

Birth Defects and NAS, Maternal and Child Health

Mississippi State Department of Health, Health Data Operations Research / Office of Health Data and Research

Jackson, Mississippi

Assignment Description

The Mississippi State Department of Health includes the following offices in Health Services: Child and Adolescent Health, Women's Health, Women, Infant and Children (WIC), Oral Health, and Tobacco Control. Many of the Maternal and Child Health programs found in the Health Services offices are funded by the Title V Maternal and Child Health Block grant. The Office of Health Data and Research is not located in Health Services, but it works closely with offices in Health Services by providing surveillance and research support.

Maternal and Child health programs are located in the Health Services' Office of Child and Adolescent Health and Office of Women's Health. The Office of Child and Adolescent Health administers the programs in these major areas: Adolescent Health, Asthma Prevention, Children and Youth with Special Health Care Needs, Early Intervention (First Steps), and Lead Poisoning Prevention and Healthy Homes Education. Key activities and services provided by the Office of Child and Adolescent Health include: Early and Periodic Screening, Diagnostic and Treatment (EPSDT), Immunizations, Vision screening, Hearing screening, and Dental screening. Examples of services and key activities include aid parents in choosing daycare for children and other information about child care providers, finding a licensed child care facility or youth camp, and creating a child safety checklist. Maternal and Child Health programs in the Office of Women's Health include programs in the major areas: Breast and Cervical Cancer, Domestic Violence, Rape Prevention and Crisis Intervention, and Comprehensive Reproductive Health. Examples of services and key activities for the office include early detection cancer screening, education, and providing access for women at or below 185 % of the Federal Poverty Level.

The CSTE fellow will have an opportunity to impact these activities and improve information sharing for the Office of Health Data and Research, improving the annual surveillance reports and manuscript writing. The CSTE fellow will be able to work with other data analysts centrally located in the Office of Health Data and Research and learn about how data analysts support health programs at the department. The Office of Health Data and Research serves as one of the major data hubs for state wide surveillance programs, and the CSTE fellow's location in the office will facilitate connections to several data sources that include but are not limited to maternal and child health data. The CSTE fellow may also work with interns, program staff, and senior staff as projects dictate connections. The CSTE mentors are highly trained and experienced professionals.

Day-to-Day Activities

The CSTE fellow will participate in meetings at the health department and with outside partners focusing on maternal and child health and injury/drug overdose. The assignee will also have the opportunity to work with community partners that are engaged in local projects. As it is important for the assignee to understand the geographic variations in the health of Mississippians, there will be planned in-state trips to visit community organizations, hospitals and partners across the state.

The CSTE fellow will be expected to attend and present project updates at the Office of Health Data and Research staff meetings that occur monthly. The fellow is strongly encouraged to attend the Health Data and Operations Grand Rounds where employees have professional development training with time to give in depth presentations of their work for colleagues. There will be various opportunities for the CSTE fellow to get feedback on their work.

Potential Projects

Surveillance Activity MCH Substance Abuse Surveillance Activity

1. Project Justification: Analyses are needed to better address adverse outcomes related to pregnancy, substance use, and resulting injury from overdose. There are disparities in outcomes that in depth analyses can examine to inform medical and public health practice.
2. Project Description: The project will focus on pregnancy, substance use, and resulting injury from overdose that can inform Opioid Overdose to Action grant activities.
3. Fellow contribution: The assignee will work with available databases to develop reports for project feedback and reports on maternal drug use, overdose, and injury.
4. Skills Utilized/Gained: Project Management, Collaboration, Analytical software: SAS/SPSS/SUDAAN/R, etc., Writing, Oral Communication

Surveillance Evaluation Maternal Mortality Surveillance - Mortality Risk of Cardiac or Hypertension Related Death

1. Project Justification: There has not been a recent evaluation of the trends in maternal mortality regarding 5-year mortality risk of cardiac or hypertension related death in Mississippi. The State Department of Health was selected to receive one of the limited Maternal Mortality Review Committee (MMRC) grants from the Centers for Disease Control and Prevention (CDC). The fellow can inform MMRC work and provide context for the Mississippi Perinatal Quality Collaborative initiatives in the state.
2. Project Description: The project will evaluate trends in maternal mortality in Mississippi related to 5-year mortality risk of cardiac or hypertension related death.
3. Fellow contribution: The assignee will be asked to work with maternal mortality and vital statistics data along with possible linkages from hospital discharge data where available to better understand and explain variations in maternal health outcomes related to cardiac or hypertension related death.

4. Skills Utilized/Gained: Project Management, Collaboration, Analytical software: SAS/SPSS/SUDAAN/R, etc., Writing, Oral Communication

Major Project Maternal Medication Exposure, Neonatal Abstinence Syndrome (NAS) and Birth Outcomes

1. Project Justification: Neonatal abstinence syndrome (NAS) is a constellation of signs of withdrawal in newborns (neonates less than 28 days) following in utero exposure to medications or illicit drugs, most commonly opioids (including opioid agonists used for treatment of opioid use disorder), benzodiazepines, and barbiturates. Other substances, such as alcohol, nicotine, medications and other drugs may influence the severity and timing of withdrawal. Despite the evident relationship between maternal medication exposures, maternal and neonatal morbidity, little is known about the birth outcomes especially during the first 12 months after delivery.
2. Project Description: This study would estimate maternal medical exposure, prevalence of NAS and its association with birth outcomes in Mississippi.
3. Fellow contribution: The fellow will have an opportunity to work with MS Vital Statistics, Office of Pharmacy, and health survey data to conduct research on the relationship between Maternal Medication Exposure, NAS and Birth Outcomes. The fellow will be responsible for in-depth literature and data analysis for the project. He/she is also responsible for writing or contributing to publications or disseminating research findings in a highly quality journal or in state meetings.
4. Skills Utilized/Gained: Project Management, Literature Review, Writing, Oral Communication, Collaboration, Analytical software: SAS/SPSS/SUDAAN/R, etc.

