Wildlife Conservation Society to monitor diseases for preventing global pandemic

USAID develops initiative to monitor diseases that move between animals and people.

The Wildlife Conservation Society will play a key role in a new international effort to monitor diseases that move between animals and people in order to prevent the next global pandemic.

The global early warning system-named PREDICT and created with incremental funding of up to $75 million over 5 years from the U.S. Agency for International Development's (USAID) Emerging Pandemic Threats Program -will help develop global capacity to anticipate and prevent emerging infectious diseases through monitoring and identifying possible pathogenic threats at the human-animal interface. The Emerging Pandemic Threats (EPT) program builds on the successes of USAID's long-standing programs in disease surveillance, training, and outbreak response, particularly those addressing avian and pandemic influenza.

PREDICT will benefit from the expertise of WCS's Global Health Program, which monitors wildlife diseases in more than 40 countries worldwide. WCS is a leader in wildlife health issues and currently leads the Global Avian Influenza Network for Surveillance (GAINS), which tracks the movements of avian influenza through wild bird populations in the field and on the GAINS database. WCS also created the One World-One Health - model for promoting international and interdisciplinary strategies that encourage health experts from around the world to share information on the movements of diseases between humans and animals.

One of five initiatives

WCS is one of five members on the PREDICT team, which also includes UC Davis School of Veterinary Medicine (the consortium's leader), Wildlife Trust, Global Viral Forecasting, Inc., and the Smithsonian Institution.

Additional collaborators include the Centre for Infection and Immunity at the Mailman School of Public Health at Columbia University, Princeton University, and HealthMap.org (a global disease alert mapping system).

PREDICT is one of five initiatives being funded by USAID to help prepare the world for infectious diseases like H1N1 flu, avian flu, SARS and Ebola. The other four USAID initiatives in the Emerging Pandemic Threats Program are PREPARE, IDENTIFY, RESPOND, and PREVENT.

"The Wildlife Conservation Society is proud to be part of this new effort to identify emerging disease threats before they become global pandemics," said Dr. Steven E. Sanderson, President and CEO of the Wildlife Conservation Society.

"Wildlife health is one of our main priorities, and our existing capacity to monitor wildlife populations will augment PREDICT's ability to spot potential pandemics before they occur and help formulate effective measures to prevent health crises."

Presenting new challenges

"Our globalised society presents the health community with new challenges that necessitate a coordinated effort for detecting diseases that move across the human-animal nexus," said Dr. William Karesh, Vice President and Director of WCS's Global Health Program and Senior Technical Advisor of PREDICT. "This new consortium will help inform key decisions by health agencies and governments on critical health issues."

"Identifying emerging pandemics quickly is critical in protecting human populations from severe disease outbreaks," said Congresswoman Nita Lowey (D-NY), Chairwoman of the Appropriations State and Foreign Operations Subcommittee that funds USAID global health efforts. "I am pleased USAID is supporting this collaborative project, and I am confident it will help improve our ability to monitor and identify wildlife diseases like influenza strains that could affect humans."

"Predicting where new diseases may emerge from wild animals and detecting viruses and other pathogens before they spread among people give us the best chance to prevent new pandemics," said Jonna Mazet, the UC Davis scientist leading PREDICT, and the director of UC Davis' new One Health Institute in the School of Veterinary Medicine.

Chances of novel diseases even higher than previously

UC Davis will also bring on emerging-disease authority Stephen S. Morse of Columbia University Mailman School of Public Health as Director of PREDICT. Morse said that, historically, pandemics occurred perhaps every 30 to 40 years. "But in our modern world, the chances of novel diseases or even a new pandemic emerging are higher than ever, because of how we live and the extent to which we travel. Our human settlements and roadways push deeper into forests and wild areas where we now raise livestock and poultry; and we transport ourselves, our animals and our food farther and faster around the globe."

The PREDICT team will be active in global hotspots where important wildlife host species have significant interaction with domestic animals and high-density human populations. They may include South America's Amazon Basin, Africa's Congo Basin and neighbouring Rift Valley, South Asia's Gangetic Plain, and Southeast Asia. Those conditions enable the spread of microbes, especially viruses and bacteria, from animals to humans.

Among the 1,461 pathogens recognized to cause diseases in humans, at least 60% are of animal origin. Notable outbreaks of these animal-to-human diseases, or zoonoses (pronounced ZO-oh-NO-sees), include:

• The 1918 influenza pandemic, which was probably caused by a virus that jumped from birds, killed over 50 million people globally;
• The human immunodeficiency virus (HIV), which moved from chimpanzees to people and now infects more than 33 million individuals;
• Severe acute respiratory syndrome (SARS), which emerged in 2003 from southern China "wet markets" where live wild animals are sold for food; and
• The recent outbreaks of avian influenza H5N1, or "bird flu."

In a global pandemic today, a quarter of the world's population could be infected and between 51 million and 81 million people could die, with the toll in the United States exceeding 400,000 casualties.

Source: Wildlife Conservation Society