MONTANA DPHHS Healthy People. Healthy Communities. Department of Public Health & Human Services

MONTANA ONE HEALTH

MONTANA DEPARTMENT OF LIVESTOCK

December 2020 Vol. 10 Issue 4
http://dphhs.mt.gov\publichealth and http://liv.mt.gov

ANIMAL AND HUMAN HEALTH PREVENTION OPPORTUNITIES

COVID-19 and Mink Farms: What We Know

Over the course of the COVID-19 outbreak, several animal species including mink, dogs, domestic cats, lions and tigers, have tested positive for SARS-CoV-2 after being exposed to infected people. SARS-CoV-2 infection in the mink population has been the topic of much discussion in recent months because of the animal's inherent susceptibility to infection and suspected capability to spread the virus back to people. The virus has been reported in 405 mink farms in ten countries: Netherlands, Denmark, Italy, Sweden, Spain, France, Canada, Lithuania, Greece, and the United States. In the U.S., 16 mink farms have tested positive for the virus: 1 in Michigan, 2 in Wisconsin, 1 in Oregon, and 12 in Utah. Most recently, surveillance testing of wild animal populations surrounding mink farms, also identified a positive wild mink in Utah. Though there are no known mink farming operations in Montana, it is important that veterinarians stay updated about zoonotic findings associated with this emerging disease. In this issue of Montana One Health we will discuss what is known about the disease in mink, the zoonotic implications of mink infections, as well as some of the control measures being implemented by the U.S. and other countries to contain the spread of disease.

Animal Health

Farmed mink populations affected by SARS-CoV-2 have displayed respiratory disease and increased mortality. Asymptomatic animals have also been documented. The SARS-CoV-2 cases involving farmed mink have been linked to exposures to infected people/farm workers. Epi investigations will show that infected mink are capable of transmitting the virus to other mink as well as to other susceptible animals on the farm including dogs and cats. Research has also shown that ferrets, which are closely related to mink, can be (experimentally) infected with the virus and can then spread the virus to other ferrets in laboratory settings. The following factors may influence the increased susceptibility of mink, compared to some other species:

- farmed mink are often housed in relatively high densities where they are in close contact with one another
- mink carry cell receptors that make them more susceptible to this virus
- farmed mink do not exhibit a large amount of genetic diversity which can favor infectious disease transmission and susceptibility

The affected mink farms in the U.S. have been quarantined to stop the spread of SARS-CoV-2 and biosecurity measures have been implemented. Meanwhile, Danish authorities have announced their decision to cull the entire mink population in their country which is reported to be between 15-17 million animals, to mitigate the risk of viral spread.

Human Health

According to the World Organization for Animal Health, recent reports from the Netherlands and Denmark suggest a possibility for transmission of SARS-CoV-2 from mink to humans. Denmark has reported a mutated strain of the SARS-CoV-2 virus in mink that was also identified in 12 human cases. Their reports suggest that humans introduced the virus to mink, and the virus then mutated and spread back to humans. This mutated variant, is referred to as the "cluster 5" variant and preliminary findings indicate that it has moderately decreased sensitivity to neutralizing antibodies. Though, the clinical presentation, severity and transmission of those infected are similar to that of other circulating SARS-CoV-2 viruses.

Take-aways

- Mink are susceptible to SARS-CoV-2 infection and there is evidence to suggest that this virus can mutate after infecting mink
- There is also evidence that suggests mink are able to spread the virus back to people
- Further studies are needed to understand the potential implications SARS-CoV-2 infection in mink populations

References:

Centers for Disease Control, Covid-19 and Animals
World Health Organization, SARS-CoV-2 mink-associated variant strain- Denmark

1400 Broadway
Helena, MT 59620-2951

2,836 copies of this public document were published at an estimated cost of $0.59 per copy, for a total cost of $1660.54, which includes $711.04 for printing and $949.50 for distribution.