

Building Capacity, Building Community

ASTHO's Environmental Public Health Tracking Fellowship Reaches the U.S. Territories

Since 2008, ASTHO's Environmental Public Health Tracking (EPHT) Fellowship Program has supported 48 health agencies to build tracking capacity through unique mentorship projects. These projects match fellows from state and local health departments that are not funded by CDC's National EPHT Program with funded CDC Tracking states as they work on individual pilot projects. Through ongoing discussions and a visit to their mentor's health agency, fellows receive guidance and technical assistance to undertake their work.

Vector-Borne Diseases in the Territories

In recent years, the transmission of Zika and other arboviral diseases in and around the Pacific region has posed a threat to communities, prompting health agencies to respond with active surveillance and increased preparedness planning.

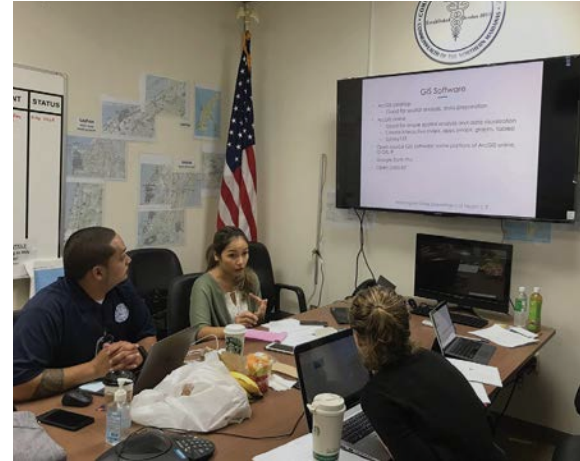
In 2016, ASTHO's EPHT Program accepted its first fellow from a territorial health agency in the Commonwealth of the Northern Mariana Islands (CNMI). Staff from CNMI's Commonwealth Healthcare Corporation (CHCC) participated as fellows with the goal of implementing a vector-borne disease surveillance system, targeting control and education efforts.

Reverse Site Visit

The objective of the 2016 fellowship was simple: to lay a foundation for incorporating geographic information systems (GIS) into ongoing surveillance activities. On a site visit to the Florida Department of Health, CNMI's mentor health agency, the fellows learned about developing and implementing a tracking program, as well as specific infrastructure needs for conducting surveillance activities. In 2017, a second fellow from CNMI participated in the program's first "reverse site visit." Over a period of four days, two staff from Washington state's tracking program travelled to CNMI to assist their territorial health agency colleagues in building tracking capacity and enhancing their current vector-borne disease surveillance activities.

Exploring Solutions

Over their four-day period together, Washington state staff worked closely with the ASTHO fellow and her colleagues in CHCC's Bureau of Environmental Health and Public Health Emergency Preparedness programs to provide onsite education that would allow CNMI staff to use health data to understand community health problems. Data management was identified as a major challenge, so a joint catalog of GIS shapefiles was the first step taken to avoid data duplication.



CHALLENGE

The Commonwealth Healthcare Corporation's staff were interested in:

- Education on CDC's EPHT Program.
- Incorporating GIS into ongoing surveillance activities.
- Determining high risk areas of mosquito activity.

RESULTS

- Increased understanding of tracking programs and surveillance techniques.
- Developed field sampling survey.
- Created mosquito map using 2016 population village estimates using ArcGIS, QGIS, and Google Earth.

"The reverse site visit enabled [the mentors] to see firsthand our strengths and limitations to reaching our project goals and helped tailor a project specific to our needs and resources."

■ AILEEN BENAVENTE, ENVIRONMENTAL HEALTH AND VECTOR CONTROL SPECIALIST, CHCC



Using configurable applications available through Esri's ArcGIS License, the fellows collected data using Survey123, analyzed it, and created maps using ArcGIS Online. The result was an integrated surveillance workflow. Similar techniques were explored on open source programs like QGIS and Google Earth.

Project Outcomes

The reverse site visit model offers several assets for building tracking capacity in the U.S. territories, including tailored technical assistance, relationship building, and workforce development.

Tailored Technical Assistance

Washington staff tailored training and assistance to CNMI's needs, limitations, and environmental conditions (e.g. using tools that could be operated offline during power loss events).

Relationship Building

Washington staff engaged CHCC leadership and agency staff, building tracking network relationships and strengthening interagency partnerships.

Workforce Development

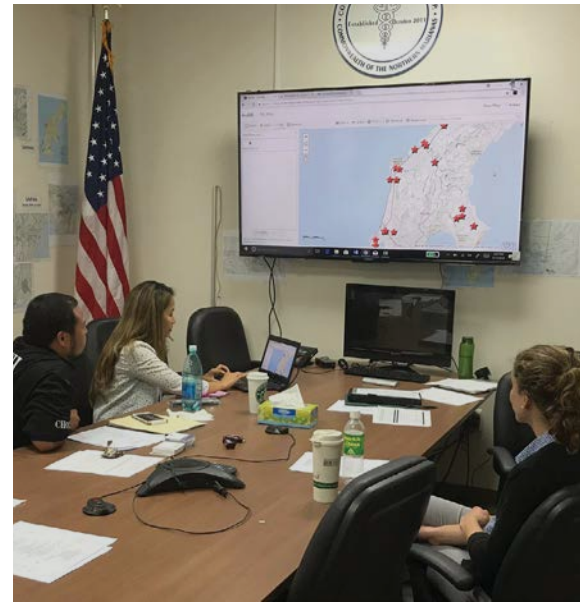
Washington staff taught CNMI fellow how to implement a GIS-based surveillance solution that can support vector-borne disease, food safety and emergency management activities.

ASTHO thanks CDC's National EPHT Program for its continued support. The program funds 26 states to collect and display data on the environment, exposures, health effects, and population on state and national portals.

CDC's National Environmental Public Health Tracking Program
www.cdc.gov/nceh/tracking

ASTHO's Fellowship
<http://www.astho.org>

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THE POWER OF GIS IN THE U.S. TERRITORIES

In CNMI, not having a uniform residential address-based location system has resulted in wide variation and errors in the routine recording of property locations at the village level. This creates a challenge for staff to rapidly execute vector control activities, including deploying mosquito surveillance traps and source elimination across defined areas. At the aggregate level, the lack of data impacts the ability to map and analyze patient population data to identify emerging disease patterns and address health inequalities.

Using GIS allowed CHCC staff to accurately map and visualize data, explore trends, and articulate data-informed strategies to community members and stakeholders. It serves as an invaluable tool for any health agency that wants to map, visualize, and analyze spatial data to derive "locational insights" that can directly support efficient response efforts during public health threats and disasters.

For CNMI's full report, visit <http://www.astho.org/Environmental-Health/Tracking-Environmental-Health-Hazards/EPHT-State-to-State-Peer-Fellowship-Program/Fellowship-Year-2018-Reports/>