

ID: 58813480

Birth Defects and NAS, Injury - Host Site Description

Virginia Department of Health

Assignment Location: Richmond, US-VA
Virginia Department of Health
Division of Population Health Data

Primary Mentor: Dane De Silva, PhD, MPH
Director, Division of Population Health Data and Acting Maternal and Child Health Epidemiology Lead
Virginia Department of Health

Secondary Mentor: Lauren Yerkes, MPH, BS
Injury and Violence Prevention Senior Epidemiologist
Virginia Department of Health

Work Environment

Hybrid

Assignment Description

The Fellow's day-to-day activities will involve active participation as a team member within the MCH Epidemiology and Evaluation Unit in the Division of Population Health Data (DPHD). With support from DPHD staff, the Fellow will gain experience in providing statistical support and technical assistance to program managers and policymakers, assisting in data-driven evaluations of MCH programs, responding to routine data requests, and synthesizing information from multiple data sources on requested topics. The Fellow may conduct literature reviews on emerging issues in MCH and formulate ways to replicate analyses with Virginia's MCH data. The Fellow may assist in conducting analyses of population-based surveys such as PRAMS data, reporting trends for Title V indicators, and providing data to the Commissioner's Office and the General Assembly regarding time-sensitive projects and requests. Most importantly, the Fellow will have the opportunity to explore any MCH area(s) that he or she finds interesting, including off-site special events.

Describe Statistical and Data Analysis Support, Such as Databases, Software, and Surveillance Systems Available to the Fellow

MCH epidemiology staff have direct access to timely, electronic, and standardized vital records (births and deaths) data, emergency department visit data, all payer claims data, and hospital inpatient discharge data. The peer group style of the DPHD allows the MCH Epidemiology and Evaluation Unit to cross-collaborate with data systems and epidemiology units within the division, including Injury/Violence Epidemiology and the Population Health Prevention and Surveys Unit. The Virginia Pregnancy Risk Assessment Monitoring Systems (VA PRAMS) is housed within the DPHD, along with the Behavioral Risk Factor Surveillance System (BRFSS) and the Youth Risk Behavior Survey (YRBS). Personnel within DPHD have experience with a range of statistical software, including MS Excel, MS Access, SAS and SUDAAN, R, ArcGIS, REDCap, and Tableau.

Projects

Surveillance Activity Title: Neonatal Abstinence Syndrome Case Classification and Development of NAS Surveillance Reports

Surveillance Activity Description:

As a result of the significant impact of opioid addiction on neonates, neonatal abstinence syndrome (NAS) was made a reportable public health condition in Virginia in 2017 through the passing of House Bill 1467.

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Reducing the NAS burden continues to be prioritized in Virginia through its current Title V Maternal and Child Health (MCH) Block Grant National Outcome Measure 11, which tracks NAS trends in the state, and through Virginia's state health improvement plan (Virginia Plan for Well-Being), which includes reducing NAS as an objective under the priority of infant mortality. In Virginia, NAS cases are reported electronically by health care providers through a module developed in the Virginia Electronic Disease Surveillance System (VEDSS), Virginia's data system for reportable health conditions. The module currently consists of a patient section with demographics, case investigation details, such as clinical information, diagnosis date, maternal history of substance use, and confirmation methods; however, these elements are not required. Additional key elements are not currently collected, such as whether referrals were made or if follow-up occurred after discharge. Because of this, follow-up of NAS cases is limited. The Fellow would conduct a data gap analysis of the NAS surveillance module in VEDSS to understand what missing or incomplete fields should be added or amended to meet the CSTE NAS Tier 1 case definition. Such examples include a missing section for mother's information, delivery facility, and whether a confirmed case showed three or more signs of withdrawal. The Fellow will work with the VDH Substance Use Prevention Epidemiologist (SUP Epi) to perform quality assurance (QA) of reported NAS cases in VEDSS, such as identifying duplicates and correcting dates of birth. The Fellow would be responsible for documenting best practices for conducting NAS QA. In addition, the Fellow would be expected to review and evaluate the SAS software program already developed to create NAS surveillance reports and the layout of the NAS surveillance reports themselves. The Fellow would identify best practices to update the SAS coding program and the surveillance reports to more effectively report on NAS cases in Virginia. Based on these assessments, the Fellow would update the SAS program and the NAS surveillance reports that are produced on a quarterly basis.

Surveillance Activity Objectives:

Objectives: To conduct case classification and quality assurance of NAS surveillance cases; To enhance timeliness and completeness of NAS reporting and surveillance; To document best practices for NAS data quality assurance

Expected deliverables: Data gap analysis of VEDSS key elements to align with the CSTE Tier 1 case definition; Up-to-date case classification of NAS cases reported in VEDSS; Best practices document for conducting NAS quality assurance; Updated SAS program created to develop quarterly NAS surveillance reports; Updated template for NAS quarterly reports

Surveillance Activity Impact:

Virginia is one of few states in the United States to have NAS as a reportable condition. Improving NAS surveillance and reporting will help to understand the burden of NAS in Virginia and, to successfully reduce the NAS burden, timely and comprehensive surveillance efforts are required.

Surveillance System Evaluation Title: VEDSS and VISITS Surveillance System Evaluation

Surveillance System Evaluation Description:

While VEDSS is the current data system for NAS case reporting in Virginia, it does not support case management and does not generate a referral to services. The Fellow will also assess the existing Virginia Infant Screening and Infant Tracking System (VISITS) for its potential to be used for NAS data collection and case management.

