

Unintentional Poisoning/Prescription Drug Overdose

Assignment Description

The CSTE Fellow will be located within the Oklahoma State Department of Health (OSDH); the primary assignment will be in the Injury Prevention Service (IPS). The State Epidemiologist will provide global supervision of the Fellow and will facilitate completion of the core skills and competency-based training requirements for the fellowship through collaboration with other OSDH service areas including the Emergency Preparedness and Response Service, the Acute Disease Service, and the Office of Scientific and Research Integrity. The IPS is staffed by three MPH trained epidemiologists (IPS Director, Administrative Program Manager, and Epidemiologist) who will work with the Fellow. The Acute Disease Service has 8 infectious disease epidemiologists. Through the Office of the State Epidemiologist, the Fellow will also have access to technical consultation from the Senior Chronic Disease Epidemiologist.

The IPS is the primary injury and violence prevention program in the state and has been conducting injury surveillance and developing, implementing, and evaluating interventions and policy for 25 years. The IPS addresses numerous and diverse unintentional and intentional injury problems (<http://ips.health.ok.gov>). Current injury surveillance projects include fatal burns, submersions, and unintentional poisonings; hospitalized traumatic brain injuries among persons less than 25 years of age; violent deaths through the Oklahoma Violent Death Reporting System (OKVDRS); and injuries resulting from the May 2013 Oklahoma tornadoes. Injury indicator data are maintained for 10 different injuries (e.g., unintentional falls, motor vehicle-related, drowning) using hospital inpatient discharge data, Vital Statistics death data, and other sources.

It is well known that for over a decade, the United States has experienced dramatic increases in unintentional poisoning deaths due to prescription drugs. From 1999-2010, unintentional poisoning mortality rates more than doubled in the United States and increased nearly fivefold in Oklahoma. In 2010, Oklahoma had the fifth highest poisoning mortality rate in the United States. In 2009, unintentional poisoning surpassed motor vehicle crashes as the leading cause of unintentional injury death in Oklahoma. Unintentional poisoning is now the leading cause of injury death for Oklahomans age 25-64. Eighty-one percent of unintentional poisoning deaths involve at least one prescription drug. The most common prescription drugs involved are opioid painkillers. Preventing unintentional poisonings is a primary focus of the OSDH IPS as well as Oklahoma's Commissioner of Health, other agency heads, and the Governor of Oklahoma. Current efforts to advance unintentional poisoning prevention include surveillance data collection and epidemiological analyses, educating providers and the public, collaboration and coalition building, and developing and promoting policy and legislation. In 2013, the IPS along with multiple other agencies and organizations developed a state plan, "Reducing Prescription Drug Abuse in Oklahoma." Two sets of prescribing guidelines for (1) emergency departments and urgent care clinics and (2) office-based settings were also developed and disseminated. The IPS provides education and information to providers and diverse community groups and promotes policies to reduce prescription drug abuse.

The IPS also maintains a surveillance database for all unintentional poisoning deaths that occur in the state. Data are collected from medical examiner reports and Vital Statistics death data. Data collection is complete for deaths occurring in 2007-2011 and ongoing for 2012 and after. In November 2013, Oklahoma law (HB 1781) granted the OSDH and the Oklahoma Department of Mental Health and Substance Abuse Services access to Prescription Monitoring Program (PMP) data maintained by the Oklahoma Bureau of Narcotics and Dangerous Drugs (OBNDD) for statistical, research, substance abuse prevention, or educational purposes. (The PMP is an electronic data system that contains real time

information input by dispensers on prescriptions filled for Schedule II – V controlled substances.) The IPS will link PMP data with the unintentional poisoning database. Analyses will be performed on the linked data to determine decedents' prescription history, dosage, and drug combinations; prescribing patterns of providers; geospatial factors; and explore other factors that may have contributed to the deaths.

Day-to-Day Activities

The CSTE Fellow will have a variety of activities on a daily basis. A typical day would consist of working with OSDH and IPS data sets, primarily the unintentional poisoning database, the Oklahoma Violent Death Reporting System database, OSDH Vital Statistics death certificate database, and the medical examiner database. Reviewing, abstracting, and coding data from medical examiner reports of investigation and retrieving data from the OSDH intranet will be a daily activity. SAS, Microsoft Access, and Excel will be used daily to manage data and perform statistical analyses. Microsoft Word will be utilized daily to prepare documents. Using, reviewing, and preparing data dictionaries/coding guidelines will be a frequent activity as well. A typical day may also include conducting literature reviews and locating and retrieving information and resources needed for reports, presentations, media or public inquiry, or other specific purposes.

