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## Rabies in a Dog Brought to Anchorage from Rural Alaska, March 2009

### Introduction

On Friday, February 27, the Section of Epidemiology (SOE) was notified of a Municipality of Anchorage (MOA) resident who was bitten multiple times by a dog that had been imported from a Yukon-Kuskokwim (YK) area village on February 16. The YK area is part of the region of Alaska where animal rabies is documented annually.<sup>1</sup> SOE recommended that the dog be euthanized and tested for rabies. MOA Animal Control (AC) staff obtained the dog on February 28, euthanized it on March 1, and the Alaska State Virology Laboratory (ASVL) confirmed rabies on March 2.

### Investigation and Follow-up

The objectives of the investigation and follow-up were:

- to ensure that all persons in contact with the dog had been assessed for exposure to rabies virus and received rabies post-exposure prophylaxis (PEP), including rabies immune globulin and rabies vaccine, if indicated;
- to determine whether other animals could have been in contact with the dog;
- to ensure that measures were taken in the YK village to be alert for other signs of rabies activity;
- to inform the public of the risk of rabies among animals imported from areas of the state where rabies is common, and the benefits and legal requirements for animal rabies vaccination.

### Rabies Exposure Assessments

Rabid animals may shed virus for several days before onset of neurologic symptoms or death.<sup>2</sup> Based on a conservative exposure assessment of 10 days prior to the day the dog bit the MOA resident, persons in contact with the dog from February 17 through March 1 (the day the dog was euthanized) were interviewed. The dog would not have been infectious while in the village or on the airplane to Anchorage on February 16. Based on standard definitions, a bite exposure was defined as any penetration of the skin by the teeth and a non-bite exposure was defined as contamination of an open wound, abrasion, mucous membrane, or scratch with saliva or other potentially infectious material (e.g., neural tissue) from the infected dog.<sup>2</sup> Contact with blood, urine, or feces does not constitute an exposure. Persons who were not completely sure of the nature of their contact were also offered PEP. Three persons began PEP on March 2, and three began PEP on March 4.

### Site Visit

By report from the owner, the dog was confined to a 144 ft<sup>2</sup> pen inside a fenced yard on private property and had not been out of its owner's control while in Anchorage. To ensure that other animals could not have reasonably accessed the dog, SOE and MOA Department of Health and Human Services (DHHS) staff visited the location where the dog was kept for the 2 weeks that it resided in Anchorage. There was no evidence to suggest that other animals could have accessed the pen where the dog was restrained.

### Village Follow-up

Yukon-Kuskokwim Health Corporation (YKHC) Office of Environmental Health and Engineering staff (OEHE) were informed of the rabies result and requested to ensure that standard rabies prevention and control actions were taken in the village. These actions included reporting all dog bites to local health authorities, euthanizing and possibly testing for rabies dogs or foxes that appeared ill, and providing rabies vaccinations to susceptible dogs.

### Public Notification

SOE notified partner agencies – MOA DHHS, YKHC OEHE, and the Department of Environmental Conservation, Office of the State Veterinarian – of the test result. Although there was no risk to the general public from the animal, a joint MOA and SOE press release was issued the morning of March 5 to inform the public of the occurrence and to increase awareness of the potential for rabies transmission from animals transported from enzootic areas.

### Discussion

In Alaska, rabies is enzootic in northern and western coastal fox populations and is occasionally transmitted to susceptible animals, such as unvaccinated dogs. Significant geographic boundaries and sparsely distributed fox populations, among other factors, have prevented rabies from becoming established in major urban areas. However, animals imported from rabies enzootic areas may be incubating virus during transport, which can lead to the detection of rabies in unexpected locations.<sup>3</sup> Researchers are conducting and planning projects that would determine whether oral rabies vaccination of foxes would be a practical method of disease control in the Arctic environment.

There are no current regulations that govern the intrastate movement of animals, which may harbor diseases transmissible to humans (e.g., rabies) or other animals, (e.g., parvovirus). The best ways to prevent the spread of these diseases include only transporting vaccinated animals or confining unvaccinated animals after transport. Agency discussions are underway to determine appropriate measures to minimize the likelihood of future disease translocation.

### Recommendations

1. Contact SOE at 907-269-8000 or 800-478-0084 (afterhours) to discuss potential exposures to rabies, to obtain testing at ASVL, and to obtain rabies PEP.
2. In the MOA (Title 17.30.060), persons bitten by an animal and medical practitioners treating animal bite victims are required to report the incident to Animal Control at 343-8119 for appropriate follow-up.
3. Per Alaska Administrative Code 7 AAC 27.022, all dogs, cats, and ferrets are required to be current on rabies vaccination.
4. Unvaccinated animals bitten by a rabid animal should be immediately euthanized. Currently vaccinated animals should be immediately re-vaccinated and observed for a period of 45 days.<sup>4</sup> If owners do not consent to euthanasia or the possibility of exposure to rabies is unclear, the animal should be immediately vaccinated and strictly isolated for a 6-month observation period.

### References

1. Alaska Section of Epidemiology website. "Regions of Alaska enzootic (always present at a certain level) for fox rabies." Available at: <http://www.epi.alaska.gov/id/rabies/regions.gif>
2. Centers for Disease Control and Prevention. Human Rabies Prevention—United States, 2008, Recommendations of the Advisory Committee on Immunization Practices. *MMWR Morb Mort Wkly Rpt* 2008;57:1-28. Available at: <http://www.cdc.gov/mmwr/pdf/rr/r57e507.pdf>
3. Castrodale L, Walker V, Baldwin J, Hofmann J, Hanlon C. Rabies in a puppy imported from India – Alaska and Washington, USA, March 2007. *Zoonoses Public Health* 2008 55:427-30.
4. National Association of State Public Health Veterinarians, Inc. Compendium of Animal Rabies Prevention and Control, 2008. Available at: <http://www.nasphv.org/Documents/RabiesCompendium.pdf>