Infectious Disease

The NYC Department of Health and Mental Hygiene is a large, and well-staffed Department with expertise in emergency management, program administration, surveillance and epidemiology. We are the primary public health agency for over 8 million ethnically and socio-economically diverse people in 321 square miles (the highest population density in the US). NYC is one of the major ports of entry for travelers and commerce with recent immigrants accounting for a third of the population leading to the threat of imported illness as happened with West Nile Virus in 1999.

The Fellow's anticipated day-to-day activities:

a) The Fellow will be assigned to the Enteric, Waterborne and Hepatitis Unit and have his/her own analytic, surveillance and educational projects to work on daily (described below). In addition, the unit investigates an average of 30 outbreaks/year and the Fellow will participate in all aspects of foodborne investigations with the goal of being able to manage them independently.

b) The Fellow will also work on educational activities regarding foodborne illness. Because of the cultural diversity of NYC this will involve working with many different communities and ethnic groups. Additionally, every effort will be made to provide the Fellow with opportunities to observe or work with other Bureaus that interact with the BCD to better understand the workings of a large local health department.

c) Although the position will be primarily focused on enteric illness, the Fellow will also participate in the general activities of the BCD including attending weekly outbreak meeting and serving in the rotation as Research Scientist of the Week to handle whatever public health issues arise that week in the bureau and analyzing the routine surveillance data to detect possible clusters.

d) The Fellow will also have the opportunity to work on other projects as they interest him/her or relate to enteric illness in the BCD or in other Bureaus which may include projects working with the Public Health Laboratory or the Office of Environmental Investigations.

The Fellow will have the opportunity to work on a variety of projects that will demonstrate the opportunity for data analysis. These projects include, but are not limited to, the following:

a) Developing MS Access databases for data from foodborne illness related case investigations and analysis of these databases. BCD routinely interviews all reported cases of certain foodborne diseases including cases of listeriosis and E. coli O157 infections to collect information on clinical illness and exposures. More detailed analysis would provide insight into the epidemiology of these infections.

b) In October of 2005, the Advisory Committee on Immunization Practices (ACIP) recommended universal hepatitis A vaccination for children at 1 year of age (12-23 months), however some cases of hepatitis A in young children continue to be reported in this age group. The Fellow will assist in evaluation of hepatitis A surveillance in New York City with a focus of examining the drop in cases due to

implementation of vaccine programs. The Fellow will write a protocol, assist with data collection and data analysis regarding missed opportunities for vaccine against hepatitis A among young children.

c) Analyze Salmonella serotype data combined with PFGE data that is compiled by the DOHMH Public Health Laboratory. This will give the fellow an opportunity to work with DOHMH staff from the laboratory

d) Investigating foodborne outbreaks. Outbreaks in New York City are identified from a variety of sources including patients themselves, providers, and analysis of disease reports. The DOHMH receives reports of approximately 30 foodborne outbreaks each year. The Fellow will take primary responsibility for investigating some of these outbreaks. The Fellow will have the opportunity to oversee and become involved in every aspect of a foodborne outbreak which will include developing a questionnaire, conducting outbreak interviews, analyzing the outbreak data, and writing the final report. For multijurisdictional outbreaks, the Fellow will participate in multistate calls and calls with CDC, FDA, USDA and other relevant agencies. S/he will have the opportunity to go on restaurant inspections and to take NYC's food safety training.

Program or surveillance system evaluation component:

a) In New York City, approximately 50 cases of typhoid fever are reported each year. Intense case investigations and follow-up are conducted for all typhoid cases and treatment failures and carriers are sometimes identified through this process. From 2000-2007, approximately 40 patients were identified as treatment failures or carriers of Salmonella typhi. Additional chart abstraction of these patients will be conducted in order to examine treatment courses for carriers and case-patients that experienced treatment failures to attempt to determine the reason for treatment failure. The new Fellow will be involved in data collection, data management, and data analysis in order to answer this question.

b) Since Shiga-toxin producing E. coli (STEC) non-O157 became reportable in New York City in 2005, approximately 20 cases have been reported in recent years. In addition, approximately 30 cases of STEC O157 are reported each year. The rate per 100,000 in New York City in 2007 compared to all FoodNet sites in 2006 for STEC O157 was 0.34 and 1.3 respectively and for STEC non-O157 was 0.29 and 0.5 respectively indicating that either risk factors among NYC cases differ or differences in surveillance may lead to underreporting of cases. The Fellow would collect data to further understand the epidemiology of Shiga-toxin producing E. coli in NYC. In addition, the fellow would be involved in conducting surveys of laboratories to investigate the possibility of underreporting. The Fellow would be involved in all aspects of this project including developing a protocol, the survey instrument, and collecting, managing, and analyzing data in order to answer these questions.

d) Evaluate foodborne outbreak investigations and summarize outbreak data that has been collected over the past five years in New York City. The Fellow would be involved in data management and data analysis of this project.

Role of the fellow in State Emergency Preparedness plan:

The NYC DOHMH has responded to a number of citywide and national emergencies in the last few years including the initial outbreak of West Nile virus in 1999, the response to the terrorist attacks and anthrax investigation in 2001, the Citywide blackout in August, 2003, and providing prophylaxis against hepatitis A to patrons of a NYC bar in 2008. All employees are assigned to an Emergency Preparedness Committee for purposes of planning for and responding to emergencies. The Fellow would be assigned to the Epidemiology and Surveillance Committee and expected to participate in the DOHMH response in the event of an emergency and in all drills and meetings required by the unit.

Assignment Location:	New York City, NY
Primary Mentor:	Sharon Balter, MD
	Medical Director
	Enteric, Waterborne and Hepatitis Unit
	Bureau of Communicable Disease, Department of Environmental Protection, New York City Department of Health and Mental Hygiene
Advanced Degrees:	MD, New York University School of Medicine (1994)
Secondary Mentor:	Vasudha Reddy, MPH
	Research Scientist, Communicable Disease Program, Bureau of Disease Interventions, New York City Department of Health
Advanced Degree:	MPH, Emory University (1997)