

IBM Helps Fight Dengue and Zika

Applies data analytics and mobile technology know-how to address mosquito-borne diseases in Taiwan and Panama

ARMONK, N.Y., March 13, 2017 /PRNewswire/ -- IBM (NYSE:[IBM](#)) is helping Taiwan and Panama battle dengue fever and the Zika virus, two mosquito-borne illnesses that have also caused concern in the United States.

The collaborations with public health agencies in Panama and Taiwan were performed as part of [IBM's Health Corps initiative](#), a new, pro bono consulting program that aims to help improve public health throughout the world.

For the Taiwan Centers for Disease Control (CDC), IBM helped create computer models that might be useful in predicting the effect of interventions to fight dengue fever. Dengue fever is a major cause of death in the tropics and subtropics. Globally, it is the most rapidly spreading mosquito-borne virus, increasing 30-fold worldwide over the past 50 years. In Taiwan, from 2003 to 2013, there were less than 2,000 annual cases. However, significant outbreaks have occurred Taiwan during recent years, with tens of thousands of new cases.

One of the strategies under consideration by the Taiwan CDC is to use natural wolbachia bacterium to make it harder for mosquitoes to carry the virus that causes dengue. IBM created computer models that can simulate the impact of wolbachia on the mosquito population and on the number of human dengue cases. IBM also created models that examined correlations between various factors, such as the relationship between a village's education level and the number of local mosquito eggs, and the relationship between temperature and larva level. The goal was to help the Taiwan CDC make more informed decisions to combat the disease.

According to Dr. Jih-Haw Chou, Director General for Taiwan's Centers for Disease Control, "The Health Corps team we hosted last fall has not only enhanced my agency's data analytics capability, but also inspired my staff to utilize the analytics framework to accelerate the work in global disease detection and in fighting against the threat of emerging and re-emerging infectious disease."

Meanwhile, in Panama, working with Gorgas Memorial Institute in February 2016, IBM created a surveillance system, including a mobile app, for relaying time-sensitive information from field investigators to researchers, health officials and policy makers. Public health field investigators are beginning to use the app to collect more precise geo-located information on disease outbreaks and mosquito breeding sites, and will provide this to the country's Ministry of Health. This will likely facilitate more rapid and effective decision-making for infectious disease control. Panama is conducting pilot tests of the app in three townships in the next six months, and plans a country-wide roll out by April 2018.

"This tool will allow a more precise, geo-referenced, and timely gathering of mosquito breeding site information which in turn will result in a quicker response to and control of outbreaks," said Dr. Nestor Sosa, Director General, Gorgas Memorial Institute Panama. "The IBM Health Corps team showed us teamwork, profound insights, and great problem solving abilities."

Announced in 2016, Health Corps is IBM's latest example of pro bono consulting and technology services within the company's portfolio of problem solving initiatives. Health Corps deploys cross-disciplinary teams that draw upon IBM's capabilities in data analytics, cognitive and cloud computing, mobile app development, Internet of Things, weather and health consulting to design strategies that help communities improve a given aspect of public health. The goal is to address disparities in healthcare access, improve services and increase impact.

"When we established IBM's Health Corps, we looked to address stubborn issues that are of critical importance to the well being of many different populations and communities," said Jennifer Ryan Crozier, Vice President, IBM Global Citizenship Initiatives. "I think it's fair to say that mosquito-borne illnesses remain one of the great public health challenges of our day, in

whatever hemisphere you find yourself in. That's why we were so pleased to have worked with premier, forward thinking health organizations in Panama and Taiwan, whose collaboration with IBM was so exciting and promising. We are eager to see where our work there will lead."

Contact(s) information

Ari Fishkind

IBM Media Relations

01 (914) 499-6420

fishkind@us.ibm.com

SOURCE IBM
