Substance Abuse

Assignment Description:
The Bureau of Disease Control, Prevention and Epidemiology (BoE) within the Michigan Department of Community Health (MDCH) provides epidemiological support to the state's Public Health programs. It is staffed by about 180 epidemiologists and professional staff organized into four Divisions: Communicable Disease; Environmental Health; Genomics, Perinatal Health and Chronic Disease Epidemiology; and Immunization.

The CSTE Fellow will have opportunities to experience and contribute to applied epidemiology in an emerging topic, substance abuse, which cuts across multiple areas of public health. He/she will be based in the Epidemiology and Surveillance Section of the Division of Environmental Health (DEH), which provides epidemiology support to the Injury and Violence Prevention Program (IPP) which includes substance abuse. The DEH currently has seven staff with advanced degrees and training in epidemiology; three have doctorates. Kim Hekman was our former CSTE Applied Epidemiology Fellow in Substance Abuse; she has developed a number of resources for her successor to draw upon. Besides the Mentors, an incoming Fellow will have support from two other BoE epidemiologists. Anita Ofori-Addo, MPH is staff epidemiologist for the CDC-funded Michigan Violent Death Reporting System (MiVDRS); and Katy Gonzales, MPH is our Bureau's CDC-funded Alcohol Epidemiologist. Su Min Oh, PhD, the BSAAS epidemiologist, meets weekly with the BoE Substance Abuse and Injury staff, and the Fellow will participate in these meetings which will help him/her develop collaborative projects. All three can provide technical support to the Fellow in accessing and manipulating data and in understanding case definition and coding issues. Because of the collaborative structure of the MDCH BoE, the Fellow can get access and assistance in using data systems managed by other programs such as Chronic Disease and HIV/AIDS. Please visit our website at www.michigan.gov/epi

Day-to-Day Activities:
The BoE is building its capacity for substance abuse epidemiology and surveillance. On a daily basis, the Fellow will learn to use data sets of varying size and complexity, link data files, edit data and maintain quality control, and manage projects. He/she will participate in the design of studies, in data collection, in the analysis and interpretation of results, and in their dissemination. Collaborations are under discussion with experts from the new CDC-funded Injury Center at UM. The Fellow will join this collaborative research team which is developing analytic studies of substance abuse impacts on mortality and morbidity. The BoE also works with the MDCH BSAAS to develop ongoing public health surveillance of key substance abuse measures. BSAAS has federal funding to build prevention capacity through the use of state and local data for prioritizing substance abuse problems and assessing the impact of interventions. To implement the program, BSAAS organized a State Epidemiology Outcomes Workgroup (SEOW) chaired until recently by Dr. Corinne Miller, State Epidemiologist and BoE Director; Dr. Cameron is BoE representative. The SEOW has compiled a wealth of data resources that are being used to develop state and community plans for prevention. The Fellow will participate in the SEOW and work with BSAAS epidemiologist Dr. Su Min Oh to develop in-depth analyses of data sources of interest. The Fellow would act as point of contact for questions about substance abuse epidemiology and would assist in the investigation of 'outbreaks' of new substance abuse problems as detected by the State's Poison Control Center or reported from local health departments or providers.

Potential Projects:
There are multiple data sources available to address substance abuse and injury issues, including hospital discharge data, death certificate files, statewide Poison Control Centers data, state and local

traffic crash death and injury data, and Medical Examiner and Death Review data for selected topics or areas; also behavioral data such as the Behavioral Risk Factor Survey (BRFS) Youth Risk Behaviors Surveillance System (YRBS), Michigan Profile of Healthy Youth (MiPHY), Michigan Youth Tobacco Survey (YTS), the National Survey of Drug Use and Health (NSDUH) and other special surveys of alcohol and drug use behaviors in Michigan. There is also the opportunity for the Fellow to work with a local health department or substance abuse treatment coordinating agency on a local or regional project of interest.

Some possible analytic projects include: 1) Examine regional distribution and morbidity, mortality trends due to prescription drug misuse, or illegal drug use among different age and ethnic groups in Michigan; 2) Examination of co-morbidity of substance abuse and injury or chronic diseases using multiple cause or diagnostic fields in death or hospital discharge data; 3) Comparison of risk factors and substance use patterns as reported by behavioral data systems such as BRFS vs. NSDUH; 4) Assessment of the "burden of disease" in Michigan due to substance abuse using attributable risk models constructed by the National Institute on Drug Abuse and CDC. 5) Design and conduct an analysis using MiVDRS data to look at the impact of substance abuse on violent deaths. In particular, the Fellow could work with staff from the Wayne County Medical Examiner's Office and the Detroit Police Department who are interested in geospatial analysis of the correlation of location of drug houses and drug related deaths, including homicide, in the City of Detroit. 6) Help in the design of a proposed statewide Emergency Department surveillance system based on the MIEMSIS (a statewide EMS data system currently under implementation by Michigan State Police), and prepare an analysis and evaluation plan for the system with a focus on substance abuse and injury. 7) Work with data from the Michigan Office of Highway Safety to examine the impact of the recently-passed Michigan Medical Marihuana law on traffic accidents among drivers 'under the influence'. 8) Design a public health surveillance system for prescription drug abuse utilizing MAPS, Michigan's prescription drug monitoring program, and conduct descriptive analyses of MAPS data.

The Fellow will be invited to join the CSTE Fatal Drug Overdose Workgroup (formerly chaired by Dr. Cameron) and will participate in the development of tools, standard case definitions and data to be used to promote surveillance of drug overdose fatalities on a national level.

Several of the behavioral data surveillance systems would be good subjects for evaluation. One suggestion would be the MiPHY, a new statewide survey of risky behaviors among middle and high school students developed by the Michigan Department of Education. Another surveillance system which helped detect drug fatality clusters due to Fentanyl and 'Bath Salts' is the statewide Poison Control Center system; this could also be the basis of an evaluation project. The Fellow could evaluate the Michigan Violent Death Reporting System with a focus on its utility for measuring the impact of substance abuse on violent deaths. He/she is also welcome to participate in other Bureau activities as time permits, including communicable disease or environmental field investigations.

<u>Preparedness Role</u>

The Fellow will participate in trainings and exercises, through the DEH's Environmental Health Preparedness Section and MDCH Office of Public Health Preparedness, for chemical, natural disaster, and radiological events. If a real emergency event takes place in environmental or communicable disease, the Fellow will be assigned an epidemiology function within the Incident Command Structure. (Note: a previous Fellow spent three weeks in the Command Center following a large oil spill in Michigan tracking acute health effects from the spill, and was a co-author on the resulting surveillance report.) All of MDCH's CSTE Fellows and other CDC assignees participated in Michigan's first CASPER (Community Assessment for Public Health Emergency Response) the week of September 10, 2012, which involved

door-to-door surveys using the CDC CASPER methodology. MDCH plans to perform at least one CASPER in 2013, which will give the Fellow another opportunity to be directly involved with a Preparedness activity.

Assignment Location:	Lansing, MI
Primary Mentor:	Lorraine Cameron, PhD, MPH Environmental Epidemiologist Manager Michigan Department of Community Health
Secondary Mentor:	Thomas Largo, MPH Injury Epidemiologist Specialist Michigan Department of Community Health