

Global Disease Detectives

[Hector Peña] I woke up. I saw blood all over the blankets. And my hands and my feet were bitten by something. I didn't know what it was. Then we realized that there had been bats.

[Dr. Scott Dowell] We can help countries to pick up new threats, to confirm them in the laboratory, to investigate clusters of disease, and ultimately to treat patients and contain a new disease threat before it spreads around the world.

[Dr. Isabella Danel] Diseases cross borders and what happens in these small countries . . . what happens in one country may affect the other countries.

[Dr. Kim Lindblade] And of these new emerging infections, zoonotic diseases play a huge role. And zoonotic diseases are those that are transmitted from animals to humans.

[Dr. Patricia Juliao] Bats are all-found all over the world and they've been associated with different diseases all over the world so what information we find here will give us an idea of what sort of infections they can harbor and what is the likelihood of those infections being transmitted to humans.

[Dr. David Moran] Right now, right here, we are trying to get some samples from the bats because there's an outbreak right now. . . there's a current outbreak of rabies in cattle in this area. We find bats in the net. We check what kind of species because there's some protected species. We take and put in some small bags and then we took all the captured animals and go to a facility here in the village. We anesthetize the animals and take blood samples and samples from ectoparasites.

[Dr. Kim Lindblade] The reason for having the program here is to understand more about the kinds of infections and diseases that are occurring in Central America which helps us to understand and prepare better in the United States to counter, to prevent and to treat these important infectious diseases.

[Dr. Scott Dowell] SARS was really the wake-up call for GDD.

[Dr. Rob Breiman] Where it occurred locally. It was a local problem . . . recognized as a local problem, but over a period of time became an international problem.

[Dr. Jeffrey McFarland] U.S. CDC started an emerging infectious disease program here in China, largely in response to the 2003 SARS epidemic.

[Dr. Jay Varma] Through the work that we do with the Chinese government to build modern surveillance systems, we were able to detect an outbreak that they never would have picked up before, because it was occurring in a large area over a long period of time.

[Dr. Bao-Ping Zhu] We are making a big impact in that country, because we are training their workforce and training their disease detectives.

[Dr. Jay Varma] We were specifically focused on one pathogen called salmonella. And within just a few months of data that we were analyzing side-by-side with our partners in China, we were able to see that there were a number of cases with a very specific molecular fingerprint that were occurring *only* in infants.

[Dr. Scott Dowell] There's no doubt in my mind that we are better prepared in 2010 for a pandemic than we were in 2003. We knew even when people questioned, "Is central Africa sort of a dark window with the pandemic H1N1? How would we even know if it was there?" Well, we had respiratory surveillance in place in Kenya.

[Dr. Rob Breiman] We have a very unique project going on in Kibera. We have a group of what we call community interviewers. They're basically field workers. And they carry personal digital assistants, you know, PDAs. And these PDAs are programmed with the questions that we're trying to get answers for.

[Jane Alice Ouma] Like, we can talk of cholera. H1N1 was found in the community.

[Roselyn Atieno Odengo] She wanted to know how we are going on . . . anybody who has been sick, anybody who has been hospital.

[Dr. Rob Breiman] And this is an area of about thirty thousand people . . . about eight thousand households. And they go to every single household every two weeks. And if someone's very sick, they encourage them to go to the field clinic.

[Roselyn Atieno Odengo] Like one day I fell sick of pneumonia. I couldn't walk. I couldn't do anything. So my neighbors carried me up to CDC.

[Dr. Rob Breiman] When they go to that clinic, if they have a condition that we're surveying for, that we're concerned about -- let's say it's pneumonia, as an example -- then we collect information about that illness in the clinic by one of the well-trained clinicians that we have working there. Because of market practices, because of air traffic, it's very possible for disease to move from one corner of the earth to another within a day.

[Dr. Scott Dowell] There's no better way to protect the American population against new disease threats than by strengthening our partners in public health institutions around the world.

[Dr. Kim Lindblade] It's not a profession that you get into for the money. You really get into it because you feel like you can make a difference.

[Dr. David Moran] I really love this job. I really love . . . go to the field and catch the animals and find the samples.

[Dr. Jay Varma] When we are seen as people that are not political, that are conveying information because it's in the best interest of the public health in the United States or somewhere else, I think that's when we're really at our best.

[Dr. Scott Dowell] We've learned that we need to be prepared for the unexpected, and the better we understand the background of pathogens emerging from animal reservoirs, the better prepared we're going to be to respond to the next surprise.