**Behavioral Health (Substance Abuse)**

**NYC Department of Health and Mental Hygiene, Bureau of Alcohol and Drug Use Prevention, Care and Treatment**
Queens, NY

**Assignment Description**

The Bureau of Alcohol and Drug Use, Prevention, Care and Treatment (BADUPCT) will provide abundant opportunities for the CSTE Behavioral Health Fellow to apply her epidemiological skills. BADUPCT conducts both alcohol and drug-related morbidity and mortality surveillance, epidemiologic, and research activities. Surveillance and research focus on the burden of alcohol use and highlights the influence of neighborhood and other contextual factors. The goal of our research is to reduce the negative health and social consequences of excessive alcohol use. One of the primary objectives of BADUPCT’s alcohol-related activities and initiatives is to identify patterns of use, access to alcohol, and emerging trends. These activities help provide early warning detection and inform timely, public health interventions. Surveillance and monitoring of mortality data from death certificates and medical examiner files focus on unintentional poisoning and chronic dependence on alcohol. Morbidity studies include analysis of emergency department and hospital discharge data, as well as treatment data.

For the next two years, the fellow will be engaged in research that utilizes three primary data sources: 1) emergency department (ED) visits; 2) inpatient hospital discharges; and 3) alcohol outlet data to better understand disparities in alcohol misuse and concentration of alcohol-related morbidity among New York City (NYC) residents. The fellow will help lead epidemiologic analyses using alcohol-related data and provide analytic and epidemiologic support to the Research and Surveillance Unit. The unifying theme of and impetus for most of their alcohol-related research and surveillance is disparities in alcohol-related morbidity. As a unit, we seek to describe alcohol-related disparities and better understand the sources of identified disparities, whether related to race/ethnicity, gender, age, socioeconomic status, or environmental and other risk.

**Day-to-Day Activities**

Activities will be dictated by the final agreement made with the Fellow; nevertheless, a typical day’s activity would include the following: working with a large complex dataset, linking data sources, and running an analysis for a specific research project. He/she will become a skilled alcohol researcher, who will become familiar with ICD-9 and ICD-10 classification systems and coding with a focus on the transition from ICD-9CM to ICD-10CM, develop and sharpen statistical analytic skills. He/she will gain experience with writing research protocols, preparing IRB applications, and securing data-source agreements. He/she will also have the opportunity to contribute to research designs, as well as providing significant input into data analysis planning.

The Fellow will learn how to abstract data from medical examiner files, interpret data, write scientific reports, and articles for peer reviewed journals. He/she will participate in the creation of data collection tools, completion of chart abstractions, management of data, and analysis including production of epidemiologic curves, data tables, and summary of findings. In addition, the Fellow, will be given ample opportunities to present data findings at meetings and conferences. He/she will be encouraged to form relationships with other public health professionals, of which there are numerous possibilities. The fellow will be encouraged to attend any of the various trainings sponsored by DOHMH, including SUDAAN and “GIS boot camp”. He/she will attend New York State Department of Health’s quarterly State Epidemiological Outcomes Workgroup meetings and monthly epidemiology grand rounds. Finally, the mentor’s will introduce the Fellow to a range of alcohol research and epidemiology experts in New York City.
**Potential Projects**

**Surveillance Activity**

Conducting routine surveillance and monitoring of alcohol-related injury in NYC EDs and morbidity in hospital discharges

Binge drinking increases injury risk by reducing coordination and reaction time and by impairing judgment and is related to fatal and non-fatal injuries, such as motor vehicle crashes and pedestrian-related accidents, poisonings, fights, and falls. In NYC, the number of alcohol-related ED visits increased from 2005 to 2010, among those aged 12 years of age or older. More than 141,307 alcohol-related ED visits were reported in 2010, representing 5% of all ED visits that year and a 64% increase from 2005.

Alcohol misuse is associated with many diseases, including liver disease (e.g., cirrhosis, hepatitis), cancers, and dementia. About 8% of all hospitalizations in NYC are alcohol-related, totaling to nearly 65,000 hospital admissions annually. While Blacks and Hispanics have lower rates of alcohol use, we hypothesize that they have higher rates of alcohol-related injury and hospitalization.

