

## **Maternal and Child Health, Maternal and Child Health**

### **Massachusetts Department of Public Health, Office of Data Translation**

Boston, Massachusetts

#### **Assignment Description**

The Office of Data Translation (ODT) serves as the internal information center for the Bureau of Family Health and Nutrition (BFHN) of the Massachusetts Department of Public Health (MDPH). The Bureau is the state Title V agency, and ODT uses data collection and analysis to inform maternal and child health (MCH) program and policy decisions, which is funded primarily by the Title V Block Grant. ODT is interested in recruiting a CSTE fellow to participate in a variety of activities in perinatal, maternal and child health. ODT will tailor the fellow's experience based on past experiences and preferences to ensure a professionally enriching experience. ODT offers a variety of opportunities for fellows to conduct data collection, analyses, program evaluation, and surveillance. ODT oversees two main data projects: the Pregnancy to Early Life Longitudinal (PELL) Data System and the Pregnancy Risk Assessment Monitoring System (PRAMS) project.

The PELL Data System is one of the few longitudinal MCH data systems in the country, created to utilize a broad range of public health data sources to examine the impact of the prenatal environment and experiences on postnatal child and maternal health. PRAMS is a surveillance system that collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy. The Fellow would have the opportunity to conduct analyses using PELL and PRAMS to identify groups of women and infants at high risk for health problems, to monitor changes in health status, and to measure progress towards goals in improving the health of mothers and infants.

Other data sources available within MDPH include vital statistics data (birth certificates and fetal, infant and maternal death certificates), the Behavioral Risk Factor Surveillance System (BRFSS), and various programmatic data systems including data from the Massachusetts Home Visiting Initiative, the Women, Infants, and Children (WIC) Nutrition program and the Early Intervention program. There are also opportunities to conduct cross-cutting research with other divisions within the Bureau of Family Health and Nutrition as well as with other bureaus within MDPH including Communicable Disease Control, Environmental and Occupational Health, and Community Health and Prevention. The Fellow would have the opportunity for collaboration with partners from Boston-area academic institutions such as Harvard School of Public Health, Tufts University and the Boston University School of Public Health. The fellow would be encouraged to present their work to programs within MDPH, at national meetings, and publish in peer-reviewed journals.

### **Day-to-Day Activities**

- Literature reviews
- Data cleaning and analysis
- Project management
- Planning and running meetings
- Attending meetings and webinars
- Communicating with mentors and key partners regarding projects' status
- Developing IRB applications as needed
- Reviewing and editing of reports and manuscripts
- Participating in Bureau' strategic planning
- Database development management
- Preparing and delivering presentations
- Assisting with mentoring student interns

## **Potential Projects**

### **Surveillance Activity      Evaluate the implementation of the An Act Relative to Postpartum Depression, Chapter 313 of the Acts of 2010**

On August 19, 2010, Governor Deval Patrick signed into law An Act Relative to Postpartum Depression, Chapter 313 of the Acts of 2010. This legislation charged the Massachusetts Department of Public Health (MDPH) to issue regulations that require carriers and health care providers to annually submit data on screening for PPD. 105 CMR 271.000 requires annual reporting by a provider that conducts or oversees screening for PPD during a routine clinical appointment in which medical services are provided to a woman who has given birth within the previous six months. The regulation also applies to a carrier that receives a claim for this PPD screening. MDPH has begun analyzing the All Payer Claims Database (APCD) received through the Center for Health Information and Analysis (CHIA) to monitor PPD screening rates. The Fellow will build on current work and will have an opportunity to work with APCD data, examine the quality and timeliness of the data, and utilize APCD data findings to promote best practices for screening across hospitals and among provider groups. The Fellow will support the PPD evaluation subcommittee, and partner with multiple stakeholders including mental health providers, state legislators, and March of Dimes, and conduct provider surveys to examine challenges related to screening and reporting of screening results to APCD.

