

**Maternal and Child Health,**

**Metro Nashville Public Health Department, Division of Epidemiology**

Nashville, Tennessee

**Assignment Description**

Infant mortality disparities continue to persist with African American women 1.5 times more likely to have an infant be born too small (low birth weight), too soon (premature), and die before his/her first birthday than any other racial or ethnic group in the county. Based on the Perinatal Periods of Risk analysis, excess fetal and infant mortality are correlated with women not being healthy before pregnancy (indicating a need for strong preconception health and interconception health interventions). In 2015, approximately 1 out of 10 births (10.4%) in Davidson County were preterm births (before 38 weeks gestation), a slight increase from 2014 (10.1%). Based on 5-year trend analysis from 2010 to 2014, very low birth weight (VLBW) percentages have remained stagnant primarily because the Caucasian VLBW percentages have increased incrementally from 0.9% in 2009 to 1.4% in 2013; decreasing to 0.9% in 2014. The African American VLBW percentages have consistently remained at or above 2.4% for the past 5 years. Additionally, as a snapshot of 2014, African American infants in Davidson County are 2.2 times more likely to be born LBW or VLBW than Caucasian infants. Currently, staff epidemiologists are updating PPOR (Perinatal Periods of Risk) estimates for Davidson County, including both Phase 1 and Phase 2.

Upon successful match for the Division of Epidemiology at the Metro Nashville Public Health Department, the fellow's primary assignment would support the ongoing work of the Birth Inequity Project, supported by CityMatCH. Specifically, the matched fellow using small area estimation, would calculate neighborhood level poverty histories and birth outcomes, (e.g., infant mortality and preterm birth). This assignment is based on the work of Margerison-Zilko et al (2015) and Kreiger (2015). This work would support ongoing PPOR (Perinatal Periods of Risk) work and align with the community health assessments.

The fellow would be placed in the Division of Epidemiology four days a week and the Maternal, Child and Adolescent Health Division one day a week. The would ensure proper support from staff epidemiologists and the chief epidemiologist, while providing opportunity to share findings with the program and gain a better understanding of community needs.

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

If there is a successful match for our program, a typical day at Metro Public Health Department could include the following activities:

- Complete tasks related to Fellow's assignment, working with and supported by staff epidemiologists and/or chief epidemiologist, as needed.
- Collaborate with team of staff epidemiologists on Division-initiated project(s), lending support and expertise. On a given day, this could include a briefing where the chief epidemiologists reviews current status and next steps.
- Attend MCAH staff meetings, in the department or in the community (with chief epidemiologist and/or staff epidemiologist), providing data support related to Fellow project.
- Support staff epidemiologist with basic data requests, becoming familiar with administrative databases and population health data sets.

## **Potential Projects**

### **Surveillance Activity      Davidson County Behavioral Risk Factor Surveillance System (BRFSS)**

As part of our local community health assessment, Metro Nashville Public Health Department (MPHD) will employ a local version of the Behavioral Risk Factor Surveillance System (BRFSS). MPHD is collaborating with one of the leading state universities and a community partner to gather and oversample certain subpopulation in preparation for the community health assessment (CHA). MPHD is committed to develop an ongoing surveillance of county level health behaviors. Findings would guide ongoing efforts and help target subpopulations with the greatest need.

The matching Fellow would participate in some data collection, lead data cleaning and analysis (with staff epidemiologists and chief epidemiologist) and collaborate with the MPHD programs and CHA Leadership Council to coordinate community discussions (e.g., newspaper editorials, internal/external leadership meetings and town halls).

### **Surveillance Evaluation      TBA**

The Division of Epidemiology at Metro Nashville Public Health Department is a local, county level health department. Our surveillance systems are managed at the state level (e.g., NEDSS, etc.). We have a congenial relationship with our state health department (Tennessee Department of Health) and could develop a surveillance system evaluation project in collaboration with them.

