Infectious Diseases

New York City Department of Health and Mental Hygiene, Bureau of Immunization, Disease Control

Long Island City, New York

Assignment Description

The Fellow would be assigned to the Bureau of Immunization within the NYC DOHMH. The Bureau is composed of units focused on: Clinical Services/Emergency Management, Surveillance, Perinatal Hepatitis B Prevention, Program Support (child care and school immunization compliance), Administration, Citywide Immunization Registry, Provider Quality Assurance, Vaccine Management, and Adult Immunization. The Bureau is responsible for assuring that all New Yorkers are appropriately vaccinated across the entire lifespan. The Bureau is responsible for surveillance and control of vaccine-preventable diseases in NYC. The Bureau regularly responds to outbreaks of measles, pertussis and mumps. During 2018-2019, the Bureau investigated the largest outbreak of measles in the United States since 1992, with over 600 cases of measles. In 2010 we experienced one of the largest outbreaks of mumps in the U.S. since 2006 and had additional outbreaks of mumps in 2014 and 2015. In 2013 we experienced the largest outbreak of measles in the U.S. since 1996 and experienced another outbreak of measles in 2014. We also investigated outbreaks of pertussis in 2011-2012 and 2015 and an outbreak of varicella in 2016. These outbreaks have consistently led to opportunities for additional studies, presentations and publications for the Fellow. Housed within the Bureau is the Citywide Immunization Registry, a mature population-based registry which maintains the immunization records of all New Yorkers under 19 years of age, which is an important source of data about immunization status for children. In addition, the Bureau has adult immunization, clinical services and assessment units. Upon arrival, the Fellow would meet with each Unit Chief to learn about their work, explore possible projects and activities of interest.

Day-to-Day Activities

The Fellow will spend the majority of his/her time working on agreed upon projects. The Fellow will be incorporated into outbreak response and control activities. In addition, the Fellow will participate in vaccine-preventable disease surveillance unit activities such as weekly case classification, unit meetings, intake and investigation of reportable disease cases and intermittent analyses of surveillance data. The Fellow will attend meetings within the Bureau (e.g. NYC Childhood and Adult immunization Coalition meetings) and Agency (e.g. Epidemiology Grand Rounds) to gain exposure to all aspects of the Bureau's and Department’s work.

Potential Projects

**Surveillance Activity**  **Oversee an Outbreak Investigation**

The CSTE Fellow would be responsible for overseeing the investigation and epidemiologic analysis of a vaccine-preventable disease outbreak.
Surveillance Evaluation

Varicella Laboratory Reporting Surveillance System

A potential project would include a surveillance system evaluation of the Bureau of Immunization's electronic laboratory reporting system for varicella. Such an evaluation is particularly important because this is currently the only source of reports for varicella in NYC. If Health Code were to change to require provider reporting of varicella in NYC, the Fellow would be involved in the implementation of case-based surveillance.

Major Project

Changing Epidemiology of Pertussis in Infants, New York City

Pertussis can cause serious respiratory illness, especially in infants. Young infants (<2 months) are at greatest risk of severe pertussis-related complications and mortality. Strategies to prevent transmission of pertussis to young infants have evolved: in 2006, the Advisory Committee on Immunization Practices (ACIP) recommended routine vaccination for postpartum women who were not vaccinated previously with Tdap. This strategy would indirectly protect infants through close contacts, also known as ‘cocooning’. In 2011, ACIP recommended vaccinating women with Tdap during pregnancy, which would protect young infants through the transplacental transfer of maternal antibodies, and this recommendation was expanded in 2012 to include vaccination with Tdap during every pregnancy. To help understand the effectiveness of these vaccination strategies, we propose to look at incidence of pertussis in young infants over time, describe clinical and epidemiological characteristics of illness in young infants, and assess maternal pertussis vaccination history and whether Tdap was recommended by their provider.

Surveillance Activity

Measles Outbreak Analysis

Additional analytic projects may be developed related to data collected during the large outbreak of measles in 2018-2019.

Surveillance Activity

Additional Analytic Projects Could Be Developed Specific to Outbreaks or Emergent Issues That May Arise During the Fellowship

- Examples of past projects conducted by CSTE Fellows include:
  - Evaluation of rubella diagnostic testing and surveillance in NYC
  - Evaluation of the use of social media during a mumps outbreak in 2015
  - Evaluation of non-mumps parotitis during the 2014-2015 influenza season
  - Mumps vaccine effectiveness and risk factors for disease in households during an outbreak in NYC
  - Effectiveness of measles post-exposure prophylaxis during an outbreak in NYC
  - Provider awareness and altered practices survey following a 2011-2012 pertussis outbreak in NYC
**Preparedness Role**

Bureau of Immunization staff have specific emergency preparedness roles and the CSTE Fellow would be able to participate in these activities. For example, the Bureau is part of the Clinical Operations Branch which is responsible for pandemic influenza planning and mass prophylaxis plans. The CSTE Fellow would attend emergency preparedness meetings. They would be engaged in emergency response activities. For example, past CSTE Fellows were responsible for the monitoring of travelers from Ebola-affected countries who were traveling between U.S. jurisdictions. Other fellows have participated in mass vaccination clinics and overseeing data collection at the clinics.

**Additional Activities**

The CSTE Fellow would have the opportunity to give presentations at local and national conferences and to write manuscripts for potential publication.

**Mentors**

**Primary**

Jennifer Rosen MD  
Director of Epidemiology and Surveillance

**Secondary**

Jane Zucker MD, MSc  
Assistant Commissioner