

Chronic Diseases/ Injury

Assignment Description

The Kansas Department of Health and Environment, Bureau of Health Promotion (BHP) includes several long-standing chronic disease and injury prevention and control programs and conducts population-based surveys in-house, which provides excellent on-the-job training opportunities for public health professionals. Fellows who want to pursue a career in the field of epidemiology can take advantage of these training opportunities and enhance their professional knowledge and skills in a real world public health setting. The CSTE fellow will determine the primary analytic and evaluation projects that he/she wants to pursue with guidance from his/her mentors in accordance with fellowship guidelines.

Day-to-Day Activities

- Consult with mentors to design and receive feedback on project objectives, methodologies, analysis plans and products
- Conduct statistical analyses using SAS
- Create and disseminate data reports, fact sheets, manuscripts, etc.
- Participate in relevant program staff meetings
- Participate in Bureau of Health Promotion Epidemiology Staff Meetings (bi-weekly)
- Participate in professional development opportunities, including workshops and webinars
- Engage in networking opportunities at statewide partnership meetings
- Present scientific work at state and national conferences

Potential Projects

Potential chronic disease-related data analysis projects include:

- Analysis of Kansas Cardiovascular Health Examination Survey (CVHES) data. The Kansas CVHES was designed to provide population-based information on cardiovascular disease indicators that require physical or laboratory examination for accurate assessment. The Kansas CVHES employed a multistage disproportionate stratified design. The initial stage was a telephone-based survey of non-institutionalized adults 18 years and older stratified to ensure adequate sample among African-American and Hispanic target subpopulations. Subsequent stages included a mail-in questionnaire and a physical examination, including measured blood pressure, blood cholesterol, height and weight, conducted in health departments and clinics.
- Analysis of Sodium Reduction in Communities – Shawnee County Survey data. The 2011 Sodium Reduction in Communities – Shawnee County Survey was conducted to collect data to inform the interventions of the Kansas Sodium Reduction in Communities Project. The survey consists of three components: (1) a telephone interview, which utilized the Kansas Behavioral Risk Factor Surveillance System (BRFSS) design; (2) clinical measurement of height, weight and blood pressure; and (3) a web-based Automated Self-administered 24-hour Dietary Recall (ASA24) instrument created by the National Cancer Institute. Telephone interviews provided information on individuals' knowledge, attitudes and behaviors related to sodium consumption. Data from

the ASA24 provided validated nutrient information, including sodium intake, based on a 24-hour period.

- Analysis of Kansas Behavioral Risk Factor Surveillance System (BRFSS) data, including local BRFSS expansion data. Beginning in 2009, the Kansas BRFSS was expanded in response to demand from local health officials for local level health risk behavior data for a 10-year period. The survey now collects adequate sample data during odd years (2009, 2011, 2013, 2015 and 2017) to provide local level estimates by county or region for these years.
- Analysis of Kansas Fitness Information Tracking System (K-FIT) data. The goal of K-FIT is to enhance the understanding of the relationships between various fitness measures (i.e. aerobic capacity, muscular endurance, flexibility) and individual academic indicators and to further validate the importance of physical education and physical activity to the academic mission of schools. As part of this initiative, K-FIT aims to provide FITNESSGRAM® to 900 schools statewide. FITNESSGRAM is an online system that enables participating schools to incorporate uniform fitness testing into their physical education curriculum and submit students' results to the Kansas State Department of Education (KSDE). KSDE links student-level data from the following sources to create the K-FIT student database: (1) demographics and absenteeism from the Kansas Individual Data on Students data system, (2) student academic performance assessment results for reading and math, and (3) FITNESSGRAM test results, including measured height and weight.
- Analysis of various asthma data sources, including Kansas BRFSS, Adult and Child Asthma Call Back Surveys, vital statistics, hospital discharge data, and Medicaid data to create an asthma burden document for Kansas.
- Analysis of various tobacco data sources, including Kansas BRFSS, Adult Tobacco Survey, Youth Tobacco Survey, vital statistics and hospital discharge, to create a tobacco burden document for Kansas.

Potential injury-related data analysis projects include:

- Examine the association between weather events and injuries in Kansas. KDHE has recently acquired access to an historical database of weather events in Kansas, including temperature and precipitation. The associations between weather events and injuries such as drowning, fire, motor vehicle crashes, and assault in Kansas have not yet been fully explored.
- Describe the complexity of intentional and unintentional drug poisonings in Kansas, including poisonings due to multiple drugs and undetermined drugs. Regional and county-level differences could be examined.
- Develop novel systems to display injury data at the state, region and county levels, including visually mapping data and creating automated reports online.
- Analyze various alcohol and substance abuse data sources, including Kansas BRFSS, YRBS, ATS, YTS, vital statistics, hospital discharge data, and Medicaid data to create an alcohol and substance abuse burden document for Kansas.

- Create data-driven toolkits to educate the public about several injury and substance abuse areas. Toolkits would include the problem statement (data), evidence-based interventions to decrease injuries, newsletter article, social media sound bites, and speaking points. Choose from the following injury areas or create your own: burn awareness, poisoning prevention, alcohol use and injuries, distracted driving, sexual assault awareness, youth sports safety, playground safety, motorcycle safety, bicycle helmet safety, safe boating, seat belt use, heat safety, home safety, childhood injury, farm safety, child passenger safety, suicide prevention, older adult falls, driver safety, fire prevention and bus safety.

Potential surveillance system evaluation projects include:

- Chronic Disease Risk Reduction Grant Program Evaluation: The BHP awards grants to 45 local counties in Kansas to reduce the burden of chronic disease through primary prevention activities (tobacco use prevention, physical activity and healthy eating). Logic models are used to guide the local grantees in selection of program activities, output tracking, and designing and implementing evaluation plans. Potential fellow evaluation activities include (1) implementing a state level output tracking system to collect local output data and aggregate it for required state and federal reports, and (2) designing and implementing evaluation plans such that short term outcomes data may be aggregated across local programs to provide state level estimates. A data collection and management system as well as analytical protocols, analysis results and evaluation report are expected outcomes of this project.
- Kansas Quality of Care Project Evaluation: The Health Systems Section of the Bureau of Health Promotion currently collaborates with 85 primary care providers in the state through the Kansas Quality of Care Project to establish a surveillance system to track improvements in the quality of care provided to the diabetic and hypertensive patients receiving care in these clinics. Potential fellow evaluation activities include: (1) designing and implementing an evaluation plan to assess appropriateness of the data collected for informing the quality of care improvement efforts; develop analysis protocols to assess the quality of data collected; and compare the measures and indicators from the data system with other surveillance data systems, and (2) provide recommendations for further strengthening and expanding the system to improve the quality of clinical care provided to Kansans with diabetes and cardiovascular disease.
- Evaluate race and location coding within hospital discharge and vital statistics databases.
- Evaluate external cause of injury coding (E-code), including unspecified e-codes, within hospital discharge and emergency department databases.

Preparedness Role

In the event of a public health emergency, the fellow will work as part of a State Epidemiologic/ Surveillance team and will participate in designing and conducting surveillance methodologies to track issues related to the emergency.

Assignment Location:	Kansas Department of Health and Environment Topeka, Kansas
Primary Mentor:	Ericka Welsh, PhD, MPH Senior Chronic Disease Epidemiologist
Secondary Mentor:	Babalola Faseru, MD, MPH Consultant Medical Epidemiologist/Assistant Professor