

Rabies: The Impact of Pet Travel & Delayed Vaccination

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In the Literature

Singh AJ, Chipmen RB, de Fijter S, et al. Translocation of a stray cat infected with rabies from North Carolina to a terrestrial rabies-free county in Ohio, 2017. *MMWR Morb Mortal Wkly Rep.* 2018;67(42):1174-1177.

FROM THE PAGE ...

More than 4000 animals test positive for rabies in the United States every year. These animals are predominately wildlife rabies reservoirs (eg, bats, raccoons) but can include domestic animals (eg, cats, dogs, cattle).¹ In the United States, the number of human rabies cases has dramatically decreased due to intense animal and public health efforts. Circulation of distinct rabies virus variants (RVVs) associated with terrestrial reservoir species occurs in geographically defined regions and greatly impacts rabies risk; for example, states in which the raccoon RVV was considered enzootic accounted for 98% of all rabid raccoons reported in 2017.¹ These RVVs readily transmit between members of the reservoir species but also transmit to other domestic and wildlife species. Considerable efforts have been made to help prevent geographic spread of RVVs, such as requiring domestic animals to be vaccinated prior to interstate movement and leaving oral rabies vaccine-laden bait for raccoons along the Ohio–Pennsylvania border to prevent westward expansion of the raccoon RVV.

This article describes the 2017 investigation into a rabies-positive

cat that was identified in Ohio west of the oral rabies vaccine barrier. During investigation, it was discovered that the cat had previously been taken in as a stray by its owner in North Carolina, who then moved to Ohio and later relinquished the cat due to inability to care for it. This cat had not been vaccinated for rabies, despite being relinquished to a county humane society and moved to a different state by the owner. Following progressive onset of clinical neurologic signs, including agitation and hind-limb ataxia, the cat was euthanized and was confirmed to be infected with rabies on testing. The virus was confirmed to be the raccoon RVV and, based on phylogenetic analysis, was deemed most likely to have originated from North Carolina. This information suggests that the cat had been infected in North Carolina at least 5 months prior to being moved to Ohio. The public health investigation identified all likely animal and human exposures to this cat so appropriate control and prevention responses could be implemented (eg, postexposure prophylaxis in humans, quarantine and vaccination in domestic animals).

This report highlights the potential consequences of animal travel and failure to vaccinate. In this case, an unvaccinated cat incubating rabies was moved from a terrestrial rabies-endemic area (ie, North Carolina) through 8 states to a terrestrial rabies-free area (ie, Ohio). In this case, prompt suspicion of rabies with subsequent testing and response allowed for containment of the virus, but similar previous episodes have not been so fortunate. Previous human-mediated translocation of rabid raccoons to Virginia in the 1970s and to Hamilton, Canada, in 2015 resulted in movement of the raccoon RVV and large-scale wildlife rabies epizootics, with far-reaching animal and public health consequences.^{2,3}

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Clinicians should educate themselves and owners on local and adjacent jurisdictional rabies vaccination regulations. Individuals traveling or moving with a pet must comply with the regulations of their destination, which may include a recently issued health certificate and proof of rabies vaccination, among others. Resources for determining interstate and international travel requirements are available.⁴
- 2** Rabies vaccination should be administered as soon as animals are older than the minimum age for vaccination and should never be delayed. Rabies is rare in vaccinated animals, and vaccinated animals serve as an important barrier to reducing the need for costly postexposure prophylaxis in humans and reducing human and animal rabies-related deaths. Following a known exposure to rabies, quarantine for vaccinated pets is considerably shorter than for unvaccinated pets; euthanasia may be required in some jurisdictions.
- 3** Clinicians should know and follow their local jurisdictional rabies control regulations, including pet quarantine, testing, and communication with human and animal health authorities. National guidelines are available and followed by many jurisdictions.²

References

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2. National Association of State Public Health Veterinarians, Compendium of Animal Rabies Prevention and Control Committee, Brown CM, et al. Compendium of animal rabies prevention and control, 2016. *J Am Vet Med Assoc.* 2016;248(5):505-517.
3. Trewby H, Nadin-Davis SA, Real LA, Biek R. Processes underlying rabies virus incursions across US-Canada border as revealed by whole-genome phylogeography. *Emerg Infect Dis.* 2017;23(9):1454-1461.
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