

The NYC Department of Health and Mental Hygiene (DOHMH) is a large and well-staffed City agency with expertise in descriptive and analytical epidemiology, program administration, public health prevention programs, and emergency management. We are the primary public health agency for over 8 million ethnically and socio-economically diverse people, residents that live in the highest population density area in the United States.

The Injury Epidemiology Unit (IEU) in the Bureau of Epidemiology Services (BES) is charged with monitoring both intentional (e.g., homicide, suicide) and unintentional (e.g., transportation accidents, falls, burns, etc.) injuries in NYC, identifying populations at risk, evaluating prevention programs, and collaborating with City agencies that provide injury-related programs to develop and support related policies.

Injuries are a major contributor to mortality and morbidity in NYC. Data from 2005 indicate that unintentional injuries rank in the top ten causes of hospitalization among almost all age groups in NYC. Among young males between the ages of 15 and 24 and adult males between the ages of 25 and 44, homicide is the leading cause of death, followed by accidents. Suicide is the fourth and fifth leading cause of death among males and females age 15-24, respectively. For adults 65 years and older, accidents due to falls are the third leading cause of hospitalization.

The IEU maintains an Injury Surveillance System (ISS) that monitors approximately 63,000 hospitalizations and 2,200 deaths due to injury per year. This system utilizes three data sources including mortality data from the NYC DOHMH's Bureau of Vital Statistics, hospital discharge data from the State Planning and Research Cooperative System (SPARCS, NYS DOH), and treated and released case data from emergency departments at a sample of NYC hospitals. These data sources are supplemented by violence and injury-related information gathered through representative health surveys in both the NYC adult and high school populations.

Findings from the IEU's surveillance activities have informed provider outreach and education focused on the health risks of intimate partner violence. For example, staff have actively promoted intimate partner violence screening among local health care providers through the mass-mailing of a publication to physicians and nurses in NYC, entitled: "Intimate Partner Violence: Encouraging Disclosure and Referral in the Primary Care Setting," and through Grand Round presentations to area physicians. In 2008, the agency also aims to conduct a large-scale provider education campaign on intimate partner violence screening, involving face-to-face visits to provider offices in poor NYC neighborhoods where intimate partner violence is elevated (using a method locally termed as "public health detailing").

The IEU gives technical assistance to the City's recently legislated Child Fatality Review Team and also serves as the City's resource to non-governmental health and social service organizations in need of injury-related data for needs assessments, grant applications, trainings, and publications.

2. The fellow's anticipated day-to-day activities

The Injury Epidemiology Unit's data systems would provide a CDC/CSTE fellow an excellent opportunity to apply his/her epidemiological skills to the important, but often overlooked area of injury prevention and control. The fellow would have his/her own analytic project(s) to work on daily (described in next section). In addition, the fellow will participate in the IEU's field work to gain experience in hospital and medical examiner chart abstraction, and he or she will also participate in developing prevention program strategies to gain experience in translating epidemiologic findings into actionable interventions.

The fellow will be provided with opportunities to be a fully-integrated member of the NYC DOHMH. He/she will attend weekly unit and bureau meetings and will be encouraged to attend the agency's monthly Epidemiology Grand Rounds in order to better understand the surveillance and analysis activities of a large local health department.

A range of additional epidemiologic and data analysis training opportunities also exist at the NYC DOHMH. The fellow will be supported to take SAS and SUDAAN training classes, as well as other trainings if relevant or interested, such as an internal "GIS Bootcamp", a scientific writing course, etc. If major communicable disease outbreaks occur, this fellow will also have the opportunity to take part in short-term field data collection efforts pertaining to outbreak control.

3. Examples of potential projects that demonstrate opportunities for data analysis, outbreak field investigations, and opportunities to work on interdisciplinary teams

The fellow will have the opportunity to work on a variety of exciting projects that involve field investigations, data analyses, and data dissemination. Specific projects that would provide skills-building experience in epidemiologic methods and public health practice and policy include, but are not limited to:

Alcohol and injury ---

While it is known that alcohol consumption is associated with both intentional and unintentional injuries, studies are needed on the magnitude of alcohol involvement in injury occurrence in New York City and alcohol involvement by type and cause of injury. The fellow will conduct an evaluation of IEU's ISS to determine the system's strengths and limitations in tracking alcohol-related non-fatal and fatal injuries. S/he will also conduct analyses of self-reported Community Health Survey and Youth Risk Behavior Survey in order to describe the distribution of usual drinking patterns (volume and heavy episodic consumption) and intentional or unintentional injury. Particularly in NYC, studies are needed which measure and analyze cultural and socioeconomic variations in this relationship.

