Injury

Assignment Description

Because of the tremendous public health and medical burden of injuries, and because of the great potential for prevention and reduction of morbidity and mortality, Nebraska public health officials have prioritized the understanding of the epidemiology and control of injury in our population. As we increasingly focus our resources on controlling and reducing health care costs, we believe that all sectors of society will need and want a thorough understanding of the distribution and determinants of injury in our population. Our agency's goal is to be the leading provider of this information. We are extremely excited about the opportunity to supplement our current team with an Injury Epidemiology Fellow, and believe that such a resource will enable us to advance this agenda. For the qualified applicant we expect employment opportunities to be available at the completion of the fellowship.

The Nebraska Office of Epidemiology provides an ideal training opportunity to an Injury Epidemiology Fellow (IEF). The Office's Health Surveillance Section and the Injury Prevention Program collaborate in studying the epidemiology of injuries and in implementing injury prevention and control strategies. The Injury Prevention Program receives CDC funding for the Core Violence and Injury Prevention Program and for Motor Vehicle Policy. A collaborative team including the injury epidemiologist (Secondary Supervisor), a trauma registrar, two statisticians, the Injury Prevention Program Manager, the Motor Vehicle Grant Coordinator and the Safe Kids Program Coordinator work closely together on a daily basis. The state epidemiologist (Primary Supervisor) consults with this team. This group uses multiple databases to study a variety of injury-related issues, and has published a wide variety of injury reports and fact sheets, including 'Injury in Nebraska', that details state-specific injury morbidity and mortality. The team actively participates in the Crash Outcome Data Evaluation System (CODES) supported by the Nebraska Office of Highway Safety through funding from the National Highway Traffic Safety Administration (NHTSA). The CODES project entails extensive analysis of injury-related data sources to produce epidemiology reports and facts sheets which national, state, and local communities use to achieve their injury research and prevention priorities.

The IEF will work as part of this team. The team members are located in close proximity to each other in various parts of our integrated Health & Human Services agency. The training and skill development of the IEF will be the primary responsibility of the State epidemiologist. All team members will be at the disposal of the IEF to provide expertise in selected aspects of epidemiology and programmatic activities. The fellow will be authorized to access and analyze data sets/surveillance systems in all of these areas.

Day-to-Day Activities

The Fellow's anticipated day-to-day activities would include work on long-term analytic projects and acute outbreak investigations (suggested projects below). Other routine activities would include:

- Develop an understanding of and familiarity with injury surveillance datasets
- Refine data processing and data analysis skills
- Understand how to assess surveillance systems

- Analyze and interpret data
- Prepare epidemiology reports
- The training goals for the Fellow will be defined by Centers for Disease Control and Prevention (CDC)/Council of State and Territorial Epidemiologists (CSTE) Applied Epidemiology Competencies (AECs). At the completion of the fellowship, the Fellow will function as a well-qualified Tier 2, mid-level epidemiologist and will be highly employable in a wide range of public health settings.

Potential Projects

There is flexibility built into the program such that the Fellow will have the option of pursuing specific projects of interest. Typical potential projects include:

The Injury Prevention Program in Nebraska has 3.25 full time staff and although small, has been funded by the competitive CDC Injury Prevention grant for the past 13 years. This size of the program allows flexibility and would mean that the IEF would have the opportunity to work on a variety of projects.

In addition to understanding ongoing projects and surveillance systems, the IEF will focus on three priority areas

1) Studying the epidemiology of prescription drug overdose;

2) Further defining the causes of traumatic brain injury in Nebraska;

3) Define the epidemiology of motor vehicle crash injuries, with an emphasis on children and teen drivers

Prescription Drug Overdose

Prescription drug abuse has quickly become a top public health concern, as the number of prescription drug overdose deaths have quadrupled in the United States since 1999. Drug poisoning deaths –the majority of which are related to prescription drugs—surpassed traffic-related crashes as the leading cause of injury death in the United States as of 2009. Although Nebraska ranks low among states for drug overdose mortality rate, there has been a steady increase in the mortality rate. The rate from 1999 – 2010 has doubled, a 191% increase.

As part of the CDC Injury Prevention funding, the Injury Prevention Program has identified prescription drug overdose as a priority area and has worked closely with a variety of external partners to begin to address this issue. In addition to conducting a detailed analysis of hospital discharge data, the IEF will work with Medicaid data and data from other available sources including the Poison Control Center and research other potential data sources to further define the problem.

Traumatic Brain Injury/Concussions

Traumatic brain injury is a contributing factor to about one third of all injury-related deaths in the United States. About 75% of TBIs that occur each year are concussions or other forms of mild TBI. Leading causes of TBI include falls, motor vehicle-traffic, struck by/against events, and assaults.

Nebraska implemented a concussion awareness law in 2012. The Office of Epidemiology has worked with the Injury Prevention Program to begin studying how the implementation of this law has affected rates of concussions. The Injury Prevention Program has also worked with several external partners to evaluate the implementation of the law, including surveys of coaches, athletic directors, and youth who sustained sports-related concussions. The EIF will work to further define the epidemiology of TBI in Nebraska, including sports-related concussions, which are being addressed by the law, as well as those from other causes.

Motor Vehicle Crashes

The Injury Prevention Program has worked with a variety of partners to address the issue of motor vehicle crash related injuries and fatalities. As described above, CODES data is used by the Injury Prevention Program, as well as by external partners. As a CDC-funded Motor Vehicle Policy Grant state, the Program uses data to explore ways to improve policy interventions in the state. A project that the IEF would work on would be to examine the motor vehicle data through the filter of Nebraska's Graduated Driver's License policy and through child passenger safety policies.

Other potential projects

The fourth of Nebraska's focus areas for the CDC Injury Grant is Older Adult Falls. The EIF would examine falls data to help determine differences in counties that have utilized evidence-based fall prevention programs as compared to those who have not.

Another potential project is comparing the Nebraska Ecode and Nebraska Trauma Registry datasets to identify which dataset more accurately collects cause of injury, diagnosis of injury, severity of injury and outcome information. The completion of this project will allow for a more robust injury surveillance system.

Preparedness Role

The IEF will be expected to respond to acute and emergent problems related to Injury Epidemiology, including emergency response activities related to naturally occurring and intentional events which have actual or potential impact on injury morbidity/mortality. Nebraska's Bioterrorism Preparedness Program offers training and exercises to ensure Nebraska's preparedness in the event of an incident or attack involving biological, chemical, radiological or other agents of bioterrorism. The injury fellow can access this training and participate in such exercises.

Assignment Location:	Nebraska Department of Health and Human Services Lincoln, Nebraska
Primary Mentor:	Tom Safranek, MD State Epidemiologist
Secondary Mentor:	Ming Qu, MD, Med, PhD Administrator, Epidemiology and Informatics Unit