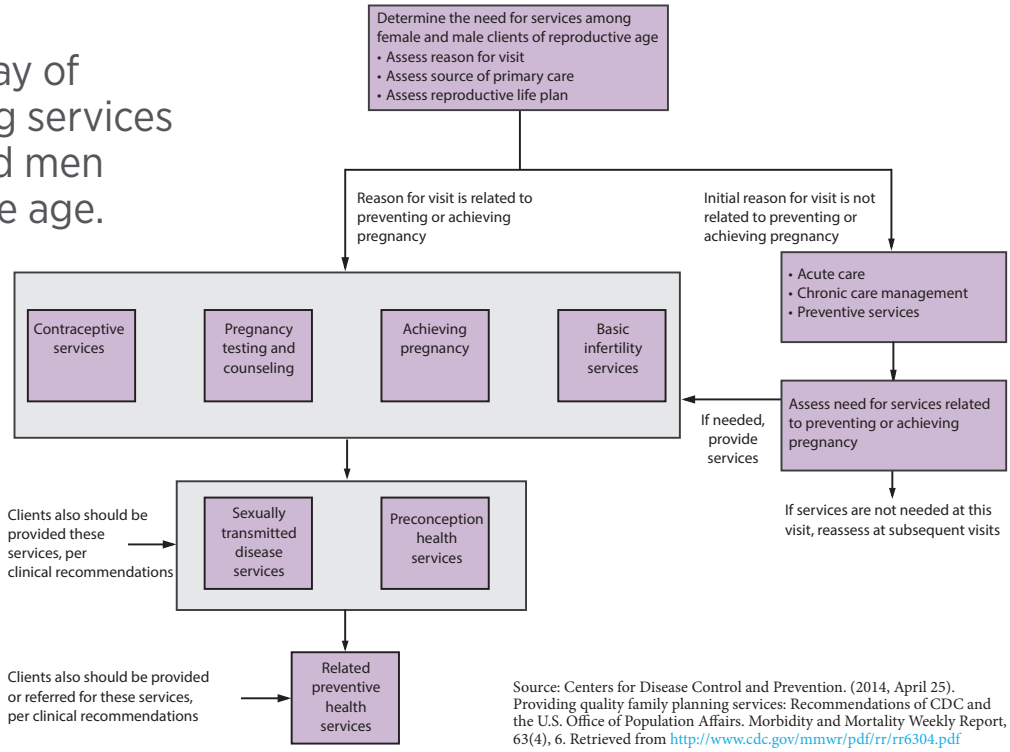
Evidence-Based Guidance for Preconception and Interconception Care

Preconception Care — All Providers and Clinics

- ☐ Provide quality family planning services. Preconception care should include the following elements.
  - ☐ contraception to help men and women plan and space births and reduce unintended pregnancies
  - ☐ pregnancy testing and counseling
  - ☐ basic infertility services
  - ☐ sexually transmitted infection screening and treatment services
- ☐ Provide preventive health services, which should include the following.
  - ☐ screening for obesity, smoking, mental health disorders, hypertension and intimate partner violence
  - ☐ other screenings not directly related to preconception care but important for the health of the parents
    - ☐ breast and cervical cancer screening
    - ☐ lipid disorders, skin cancer, colorectal cancer and osteoporosis screening
- ☐ Manage patients' chronic health conditions, such as diabetes, hypertension, mental health disorders, substance use disorder and thyroid disease.[2]
- ☐ Review all prescription and nonprescription medications. This also should include nutritional supplements and herbal products that a patient may not consider as medication but could affect reproduction and pregnancy.[2]
- ☐ Review patients' immunization status, including tetanus toxoid, reduced diphtheria toxoid and acellular pertussis (Tdap); measles-mumps-rubella; and hepatitis B and varicella.
- ☐ Assess for the need of STI screening.[2]
- ☐ Discuss potential exposure to certain infectious diseases, such as the Zika virus, and counsel the patient regarding travel restrictions and the appropriate waiting time before attempting pregnancy.[2]
- ☐ Encourage prepregnancy folic acid supplementation to reduce the risk of neural tube defects.[2]
- ☐ Screen patients to ensure they are meeting recommended daily allowances for calcium, iron, vitamin A, vitamin B12, vitamin B, vitamin D and other essential nutrients through their diet and vitamin supplements.[2]
- ☐ Encourage patients to attain a BMI in the recommended range before attempting pregnancy.[2]

Figure 1:

Clinical pathway of family planning services for women and men of reproductive age.