At times, day-to-day work will involve preparing manuscripts for professional journals, agency publications, news releases, fact sheets, and educational materials/brochures to disseminate data and information. The Fellow will have opportunities to prepare and present their work to professional, academic, and community groups. On a scheduled basis throughout the year, the Fellow will attend meetings of the Oklahoma Injury Prevention Advisory Committee, the Oklahoma Prevention Leadership Collaborative, the State Epidemiological Outcomes Workgroup, and other coalitions/committees and workshops with a focus on unintentional poisoning prevention.

Potential Projects

Several applied epidemiology projects are proposed by the IPS to supplement and enhance unintentional poisoning prevention. Once familiar with the injury prevention program and data sets, other projects may be proposed by the Fellow, IPS staff, or the primary and secondary mentors.

- Evaluate the IPS unintentional poisoning surveillance system using the Centers for Disease Control and Prevention guidelines for evaluating a public health surveillance system (*MMWR*, July 27, 2001 / 50(RR13);1-35).
- Conduct a study on intentional (i.e., homicide and suicide) and undetermined manner poisoning deaths. Utilize OKVDRS data to identify victims of intentional and undetermined manner poisonings. Enhance the OKVDRS data for these cases with information from the PMP. Examine victims' history of prescription drug use, opiate use, drug combinations, and dosages. Assess OKVDRS data completeness and quality.
- Conduct spatial or geographic analyses to identify "hot spots" and geographic patterns. Identify geographic areas with high death rates or prescribers or pharmacies associated with multiple deaths. Determine appropriate uses of the data to impact prevention. (This project or a similar project would be available to a Fellow who has skill using GIS software or could develop GIS skills.)
- Conduct policy evaluation of Oklahoma legislation (HB 1783) effective in November 2013 that prohibits refills for oral and written prescriptions for hydrocodone. Determine the extent of compliance, effectiveness, and unintended consequences of the legislation.
- Design a surveillance project to collect data from hospital emergency departments on nonfatal unintentional poisonings including payment/insurance coverage. Oklahoma does not have a statewide emergency department discharge database. Expanding surveillance efforts to capture

emergency department data will inform prevention efforts regarding third-party payers and provide a comparison group to examine factors related to fatal and nonfatal unintentional poisonings.

- Examine PMP data to assess a variety of “doctor shopper” definitions currently in use nationally. Conduct an analysis to determine the proportion of doctor shoppers among fatal unintentional poisonings. Access additional data to identify prescribers’ specialties and examine the frequency of specialty types involved in the deaths. Engage in national efforts and follow the progress on developing a gold standard for defining questionable activity. Develop, promote, and evaluate policies for hospitals and clinics to discourage doctor shopping practices among patients.
- Design a study to identify, quantify, and type substances discarded in OBNDD drop boxes for unused prescription drugs. Assess the OBNDD drop box process, strategic locations, and content.

Additional activities include developing: (1) educational materials related to the statewide media campaign “Take as Prescribed;” (2) community-based strategies for public education; (3) strategies for provider/prescriber education; and (4) news releases.

Preparedness Role

The Fellow will attend the standing monthly meeting of the OSDH multi-disciplinary “All Hands” group where OSDH employees and extramural partners provide updates on core preparedness activities, key infectious disease surveillance findings, and recent drills or activations of the Incident Command System (ICS). Oklahoma is well recognized for the state’s ability to respond to natural disasters and the OSDH typically activates its Emergency Operations Center to operate through an ICS structure at least twice per year. Recent ICS activations have included public health response to a large scale patient notification and epidemiologic investigation into hepatitis C virus transmission in an oral surgical facility (March – July, 2013) and to the May 2013 tornado incidents. To fulfill the core competency of emergency preparedness, the Fellow will receive ICS training and be assigned to a Branch or Unit during an ICS activation during their fellowship. The Fellow will also be encouraged to participate in emergency preparedness or pandemic table top exercises or drills.

Experience Desired

A doctoral-level epidemiologist, who is skilled in using SAS and analyzing epidemiological data, is preferred for this assignment. There will be a potential for future placement within the IPS when the fellowship is completed.

Assignment Location: Oklahoma State Department of Health
Oklahoma City, Oklahoma

Primary Mentor: Kristy Bradley DVM, MPH
State Epidemiologist

Secondary Mentor: Sheryll Brown, MPH
Director, Injury Prevention Service