VISITS is a web-based surveillance system that combines multiple state-mandated functions, including electronic birth certificates, certifiable birth events, birth defects reporting, and electronic death registration. VISITS is linked with the Electronic Birth Certificate registry to collect all necessary demographic data, including the patient's maternal demographic information, to provide a unique patient record for each infant born in Virginia. Data in VISITS can then be used to conduct follow-up activities.

While VISITS is used for case management and follow-up for birth defects reporting, it is not currently being used for NAS. The Fellow will be expected to develop an evaluation of VEDSS and VISITS. Based on findings from VEDSS (as a part

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of the Fellow's Surveillance Activity) and VISITS evaluations, the Fellow will work their DPHD team and the VDH Office of Epidemiology (OEPI) and VDH Office of Information Management (OIM) to inform surveillance data system enhancements or selection for NAS data collection and management.

Surveillance System Objectives:

Objectives: To evaluate VEDSS and VISITS data systems to inform data system enhancements or selection for NAS data collection and management

Deliverables: Evaluation assessment document of VEDSS and VISITS for NAS data collection and management

Surveillance System Impact:

Completion of this activity will help VDH make decisions for which data system to collect and report NAS data and to inform future development and enhancements of the chosen data system.

Major Project Title: Data Linkage for NAS Case Classification and Identification

Major Project Description:

One of the major projects is to link record-level NAS case reporting data to record-level birth certificate data and inpatient hospitalization data to identify NAS cases that were diagnosed through inpatient hospitalization data but not reported to VDH through existing NAS reporting pathways. This project will allow VDH to a) identify priority populations at higher risk for NAS; b) engage hospital-based postnatal care programs at time of delivery and before discharge; and c) support active linkage to care for infants with NAS. The Fellow will have access to person-level identifiers in birth certificate data necessary to conduct successful data linkage activities. Activities include the Fellow obtaining access to data sources, selecting data linkage software, creating a linkage protocol, and applying for VDH Institutional Review Board (IRB) review as appropriate. The Fellow will prepare and clean the record-level NAS case reporting data and use deterministic matching to link NAS case reporting data and inpatient hospitalization data to identify missed NAS case patients, with support from their Virginia mentors and other epidemiologists in DPHD. Linking to birth certificate data will also help to extend the NAS case record by better understanding maternal and delivery characteristics that may be associated with an increased risk of NAS that can inform potential interventions. Additionally, rates among all live births in Virginia can be calculated, which will provide a better picture of the burden of NAS, particularly for infants diagnosed after discharge. The linked dataset will serve as the master dataset for a list of NAS cases for follow-up statewide. The Fellow will stratify linked data by VDH health region and district, sex, and race/ethnicity to determine potential health disparities among geographic and demographic populations. The Fellow will submit at least one abstract on project findings.

Major Project Objectives:

Objectives: To link NAS data sources for the purposes of supporting NAS case follow-up statewide

Deliverables: Master linked dataset; Linkage protocol document; Data analyses (through a data product like a fact sheet, brief, table, or visualization); At least one abstract of project findings

Major Project Impact:

Linking to birth certificate data and hospital discharge data will help to extend the NAS case record by better understanding maternal and delivery characteristics that may be associated with an increased risk of NAS, which can inform potential interventions.

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Additional Project #1 Title: Maternal Opioid Use Dashboard

Project #1 Type: Major Project

Project #1 Description:

As a part of enhancements to VDH's current Drug Overdose and Related Health Outcomes dashboard series, the Fellow will work with their DPHD team to develop a dashboard and/or dashboard indicators on maternal opioid use. This dashboard will be used by the VDH Overdose Incident Management Team and other key partners to assess maternal opioid use throughout the state and identify demographic and geographic disparities.

Project #1 Objectives and Expected Deliverables:

Objectives: To disseminate data via an interactive dashboard about maternal opioid use among Virginians and associated health disparities

Expected Deliverables: Interactive Tableau dashboard published on VDH website

Project #1 Impact:

This dashboard will be used by the VDH Overdose Incident Management Team and other key partners to assess maternal opioid use throughout the state and identify demographic and geographic disparities.

Please Describe the Fellow's Anticipated Role in Preparedness and Response Efforts – Include Activities and Time Allocation (Required Competency of Fellowship)

The Fellow will participate in VDH Overdose Incident Management Team (IMT) meetings, which is a VDH response team led by the State Health Commissioner for overdose and substance use prevention and surveillance. As a part of this work, the Fellow will be tasked with developing data visualizations on maternal opioid use for utilization in planning and prevention efforts.

Please Describe the Fellow's Anticipated Role in Cluster and Outbreak Investigations – Include Activities and Time Allocation (Required Competency of Fellowship)

The Fellow will gain access to ODMAP, a platform used to assess nonfatal and fatal opioid overdoses reported by EMS in near real-time. The Fellow will develop a report of nonfatal overdose cluster investigations as they occur and send to Virginia comprehensive harm reduction programs throughout the state. The reports will be developed on an as-needed basis throughout the tenure of the program.

Please Describe the Fellow's Anticipated Role in the COVID-19 Response – Include Activities and Time Allocation

The Fellow is not anticipated to participate in the COVID-19 response. If VDH is asked to participate in pandemic response, the Fellow may need to participate in response activities along with the rest of the MCH epidemiology and evaluation team.

Please Describe Opportunities for Fellows to Work in Health Equity as well as Incorporating Diversity, Equity, and Inclusion into their Work

The Fellow will be able to examine health disparities in NAS data and make recommendations to the Office of Family Health Services, MCH and IVP program teams, and the Overdose IMT to achieve health equity. In addition, the Fellow will be able to participate in We All Count trainings, which specifically trains public health professionals about addressing health equity in data science.