

Community Epidemiology conducts active surveillance and disease investigation on 80+ diseases and conditions that are reportable in California. Epidemiologists, Biostatisticians, Public Health Nurses, physicians and Communicable Disease Investigators work with Environmental Health, Vector Control, and Public Health Laboratory to define communicable health problems, design and implement interventions to reduce the burden of disease in the community.

The Fellow would participate in weekly Epidemiology meeting that involve the above-mentioned group and community representatives from hospitals and military preventive medicine groups. In addition to the three project areas outlined below, the fellow would gain experience in outbreak investigation, planning studies, and developing grant applications.

I. Community-Wide Antibigram (CWA) project

Antimicrobial resistance to common pathogens is increasing. Among the pathogens of concern is Methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococcus* (VRE), and drug-resistant *Streptococcus pneumoniae* and *E. coli*. Surveillance systems have been developed to monitor and predict resistance trends. There are many regional, national and international surveillance systems in place that currently track susceptibility data. Examples include the Active Bacterial Core Surveillance (ABCs) system, the National Nosocomial Infections Surveillance (NNIS) system, and the Intensive Care Antimicrobial Resistance Epidemiology (ICARE) study.

Establishing a local surveillance system to monitor regional antimicrobial susceptibility patterns would be beneficial for local health providers. In the CDC campaign “12 steps to prevent antimicrobial resistance among hospitalized adults”, Step 6: Use local Data advocates knowing your local antibiogram and your local patient population. Antibiograms are a form of passive surveillance that can provide community-specific drug-resistance data. An antibiogram (ABGM) is defined as an overall profile of antimicrobial susceptibility results of a microbial species to a battery of antimicrobial agents (CLSI-Clinical and Laboratory Standards Institute). Hospitals generate antibiograms every three, six or twelve months. Antibiograms may guide empirical therapy. ABGM data can be used to monitor resistance trends, identify outbreaks, develop quality improvement initiatives and help form infection control policies. A community-wide antibiogram is an aggregate of existing hospital antibiograms.

The County of San Diego Division of Epidemiology is in the process of developing a community-wide antibiogram. Currently, antibiotic susceptibility for four organisms will be evaluated: *Staphylococcus aureus* (MRSA and methicillin sensitive), *Streptococcus pneumoniae*, *Enterococcus* species (*faecalis* and *faecium*) and *E. coli*. A cumulative antimicrobial susceptibility report will be generated for each of the organisms. There will be annual feedback to the hospitals and the community after analysis of the data. This will be an ongoing project with the continuous collection of data.

(References: Zapantis A et al. (2005). Nationwide antibiogram analysis using NCCLS M39-A guidelines. *Journal of Clinical Microbiology*, 42: 2629-2634; Halstead DC et al. (2004). Reality of developing a community-wide antibiogram. *Journal of Clinical Microbiology*, 42:1-6.)

Fellowship Activity

1. Liaison with hospitals and laboratories to monitor antibiogram data
2. Develop reports to summarize antibiogram data
3. Interface with community infection control clinicians on resistance patterns and interpretations

II. Timeliness and completeness of disease reporting

The County of San Diego currently has a functional reportable disease system that is operational on a 24-hour-per-day, 7-day-per-week basis. At least annually, we assess the timeliness and completeness of your reportable disease surveillance system.

Fellowship Activity

1. Assess VCMR reportable disease system via review of “time from diagnosis to report” variables in computerized disease reporting database.

III. Clinician and partner agency education for pandemic influenza

Pandemic influenza planning has highlighted the importance of clinician reporting and specimen submission.

Fellowship Activity

1. Develop and implement educational material for clinicians on disease reporting and specimen submission related to influenza
2. Establish relationships with partner agencies capable of providing assistance in interviewing cases and contacts for potential influenza pandemic
3. Define training content on identifying, locating and notifying contacts of cases
4. Define methods of utilizing data sources to estimate community impact

Assignment Location: San Diego, CA

Primary Mentor: Michele Michaels Ginsberg, MD
Chief, Community Epidemiology, San Diego County

Advanced Degree: MD, State University of New York (1971)

Secondary Mentor: Louise Gresham, PhD, MPH
Senior Epidemiologist, San Diego County

Advanced Degrees: PhD, University of California San Diego (1996)
MPH, San Diego State University (1985)