PREMATURITY AND INFANT MORTALITY IN MISSOURI

Status Review and Recommendations from Missouri's Task Force on Prematurity and Infant Mortality

January 2014

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Chair's Letter of Introduction

Dear Governor Nixon and Members of the 97th General Assembly, 2nd Regular Session,

We are pleased to present the final report of the Missouri Task Force on Prematurity and Infant Mortality.

Since the task force began work in 2011, a large number of Missourians have contributed their time and expertise toward its goal of improving birth outcomes and related health care across the state. Our state's best minds on these issues developed the recommendations contained within, and represent public and private health entities. There is consensus among this group that implementation of these recommendations will improve birth outcomes, maternal and paternal care, and equitable access to health for all Missourians.

The results we hope to achieve are as follows:

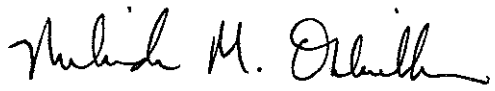
- Establish a Statewide Perinatal Care Collaborative
- Establish a Maternal/Child Health Home Program
- Establish a Repository to House All Maternal/Child Health Information and Resources
- Integrate the Entities Providing Care Across the Perinatal Spectrum
- Present the Importance of Regionalized Perinatal Care
- Implement Evidence-Based Interventions
- Establish a Commission to Oversee Coordination and Implementation of Task Force Recommendations

Funding is needed to implement some of these recommendations, a reality this task force does not take lightly given the economic challenges our state has faced and the many worthwhile competing interests. Funding of these recommendations is an investment in the future of this state, however, and will remove many barriers for this state's most vulnerable populations seeking healthcare.

One final, important recommendation is the creation of a commission to oversee the effective implementation of these recommendations. Our commitment to this mission extends beyond the issuance of the report, and will continue as we strive to improve birth outcomes and related health care in Missouri. We look forward to meeting with you after you have had the chance to review the findings of the task force. We believe the opportunity to begin addressing this important issue starts with the 2014 legislative session.

Thank you for the opportunity to serve Missouri on this important issue.

Sincerely,



Melinda Ohlemiller, Chair

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EXECUTIVE SUMMARY

The Missouri Legislature established the Missouri Task Force on Prematurity and Infant Mortality in 2011 in order to seek evidence-based and cost-effective approaches to reduce Missouri's preterm birth and infant mortality rates. To develop these objectives and strategies, the task force was charged with examining current research and practices associated with the prevention and treatment of prematurity and infant mortality. The legislation stated the task force should submit its findings and recommendations to the Governor and General Assembly by December 31, 2013.

The task force divided into four work groups that researched specific areas pertaining to its charge: Consumer Resources, Provider Resources, Policy, and Data and Metrics. The task force and work groups met numerous times from 2011 through 2013. Each work group drafted recommendations for the report pertinent to its areas of focus, and these recommendations were reviewed and edited by the entire task force prior to their inclusion in the report.

The recommendations outlined within this report represent the consensus of the entire Task Force on Prematurity and Infant Mortality. Recommendations are designed to be proactive and forward-thinking, and build upon the exemplary work of other state task forces convened to address these issues. In brief, the Task Force's recommendations are:

Establish a Statewide Perinatal Care Collaborative

Establish a Maternal/Child Health Home Program

Establish a Repository to House All Maternal/Child Health Information and Resources

Integrate the Spectrum of Entities Providing Resources and Care Across the Perinatal Spectrum

Present to the Legislature the Importance of Regionalized Perinatal Care

Implement Evidence-Based Interventions

Establish a Commission to Oversee Coordination and Implementation of Task Force Recommendations

Proper implementation of these recommendations will greatly reduce the incidence of prematurity and infant mortality in Missouri. Currently, there are significant urban-rural health access issues and racial and ethnic disparities in pregnancy outcomes in our state. These can be addressed and mitigated through the strategic collaboration of state and local stakeholders when enacting these recommendations. Health equity can be further promoted if the social determinants of health are considered when these implementation strategies are developed.

Prematurity and Infant Mortality: Statement of the Problem

Prematurity

A normal pregnancy lasts about 40 weeks. While it was once thought that babies born a few weeks early were just as healthy as babies born after 39 weeks, experts now know that babies grow throughout the entire 40 weeks of pregnancy. During the final weeks, the lungs, brain and liver fully develop. The brain in particular develops at its fastest rate at the end of pregnancy, growing by one third just between weeks 35 and 39. Elective deliveries (those performed for nonmedical reasons) before 39 completed weeks of gestation can pose both short-term and long-term health risks for the newborn, including breathing problems; temperature problems; feeding difficulties; hearing and vision problems; and learning and behavior problems.[i]

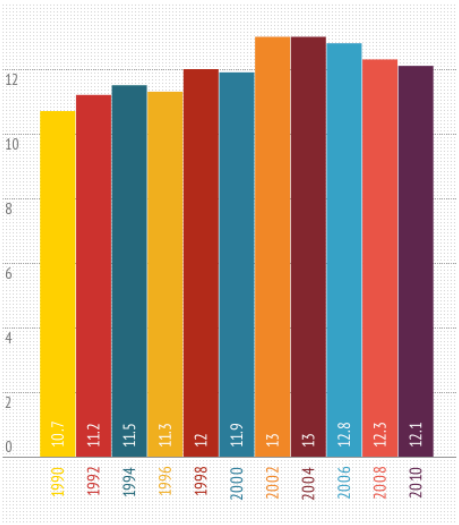
Babies grow throughout the entire 40 weeks of pregnancy.

Missouri has a prematurity problem. The most recent preterm birth rate data (2010) shows Missouri's preterm birth rate of 12.1% has increased from 10.7% since 1990. Since its peak in 2005 the premature birth rate has been declining, however, at the current rates 1 in 8 Missouri babies (9,425 babies per year) are born prematurely.[ii] Discrepancies in preterm birth rates are visible in Missouri from county to county: in 2009, rates ranged from a high of 19.9% in Pemiscot County to a low of 6.0% in Scotland County.[iii] Pemiscot County had 313 births in 2009, compared to the 70 births in Scotland County.[iv]

At the current rates 1 in 8 Missouri babies are born prematurely.