### **Major Project      Davidson County Neighborhood Level Assessment of Poverty and its Influence on Birth Outcomes**

Infant mortality disparities continue to persist with African American women 1.5 times more likely to have an infant be born too small (low birth weight), too soon (premature), and die before his/her first birthday than any other racial or ethnic group in the county. Based on the Perinatal Periods of Risk analysis, excess fetal and infant mortality are correlated with women not being healthy before pregnancy (indicating a need for strong preconception health and Interconception health interventions). In 2015, approximately 1 out of 10 births (10.4%) in Davidson County were preterm births (before 38 weeks gestation), a slight increase from 2014 (10.1%). Based on 5-year trend analysis from 2010 to 2014, very low birth weight (VLBW) percentages have remained stagnant primarily because the Caucasian VLBW percentages have increased incrementally from 0.9% in 2009 to 1.4% in 2013; decreasing to 0.9% in 2014. The African American VLBW percentages have consistently remained at or above 2.4% for the past 5 years. Additionally, as a snapshot of 2014, African American infants in Davidson County are 2.2 times more likely to be born LBW or VLBW than Caucasian infants. Currently, staff epidemiologists are updating PPOR (Perinatal Periods of Risk) estimates for Davidson County, including both Phase 1 and Phase 2.

Upon successful match for the Division of Epidemiology at the Metro Nashville Public Health Department, the fellow's primary assignment would support the ongoing work of the Birth Inequity Project, supported by CityMatCH, specifically: estimating neighborhood level poverty histories and birth outcomes (e.g., infant mortality and preterm birth). This assignment is based on the work of Margerison-Zilko et al (2015) and Kreiger (2015). This work would support ongoing PPOR (Perinatal Periods of Risk) work and align with the community health assessments. The methodology is based on ongoing division work called SCALE – Sub-County Assessment of Life Expectancy Project – where life expectancy was calculated for Davidson County at the zip code levels. The Fellow would expand on this work by using birth estimates to calculate 5-year infant mortality averages at the neighborhood level, mapping results using ArcGIS. Additionally, poverty estimates (Margerison-Zilko et al work) will be calculated using American Community Survey data. Examining the historical changes of poverty within the county will be key as Davidson County changes due to population increases and housing shortages.

The fellow would be placed in the Division of Epidemiology four days a week and the Maternal, Child and Adolescent Health Division one day a week. The would ensure proper support from staff epidemiologists and the chief epidemiologist, while providing opportunity to share findings with the program and gain a better understanding of community needs.

#### **Additional Youth Violence & Juvenile Justice Indicators Project Project**

Of the 75 criminal homicides in 2015, 20 of the victims were teenagers or younger — the highest number of youth deaths to hit Nashville in the past decade. The MCAH Division recently hired a Youth Violence Coordinator to identify community issues and potential solutions. Data is essential to process.

The Fellow would work with the Youth Violence Coordinator and the staff epidemiologist who supports Behavioral Health to develop a set of indicators that can be monitored over time.

#### **Preparedness Role**

It is essential to maintain readiness for any epidemiologic response during an emergency or disaster. The Division of Epidemiology supports MPHD in its effort to continually refine the Quality Improvement processes. This includes improving process efficiencies ranging from the receipt of disease reports to case management and participating in after-action reviews following emergency events.

There is opportunity for the Fellow to collaborate with our Emergency Preparedness Division around evaluating ongoing community education efforts and emergency plans as well as development of a training exercise for MPHD epidemiologists.

### **Additional Activities**

The Fellow will participate in:

- Completing data requests.
- Supporting the Institutional Review Board committee, reviewing incoming protocol and implementing quality improvement in the review process.
- Working with MCH interns.
- Supporting ongoing MCH community events by conducting process evaluation and other epidemiological activities, as needed.

### **Mentors**

<b>Primary</b>	Raquel Qualls-Hampton PhD, MS Chief Epidemiologist & Division Director
<b>Secondary</b>	D'Yuanna Allen-Robb MPH Director, Division of Maternal, Child & Adolescent Health