### **Surveillance Evaluation      Evaluating Reports of Dental Cleaning during Pregnancy**

Improving oral health in the US has received increasing attention over the past decade and was included as one of the Healthy People 2020 goals. While the oral health status of adults and children in the U.S. is continuing to be studied on a population basis, and is getting local and national attention, research on the oral health status of pregnant women is still sparse. Pregnancy can alter or complicate oral health in women, which can lead to adverse pregnancy outcomes and potentially poor oral health in their children. However, pregnancy offers a unique opportunity for women to receive preventive, diagnostic and restorative services, which have been found to be safe throughout pregnancy. Unfortunately, prenatal providers often do not provide oral health care to pregnant women or refer patients to oral health providers, and most pregnant women do not seek oral health care. In some cases, neither prenatal providers nor pregnant women understand that oral health is an essential component of a healthy pregnancy. To address this issue, the Massachusetts Title V program selected “coordinating preventive oral health measures and promoting universal access to affordable dental care” as one of its priorities in 2010. PRAMS data have been uniquely used to describe the oral health experiences of mothers during their most recent pregnancy and to assess racial and ethnic disparities in maternal oral health care experiences. Starting in 2011, a question about teeth cleaning during pregnancy was added on the birth certificate. In 2013, MDPH convened a statewide summit to lay a foundation for the integration of dental care into routine prenatal care and in 2016 released a set of Oral Health Practice Guidelines for Pregnancy and Early Childhood.

The Fellow will examine dental cleaning as reported on the birth certificate compared to PRAMS to assess the effect of the oral health guidelines in Massachusetts.

### **Major Project    Improving the Care of Babies Born with Neonatal Abstinence Syndrome**

In the FY 2017 budget, the Legislature and Governor established an Interagency Task Force on Newborns with Neonatal Abstinence Syndrome (NAS) whose charge is to assess existing services and programs in the Commonwealth for mothers and newborns with NAS, identify service gaps, and formulate a cross-system action plan for collecting data, developing outcome goals, and address service and support gaps in the Commonwealth. The Task Force submitted a uniform statewide plan to the Legislature on March 1, 2017, that supports the coordination of services across executive agencies to address the needs of newborns, infants and young children affected by exposure to substances. Major gaps identified by the Task Force included the following (1) Lack of centralized data collection across intervention stages; (2) Lack of defined key metrics for tracking outcomes; and (3) Inconsistent sharing of information for clinical care coordination.

Early Intervention (EI) has an important role to play in supporting and potentially changing the environment within a family in order for infants beginning life with an NAS diagnosis to thrive and reach their maximum potential. EI is also an important component of the system of care that begins in pregnancy, continues through hospitalization, and ends with a seamless transition to community-based care. There are, however, a number of barriers to EI for this population that have been identified through past initiatives, interviews, and work groups. Many hospitals have EI referral protocols, but might not be systematically referring all substance exposed newborn (SENs) or babies with NAS due to a) staff uncertainty about eligibility b) a perception that referrals will be made by DCF or community pediatricians and thus are not necessary from the hospital, and c) a lack of comfort with presenting EI services to families in a way that does not seem blaming. Even when referrals are made, families are often reluctant to engage in services due to factors including a) self-perceived guilt about their child's "need for services" b) a lack of desire to have yet another provider in their home, and c) uncertainty about how EI would benefit them. The Fellow will have an opportunity to work with multiple stakeholders on increasing hospital referrals of SEN and NAS to EI programs, on hospital-based engagement to improve the follow-through on referrals, and data analysis to assess referral patterns across hospitals the birth certificate and EI datasets.

**Additional Project      Evaluating Health Equity Impacts of a Universal Nurse Home Visiting Program**

Studies show that home visiting programs targeting at-risk families have a positive effect on health and developmental indicators. Given the success of these programs coupled with evidence that infant and maternal needs for supportive services are common regardless of race/ethnicity and income, there is a call for the adoption of universal home visiting programs. Universal home visiting programs can result in increased need-identification, remove stigma, and promote health equity because unaddressed disparities during the earliest years can lead to intensified health problems and widening social, educational and economic gaps. The Welcome Family Program, a component of the Massachusetts Maternal, Infant and Early Childhood Home Visiting Initiative, offers a one-time nurse home visit to all mothers with newborns in five Massachusetts communities. The visits are designed to assess and address medical and non-medical needs and provide an entry point into a system of care for families with newborns. An initial evaluation demonstrated success of the program in identifying needs and connecting participants to community services. The Fellow will have the opportunity to build on this work by advancing our understanding of the health and equity impacts of the program. This project will involve the use of claims data from the Massachusetts All Payers Claims Data linked with Welcome Family Program data to: 1) evaluate post-partum maternal and infant health indicators (including healthcare utilization, costs, and outcomes) among program participants compared to a matched comparison group and 2) determine outcomes by race/ethnicity.

