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Veterinarians' role in preventing zoonotic salmonellosis from hedgehogs

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A recent outbreak of human salmonellosis linked to contact with pet hedgehogs¹ highlights the need to address *Salmonella* carriage in hedgehogs as an issue of public health importance. Three multistate outbreaks involving a single *Salmonella* strain linked to hedgehogs have caused 129 human illnesses in the United States since 2011; 17% (21/122) of these illnesses occurred in children < 5 years of age.^{1–3} The finding of a genetically nearly identical strain over multiple years indicates this strain might be persisting in the pet hedgehog population, including the breeding population, representing a continued health risk to hedgehog owners. Despite public health outreach and recommendations made during outbreak investigations, continued occurrence of this strain in human illness outbreaks indicates additional efforts are needed to engage with hedgehog breeders to reduce the burden of *Salmonella* spp in hedgehog populations, which may prevent disease transmission to people.

Over 57 hedgehog breeders or dealers were identified as suppliers of pets to people identified as ill during these investigations. The complex distribution of hedgehogs from breeder to consumer, including the practice of sharing and trading breeding stock, has complicated investigation of the strain and likely resulted in the wide geographic distribution of illnesses.^{1–3} The burden and strains of *Salmonella* spp in hedgehogs in the United States are largely unknown,⁴ and there is no standard set of recommendations to mitigate

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Salmonella carriage in breeding populations. There is a need to examine the efficacy and economic feasibility of prevention efforts such as routine testing of breeding animals, removing *Salmonella* carriers from breeding, isolating and testing new animals, and increasing sanitation and cleaning.

Exotic mammal veterinarians, especially those in academia, may be uniquely suited to partner with breeders as well as public health and animal health officials to fill this knowledge gap and develop additional tools to mitigate *Salmonella* carriage. These recommendations might help veterinarians work with breeders to evaluate and characterize *Salmonella* strains in their breeding herds through diagnostic testing, implement effective biosecurity measures and sanitation practices in their facilities, and disseminate disease prevention information to pet owners.⁵ These efforts can help reduce the risk of *Salmonella* introduction and spread in hedgehogs and potentially prevent transmission of *Salmonella* organisms to people.

Human salmonellosis from contact with hedgehogs can occur when owners don't wash their hands after handling or feeding their pets, when hedgehogs roam freely in the household, or when owners clean items used to care for hedgehogs in areas where food is stored and prepared. Hedgehogs carry *Salmonella* asymptomatically and shed bacteria in their feces intermittently, and their behavior can lead to widespread environmental contamination.⁵ Owners, especially new owners, may not understand the risk of indirect exposure posed by contaminated areas where hedgehogs live and roam. To protect public health and prevent future outbreaks linked to contact with hedgehogs, owners must have access to information regarding the risk and prevention of *Salmonella* transmission from hedgehogs. Veterinarians are well positioned to provide this information and educate owners on preventive disease care, animal husbandry, and responsible pet ownership, including that hedgehogs may be inappropriate pets for children < 5 years of age.⁶

References

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