

Environmental Health/Occupational Health

Assignment Description:

It is anticipated that the Fellow divides their time between environmental health surveillance and response and occupationally related illness and injury surveillance and response. It is also anticipated that the Fellow be exposed to and become familiar with the broad range of functions that occur in the Bureau of Epidemiology. The environmental epidemiology section houses numerous programs that represent both occupational and environmental issues and has funding from CDC, EPA and others that support these efforts across the many programs (CO poisoning, pesticide poisoning, arsenic and mercury, chemical disease, lead, climate related issues, environmental data, birth defects, etc). The Fellow will become familiar with how disease surveillance (for acute infectious, chronic and environmental disease) is performed, how chemical disease surveillance is handled (syndromic surveillance, poison center data, state alerting systems on chemical events), and how exposures which lead to disease are investigated including the relevant guidelines and protocols for surveillance and response. The Fellow will also become familiar with the data systems related to acute and chronic diseases of possible environmental origin (Merlin-the reportable disease system for DOH, ESSENCE-the syndromic surveillance system, FPICN-Florida poison center data, ABLES -adult blood lead, FBDR-Florida birth defects registry, and FCDS-Florida cancer data system). In addition, the numerous population based surveys such as BRFSS, PRAMS and other youth related surveys which are located within this bureau will be discussed with the Fellow and may be used in projects. The Fellow will get experience in disease investigation and response, disease outbreak detection, critical review of a surveillance system, data analysis and general operations in a large and diverse health department.

Day-to-Day Activities:

While the Fellow will have their own projects related to environmental and occupational health which they will be working on to complete the Fellowship competencies, they will also be integrated into our daily general bureau operations to ensure they have a robust applied public health experience. On a daily basis the Fellow will interact with the Environmental Epidemiology and Response Section, working closely with various staff within the different groups. They will also interact with the Surveillance Systems Section staff, working with the staff within this section related to those environmental diseases which are currently reported through the state system Merlin (CO, pesticides, mercury, arsenic, lead). Review of our syndromic surveillance data system for detection of clusters is a daily function. Other daily work includes individual time to develop work products and assignments, attending meetings of small teams working on projects, telephone consultations with county health department epidemiology staff or clinicians, attendance at required or skill-enhancement trainings, and time for reading, data analysis and writing of reports and summaries. The Fellow will most certainly partner with other bureaus for access to data, clarification and exploration of other surveillance issues, and general projects. Projects led by the Fellow will require them to work independently but will also require them to convene work groups of state and county level epidemiologists.

The Fellow will be invited to attend the biweekly meetings of the Bureau of Epidemiology, biweekly meetings of the Environmental Epidemiology and Response section, and various workgroup meetings as their interests develop. There are weekly meetings associated with the FDOH Merlin electronic laboratory reporting team, the Meaningful Use Coordinator, the Merlin system development team, surveillance and disease meetings discussing outbreaks or cases of interest, and regular meetings of the various program areas. As a result, the Fellow will be exposed to a diverse set of public health issues faced by state health departments. These processes will give the Fellow an opportunity to experience how a public health agency functions, how environmental and occupational health function within a

large DOH, and provide the Fellow opportunities to take on leadership roles and to see how investigations are handled from start to finish including the ability to make recommendations for improvement in our surveillance activities.

Potential Projects:

Project 1: Surveillance System Evaluation. The Occupational Health Program and the Chemical Disease Surveillance Program are interested in determining if the current syndromic surveillance system (ESSENCE) could be used to detect occupationally-related illness and injury. This would primarily be related to chemical exposures but may include other types of injuries and illness. Usefulness of both chief complaint data coming from Hospital Emergency Departments into ESSENCE as well as records coming in from the Florida Poison Information Center data will be evaluated. The Fellow would need to be trained on the data inputs, functions and use of ESSENCE as well as the overall strengths and weaknesses of this system. Training is handled within DOH although direct access to Florida Poison Information Center (FPIC) data is possible and requires a one day training at our Jacksonville FPIC center. Current surveillance efforts review ESSENCE for detection of disease related to chemical exposure in a real time sense but not focused on occupational issues; surveillance for occupational illness and injuries is conducted through analysis of administrative data sets with a two year or more delay and thus not real time. This surveillance system evaluation would provide the Fellow with training and background in both syndromic surveillance and occupational health and explore the benefits (and limitations) of a more timely detection approach. It is expected that this project would result in presentation of results at national meetings, recommendations that would be used within the programs, and the possibility of publication. Analysis of data will also occur.

