

CDC's One Health Office and Georgia Aquarium Work Together to Investigate Otters with SARS-CoV-2

<https://www.cdc.gov/coronavirus/2019-ncov/communication/responder-stories/CDC-One-Health-GA-Aquarium.html>

Like many other zoonotic infectious diseases, SARS-CoV-2 – the virus that causes COVID-19 — does not respect species boundaries. It poses a risk to not only people, but to animals as well. The COVID-19 pandemic is the latest example of a disease emerging as a result of close contact between animals and people. When SARS-CoV-2 broke out among Asian small-clawed otters at Georgia Aquarium in Atlanta, it was clear that a One Health investigation was needed to learn how the otters became infected and to prevent the virus from spreading further to people and other animals. A One Health approach recognizes the close connection between the health of people, animals, and their shared environment and the role this connection plays in the emergence of new diseases. To effectively address diseases that threaten people and animals, like COVID-19, experts across the spectrum of human, animal, and environmental health all need to work together with the goal of achieving the best health outcomes for people and animals.

Part of Dr. Ghai's role in the COVID-19 response has been supporting state, tribal, local, and territorial (STLT) and federal interagency partners by giving technical guidance and coordination of animal and human sample testing, coordinating One Health investigations of people and animals with SARS-CoV-2, and serving as a collaborator for genomic and diagnostic analyses of samples from infected animals and people to see if they are linked. Dr. Ghai has collaborated with partners on One Health case investigations in 16 states since March 2020. Their work has helped us learn and add to the knowledge base for how the virus affects animals. The results of these investigations have also helped to inform public health and animal health guidance for those who may come in contact with animals, including public health professionals, animal health professionals (such as veterinarians), pet owners, wildlife experts, pet store staff, and many others. Her work has led to creating and implementing guidance for different animal care settings, including veterinary clinics, zoos, wildlife rehabilitation centers, and pet stores, which have different needs from what typical public health guidance usually covers. So, when the state asked Dr. Ghai to help with an investigation at the aquarium, she and CDC's One Health Team were ready to assist in yet another unique setting.

In mid-March of 2021, staff at Georgia Aquarium noticed their seven Asian small-clawed otters were lethargic and not as hungry as usual. By April, the otters were also showing signs of respiratory illness. Aquarium veterinary staff first contacted the State Veterinarian's office and then the Georgia Department of Public Health to ask for permission to test the otters for SARS-CoV-2 infection. Their request was approved. To everyone's surprise, the results were positive. CDC's One Health Office was brought into the conversation to support the Georgia Department of Public Health investigation into the animals' infections.

"The Georgia Aquarium team is so appreciative of the support we have been given during this investigation by both local, state, and federal officials," said Dr. Tonya Clauss, vice president of animal and environmental health at Georgia Aquarium. "Thankfully, our Asian small-clawed otters had mild illness and have fully recovered, but the multi-organizational ties developed in the process are persistent. Experiencing this One Health collaborative approach first-hand has been very impactful."

Dr. Ghai's role in the One Health investigation was to help coordinate the genomic and diagnostic analysis of samples from the otters to further support the epidemiologic investigation in people and animals with the Georgia Department of Public Health and Georgia Aquarium.

The investigation into the Asian small-clawed otters is especially important because it will help us continue to learn more about SARS-CoV-2 in highly susceptible animal species. Otters are closely related to mink, which are highly susceptible to SARS-CoV-2 infection and have been infected in large numbers on mink farms around the world during the pandemic. Examining infections in otters could add to our understanding of why mustelids (animals like otters, mink, ferrets, and badgers) are so susceptible to SARS-CoV-2, whether they can be reinfected, and whether mutations and potential spillover into other animals or people are possible.

"This investigation was a great example of a strong One Health collaboration to protect both human and animal health," said Dr. Ghai. "It involved public health and animal health partners from the local level (Georgia Aquarium and University of Georgia), state level (Georgia Department of Public Health and their laboratories), and federal level (CDC and USDA-APHIS), all working together to protect the health of the otters and other aquarium animals, as well as the health of staff, volunteers, and aquarium visitors."

No one sector alone can address issues that affect people, animals, and the environment. By promoting collaboration, communication, and coordination using a One Health approach across all areas, diseases that cross species boundaries like COVID-19 can be more effectively and quickly addressed, resulting in better health outcomes for all.