Missouri Premature Births

*As a percentage of total births that year.



Data from National Center for Health Statistics, Final Natality Data.

The United States' national preterm birth rate also rose to over 12.8% between 1990 and 2006. Since its peak in 2006, it has dropped to 12% as of 2010. *Missouri's rate is still higher than the national rate.[v]

Infant Mortality

Infant mortality is the death of infants during the first year of life. Its rates are a reflection of quality of health care, access to quality food and nutrition, safe housing, a healthy environment, and income status. A society's ability to prevent infant deaths is a reflection of its commitment to the health and well-being of all women, children and families.[vi]

Babies fully develop many vital organ systems during the last weeks of gestation. Therefore, preterm birth babies face a higher risk of death or disability than do babies brought to term, 39-40 weeks.[vii]

*Pemiscot County had 313 births in 2009, compared to the 70 births in Scotland County.[viii]

Infant mortality statistics collected through the National Center for Health Statistics for the period of 1990 - 2009 show that infant mortality was highest in Missouri in 1991, with 10.2 infant deaths per 1,000 live births. By 2009, infant mortality was at its lowest point in the 20-year period, with a rate of 7.1 infant deaths per 1,000 live births. Rates during this 20-year period fluctuated as high as 8.5 infant deaths per 1,000 live births, however.[ix]

As mentioned earlier, infant mortality rates vary county-to-county. A review of the 2009 county-level data shows that infant mortality rates ranged from a high of 17.2 infant deaths per 1,000 live births in both Putnam and Schuyler Counties to no infant deaths in Atchison, Gentry, Knox, Maries, and Worth Counties.[x]

Preterm birth is also the leading cause of infant death in the nation. Approximately two-thirds of infant deaths in 2009 occurred among the 12.2% of infants who were born preterm; thus, the infant mortality rate among very preterm infants is 73 times greater than the infant mortality rate of term infants. Overall, national infant mortality rates have declined since 1995. In spite of our state's rate decline since 2005, Missouri is still among 26 states with infant mortality rates on par with the national average.[xi] The 2009 national rate of 6.4% translates to 26,408 deaths among the 4 million live births that year.[xii]

Factors Contributing to Preterm Birth and Infant Mortality

Any woman can give birth prematurely, and any baby can be at risk of circumstances resulting in infant mortality. Some women and babies are at greater risk than others, however.

Researchers have identified risk factors for prematurity, but providers are still unable to definitively predict which women will deliver prematurely. The three groups of women at greatest risk for premature birth are: those who have had a previous premature birth; those who are pregnant with multiples; and those with certain uterine or cervical shortening.[xiii]

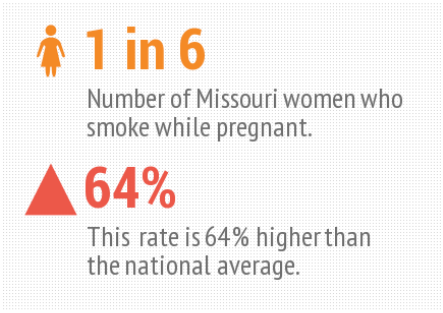
Risk factors for infant mortality span across the preconception to postpartum period. Lack of quality health care, food and nutrition, safe housing, a healthy environment, and income are all significant risk factors. Infants at an increased risk of mortality or those whose families do not have adequate access to primary care or planning prior to pregnancy; high-quality prenatal care; the income to procure treatments for preterm or sick infants; breastfeeding support and immunizations; and safe housing and healthy neighborhoods.[xiv]

Data Source: Secretary's Advisory Committee on Infant Mortality, 2013, "Recommendations for Department of Health and Human Services (HHS) Action and Framework for a National Strategy."

Additional factors that contribute to preterm birth and infant mortality include:

Obesity - The American Congress of Obstetricians and Gynecologists (ACOG) notes that obese women are at increased risk of many pregnancy complications such as gestational diabetes, hypertension, preeclampsia and cesarean delivery. Similarly, fetuses of obese women experience an increased risk of prematurity, stillbirth, congenital anomalies, possible birth injury, and childhood obesity.[xv] Missouri has a

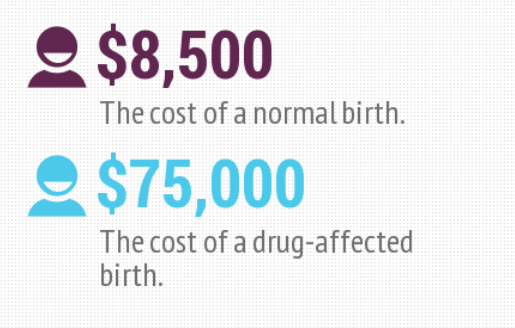
significant obesity problem; roughly 2 out of every 3 adults are overweight or obese.[xvi] Obesity affects Missourians of all races, ethnicities and socioeconomic groups across the state.



Data Source: Missouri Department of Health and Senior Services, US Centers for Disease Control.

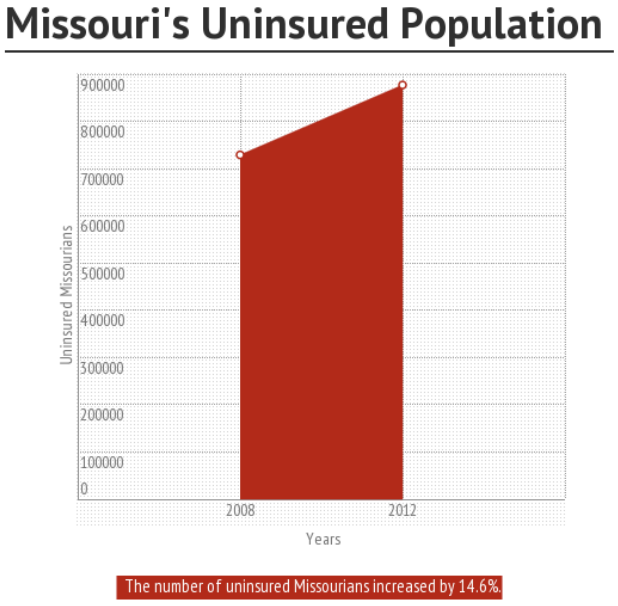
Smoking - The Centers for Disease Control (CDC) reports that smoking during pregnancy increases the risk of preterm delivery, stillbirth, low birth weight, early miscarriage and Sudden Infant Death Syndrome.[xvii] Missouri has the ninth-highest smoking rate in the nation: 25% of adults and more than 18% of high school students in Missouri smoke. Moreover, smoking rates are high among pregnant women in Missouri: 1 of every 6 pregnant women smokes, a rate 64% higher than the national average.[xviii]

