Infectious Diseases, Infectious Diseases-HAI

Oregon Health Authority Public Health Division, Acute & Communicable Disease Prevention

Portland, Oregon

Assignment Description

The fellow would serve as an epidemiologist within ACDP, which has responsibility in Oregon for writing administrative rules specifying reportable diseases; guiding Oregon local public health officials in their investigation and control efforts; investigating outbreaks that cross county jurisdictional lines; managing data systems for reportable diseases, outbreaks, healthcare-acquired infections, and emergency department surveillance; analyzing and summarizing communicable disease data for publication; and providing epidemiologic assistance in public health emergencies of any kind.

Day-to-Day Activities

As a member of our ACDP Epidemiology Team and would take day call 1-2 days per month, primarily fielding queries from Oregon’s 33 local public health agencies, and occasionally from physicians, nurses, and veterinarians; in this way, the fellow would learn to deal with a variety of communicable diseases, learning Oregon methods as well as developing an approach to public-health decision making when data are few. The fellow would join the technical team that services Oregon’s statewide integrated disease database Orpheus, learning informatics skills; and serve on our urgent Epi Response Team, investigating outbreaks one week a month. They would participate in ACDP’s 4 P.M. daily wrap-up session, which we use both to ensure some standardization of approach as well as didactic sessions for newer members of the section. The fellow will also be cross-trained in emergency response.

When not working in these capacities, the fellow would work on longer-term projects, including learning and analyzing All-Payer-All-Claims data for antibiotic utilization in Oregon; reviewing clusters and outbreaks in our Outbreaks database to identify parameters of successful investigation and informing our policy; and analyzing other data regarding reportable diseases, healthcare-acquired infections, or emergency department syndrome reporting (Essence) data. If interested, the fellow could help blaze the trail here for spacial data analysis; or find projects outside the communicable disease realm, given that all state-based public-health epidemiology in Oregon is housed within our Portland State Office Building.

Potential Projects

Surveillance Activity  Surgical Site Infections in Ambulatory Surgery Centers

Selected surgical site infections (SSIs) -- e.g., those following knee and hip prosthesis implantation -- are reportable from hospitals in Oregon via the National Healthcare Safety Network (NHSN). However, some of these are increasingly performed in the outpatient -- ambulatory -- setting. The fellow will review available sources of data on infection following these procedures to inform the decision as to whether to make SSIs following ambulatory surgery reportable. Potential data sources include claims data; review of hospital discharge data (when such infections require hospitalization); and collecting data directly from centers.
**Surveillance Evaluation Enteric Disease Cluster Detection**

Until July 2019, molecular subtyping for detection of clusters of enteric bacterial infection was performed by pulsed-field gel electrophoresis (PFGE). On July 15, whole-genome sequencing (WGS) supplanted PFGE. This shift requires a re-thinking of criteria for clusters meriting investigation. The new criteria will ideally be based on empirical data. The fellow will review our clusters and outbreaks to identify parameters of successful investigation.

**Major Project Personalized Prescription Feedback Using Oregon All Payer All Claims Data to Reduce Antibiotic Use for Acute Respiratory Tract Infections in The Outpatient Setting**

The objective of this project is to evaluate the impact of blinded normative comparison on rates of antibiotic prescribing for acute respiratory tract infections (ARTI). On an annual basis, primary care clinicians in Oregon with the highest prescribing rates will receive personalized prescription feedback that includes the individual amount of antibiotic prescriptions per 100 consultations for ARTI in the preceding years along with the adjusted averages in peer clinicians. More detailed prescription feedback (e.g., details on prescription by age group or for certain antibiotic types) will also be provided. The primary outcome will be the antibiotic prescribing rate for antibiotic-inappropriate ARTI visits with no concomitant reason for antibiotic prescribing.

**Additional Project Infectious Disease Complications of Injection-Drug Use**

Although we can discern reportable infectious diseases associated with injection drug use (IDU), we have yet to assess the massive and growing burden of non-reportable infections (e.g., endocarditis, vertebral osteomyelitis, epidural abscess) associated with IDU. The fellow will assess available data (e.g., hospital discharge data), collect data as necessary, and count the bodies.

**Surveillance Evaluation Veterinary Reporting**

Oregon is one of few states that require veterinarians to report selected communicable diseases in animals to state public health authorities. Our system has not been systematically reviewed against standard CDC criteria such as sensitivity, predictive value positive, acceptability, and utility.

**Preparedness Role**

The fellow will be trained in the Incident Command System and then will serve on the public health division incident management team in the health intelligence section, gathering and summarizing data to be used for decision making in emergency response. Participate in table-top and full-scale exercises with the Preparedness Surveillance & Epidemiology Team. In addition, they will provide input on the evaluation and development of surveillance plans for health events associated with natural hazards, e.g., wildfires and winter storms.

**Additional Activities**

Anything and everything infectious. When we have a big outbreak or incident, it’s "all hands-on deck." Fellows will have latitude to pursue their passions. (And who isn't passionate about communicable diseases?)
Mentors

Primary  Paul Cieslak, MD
Medical Director, Communicable Diseases and Immunizations

Secondary  Dat Tran, MD, MS
Public Health Physician