Center integrates human, animal, environmental health

EurekAlert

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CHAMPAIGN, Ill. ? The Center for One Health Illinois, established at the University of Illinois last year with a $250,000 grant from the U.S. Department of Agriculture, will receive another $500,000 in grants over several years from the USDA to pursue its mission of fostering collaborations and the free flow of information among those in the fields of medicine, public health, the environment and agriculture.

The center has three areas of engagement: educating a new cadre of cross-trained public health practitioners, working with public health agencies to improve disease surveillance, and fostering collaborative research.

In 2004, the College of Veterinary Medicine and the School of Public Health at the University of Illinois in Chicago established a joint degree program that allows students to complete a master's degree in public health concurrent with their studies for a doctorate in veterinary medicine. The DVM/MPH program has enrolled 33 students so far, four of whom have completed both degrees, and is part of a national trend that recognizes the interdependence of human and animal health.

A growing awareness of zoonotic diseases, which originate in animals but can spread to humans, has contributed to this trend. More than 60 percent of the 1,400 pathogens that affect people originate, or are amplified, in other animals.

Although many of these diseases must be reported to local and state health departments when humans are infected, veterinarians are not alerted to their occurrence, said John Herrmann, a professor of clinical veterinary medicine who directs the DVM/MPH program at Illinois. Similarly, veterinarians report outbreaks of many of the same diseases to agricultural officials, but those officials have no system for passing the information to public health agencies.

"The state agriculture department and the state health department are only a few blocks from each other in Springfield," Herrmann said. "But we still don't have an integrated surveillance system for sharing information."

Herrmann led the effort to create the Center for One Health Illinois, which is tackling this gap in surveillance by recruiting experts to build a system for sharing environmental and health data. Earlier this year the center brought potential partners together for a conference. Among the many ideas shared, participants discussed the barriers to quick and efficient data sharing.

An outcome of that discussion was the creation of a demonstration project to

develop an integrated surveillance system. The project involves experts at the local health department, the National Center for Supercomputing Applications at Illinois and the College of Veterinary Medicine.

The center also has funded a few small-scale research projects. These include an initiative aimed at comparing the ecological impacts of small and large dairy operations; a geographic and ecological analysis of rabies in bats in Illinois; a study of microbial contamination in relation to food establishments with and without health code violations in Champaign and Urbana; and a study of human and animal trichinella infections on small hog farms in Romania. The center seeks to fund new studies that integrate human, animal, agricultural and/or ecosystem health.

The USDA funding has allowed the center to also "increase the public health exposure of our students," Herrmann said.

It funds externships for some DVM/MPH students at the national Centers for Disease Control and Prevention, the USDA, the Food and Drug Administration and various other federal and state agencies. It also supplements course budgets so students can do more site visits and participate in outbreak investigations. For example, Herrmann recently took students to a poultry operation in northwest Illinois to do some environmental sampling. Other students traveled to Germany to visit and learn about a foreign animal disease facility and "the German equivalent of our CDC," Herrmann said.

In a world of increasing environmental pressures and burgeoning agricultural needs, Herrmann said, human communities can no longer afford to segregate their understanding of these influences on human health.

"Many of the determinants and contributing factors to human health are environmental in nature, including how our food is produced," Herrmann said. "So the safety of food and other consumer products is really important, as is the sustainability of those production systems. Emerging diseases, whether infectious or non-infectious, are also often associated with changes in our natural or built environment. We need to look at all these things, how they're all interrelated."

SOURCE [2]

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