Substance Abuse - Missouri grapples with a significant substance abuse problem. In 2012, an estimated 394,000 Missouri adolescents and adults ages 12 and older had a substance use disorder. 262,000 suffered alcohol dependence or abuse; 67,000 had illicit drug dependence or abuse; and 65,000 had both alcohol and illicit drug dependence or abuse.[xix] In addition to negative outcomes, drug and alcohol use in pregnancy increases hospitalization cost. In Missouri, the cost of a drug-affected birth is about $27,000, whereas a normal delivery costs $8,500.[xx]



Data Source: Missouri Department of Mental Health, 2008, "The Burden of Substance Abuse on the State of Missouri."

Medical Coverage - Insufficient access to health care prior to, during and following pregnancy negatively affects pregnancy outcomes. Additionally, maternal health is a driver of infant outcomes during the first year of life. From 2008 to 2012, Missouri's uninsured population increased from 729,000 to 877,000, or 14.6%.[xxi] Significant racial and ethnic disparities exist in women's health. These health disparities largely result from differences in socioeconomic status and insurance status. Access to health insurance coverage and care and utilization of care is significantly different for minority women.

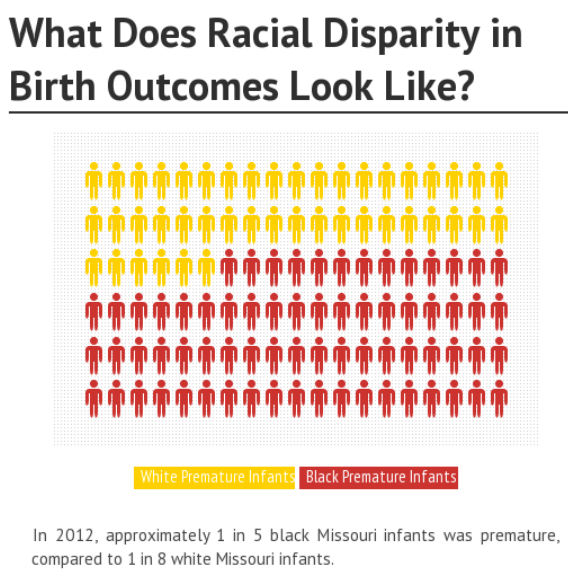


Data Source: Cover Missouri, 2013, "The Significance of Missouri's Uninsured."

Health & Wellness/Nutrition - Missouri ranks among the top 10 states with the highest household percentage classified as food insecure or having very low food security. Estimates of Missouri household rates of food insecurity and very low food security as of 2010 were 16% and 6.7% respectively. 380,097 experience food insecurity and roughly 159,165 households experience very low food security in Missouri; roughly 1.3 million of our citizens.[xxii]

Racial Disparities

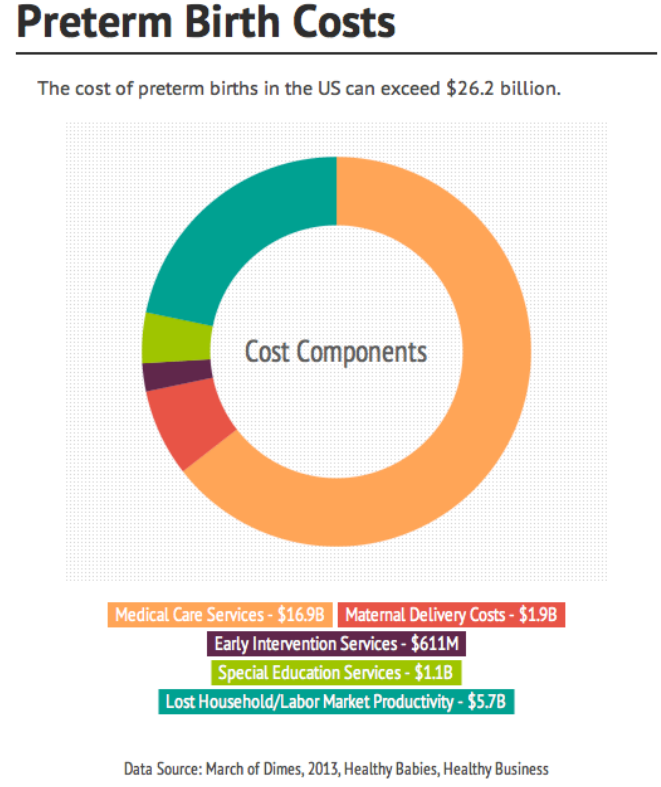
Data collected through the National Center for Health Statistics from 1990 – 2009 shows that premature birth rates and infant mortality rates for black infants were significantly higher than the state averages and exceeded rates experienced by all other races or ethnicities. In 2009, the overall preterm birth rate for Missouri was 12.5%; however, the preterm birth rate for black infants was 18% compared to 11% for white infants.[xxiii] This percentage equates to approximately 1 in 5 black infants born prematurely compared to 1 in 8 white infants. Similarly in 2009, the infant mortality rate for black newborns was significantly higher than both the state average and the rates for all other races or ethnicities.[xxiv]



Costs of Prematurity and Infant Mortality in Missouri

Each premature birth in Missouri costs the state an average of $75,000 in immediate and short-term costs. Many premature babies require hundreds of thousands of dollars in postpartum neonatal intensive care and millions more in longitudinal costs over their lifetime. These costs are passed on to taxpayers both directly through Medicaid and indirectly through increased health insurance costs.[xxv] These costs are in addition to the immeasurable emotional and psychological costs suffered by those coping with the extended effects of prematurity and infant mortality.