**Additional Project      Identifying Cases of Turner Syndrome among Infants with Cardiovascular Abnormalities**

The Fellow will have the opportunity to work with the staff at the Massachusetts Center for Birth Defects Research and Prevention on a study to identify girls with Turner syndrome (TS) among surveillance cases with various forms of left ventricular outflow tract obstruction (LVOTO). TS is a rare (1/2500 female live births), but familiar sex chromosome abnormality (SCA) in which the second sex chromosome is absent or structurally deficient. TS is associated with a number of abnormalities, including cardiovascular abnormalities, which are the leading cause of mortality for individuals with the syndrome. The objectives of the study would be to (1) evaluate the frequency of TS in a population-based, statewide cohort of girls with various forms of LVOTO; and (2) determine whether there is evidence to support chromosome analysis for Turner syndrome whenever an infant girl is diagnosed with various forms of LVOTO. The Fellow would assist with data analysis using data from the Massachusetts Birth Defects Monitoring Program (1997-2014) and with creation of a manuscript for publication.

## **Preparedness Role**

The Fellow will have the opportunity to work with the Division of Children and Youth with Special Health Needs and the Bureau of Emergency Preparedness to assess emergency preparedness surveillance systems following natural disasters, with a particular focus on MCH populations including children and youth with special health needs. In addition, the fellow will have the opportunity to participate in emergency preparedness exercises or responses (e.g. assisting with the Boston Marathon).

## **Additional Activities**

- Health Disparity/Equity: The Bureau of Family Health and Nutrition (BFHN) is working a Racial Equity Initiative with the following two goals:
  1. Eliminate structural racism in all BFHN policies, programs, and practices to promote health equity and racial justice; and
  2. Foster a healthy and equitable work environment in BFHN, where staff feel confident and supported to interact and communicate openly and respectfully.
  3. The Fellow will have an opportunity to participate in this important endeavor and assist with data collection, analysis and interpretation. The Fellow can also conduct an analysis of the Life Course Indicators developed by the Association of Maternal and Child Programs using Massachusetts data.
  
- Oral Health Practice Guideline: In 2013, the Title V Program, in collaboration with the Office of Oral Health at the Massachusetts Department of Public Health (MDPH), convened a statewide summit to lay a foundation for the integration of dental care into routine prenatal care. The MDPH also endorsed efforts by Massachusetts Health Quality Partners to include oral health in its 2013 Perinatal Care Recommendations. An Oral Health Advisory Committee and work groups were subsequently convened by MDPH to develop oral health care practice guidelines for providers who care for pregnant women and young children. The Fellow will have the opportunity to evaluate the impact of the MA Massachusetts Oral Health Practice Guidelines for Pregnancy & Early Childhood.
  
- PRAMS: The fellow will have the opportunity to conduct analyses of quantitative and qualitative data gathered by PRAMS to examine issues faced by new mothers in the early postpartum period. This might include examining disparities in maternal and child health indicators by specific ethnic subgroup among Hispanic, Asian or Black mothers; analyzing maternity leave pattern among new mothers in Massachusetts; assessing travel-related Zika virus possible exposure among pregnant women; or analyzing PRAMS data linked with the PELL data system. Some project ideas using the PRAMS-PELL linkage include examining differences in length of delivery hospital stay, complications of labor and delivery, costs of delivery hospitalization by pre-pregnancy body mass index category and method of delivery, and infant health outcomes (e.g., macrosomia, respiratory complications, preterm birth, SGA/LGA); or the frequency of and reasons for pre-pregnancy and intrapregnancy hospital

utilization for women with and without selected social risk factors (e.g., domestic violence, homelessness).

- Children and Youth with Special Healthcare Needs: The Division for Children and Youth with Special Health Needs (CYSHN) works with families, providers, and others to support children and youth with special health needs ages birth to 22 and their families. CYSHN include those who have or are at increased risk for a chronic physical, developmental, behavioral or emotional condition and who also require health-related and other services beyond that required by children generally. The Fellow will have the opportunity to assist the division with evaluation and systems mapping activities. The Fellow would work with the various programs that serve children and youth with special health needs, including care coordination and health transition, on developing/reviewing logic models. Possible frameworks include whole system mapping, Lean 6 Sigma, and system support mapping.

**Mentors**

<b>Primary</b>	Hafsatou Diop MD, MPH Director, Office of Data Translation
<b>Secondary</b>	Susan E. Manning MD, MPH CDC MCH Assignee