For this project, the CSTE behavioral health fellow will the opportunity to conduct routine surveillance and monitoring by 1) summarizing the rates of alcohol-related injuries in EDs and rates of alcohol-related hospitalizations for the past three years and 2) ranking comorbid conditions associated with alcohol-related diagnoses, using the New York State Department of Health’s Statewide Planning and Research Cooperative System (SPARCS), an administrative dataset that includes patient-level information and diagnoses from all article 28-reporting hospitals. Data include patient-level information from all hospitals, including demographic characteristics, diagnoses (principal and up to 24 secondary diagnoses), treatments, and services for each outpatient visit including ED visits and inpatient hospital stay. All alcohol-related principal and secondary diagnoses are identified using ICD-9 CM diagnostic codes, a system of disease classification developed by the World Health Organization. She will compute age-adjusted hospitalization rates overall and separately by demographic characteristics and alcohol diagnostic classification groupings (e.g., alcohol dependence vs. alcohol induced mental disorders). Because more than half of alcohol-related diagnoses are captured by secondary diagnoses (and not by a principal diagnosis), the fellow will also rank and describe the top 10 comorbid conditions associated with a secondary alcohol-related diagnosis. Results are expected to reveal complex distribution of alcohol-attributable injury outcomes and hospital morbidity by race/ethnicity and neighborhood of residence. This analysis represents a first stage of describing the impact of alcohol misuse on alcohol-related injury and morbidity in NYC using the most up-to-date hospitalization data. Examining differences in alcohol-related ED and hospitalization rates is important to identify groups at higher risk, necessary for public health intervention and planning efforts.
Major Project  Conduct and evaluate alcohol mortality surveillance activities in New York City (NYC)

In NYC, alcohol use leads to about 1,800 deaths each year, with alcoholic liver disease and alcohol-related injury and poisonings ranking as leading causes of death. The Fellow will work with DOHMH analysts to conduct alcohol mortality surveillance in NYC. The Fellow will be provided a review of the data collaboration between BADUPCT, Bureau of Vital Statistics, and the Office of the Chief Medical Examiner’s (OCME) office to understand the essential public health functions of each office. The Fellow will be trained on using toxicology results to abstract and interpret alcohol-related mortality data from OCME files. The Fellow will assist DOHMH analysts on the evaluation of current data collection tools and assess if new fields should be added to forms. The Fellow will create mortality surveillance databases, participate in data entry, and create a system for data entry quality assurance.

The Fellow will also assist DOHMH analysts with the analysis of alcohol mortality surveillance. The Fellow will follow data cleaning protocols and analyze data using SAS software. The Fellow will interpret data and report findings by preparing tables and reports. The Fellow will work with DOHMH analysts to create map(s) for alcohol mortality surveillance. Training in ArcGIS for generating maps is referenced in more detail under Project 4. The fellow will have an opportunity to present summary findings at bi-weekly research staff meetings using tables and Powerpoint presentations.

The Fellow will assist DOHMH analysts in dissemination of annual BADUPCT surveillance report through an Epi Data Brief. Epi Data Briefs are short publications published by the NYC DOHMH that highlight data findings from various programs and projects. The Fellow will understand the basics of health risk communication and will learn to communicate alcohol-related mortality surveillance findings to the lay public. With supervisors’ guidance and approval, outcomes from public health surveillance can be presented in scientific posters, reports, or manuscripts.

Major Project  Conduct and evaluate alcohol mortality surveillance activities in New York City (NYC)

Collecting information from patients about their alcohol consumption can provide clinicians with valuable information to identify excessive or dangerous drinking, prevent potential contraindication with medical therapies, and provide the opportunity for intervention where needed. Alcohol Screening and brief intervention (A-SBI) is an intervention where a health care provider uses a validated instrument to assess a patient’s alcohol consumption and intervenes as needed. A-SBI has been shown to be effective in reducing alcohol consumption. In emergency care settings, studies have shown that A-SBI can reduce alcohol consumption, reduce driving after drinking, reduce injury recurrence, and decrease subsequent emergency department visits.

Based on this strong evidence, several professional associations have encouraged or recommended the use of A-SBI in ED settings, including the American College of Emergency physicians and the Emergency Nurses Association. And both have developed toolkits to aid health professionals in implementing A-SBI in the ED. Despite these tools and directives, screening rates in EDs remain highly variable. EDs often under-report use for a variety of reasons, including lack of provider time, financial resources, lack of knowledge of efficacious intervention techniques, financial resources to provide training, and lack of knowledge of valid screening measures.