In 2005 in the US, preterm costs exceeded at least $26.2 billion. Medical care services contributed $16.9 billion; maternal delivery costs $1.9 billion; early intervention services an estimated $611 million; special education services associated with the higher prevalence of four major disabling conditions among preterm infants (cerebral palsy, intellectual disability, vision impairment and hearing loss) added another $1.1 billion; and lost household and labor market productivity associated with preterm birth disabilities contributed $5.7 billion.[xxvi]



The Current Landscape of Preventive Care

Medicaid for Pregnant Women (MPW) coverage ends on the last day of the month in which the 60th postpartum day occurs. This creates a cliff effect that leads to shorter intervals between births and lack of many vital preventative care services for high risk women in Missouri.

Currently, federal law requires all new health plans to cover certain preventive services for women with no cost sharing. These include the full range of FDA-approved contraceptive methods and contraceptive counseling, well-woman visits, screening for gestational diabetes, breastfeeding support, supplies, and counseling and domestic violence screening and counseling. Beginning in 2014, all new health plans must cover a list of essential health benefits including maternity and newborn care, mental health treatment, and pediatric services such as vision and dental care.[xxvii]

Beginning in 2014, all new health plans must cover maternity and newborn care, and pediatric services such as vision and dental care.

Health Homes promise many potential health system improvements specific to the MO HealthNet program. Missouri was the first state to to have approved Primary Care and Mental Health Health Home state plan amendments approved by CMS. Missouri's Health Homes offer an alternative approach to the delivery of health care services that improves patient experiences and provides better health outcomes and more efficient health care service delivery than traditional care models. They are customized to meet the specific needs of low-income patients with chronic medical conditions and serious mental illness through comprehensive care management, patient and family support, referrals to community and support services, and other initiatives. Although the current Missouri Health Home model was not implemented as part of obstetric and gynecologic care, the model and key concepts from the Mo HealthNet program are transferrable in developing Missouri Maternal Child Health Homes.[xxviii]

Additionally, in 2012, when the premature birth rate was 12.1% the Missouri Department of Health and Senior Services has set the goal of reducing the premature birth rate in Missouri by 8 percent by the year 2014.[xxix] A list of their related initiatives is available in Appendix B of this report.

RECOMMENDATION 1

Establish a Statewide Perinatal Care Collaborative

A perinatal care collaborative is a group of individuals or organizations uniting to improve maternal and perinatal care. Missouri should develop, implement and monitor a statewide perinatal quality collaborative that leverages federal, state, and private funding to promote evidence-based practices and protocols; gathers and shares existing data promptly; generates relevant data and performance metrics; and provides feedback regarding quality outcomes.[xxx]

The collaborative would work to promote policies that eliminate early elective deliveries prior to 39 weeks gestation; reduce infection rates; reduce rates of premature births; reduce smoking rates; provide real time data on high risk pregnancies in case management, premature birth rates, gestational age, gestational birth weight and use of a synthetic progesterone treatment to prevent preterm birth; increase inter-conception counseling; and reduce rates of infant mortality. It would also provide outreach education to hospitals and providers and develop toolkits for improving care and other priorities as determined by members.

> **Missouri should develop a perinatal quality care collaborative, a group of individuals or organizations uniting to improve maternal and perinatal care.**

In creating a collaborative, Missouri would be following in the footsteps of states such as California, Colorado, Florida, Maryland, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Tennessee, Virginia, Washington, West Virginia, and Wisconsin. Perinatal care collaboratives have seen great success in many of these states. In California, for example, more than 130 hospitals currently participate in a collaborative that advocates for superior patient care and efficiency in resource allocation and utilization. California's system also features an integrated data management system that facilitates the identification of important perinatal improvement targets and monitors the public health effects of planned interventions.

The participation of state agencies has enabled existing state collaboratives to stay at the forefront of perinatal care improvements. Any collaborative undertaken by Missouri should similarly involve the participation of state agencies.

Members of the perinatal collaborative should include, but certainly not be limited to, the American Congress of Obstetricians/Gynecologists, the American Academy of Pediatrics, the March of Dimes, the National Association for Nurse Practitioners in Women's Health (NPWH), American College of Nurse Midwives, Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), Missouri Department of Health and Senior Services, Missouri Department of Social Services (MO HealthNet Division), Missouri Hospital Association, Missouri Association of Health Plans, Missouri Nurses Association, Missouri Academy of Family Practitioners, community-based providers who focus on infant mortality prevention, community-based maternal/child health coalitions and regional consortiums.

Establish a Maternal/Child Health Home Program

No single stand-alone intervention has been shown to be effective in reducing preterm births and infant mortality. Collective implementation of a biopsychosocial set of interventions leads to better cross-provider communication, patient engagement, and coordinated care transition, which in turn is expected to have a positive impact on perinatal outcomes. A Maternal Child Health Home (MCHH) could emulate other current health home initiatives in Missouri. A MCHH is not a physical location, but rather a model of health service delivery.

Missouri should develop a MCHH through the Department of Social Services, MO HealthNet Division. A Missouri MCHH would leverage current Primary Care Health Homes (PCHH), Mental Health Homes (MHH) and potential Managed Medicaid/Medicaid ACO infrastructure to build upon existing systems and align with cost savings goals. Missouri's existing PCHHs provide care that is patient-centered, comprehensive, coordinated, accessible, and of high quality and safety. A Missouri MCHH program would be non-duplicative with current health home programs like PCHHs and MHHs, and any new health homes created through this program would be monitored and evaluated on outcomes to ensure meaningful and valuable expenditures of state revenue.

A MCHH would result in better pregnancy outcomes by coordinating care and access to necessary health services and improving health outcomes, health service delivery, and health service delivery efficiency.

A MCHH would result in better pregnancy outcomes by coordinating care and access to necessary preventive and chronic care services. It would improve health outcomes, health service delivery, and efficiency. By reducing negative pregnancy outcomes, a MCHH would also keep associated expenses down.

Traditional Maternity Care Home models encompass preconception and interconception health, prenatal and postpartum care, and newborn care through the first year of life. A MCHH expands upon this model by integrating a comprehensive set of clinical and non-clinical services that also addresses physical, behavioral, psychological, social and environmental factors affecting the overall health of families. It also integrates mental health with life course services, care coordination with primary care, pediatric and mental health providers, and patients with community resources.

