

Infectious Diseases

Assignment Description:

The fellow will be involved with analysis of data from the Michigan Care Improvement Registry (MCIR). MCIR is a statewide immunization information system (IIS) intended to improve age-appropriate immunization and vaccination coverage levels. The MCIR was created in 1998 to collect immunization information from multiple providers and provide authorized users with immediate access to a patient's immunization history through an easily accessible interface. The MCIR has been populated with data for all Michigan live births since 1994 through a link with vital records and consists of a single, secure electronic database operated by MDCH. Schools use the MCIR School Immunization Reporting System interface for compliance reporting to their local health departments. Health care providers cannot view school-entered data, although schools are able to view provider-entered data and also add historical immunization information. Data entered by schools are not considered medically authorized until verified by a provider, however. Providers and schools may also enter positive antibody titers or record documented immunity based on a history of past disease. While providers may electively report all immunizations into the MCIR, the State of Michigan specifically requires that physicians and other providers report all school-exclusionary immunizations given to children less than 20 years of age within 72 hours of administration unless the child's parent or guardian objects by written notice. Currently, less than 0.05% of Michigan children less than age 19 years have been opted-out of the MCIR. The MCIR is a CDC IIS Sentinel Implementation Site

Day-to-Day Activities:

The fellow will:

- 1.) Analyze, interpret, and disseminate data from the Michigan Care Improvement Registry (MCIR) to identify pockets of need, immunization levels by antigen, and conduct other analyses as requested.
- 2.) Disseminate the findings and implications of data analysis projects, project evaluation, research, or other activities involving immunization and vaccine-preventable disease through peer-reviewed publication, professional conferences and seminars, and / or other forums as needed.
- 3.) Collaborate with other organizations and researchers interested in using MCIR data, including the Centers for Disease Control and Prevention (CDC), Michigan local health departments, and academia.
- 4.) Analyze data for immunization issues from other sources, e.g., the Behavioral Risk Factor Surveys (MiBRFS) and the school immunization records system.

Potential Projects:

Given the wealth of data available for analysis in MCIR, numerous potential projects are possible.

- 1.) An evaluation of how DTaP and Tdap immunization history is recorded for pertussis cases in the Michigan Disease Surveillance System (MDSS) compared to doses recorded in MCIR. Having established a cohort of pertussis cases linked to MCIR, an analysis of the time interval between last dose of pertussis-containing vaccine and disease onset, number of doses to complete the primary series, and ages at which doses were received could be analyzed for vaccine effectiveness.
- 2.) The Perinatal Hepatitis B Prevention Program (PHBPP) – Supplemental Evaluation Project is in need of an epidemiologist to collect and analyze data collected on the Newborn Screening (NBS) card and the Electronic Birth Certificate (EBC) as it relates to hepatitis B birth dose coverage levels. Transfers, NICU admission, underlying medical conditions, and low birth weight may result in delayed administration of the birth dose of Hepatitis B vaccine. These data will be used

to better quantify the number of parent refusals occurring at each birthing facility. The epidemiologist will help the PHBPP-SEP identify barriers and challenges that are facing our birthing hospitals when submitting their hepatitis B birth dose data.

- 3.) There is a perceived increase in parents delaying childhood immunizations or limiting the number of immunizations their child receives. The fellow could measure the prevalence of these trends over time, and identify parent and provider factors associated with adoption of non-ACIP vaccine schedules and make policy recommendations to decrease the use of these schedules.
- 4.) Immunizations are a fast-paced, ever-changing field. The need for ad hoc queries of MCIR arise on a daily basis.

Preparedness Role:

The influenza epidemiologist and the all-hazard plan coordinator in the Division of Immunization work with the Office of Public Health Preparedness to provide subject matter expertise in the development of response plans for outbreaks of vaccine-preventable disease. There are opportunities for the fellow to work with the influenza epidemiologist to update the pandemic influenza response plan as needed and to update the smallpox and anthrax plans.

Assignment Location: Lansing, MI

Primary Mentor: Rachel Potter, DVM, MS
Vaccine-Preventable Disease Epidemiologist
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Secondary Mentor: Corrine Miller, DDS, PhD
Director, Bureau of Disease Control, Prevention, and Epidemiology and
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