To better identify patients with alcohol misuse and narrow the gap between patients in need of services and those who actually receive them, the CSTE behavioral health fellow will help conduct and evaluate a pilot study on how patients’ alcohol use history is collected in EDs. This pilot study is part of a larger national effort through the CSTE Alcohol Subcommittee to understand how patient alcohol use information is collected. The study objectives are to: 1) describe how alcohol consumption data may be
collected and reported in the ED; 2) describe the perceptions and attitudes of emergency department staff (physicians and nurses) towards the routine collection of alcohol consumption data in emergency departments; and 3) describe barriers to and opportunities for improving the collection of alcohol consumption information in this setting. The CSTE behavioral health fellow will help conduct a qualitative analysis of surveys conducted with ED staff, using questions developed by focus groups created by the CSTE Alcohol Subcommittee. The fellow will conduct these investigations at 2-3 Health and Hospital Corporation (HHC) hospitals, a network of 11 acute and community hospitals in NYC. She will help summarize data by key informant type, trauma level of hospital, academic affiliation, neighborhood of ED, and volume of bed and disseminate findings through routine and special reports and presentations to internal and external audiences.

**Additional Project: Analyzing alcohol outlet density**

Alcohol outlets, places that sell or serve alcohol, are the built environment of alcohol exposure and access. Outlet density describes the landscape of alcohol availability. Numerous studies show that alcohol outlet density is positively associated with binge drinking, alcohol-related morbidity, and related harm, including injury and violence. Systematic reviews suggest that reducing density, limiting the physical availability of alcohol, may help to decrease binge drinking and alcohol-related injury and hospitalizations. The purpose of this analysis is two-fold: 1) to quantify the density of on-premise (service) and off-premise (retail) alcohol outlets in NYC; and 2) to examine the relationship between the geographic density of outlets and alcohol-related hospital discharges in 2013 among both youth and adults. Using patient ZIP code of residence from SPARCS hospitalization data (street address is not available), ecologic analyses will also be conducted to determine whether there is an association between neighborhood-level density and morbidity and, if so, whether the prevalence of binge drinking mediates the relationship.

Data on alcohol outlets come from the NY State Liquor Authority and include street address and license type (i.e., on-premise vs. off-premise). Data on neighborhood-level alcohol use behavior come from the NYC Community Health Survey, an annual DOHMH survey that provides estimates on a range of chronic diseases and behavioral risk factors. ED and hospital data come from SPARCS, an administrative dataset that includes patient-level information and diagnoses from all article 28-reporting hospitals. Analyses are guided by recommendations developed by the CDC’s Alcohol Program, located in Division of Population Health in the National Center for Chronic Disease Prevention and Health Promotion and a 2013 CSTE pre-conference workshop on standardizing measures for outlet density.

The fellow, with access to over 22,000 alcohol outlet license data (that has been geocoded already to the X,Y coordinates), will explore the utility of using various area-based and network-based measures of density and assess spatial clustering. To conduct analyses that examine the relationship between density and alcohol-related injury and morbidity, the fellow will help compute geographically weighted regression models. The fellow will have access to training classes at the DOHMH GIS Center of Excellence and in-house geographers at the DOHMH. Monitoring of density and patterns of density will improve effective dissemination and application of information for advocacy, policy development and evaluation purposes.
**Preparedness Role**

The fellow will be encouraged to participate in any training and exercises sponsored by the DOHMH Bureau of Emergency Preparedness. NYC DOHMH has responded to a number of citywide emergencies and epidemics including a meningitis outbreak in 2006, for which Dr. Paone was asked to work on the response team. More recently, Dr. Paone and other BADUPCT staff responded to an increase in synthetic cannabinoid-related adverse events in emergency department visits and fentanyl-associated overdose deaths by alerting health care providers and publishing DOHMH Health Advisories. In the case of an emergency, the CSTE Fellow may have the opportunity to work on a response team.

**Additional Activities**

- Conduct data abstraction and data entry
- Prepare data tables
- Assist with the preparation of reports and presentations
- Review data tables, synthesize information, and identify areas for future analysis
- Assist with analysis of data
- Assist with general projects as needed by the Alcohol Epidemiologist

**Mentors**

**Primary**

Denise Paone, EdD  
Director of Research and Surveillance Unit

**Secondary**

Arpi Terzian, PhD, MPH  
Alcohol Epidemiologist