A MCHH would also link women at risk of adverse pregnancy outcomes who are eligible for Medicaid through pregnancy and their children to vital services, including enhanced perinatal education and community resources, that would improve their health outcomes when they become ineligible. Medicaid for Pregnant Women (MPW) coverage ends on the last day of the month in which the 60th postpartum day occurs, creating a cliff effect that leads to shorter intervals between births and lack of pre-conception services for high risk women. Additionally, expanding Medicaid coverage would greatly assist in the reduction of adverse pregnancy-related outcomes in Missouri.

A Missouri MCHH would be a partnership among several stakeholders: the Division of Social Services (MO HealthNet Division), the Department of Health and Senior Services, the Missouri Primary Care Association, the Department of Mental Health, health care providers across the state, the Perinatal Care Collaborative, and regional coalitions. An interdisciplinary team of health care providers and community stakeholders should develop the MCHH concept for implementation in Missouri. Central functions of a Missouri MCHH would be to:

- Identify key women's health, maternity, pediatric safety and quality measures to assess the MCHH's impact on perinatal outcomes;
- Align metrics between public and private payers and a perinatal quality collaborative and incentives for the provision of evidence-based high quality care;
- Support a variety of prenatal care modalities;
- Provide services to support the health and well-being of fathers and father involvement;
- Provide services such as nurse home visits, social work, nutrition counseling, smoking cessation, lactation support and other supportive services;
- Provide health care information and services in a manner that is consistent with the cultural norms and health literacy levels of the target population.

RECOMMENDATION 3

Establish a Repository to House All Maternal/Child Health Information and Resources

Create a One-Stop Shop of Resources for Women, Families and Providers

Missouri should create, promote, and maintain a centralized, comprehensive, consumer-focused, and accessible portal with multiple evidence-based, educational, and reproducible informational resources. These resources should be made accessible through existing state departments as well as collaboratives and public/private partnerships. The portal should be easily accessible by high-risk women and their families.

An electronic warehouse should be created to gather and collate materials for individuals seeking information related to pregnancy, preterm birth and newborn care. This information should be updated on a regular basis to ensure accuracy and should also be easily accessible, free and printable for those who may not have access to the Internet. It is important to note that the shared information will not be medical or personal records.

By improving information available on preconception and interconception care, this portal would expand related support systems in several ways. Information geared specifically toward men or fathers and other family members would be more readily available, as would resources supporting schools' teen pregnancy prevention educational programs. Resources leveraging federal programs and reforms within the Affordable Care Act would allow for increased home visits to populations unable to access care in more traditional settings and provide increased access to materials regarding the risks of early-elective deliveries.

The portal would enhance the efforts of existing family support programs in the state by improving information on preconception and inter conception care.

The portal would enhance the efforts of existing comprehensive, relationship-based family support programs in the state. It would also improve interagency collaboration and communication plans, along with enrollment and participation for these valuable programs.

Included in these resources should be a state-developed, standardized hospital postpartum discharge form. Such a form would help link high-risk mothers and infants with community services and evidence-based educational resources. Similarly important, a portal-hosted mechanism should identify Medicaid-eligible women at risk for adverse pregnancy outcomes early in pregnancy and link them to vital resources.

Collaborators on the portal should include, but certainly not be limited to, the American Congress of Obstetricians/Gynecologists, the American Academy of Pediatrics, the March of Dimes, the National Association for Nurse Practitioners in Women's Health (NPWH), American College of Nurse Midwives, Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), Missouri Department of Health and Senior Services, Missouri Department of Social Services (MO HealthNet Division), Missouri Hospital Association, Missouri Department of Insurance Financial Institutions and Professional Registration, Missouri Association of Health Plans, Missouri Nurses Association, Missouri Academy of Family Practitioners, community-based maternal/child health coalitions, health insurance carriers, Medicaid managed care organizations and regional consortiums.

Utilize Existing Data for Public Health Benefits

A better understanding of the causes and factors correlating to preterm births and infant mortality would help prevent them. Missouri should consolidate and link data systems to create a comprehensive data set that captures information on infant outcomes and maternal health before, during and after pregnancy. Linking systems will provide a consistent and standardized repository for relevant data that can be used to improve health outcomes.

Enhance Data Collection

In addition to establishing a one-stop shop for consumers, providers, and other stakeholders to access a comprehensive data set of maternal-child subject matters, Missouri should enhance its methods of collecting data related to preterm births and infant mortality by linking population datasets to clinical data information systems using consistent performance measures recommended by Toward Improving the Outcome of Pregnancy III: Enhancing Perinatal Health Through Quality, Safety and Performance Initiatives (TIOP III). TIOP III is a report developed by the March of Dimes that redefines maternal and child care and offers ideas for mothers, doctors, nurses, and hospitals to make pregnancy care more standardized and accessible nationwide.

Missouri should enhance its methods of collecting data on preterm births and infant mortality by linking population datasets to clinical data information systems.

In addition to working collaboratively with stakeholders on updating the data resources available from the Department of Health and Senior Services, Missouri should provide sufficient and appropriate departmental personnel to support increased data assessment tracking capacity. The resulting advisory group, with representation from Missouri Department of Health and Senior Services, Missouri Department of Social Services (MO HealthNet Division), and other academic and epidemiological stakeholders, would have the capacity to sort and identify relevant data sets for monitoring the key variables associated with prematurity and infant mortality.

Any data collected and analyzed should be sensitive to issues related to health disparities and social determinants of health. The data should be easily accessible through a user-friendly website, and the availability of collected data should be publicized to both consumers and stakeholders through a communication plan.

Integrate the Entities Providing Care Across the Perinatal Spectrum

A broad array of entities providing resources and care across the perinatal spectrum already exists in Missouri. Coordinating the efforts of these groups would result in a more targeted approach to improving health outcomes for women across this spectrum and their children. These groups include such diverse entities as state agencies, providers, professional associations and community stakeholders.

