Infectious Diseases, Substance Use/Mental Health

Michigan Department of Health and Human Services, Communicable Disease Division

Lansing, Michigan

Assignment Description

Housed within the MDHHS Bureau of Epidemiology and Population Health, the Communicable Disease Division is responsible for statewide surveillance and outbreak response to infectious agents. The CD Division is comprised of the following programs: Informatics, regional epidemiology, enteric and respiratory diseases, HIV and STD, tuberculosis, healthcare acquired infections, and viral hepatitis. The AEF will be placed in the Viral Hepatitis Surveillance and Prevention Unit, which directly integrates surveillance and special project data with prevention activities that include testing, linkage to care, harm reduction capacity expansion and syringe service program implementation.

Day-to-Day Activities

Specific activities will be dictated somewhat by the AEF’s goals and interests, but routine work will typically focus on the utilization of surveillance systems and large datasets to perform epidemiologic tasks. This will involve using data sets of varying size and complexity, linking data files, entering/editing data, maintaining quality control, and managing projects. The AEF will also participate in the design of studies, data collection, analysis and interpretation of results, and in their dissemination. Other routine activities would include: Creating data products, presenting on topics to various stakeholders, writing articles for publication, participating in trainings, and attending meetings or conference calls with local, state and federal partners.

Potential Projects

Surveillance Activity   Invasive Bacterial and Fungal Infections Associated with Injection of Substance

Passive surveillance exists for the measurement of HIV, HBV and HCV, but less is known about invasive bacterial and fungal infections among persons who inject substances. MDHHS has recently begun to analyze inpatient hospitalization data for surveillance of these non-reportable infections that are potentially related to injecting substances with unsterile equipment. Although this work has already produced a manuscript submission to the Journal for Infectious Diseases, it is novel surveillance in Michigan and the first effort was limited in scope. The AEF would be tasked with expanding this surveillance and refining the methodology. Additional directions the AEF could pursue would include incorporating medical coded emergency department data, work with select healthcare systems to validate surveillance methodology through medical chart review and use geospatial analysis to assess potential protective effects of syringe service programs. This work aligns closely with the goals of CSTE’s new Infectious Complications of Injection Drug Use workgroup, of which the MDHHS Viral Hepatitis Unit and AEF will be actively involved.
Surveillance Evaluation  

The AEF will be tasked with evaluating the SSP Utilization Platform (SUP) to ensure that it meets local and State program objectives. The SUP is an encounter-based surveillance system to track syringe service program deliverables and behavior data associated with injection drug use. This system is currently under development as part of Michigan’s state funded SSP implementation efforts and will be in production by early 2020. In addition to system evaluation, the AEF would use SUP data to inform stakeholders at the local, state and federal level, including presentations on local and national platforms, as well as developing recommendations for system improvements and working with the SUP’s vendor to facilitate those changes. SSP process measures (such as the number of clients served, syringes distributed, naloxone kits disbursed, overdoses reversed, persons referred for substance use treatment, HCV tests conducted, etc.) will be a component of the State’s Opioid Strategy Dashboard and will provide the AEF with an opportunity to collaborate on a State-level public health campaign.

Major Project  

Perinatal Hepatitis C Surveillance

The AEF will assist the Viral Hepatitis Unit in developing a protocol for routine identifications of high-risk pregnancies and guidance for follow-up to ensure testing and linkage to care for children at risk for vertical transmission of hepatitis C. This will involve obtaining records from Vital Statistics to match against communicable disease surveillance system cases to identify live births to mothers with hepatitis C infection. In collaboration with the Viral Hepatitis Unit, the AEF will then develop a method for sharing that information with local public health for testing, linkage to care, and follow-up so that at-risk children can receive appropriate testing and treatment (if necessary). As clinical screening and treatment recommendations change, it will be critical to develop a strategy and materials to update the public health and clinical community.

Major Project  

Hepatitis C Cure Cascade and Prevalence Estimate

The MDHHS Viral Hepatitis Unit started to receive negative electronic laboratory reports for HCV beginning in 2019, allowing for the detection of viral clearance. The AEF would be tasked with utilizing this surveillance data to create a “cure cascade” for hepatitis C, as well as developing a prevalence estimate for HCV infection in Michigan.

Additional Project  

Hepatitis C Treatment Availability Assessment

Michigan Medicaid has recently removed fibrosis score requirements for coverage of direct-acting antivirals (DAAs) for treatment of chronic hepatitis C infection, but sobriety and prescriber restrictions remain. The AEF will be tasked with comparing location of specialists (gastroenterologist, hepatologist, liver transplant or infectious disease physician) eligible to prescribe DAAs and geographic burden of HCV to describe any treatment deserts in the state. Additionally, the AEF will use Medicaid data to assess impacts of lifting fibrosis score requirements, cost effectiveness of DAAs, and health outcomes associated with prior authorization approval/denials.
**Preparedness Role**

The MDHHS Division of Communicable Disease has a close relationship with our counterparts in the Division of Emergency Preparedness and Response. The AEF will participate in trainings and exercises, which may involve communicable disease, chemical, natural disaster, and radiological events. If a real emergency event takes place in communicable disease or environmental health, the Fellow will be assigned an epidemiology function within the Incident Command Structure. Past AEFs at MDHHS have contributed to our emergency preparedness response in such situations as fungal meningitis, swine variant influenza, hepatitis A outbreak, legionnaire’s disease, lead, PFAS and eastern equine encephalitis.

**Additional Activities**

Additional projects: Vulnerability index assessments, HCV GHOST outbreak protocol, and other viral hepatitis surveillance activities

Additional activities: Development of protocols for surveillance, outbreak response and follow-up guidance. Develop and enhance data products. Assist with abstract/manuscript preparation and submission. Prepare and deliver presentations to stakeholders. Assist with any field investigations that arise.

Participation in local, state and national committees/workgroups, including: The Drug Epidemiology Workgroup, State Epidemiological Outcomes Workgroup, Epidemiology and Laboratory Capacity Workgroup, Viral Hepatitis Prevention Workgroup, SSP Advisory Group, NASTAD Viral Hepatitis Workgroup, Medicaid Affinity Group, CSTE Hepatitis C Subcommittee and Infectious Complications of Injection Drug Use workgroup.

**Mentors**

**Primary**

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State Epidemiologist

**Secondary**

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