Ebola highlights the link between human, wildlife health

Managing outbreaks

Emerging Infectious Diseases Challenge Wildlife Conservation Efforts and Public Health Capabilities

OCTOBER 16, 2014 • BY DR. SHARON DEEM AND LISE S Affran

The news of Ebola in Dallas has crystallized fears of this deadly infectious disease. Ebola has decimated communities in West Africa, killing over 4,000 of the 8,000 infected and bringing overburdened health systems to the brink of collapse. Though the international response was slow, U.S. soldiers, doctors and nurses are now rushing to help fight what the World Health Organization calls the largest and most complex Ebola outbreak in history. In the U.S., misinformation is widespread, provoking fears. Even before the news from Dallas, one in four Americans worried about a large outbreak in the U.S. How realistic are these fears? Should we in Missouri be concerned?

Ebola is hardly as unpredictable or mysterious as it may seem to those just now hearing about it. The first known outbreak occurred in 1976 near the Ebola River in the Democratic Republic of the Congo. After a 15-year absence, Ebola re-emerged in 1994 when an anthropologist became ill after performing a necropsy (the animal equivalent to an autopsy) on a chimpanzee. Following this first case, other people handling animal carcasses also became ill with Ebola.

Though it is still uncertain how Ebola was first transmitted to humans in the current outbreak, we do know that Ebola is a zoonotic disease — a disease transmitted between animals and humans. We also know what is driving the increase in zoonotic diseases, like Ebola. Humans are moving into wilderness areas and eating wild animals at an unsustainable level. The current Ebola outbreak, for instance, most likely began with someone infected during the hunting, butchering or eating of a fruit bat carrying the virus.

The interaction between animals and humans — increasingly in stressed environments — raises the stakes across the animal kingdom in regard to health impacts associated with environmental damage. The more we expand into terrestrial and aquatic environments, the more we alter natural habitats to extract resources, intensify food production and move people and their animals, the greater the potential for the spread of deadly diseases.

Indeed, Ebola itself has been disastrous for some wild animal populations during the past decades. A new study shows that it will kill up to 80 percent of all gorillas in its path; Ebola, along with illegal hunting, is driving these animals toward extinction. In fact, tens of thousands of primates are believed to have died from the disease in recent decades. We can no longer afford to think of human health as separate from animal and environmental health. We need a comprehensive approach if we are to effectively manage emerging wildlife and human health issues.
That approach is One Health. This is a concept that integrates human, animal and environmental health with multidisciplinary teams working together to better understand the causes and consequences of environmental change. An example is the case of West Nile virus: Zoo veterinarians helped to first isolate the virus, opening the door to work with public health scientists to develop effective prevention programs for both humans and animals alike. Environmental, human and animal health care providers on the local, state and national levels comprise a public health infrastructure that, when working well, can seem invisible.

Invisible or not, a holistic approach, like One Health, is as necessary as bridges and water treatment plants. Like these structures, it requires maintenance. So are we maintaining this crucial public health infrastructure? All over the U.S., public health budgets are being drastically cut. Federal funding has remained flat. Missouri is dead last in the nation for per capita public health spending. According to Trust for America's Health, Missouri spends only $5.86 per resident, far below the national median of $27.49.

The Ebola crisis offers an opportunity to raise awareness about the ways humans and wildlife share changing ecosystems. While we need to better understand zoonotic diseases, we also must accept and address the role of humans in their development. Emerging infectious diseases, like Ebola, increasingly challenge wildlife conservation efforts and public health capabilities. Now that Ebola has entered the U.S., it is imperative that we all work together to deal with Ebola if it does arrive in Missouri. At the very least, we must be prepared to manage the consequences should prevention fail.

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