One substantial benefit would be derived from coordinating the efforts of the Missouri Department of Health and Senior Services and other health professionals and related organizations. The Department currently has multiple web-based data query systems that disseminate public health data. The largest of these is the Missouri Information for Community Assessment (MICA) system that includes both static Community Data Profile pages with limited graphing functionality and a customizable web query tool that generates both data tables and maps. The MICA system incorporates a variety of data sources relevant to tracking prematurity and infant deaths. These include vital statistics regarding births and deaths, inpatient and emergency room data, discharge data, WIC, and population demographics.

Coordinating the efforts of those providing care across the perinatal spectrum would result in a more targeted approach to improving health outcomes.

The Department also has a separate query tool for environmental public health data. A third tool tracks communicable diseases and HIV/AIDS. Currently the Department is consolidating these various data systems into one shared platform. A contractor is developing a back-end database and is now integrating MICA and the Environmental Public Health Tracking Network. This portion of the project is near completion. A second contractor will be hired to design and build a front-end user interface capable of accessing and presenting the new integrated information in a convenient and beneficial format for users. The Bureau of Health Care Analysis and Data Dissemination is collecting user input to help identify other user needs.

Working collaboratively with physician obstetrical care providers, advanced practice registered nurses, including certified nurse midwives (CNMs), women's health nurse practitioners (WHNPs), and family nurse practitioners (FNPs), and perinatal clinical nurse specialists (CNS) provide care to women before, during and between pregnancies. Families may also choose to access pregnancy related care through birthing centers. Missouri's women's health work force should be integrated as partners, as should those organizations with efforts to ensure continuity of care for those who are no longer eligible for pregnancy related Medicaid services.

Present the Importance of Regionalized Perinatal Care

A regionalized system of perinatal and neonatal care is shown to be effective in improving pregnancy outcomes and reducing infant mortality. The goals of perinatal regionalization are to ensure access to risk appropriate care, provide outreach education to network providers and hospitals, and to assess the quality and safety of care.

5 RECOMMENDATION

Within a regionalized perinatal system, care is delivered through a three-level stratified system of maternal and newborn care. Under this model, hospitals would receive designation as Level 1; Level 2; or Level 3. Level 1 perinatal centers provide basic care; Level 2 provide specialty care; and Level 3 provides subspecialty care to critically ill pregnant women and mothers.

> **Perinatal regionalization goals are to ensure access to risk appropriate care, provide outreach education to network providers and hospitals, and assesse the quality and safety of care.**

Perinatal regionalization will work with established professional organizations, national advisory bodies, state agencies and other regulatory agencies to develop perinatal networks of hospitals. This system will facilitate the transport and care of high-risk pregnant women and sick infants to the appropriate level of hospital care. Similarly, it will support community-based health care providers, enabling them to provide appropriate risk assessment, referral and follow up for high-risk women and neonates. It will promote evidence-based best practice protocols and guidelines, thereby assessing care provided at each institution. Finally, a regionalized model will deliver the "right care at the right place at the right time" by ensuring high-risk pregnant women and sick infants are transported to the appropriate level of hospital care.

Missouri should work to establish regional perinatal networks that facilitates appropriate risk assessment and support for care at the community level and triages the transport and care of high-risk pregnant women and sick infants to the appropriate provider and facility. It should also amend statewide regulatory codes to better define levels of care provided by hospitals, provide for outreach education in best practices, and require outcomes reporting for staff development.

Implement Evidence-Based Interventions

6 RECOMMENDATION

In Missouri, significant health-access disparities and inequity in the social determinants of health contribute to the problem of prematurity and infant mortality. If the inequity is to be fully addressed, Missouri needs to implement intervention programs in populations where such efforts will be most efficacious. While a lack of healthcare access and other social determinants of health impact many populations, certain groups are disproportionately affected and are, therefore, of particular importance. These populations include women and infants of color, those in poverty and non-English speaking individuals.

> **Women and infants of color, those in poverty and non-English speaking individuals are disproportionately affected by lack of access to healthcare.**

Examples of interventions include efforts to:

- Promote the use of prenatal multivitamins
- Improve understanding of how nutrition ties into pregnancy outcomes
- Promote safe sleeping
- Prevent infant and toddler injuries
- Help expectant mothers and their families cease smoking
- Educate women on the importance and means of achieving longer birth to conception intervals
- Use of progesterone in women at increased risk of preterm birth
- Encourage breastfeeding
- Address postpartum depression

Any intervention necessitates strategic interagency collaboration at the state and local levels in order to effectively reduce racial, ethnic and socioeconomic disparities in pregnancy and infant health outcomes. In addition, social determinants of health should be considered and integrated into all plans that seek to promote health equity and eliminate disparities. To that end, a focus on continuity of care must also be considered for those who are transitioning away from pregnancy-related health coverage through Medicaid.

RECOMMENDATION 7

Establish a Commission to Oversee Coordination and Implementation of Task Force Recommendations

Oftentimes task force recommendations are noted, but not acted upon. The Missouri task force has identified many vehicles through which prematurity and infant mortality outcomes can be ameliorated. Therefore, it is crucial that the work begun by the task force be continued.

> **It is crucial the work begun by the task force be continued.**

Missouri should establish an oversight commission to continue the task force's efforts past its statutory termination date. To provide for institutional knowledge of the recommendations, the commission should consist of two to three members from each current task force work group and be a voluntary membership organization. Further, the commission will be designed to consult and advise the Perinatal Care Collaborative and be charged with monitoring public policy as it relates to maternal and child issues.

The Task Force shall make a request of the Children's Services Commission to reconstitute itself at its February 3, 2014 meeting. The chair, and any members of the task force selected by the chair, shall prepare an extension proposal for presentation at this meeting on behalf of the Task Force.

Special Thanks

The Task Force on Prematurity and Infant Mortality would like to thank the Missouri Foundation of Health and the March of Dimes for their support of its work as an extension of their efforts to reduce prematurity and infant mortality in the state.

Appendix A - Task Force Authorizing Statute

Missouri Revised Statutes
Chapter 210
Child Protection and Reformation
Section 210.105
August 28, 2013

Missouri task force on prematurity and infant mortality created--members, officers, expenses--duties--report--expiration date.