Source: Centers for Disease Control and Prevention. (2014, April 25). Providing quality family planning services: Recommendations of CDC and the U.S. Office of Population Affairs. Morbidity and Mortality Weekly Report, 63(4), 6. Retrieved from http://www.cdc.gov/mmwr/pdf/rr/rr6304.pdf

Interconception Care — All Providers and Clinics[4]

In addition to the topics in Preconception Care section, providers and clinics should remember the following.

- ☐ During prenatal care
  - ☐ determine who will provide primary care after the immediate postpartum period
  - ☐ discuss reproductive life planning and preferences for a method of conception
  - ☐ provide anticipatory guidance regarding breastfeeding and maternal health
  - ☐ discuss associations between pregnancy complications and long-term maternal health as appropriate (e.g., gestational diabetes, severe hypertension in pregnancy)[3]
- ☐ During the hospital stay/post-delivery
  - ☐ discuss the importance, location and timing of follow-up for postpartum care
  - ☐ if desired by patient, provide contraception, including long-acting, reversible contraception or surgical sterilization
  - ☐ provide anticipatory guidance regarding breastfeeding and maternal health
  - ☐ ensure the patient has a postpartum medical home
- ☐ At the comprehensive postpartum visit
  - ☐ review any complications of pregnancy and birth and their implications for future maternal health and discuss appropriate follow-up care
  - ☐ review the reproductive life plan and provide an appropriate method of contraception
  - ☐ ensure the patient has a primary medical home for ongoing care
- ☐ During routine health care or gynecological care visits
  - ☐ assess whether the patient would like to become pregnant in the next year
  - ☐ screen for IPV and depression/mental health disorders
  - ☐ assess pregnancy history to inform decision about screening for chronic conditions
  - ☐ for known chronic conditions, optimize disease control and mental health

Clinical Components of Interconception Care[3]

- ☐ Breastfeeding and maternal health
  - ☐ Breastfeeding is an important component of interconception health, and providers should support and provide breastfeeding guidance. Multiple studies have shown that longer duration of breastfeeding is associated with lower risks of hypertension, diabetes, myocardial infarction, ovarian cancer and breast cancer in the pregnant person.
  - ☐ For patients with gestational diabetes, a longer duration of breastfeeding has been associated with a decreased risk of metabolic syndrome.[4]
- ☐ Interconception interval
  - ☐ Birthing people should be encouraged to avoid intervals between pregnancies shorter than six months, and they should receive counseling about the risks and benefits of becoming pregnant again sooner than 18 months after giving birth. Observational studies in the United States indicate a modest increase in adverse outcomes with intervals of less than 18 months, and a more substantial risk of adverse outcomes with intervals of less than six months between birth and the subsequent pregnancy, though there have been some recent studies that have called into question the causal effect of short interconception intervals on some outcomes.[11]
- ☐ Depression
  - ☐ All patients should be screened for depression in the postpartum period and then as part of well-woman care during the interconception period.
    - ☐ Screening should be implemented with systems in place to ensure accurate diagnosis, effective treatment and appropriate follow-up.
    - ☐ Screening should be done with a validated instrument.
      1. Patient Health Questionnaire-9
      2. Edinburgh Postnatal Depression Scale
    - ☐ The American Academy of Pediatrics recommends postpartum depression screening at the time of well-child visits at one, two, four and six months of age.
  - ☐ According to a recent systematic review, among women who screened positive for depression, only 22% attended a mental health visit without any intervention to help facilitate referral.[12]
- ☐ Weight reduction
  - ☐ By six to 12 months postpartum, patients should be encouraged to reach their prepregnancy weight and ultimately achieve a BMI of 18.5-24.9.
  - ☐ The retention or gain of weight after pregnancy has been linked to potential adverse obstetric outcomes in subsequent pregnancies, including gestational diabetes, hypertensive disorders, stillbirth, larger-than-average neonates, cesarean delivery, long-term obesity and potentially congenital anomalies. Lowering BMI between pregnancies is connected with better perinatal outcomes, underscoring the importance of achieving an ideal body weight as a key aspect of interconception care.
  - ☐ Health care providers should offer specific, actionable advice regarding nutrition and physical activity. The ACOG Obesity Webinar and Toolkit is an excellent resource.
- ☐ Other medical conditions — For patients with chronic medical conditions, interconception care offers a chance to enhance health before another pregnancy. Additionally, for patients who do not plan on future pregnancies, the postpregnancy period presents an opportunity for secondary prevention and overall health improvement. See the Resources section for a chart with recommendations for counseling and goals for specific health conditions.