Project 2: Surveillance System Evaluation: Carbon Monoxide Poisoning became a reportable disease in Florida within the last 5 years and over time additional data has been collected/requested on the case reporting form that is available in the state disease reporting system (Merlin). Evaluation of the surveillance system with respect to CO poisoning would be a much needed and timely project. The Fellow would review the number of cases reported, completeness of data captured, ability of Merlin to capture data from the case report form, usefulness of current variables requested for understanding the situations leading to poisoning, and estimate of what proportion of cases may be missed in state surveillance. For this project the Fellow would need to become familiar with Merlin, with disease reporting and investigation guidelines related to CO, with operations and staff within county health departments, and with national efforts on this issue including participation on CSTE workgroup calls related to CO poisoning. It is expected that completion of this project would result in a presentation at a national meeting, internal recommendations to the related programs, and key participation in CSTE workgroups related to this issue. Analysis of data will also occur.

Project 3: Data Analysis. Florida has timely access to Hospital Emergency Data and Hospital Inpatient Data that could be used to explore occupationally related illness and injury. The Fellow could choose a category of illness and injury (burn related, amputations, chemically-related, falls, etc.) and explore the burden, the trends over time, as well as explore disparities with respect to age, gender, race and/or ethnicity. The mentors can facilitate access to this data source and provide direction on the scope and methodology to be used. It is expected that this project would result in presentation of results and possible publication of results.

Project 4: Data Analysis. Florida Behavior Risk Factor Surveillance System (BRFSS) is currently collecting information on industry and occupation of employed respondents. County level data (a larger sample size) is now being collected and would be available for analysis of this very new variable. BRFSS data on

industry and occupation will provide the very first time this can be presented from this data set from a population perspective and will be widely shared and anticipated within Florida and the program partners. It is anticipated that his project would involve presentation and possible publication of results.

Project 5. Data Analysis/Field Experience. Large Outbreak Investigation. The Fellow will participate in a large outbreak investigation that includes data collection and data analysis. The outbreak will be environmental or occupationally-related, and past examples have included a large cluster of eye injuries after a foam party, strontium levels in patients who received a cardiac test, illness and injury associated with the Gulf Oil Spill, clusters of large poisonings (pesticide or CO related). Other opportunities have included participation in arbovirus or infectious disease outbreaks (dengue, salmonella, TB, etc.). Data collection and analysis, field experience, interview experience, and leadership role are all anticipated in this project.

Other Projects: The Mentors anticipate that the Fellow will have other interests and ideas for projects and look forward to dialogue. Standardization of the chemical disease surveillance process (improved tracking of exposures, review of guidelines and protocols, review of follow-up process, review of reporting and document production process) could be a secondary project. Development of a small chemical incident exposure exercise (focusing on epidemiologic aspects) for use as a training exercise would be welcomed and includes collaboration with laboratory, county health departments, preparedness, and other responders. The birth defects program, lead surveillance program, EPHT, and climate program all have data sets available which are both health outcome and environmental monitoring related. The Fellow would have a wide range of projects to choose from.

Preparedness Role

As part of natural disaster surveillance and response or a community-wide emergency (i.e. food borne outbreak, hurricane, tornado, chemical event, bioterrorism alert) the Fellow will have opportunity to participate in the Bureau of Epidemiology field response, deployment, and medical (ESF-8) preparedness activities. The Fellow may be activated or deployed for emergency responses along with other central office epidemiology staff members, and have the opportunity to work on surveillance and disease control activities after natural disasters, to assist with population-based post-hurricane surveys, and to investigate acute health problems arising in a natural disaster context. Florida hurricane season extends from June 1 through Nov 30 and there is no shortage of field epidemiology experience that can be gained in Florida in the field of preparedness and response. Recent field experiences include 1) assessment of strontium levels among recipients of a cardiac test (staff participated in design, recruitment, field measurement, data base development and submission of journal articles); 2) investigation of illness after a foam party (medical record abstraction, survey development and interviewing, data base development and analysis, submission of journal article); 3) adaptation to the data base necessary for long term follow-up in the meningitis outbreak. Surveillance for illness post Gulf Oil spill was also handled in this section. The Fellow will have the opportunity to work closely with County Health Departments, State Public Health Laboratories, and the Centers for Disease Control and Prevention on matters regarding public health priority diseases. Coordination with legal counsel, law enforcement, ethicists, logistics and central IT and other partners may also be necessary in the case of some public health emergencies. Coordination with other agencies, such as with lead environmental, agricultural or business regulation/inspections is also likely. Other previous response efforts by fellows and other epidemiologic staff have involved heavy disease surveillance during the 2012 fungal meningitis outbreak, post-Haiti earthquake response efforts and novel influenza A H1N1. Florida has no shortage of issues to provide field experience for acute outbreaks, disasters or long term outbreak situations.

Assignment Location:

Tallahassee, FL

Primary Mentor:

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Secondary Mentor:

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