210.105. 1. There is hereby created the "Missouri Task Force on Prematurity and Infant Mortality" within the children's services commission to consist of the following eighteen members:

(1) The following six members of the general assembly:

(a) Three members of the house of representatives, with two members to be appointed by the speaker of the house and one member to be appointed by the minority leader of the house;

(b) Three members of the senate, with two members to be appointed by the president pro tem of the senate and one member to be appointed by the minority leader of the senate;

(2) The director of the department of health and senior services, or the director's designee;

(3) The director of the department of social services, or the director's designee;

(4) The director of the department of insurance, financial institutions and professional registration, or the director's designee;

(5) One member representing a not-for-profit organization specializing in prematurity and infant mortality;

(6) Two members who shall be either a physician or nurse practitioner specializing in obstetrics and gynecology, family medicine, pediatrics or perinatology;

(7) Two consumer representatives who are parents of individuals born prematurely, including one parent of an individual under the age of eighteen;

(8) Two members representing insurance providers in the state;

(9) One small business advocate; and

(10) One member of the small business regulatory fairness board.

Members of the task force, other than the legislative members and directors of state agencies, shall be appointed by the governor with the advice and consent of the senate by September 15, 2011.

2. A majority of a quorum from among the task force membership shall elect a chair and vice chair of the task force.

3. A majority vote of a quorum of the task force is required for any action.

4. The chairperson of the children's services commission shall convene the initial meeting of the task force by no later than October 15, 2011. The task force shall meet at least quarterly; except that the task

force shall meet at least twice prior to the end of 2011. Meetings may be held by telephone or video conference at the discretion of the chair.

5. Members shall serve on the commission without compensation, but may, subject to appropriation, be reimbursed for actual and necessary expenses incurred in the performance of their official duties as members of the task force.

6. The goal of the task force is to seek evidence-based and cost-effective approaches to reduce Missouri's preterm birth and infant mortality rates.

7. The task force shall:

(1) Submit findings to the general assembly;

(2) Review appropriate and relevant evidence-based research regarding the causes and effects of prematurity and birth defects in Missouri;

(3) Examine existing public and private entities currently associated with the prevention and treatment of prematurity and infant mortality in Missouri;

(4) Develop cost-effective strategies to reduce prematurity and infant mortality; and

(5) Issue findings and propose to the appropriate public and private organizations goals, objectives, strategies, and tactics designed to reduce prematurity and infant mortality in Missouri, including recommendations on public policy for consideration during the next appropriate session of the general assembly.

8. On or before December 31, 2013, the task force shall submit a report on their findings to the governor and general assembly. The report shall include any dissenting opinions in addition to any majority opinions.

9. The task force shall expire on January 1, 2015, or upon submission of a report under subsection 8 of this section, whichever is earlier.

L. 2011 H.B. 464 merged with H.B. 555)

Appendix B - MO DHSS Initiatives to Reduce Premature Birth Rate

The Missouri Department of Health and Senior Services provided this overview of interventions in Missouri to assist in the reduction in premature births:

- Through the Maternal and Child Health Home Visiting Programs in GHC (the Missouri Community Based Home Visiting Program, Building Blocks of Missouri Program and the Affordable Care Act Maternal, Infant and Early Childhood Home Visiting Program), pregnant women and their families receive home visiting services prenatally and continuing through age two or up to age five of their index child (depending on the program) to increase healthy pregnancies and positive birth outcomes and decrease child abuse and neglect through home-based services, which provide maternal and child health assessments, education and referrals for high-risk Missouri families. Topics covered include the benefits of not smoking during pregnancy, early and adequate prenatal care, enrollment in MO HealthNet, proper nutrition to promote a healthy weight and the importance of carrying their pregnancy to term, e.g. 40 weeks gestation.
    - Data captured from October 1, 2012 through September 30, 2013 for the Building Blocks of Missouri Program, which implements the Nurse Family Partnership (NFP) evidence-based home visiting model, shows the percentage of preterm births for enrolled clients as 9.6% in Missouri (9.5% nationally), 10.8% for Black/African American in Missouri (11.5% nationally), 6.4% for Hispanic or Latina in Missouri (8.5% nationally) and 9.4% for White in Missouri (9% nationally) according to the Nurse Family Partnership National Office.

- Currently the Missouri Department of Health and Senior Services (DHSS), Bureau of Genetics and Healthy Childhood (GHC) Newborn Health Program provides educational materials to health care providers, health educators and directly to Missouri women to educate them on the benefits of not smoking during the preconception period and throughout their pregnancy, including reducing their risk of delivering a premature or low birth weight infant and decreasing complications during pregnancy. The Newborn Health Program also exhibits at health fairs and conferences to provide information on these topics.

- Educational materials distributed include a new Missouri-specific prenatal and newborn health booklet titled “Pregnancy and Beyond,” available for distribution at no cost to pregnant and parenting women/families in Missouri. The booklet covers topics related to pregnancy and parenting from birth to five years of age. Messages include the benefits of not smoking, the importance of early and regular prenatal care, and why it is best to stay pregnant for 40 weeks.

- Through the Text4baby program, Missouri-specific health-related text messages are delivered free-of-charge to Missouri women who sign up for the program during their pregnancy and up to age one of their child. The messages educate women and provide information on resources that are available to promote a healthy pregnancy and healthy birth outcome. Messages include the benefits of not smoking and the importance of early entry into and adequate prenatal care to prevent premature births, as well as the importance of carrying their pregnancy to term, e.g. 40 weeks gestation.

- The “An Ounce of Prevention: Addressing Health Issues of Adolescents and Young Adults” curriculum that was developed by GHC in collaboration with the Missouri Chapter of the March of Dimes and the Adolescent Health Program, provides family and consumer science teachers, school nurses and other health educators throughout Missouri a curriculum they can use with students and other young adults to educate them on the benefits of living a healthy lifestyle throughout the lifespan including not smoking and not drinking alcohol or using drugs.

- The Supplemental Nutrition Program for Women, Infants, and Children (WIC), educates all pregnant women enrolled in their programs on the benefits of not smoking and the importance of early entry into and adequate prenatal care. Women enrolled in the program are also educated on the availability of health insurance including enrollment in MO HealthNet.