Falls among the elderly ---

More than 17,000 New Yorkers 65 years of age or older were hospitalized as a result of fall-related injuries in 2005. The fellow will use GIS to spatially map falls resulting in hospitalizations among older adults in NYC and identify potential environmental and socioeconomic factors. S/he will also evaluate the ability of Vital Statistics and SPARCS to track recurrent falls and /or mortality within three months of falls. This important project may result in a health communication piece shared with the NYC Department for the Aging and NYC Housing Authority.

Teen suicide ---

Working with partners in the BES's Psychiatric Epidemiology Unit, the fellow will review teen suicides in NYC to assess for missed opportunities within the health and education sectors and apply epidemiologic principles to help establish a system for estimating the burden of non-fatal suicide attempts through the analysis of SPARC's data (i.e., self-inflicted injuries) and self-reported data from the BES's Youth Risk Behavior Survey. This is the first step towards establishing a coordinated research agenda that increases attention to high risk groups, gender and ethnic differences, geographical distribution, economic changes, protective factors, potential treatment and preventive interventions.

The impact of policy on unintentional injury ---

The fellow will examine the impact of various policies that impact the prevention of unintentional fatal and non-fatal injuries in NYC (e.g., motor vehicles, falls, and fires) by writing a brief on the roles of local and state policies (e.g., blood alcohol and safety belt legislation, helmet use, window guards, pedestrian safety, smoke detectors) and model the impact of these various policies on unintentional injury-related morbidity and mortalities since 1990. The brief should include graphics that track policy implementations and injury trends. Analyzing injuries in this way will help expand prevention efforts traditionally focused on messages related to personal behavior.

The fellow, if interested in these important substantive areas, is encouraged to use findings for conference abstract submission and research manuscripts.

4. Program or surveillance system evaluation component

Under mentor guidance, the CDC/CSTE fellow will lead the evaluation of the IEU's recently revised active surveillance of NYC emergency departments to understand the strengths and limitations of the data. The primary objective of this surveillance system is to estimate and monitor two quantities: the total number of emergency room visits that are the result of assaults, and the proportion of these that are the result of intimate partner violence. The fellow will lead this evaluation at a unique time when the system is changing sampling design. Since 1997, the basic approach has been to regularly review charts from a convenience sample of hospitals and then generalize to the NYC population using multipliers from auxiliary data. In 2008, the system will move to a probability sampling framework utilizing syndromic surveillance data containing records for 90% of all emergency visits in New York City. The fellow will be responsible for comparing the representativeness of the 2008 sample and the difference in the quality of the

generalizability of the data from the two methods. S/he will also determine whether the new sampling plan results in discrepancies between the latest data and data collected under the former sampling plan. The fellow will design a plan to integrate the 2008 data into the trend analyses. This evaluation project will prepare the fellow to submit an abstract for the CSTE Annual Conference.

5. Role of fellow in City Emergency Preparedness plan

The NYC DOHMH has responded to a number of citywide and national emergencies in the last few years including the response to the terrorist attacks and anthrax investigation in 2001 and the citywide blackout in August 2003. Recent preparedness activities have included syndromic surveillance during the 2004 Republican National Convention and the training of staff as shelter operators in conjunction with the NYC Office of Emergency Management's Coastal Storm Plan this summer. The CDC/CSTE fellow will be integrated into the DOHMH's Incident Command System, which regularly plans for and responds to emergencies. The fellow will be assigned to the Epi and Data Unit within the Surveillance and Epidemiology Section and will be expected to participate in unit meetings, drills and the DOHMH response to an emergency.

Assignment Location: New York, New York

Primary Mentor: Laura DiGrande, DrPH, MPH
Research Director, New York City Department of
Health and Mental Hygiene, Division of
Epidemiology Services, Injury Epidemiology Unit

Advanced Degrees: DrPH, Columbia University (2007)
MPH, Boston University, 1996

Secondary Mentor: Catherine Stayton, DrPH, MPH
Director, Injury Epidemiology Unit, New York City
Department of Health and Mental Hygiene

Advanced Degrees: DrPH, Columbia University (2002)