Additional Project Smoking Patterns Among Pregnant Women

1. Project Justification - Smoking before, during and after pregnancy contributes to a variety of poor pregnancy and birth outcomes and has remained one of the most common preventable causes of infant morbidity and mortality in the United States. In addition to the adverse effects of maternal smoking on mothers themselves, maternal smoking is associated with low birth weight and many childhood medical problems including respiratory illness, asthma, obesity and cardiovascular disease. Although some studies have included prenatal smoking as a covariate to assess birth outcomes in Mississippi, no in-depth research has been conducted when smoking is treated as a major outcome variable.
2. Project Description- This study will assess prenatal and postpartum smoking rates and examine changes in smoking patterns during pregnancy in Mississippi.
3. Fellow contribution - The fellow will have the opportunity to use Mississippi Pregnancy Risk Assessment Monitoring system (PRAMS) data to assess smoking patterns among pregnant women. The fellow will be responsible for conducting a thorough literature review on smoking among pregnant women, become familiar with complex samples data through use of PRAMS. The fellow will then analyze the data and produce a written report of findings, and presentations relevant to the project. The fellow is also required to publish scientific work and its results in a high-quality journal.
4. Skills Utilized/Gained - Project Management, Literature Review, Writing, Oral Communication, Collaboration, Analytical software: SAS/SPSS/SUDAAN/R, etc.

Additional Project 17P and Preventing Preterm Births

1. Project Justification: Preterm births and low birth weight births are the leading cause of infant mortality in MS, accounting for 20% of deaths (Mississippi State Department of Health, Public Health Statistics). Progesterone shots can be used to reduce the risk of preterm deliveries, in a form of medication called 17P. There is a need to evaluate the use of 17P by providers in the state and justify payment for the medication.
2. Project Description: This study would examine the provider use of 17P and outcomes of preterm birth.
3. Fellow contribution: The fellow will have an opportunity to conduct research on the relationship between 17P use and preterm labor in the state. The fellow will be responsible for in-depth literature and data analysis for the project. He/she is also responsible for writing or contributing to publications or disseminating research findings in a highly quality journal or in state meetings.
4. Skills Utilized/Gained: Project Management, Literature Review, Writing, Oral Communication, Collaboration, Analytical software: SAS/SPSS/SUDAAN/R, etc.

Preparedness Role

1. Project Justification: There are special considerations for mothers and infants in emergency preparedness situations. This project will inform policies and facilitate meeting their needs.
2. Project Description: The fellow will have an opportunity to assess emergency preparedness policies and practices for maternal and child health needs among the general population and high-risk pregnancy population.
3. Fellow Contribution: The fellow will take the lead in examining policies and practices. Policy analyses can be shared with preparedness personnel.
4. Skills Utilized/Gained: Project management, Strategic planning, Oral Communication

Additional Activities

Severe maternal morbidity during the postpartum period

1. Project Justification: There has not been a recent in-depth evaluation of the severe maternal morbidity that can occur during the postpartum period. The State Department of Health was selected to receive one of the limited Maternal Mortality Review Committee (MMRC) grants from the Centers for Disease Control and Prevention (CDC). The Mississippi Maternal Mortality Review Committee reviews pregnancy related deaths that occur within one year postpartum. The fellow's work can inform MMRC work and provide context for the Mississippi Perinatal Quality Collaborative initiatives in the state.
2. Project Description: The project will examine trends in severe maternal morbidity during the postpartum period for women in Mississippi.
3. Fellow contribution - The assignee will be asked to work with multiple years of hospital discharge data, birth certificate data, and geographic mapping to better understand and explain variations in maternal morbidity that occur one year postpartum.

4. Skills Utilized/Gained - Project Management, Collaboration, Analytical software: SAS/SPSS/SUDAAN/R, etc., Writing, Oral Communication

Evaluation of the trends and changes of infant health and mortality in Mississippi

1. Project Justification: There has not been a recent in-depth evaluation of the trends and changes of infant health and mortality in Mississippi.
2. Project Description: The project will evaluate trends in infant health and mortality in Mississippi.
3. Fellow contribution: The assignee will be asked to work with multiple years of infant mortality and birth certificate data along with possible linkages from hospital discharge data and geographic mapping to better understand and explain variations in infant health outcomes including preterm birth, racial disparities in preterm birth and infant mortality and post-neonatal death, particularly from SUID.
4. Skills Utilized/Gained: Project Management, Collaboration, Analytical software: SAS/SPSS/SUDAAN/R, etc., Writing, Oral Communication

Mentors

Primary	Charlene Collier MD, MPH, MHS, FACOG Director Mississippi Perinatal Quality Collaborative, Perinatal Health Research & Policy Consultant
Secondary	Sai Kurmana MD, MPH Senior Epidemiologist