- Smoking during pregnancy is an important public health and economic issue. It increases the risk of low birth rate, stillbirth, premature rupture of the membranes, placental abruption, placenta previa, and sudden infant death syndrome (SIDS) to name a few. According to the 2011 MO Pregnancy Risk Assessment and Monitoring Survey, 18.7% of women smoked during their last 3 months of pregnancy. In addition, 60-67% of women who smoke do not stop when they learn they are pregnant.

  MO makes use of evidence-based interventions in order to reduce the use of tobacco products among the state's residents. The MO Quitline provides coaching and a limited amount of Nicotine Replacement Therapy (NRT) to persons enrolling via telephone or on the web. Pregnant women may receive up to 10 coaching calls taking them through their pregnancy and up through 2 months post-partum as well as short-term NRT (gum). MO HealthNet (Missouri's Medicaid program) covers 2 quit attempts of up to 12 weeks per lifetime and covers all FDA approved medications for smoking cessation.

  According to the 2013 Youth Tobacco Survey/Youth Risk Behavior Survey, 14.9% of high school and 4.0% of middle school students in MO smoke. Efforts targeting MO's youth include education of youth, working with school health programs to promote policies and programs to address health behaviors, and training youth themselves to become leaders in tobacco reduction, both for their communities and state.

  Passage of comprehensive smoke-free policies have been an effective way of protecting the public from second-hand smoke and are considered to be another evidence-based intervention to promote smoking cessation. Currently there are 24 communities with a city ordinance requiring all indoor workplaces to be smoke-free, including restaurants and bars. In 2011 and 2012 Missouri won a 2nd place award from Americans for Nonsmokers Rights for the number of communities with smoke-free policies implemented in that year.

Glossary of Terms Used Within the Report

17-P - A progesterone treatment used to prevent preterm birth.

2-1-1 - Missouri 2-1-1 connects people with important community services and community service opportunities.

Biopsychosocial - The biopsychosocial approach systematically considers biological, psychological, and social factors and their complex interactions in understanding health, illness, and health care delivery.

Birthing Center - A healthcare facility staffed by nurse-midwives, midwives and/or obstetricians for mothers in labor that provides a more home-like environment than a hospital labor ward.

Congenital Anomalies - Also known as birth defects, congenital disorders or congenital malformations.

Early Elective Deliveries - Cesarean deliveries and labor inductions prior to 39 weeks of pregnancy for non-medical reasons.

Early Head Start - A child development program that seeks to enhance the development of infants and toddlers by establishing strong partnerships with parents and the community.

Food Insecure - A person's inability to access at all times to enough food for an active, healthy life.

Gestational Diabetes - A condition characterized by high blood sugar (glucose) levels that is first recognized during pregnancy. The condition occurs in approximately 4% of all pregnancies.

Health Care Home - Health care homes offer an alternative approach to the delivery of health care services that results better patient experiences and better results than traditional care models. They are customized to meet the specific needs of low-income patients with chronic medical conditions through comprehensive care management, patient and family support, referrals to community and support services, and other initiatives.

High Risk Pregnancies - A high risk pregnancy is one in which some condition puts the mother, the developing fetus, or both at higher-than-normal risk for complications during or after the pregnancy and birth.

Hypertension - High blood pressure.

Infant Mortality - The death of a child less than one year of age.

Interconception - The time period between pregnancies.

Low Birthweight - A low birthweight baby is born weighing less than 5 pounds, 8 ounces.

Maternal Child Health Home - Traditional Maternity Care Home models encompass preconception and interconception health, prenatal and postpartum care, and newborn care through the first year of life. A MCHH expands upon this model by integrating a comprehensive set of clinical and non-clinical services that also address physical, behavioral, psychological, social and environmental factors affecting the

overall health of families. It also integrates mental health with life course services, care coordination with primary care and mental health providers, and patients with community resources.

Midwifery - Midwifery encompasses care of women during pregnancy, childbirth and the postpartum period, as well as care of the newborn. It includes health counseling for women and families, measures aimed at preventing health problems in pregnancy, the detection of abnormal conditions, collaboration with other healthcare providers the procurement of additional medical assistance when necessary, and the execution of emergency measures in the absence of additional medical help.

Neonatal - Of or relating to newborn infants in the first month of life.

Nurse Family Partnership - A program through which ongoing home visits from registered nurses help low-income, first-time mothers receive the care and support they need to have a healthy pregnancy, provide responsible and competent care for their children, and become more economically self-sufficient. Visits begin during pregnancy and continue until the child turns two years old.

Perinatal - The period immediately before and after birth.

Perinatal Care Collaborative - A perinatal care collaborative is a group of individuals or organizations uniting to improve maternal and perinatal care.

Postpartum - Pertaining to the period following birth.

Preconception - The period prior to a woman conceiving.

Preeclampsia - A medical condition occurring at any time after 20 weeks gestation characterized by high blood pressure and significant amounts of protein in the urine of a pregnant woman. If left untreated, it can develop into a life-threatening occurrence of seizures during pregnancy.

Prematurity - The birth of an infant prior to 39 weeks gestation, rather than the expected normal gestation of 40 weeks.

Preterm - The birth of a baby at less than 39 weeks gestation, rather than the expected normal gestation of 40 weeks.

Stillbirth - The birth of an infant that has died in the womb.

Sudden Infant Death Syndrome - The unexpected, sudden death of an infant under the age of one year in which there is no explainable cause of death. The following have been linked to an infant's increased risk of SIDS: sleeping on the stomach, exposure to cigarette smoke which in-utero or after birth, co-sleeping with parents, soft bedding in the crib, multiple birth babies (being a twin, triplet, etc.), premature birth, having a sibling that died of SIDS, born to a teen mother, short interval between pregnancies, late or no prenatal care and/or living in poverty situations.

TIOP III - *Toward Improving the Outcome of Pregnancy III: Enhancing Perinatal Health Through Quality, Safety and Performance Initiatives* is a report developed by the March of Dimes that redefines maternal and child care and offers ideas for moms, doctors, nurses, and hospitals to make pregnancy care more standardized and accessible nationwide, so that every mom and baby in every state gets the best possible care.

Well-Woman Visits - Well-woman visits include a full checkup, separate from any other visit for sickness or injury. These visits focus on preventive care for women.

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