Preconception and interconception care are vital for patients with chronic health conditions as they provide crucial opportunities to optimize health before and between pregnancies. By managing conditions such as diabetes, hypertension or other chronic illnesses effectively during these periods, health care providers can mitigate potential risks to both maternal and fetal health. This proactive approach not only enhances pregnancy outcomes but also supports long-term health by addressing underlying conditions and promoting overall well-being throughout a woman's reproductive journey.

Resources

Preconception Care

CDC: Providing Quality Family Planning Services

Preconception Health+Health Care Initiative: Women's Health Practice Bulletin 2020

Johns Hopkins Medicine: Preconception Care Checklists

ACOG: Committee Opinion on Prepregnancy Counseling

DHSS: Preconception Care/Folic Acid

Missouri State Agencies: Healthy Moms, Healthy Babies

Interconception Care

ACOG: Interpregnancy Care – Table 2: Specific Conditions

Obesity

ACOG: Obesity Toolkit (Webinar and Resources)

Telehealth and Mental Health Resources

MHAP: Missouri Maternal Health Access Project

HRSA: National Maternal Mental Health Hotline

Office on Women's Health: Get Help Now Hotlines

National Parent & Youth Helpline™

MotherToBaby® (for questions about medications and substance exposures during pregnancy and breastfeeding)

Federal Communications Commission 988 Suicide and Crisis Lifeline

Health Care Professional-facing Materials

CDC: Hear Her® Campaign

Reproductive Health National Training Center: Urgent Postpartum Warning Signs

Patient-facing Materials

CDC: Hear Her® Campaign (also in Spanish)

AIM: Urgent Maternal Warning Signs

ACOG: Pregnancy Status Signs in English and Spanish

Care for Pregnant and Postpartum People With Substance Use Disorder

Academy of Perinatal Harm Reduction: Pregnancy and Substance Use: A Harm Reduction Toolkit

CDC: Treatment for Opioid Use Disorder Before, During, and After Pregnancy

Substance Abuse and Mental Health Services Administration: Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants

Cardiac Conditions in Pregnancy and Postpartum

California Maternal Quality Care Collaborative: Cardiovascular Disease Assessment in Pregnant and Postpartum Women Algorithm

American Heart Association: Cardiac Arrest in Pregnancy In-Hospital ACLS Algorithm

Respectful, Equitable and Supportive Care

March of Dimes: Beyond Labels: Do Your Part to Reduce Stigma

ACOG: Respectful Care eModules

Institute for Healthcare Advancement: 10 Elements of Competence for Using Teach-Back Effectively

IHA: Always Use Teach-Back! Toolkit

IHA: Teach-Back Quick Guide

Ottawa Hospital Research Institute: Patient Decision Aids: Implementation Toolkit

Agency for Healthcare Research and Quality: SHARE Approach Curriculum Tools

Centers for Medicare and Medicaid Services: Providing Language Services to Diverse Populations: Lessons From the Field

Rural Health Information Hub: Enhancing Services for Deaf, Hard of Hearing, and Deafblind Patients in Rural America

