

## **Guidance Regarding Animal Ownership and Contact by Individuals with Potential Ebola Virus Exposure**

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For the Canadian working group of Ebola virus in animals

### **Introduction**

The 2014 Ebola virus disease (EVD) epidemic in West Africa has heightened awareness of the potential for Ebola virus (EV) to be brought into Canada by infected individuals. While the likelihood of EVD in Canada is low, cases of imported EVD in a small number of countries outside of Africa, along with limited transmission of EV in those countries, have resulted in concerns about the potential for exposure of animals to EV from an infected person.

Currently, the range of species that EV can infect is poorly understood. It is known to be able to naturally infect humans, non-human primates (NHPs) and potentially some other forest dwelling species in Central and West Africa (e.g. duikers, a type of antelope). Experimental infection of NHPs, pigs and some small laboratory mammals has also been achieved. Seroconversion of dogs living in regions with outbreaks of EVD has also been reported, although it is unclear whether dogs develop clinical infections or are able to shed the virus. The potential for EV to infect other domestic species is unclear, and out of prudence, one must assume that various domestic species could be infected until there is adequate evidence to the contrary.

Any introduction of EV into Canada would almost certainly be from entrance of a person who is incubating the virus. Yet, given the high incidence of animal ownership and other animal contacts in Canada, there is some potential for subsequent exposure of an animal to EV should an infected person enter the country or a close contact of an imported case become infected.

Once a person develops symptoms of EVD, they are considered infectious. Therefore, any individual, human or animal that someone encounters after the onset of symptoms, could

potentially be exposed. Given the seriousness of EVD and the many knowledge gaps regarding EV in animals, identification of contact between a person with symptomatic EVD and an animal necessitates investigation.

### **Implications of exposure of animals to persons with symptomatic Ebola virus disease**

Investigation of animal contacts by the appropriate public health and animal health officials should be performed after identification of EVD in a person in Canada, as part of routine public health contact tracing. If an animal is deemed to have potentially been exposed to EV, public health and animal health officials will conduct a risk assessment and determine the appropriate response. For companion animals, this may involve a complex and expensive 21-day strict quarantine. In some situations, euthanasia may be considered because of an inability to safely and effectively quarantine an animal. For livestock, quarantine or depopulation and disposal may be required.

### **Recommendations for animal contact of people undergoing monitoring following Ebola virus exposure**

Because of the cost, logistical challenges and animal welfare concerns with quarantine or depopulation, and the potential economic impacts on the livestock industry should a food animal group be exposed, preventing the need for quarantine is the desired approach. This involves ensuring that people that develop EVD do not have contact with animals, and from a practical standpoint is most effective when directed at people that are at high risk for infection. This is of particular relevance to people being monitored or asked to self-isolate because of exposure to a person with EVD.

It is ideal that people that may have been exposed to EV have no animal contact whatsoever during the 21-day monitoring or self-isolation period. This may be difficult in some situations so consideration of the likelihood that the person was actually exposed and the potential implications of subsequent animal exposure by appropriate public health and animal health officials are required.

#### *Companion Animals*

Because of the typically close contact of people and their pets, it is recommended that people potentially exposed to EV consider removing pets from their households during the monitoring period. Measures to eliminate all animal contact are most important for individuals who have had high-risk exposure, most notably those that have had mucous membrane or percutaneous (e.g. needlestick), exposure to the blood or body fluids of a person with EVD without appropriate (and appropriately used) personal protective equipment (PPE), direct contact with the body of someone who has died of suspected or confirmed EVD, and having lived in the household and provided direct care to a person with EVD. Additionally, removal of companion animals would be particularly important in situations where quarantine would be difficult because of the animal species (e.g. non-human primates and some other exotic pets), temperament (e.g. highly active, fearful or aggressive with strangers), health status (e.g. requires medical care such as regular medication that cannot be provided during quarantine) or logistical reasons (e.g. large number of pets, lack of access to a suitable quarantine facility). *It is important to recognize that pets of potentially exposed individuals pose no threat to caretakers. Since EV is only transmitted when people are symptomatic, pets of asymptomatic potentially exposed*

*individuals have not been exposed.* Therefore there are no restrictions on pets of asymptomatic but potentially exposed individuals that are temporarily rehomed.

If separation of the pet and potentially exposed individual is not possible (e.g. service animal, inability to find an appropriate caretaker), measures should be taken to reduce the chance that the animal would be considered exposed if the person develops EVD. Contact with the pet should be limited. All contact should cease if the person develops any symptoms that could be consistent with EVD, including fever (temperature  $\geq 38^{\circ}\text{C}$ ), vomiting, diarrhea or any other abnormal sign or symptom. If signs of EVD are identified in the exposed individual, the pet should ideally be placed in a crate or shut in a room with no direct contact. If a delay is anticipated until the time that the animal will be assessed and/or removed, enough food and water should be provided for the anticipated period. If the person with suspected EVD must do this, direct contact with the animal should be avoided if at all possible, and hands should be washed thoroughly (or an alcohol-based hand sanitizer applied) before contact with the pet, its food or any other item with which the pet will have contact.

### *Livestock*

While exposure of livestock to a person with symptomatic EVD is unlikely, the potential impact on the animals, the farm and agricultural sector (e.g. public fear for food safety) could be profound. Quarantine of a large number of animals is highly problematic, as is depopulation. Therefore, it is strongly recommended that all potentially exposed individuals, regardless of the risk of exposure, cease all contact with livestock.

People that have potentially been exposed to EV should never have contact with livestock or even enter a barn or other animal housing area during the monitoring or self-isolation period. Preferably, such individuals should stay away from the farm (including farmhouse) during the monitoring or self-isolation period, not because EV can be transmitted over long distances, but because of the potential public perceptions of someone with EV residing on a farm.

### **Resources**

Barton Behraves et al, Interim guidance for dog or cat quarantine after exposure to a human with confirmed Ebola virus disease. <http://www.cdc.gov/vhf/ebola/pdf/dog-cat-quarantine.pdf>

Barton Behraves et al, Interim guidance for public health officials on pets of Ebola virus disease contacts. <http://www.cdc.gov/vhf/ebola/pdf/pets-of-ebola-contacts.pdf>