Trauma-informed Care

SAMHSA: Concept of Trauma and Guidance for a Trauma-informed Approach

Trauma-informed Care Implementation Resource Center: All Resources

Medical Education Online: Trauma-informed Care in the Emergency Department: Concepts and Recommendations for Integrating Practices Into Emergency Medicine

Journal of Obstetric, Gynecologic, and Neonatal Nursing: National Partnership for Maternal Safety: Consensus Bundle on Support After a Severe Maternal Event

AIM: Patient Support After a Severe Event: The Importance of Providing Trauma-informed Care

AIM: Implementing a Clinician and Staff Peer Support Program

Crisis Prevention Institute: 3 Keys to Help Staff Cope With Secondary Trauma

References

[1] Health Resources & Services Administration. (n.d.). Alliance for innovation on maternal health (AIM) capacity. https://www.hrsa.gov/grants/find-funding/HRSA-23-066

[2] American College of Obstetricians and Gynecologists. (2019). Committee opinion no. 762: Prepregnancy counseling. *Obstetrics & Gynecology, 133*(1), e78-e89. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2019/01/prepregnancy-counseling

[3] National Preconception Health and Health Care Initiative. (2020). Women's health practice bulletin 2020 [PDF]. BeforeandBeyond.org. Retrieved April 9, 2024, from https://beforeandbeyond.org/wp-content/uploads/2021/02/phc-bulletin-0223211.pdf

[4] American College of Obstetricians and Gynecologists. (2019). Obstetric care consensus no. 8: Interpregnancy care. *Obstetrics & Gynecology, 133*(1), e51-e72. https://www.acog.org/clinical/clinical-guidance/obstetric-care-consensus/articles/2019/01/interpregnancy-care

[5] Ogunwole, S., Chen, X., Mitta, S., Minhas, A., Sharma, G., Zakaria, S., Vaught, A., Toth-Manikowski, S. M., & Smith, G. (2021). Interconception care for primary care providers: Consensus recommendations on preconception and postpartum management of reproductive-age patients with medical comorbidities. Mayo Clinic Proceedings: Innovations, Quality & Outcomes, 5(5), 872–890. https://doi.org/10.1016/j.mayocpiqo.2021.08.004

[6] Missouri Department of Health and Senior Services. (2024, June). Missouri Pregnancy Associated Mortality Review 2017-2021 Annual Report [PDF]. https://health.mo.gov/data/pamr/pdf/2021-annual-report.pdf

[7] Hoyert, D. L. (2023). Maternal mortality rates in the United States, 2021. NCHS Health E-Stats. https://www.cdc.gov/nchs/data/hestat/maternal-mortality/2021/maternal-mortality-rates-2021.htm#ref1

[8] Centers for Disease Control and Prevention. (2023, November 9). Impact of geography and rurality on preconception health status in the United States. Retrieved April 9, 2024, from https://www.cdc.gov/pcd/issues/2023/23_0104.htm#T2_down

[9] Poston, L., Harthoorn, L. F., & van der Beek, E. M. (2011). Obesity in pregnancy: Implications for the mother and lifelong health of the child. a consensus statement. *Pediatric Research, 69*(2), 175–180. https://doi.org/10.1203/pdr.0b013e3182055ede

[10] Missouri Department of Health and Senior Services. (2023, July). A multi year look at maternal mortality in Missouri, 2018-2020 pregnancy associated mortality review [PDF]. https://health.mo.gov/data/pamr/pdf/2020-annual-report.pdf

[11] Ball, S. J., Pereira, G., Jacoby, P., de Klerk, N., & Stanley, F. J. (2014). Re-evaluation of link between interpregnancy interval and adverse birth outcomes: Retrospective cohort study matching two intervals per mother. *British Medical Journal, 349*(g4333). https://doi.org/10.1136/bmj.g4333

[12] Byatt, N., Levin, L. L., Ziedonis, D., Moore Simas, T. A., & Allison, J. (2015). Enhancing participation in depression care in outpatient perinatal care settings. *Obstetrics & Gynecology, 126*(5), 1048–1058. https://doi.org/10.1097/aog.0000000000001067