Fatal Infection Associated with Equine Exposure — King County, Washington, 2016

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On March 17, 2016, Public Health—Seattle & King County in Washington was notified of two persons who received a diagnosis of *Streptococcus equi* subspecies *zooepidemicus* (S. *zooepidemicus*) infections. *S. zooepidemicus* is a zoonotic pathogen that rarely causes human illness and is usually associated with consuming unpasteurized dairy products or with direct horse contact (1). In horses, *S. zooepidemicus* is a commensal bacterium that can cause respiratory, wound, and uterine infections (2). The health department investigated to determine the magnitude of the outbreak, identify risk factors, and offer recommendations.

Patient A, a previously healthy woman aged 37 years, operated a horse boarding and riding facility in King County, Washington. Patient A fed, groomed, and exercised the facility’s six horses and cleaned the stalls daily. During the week of February 21, 2016, patient A developed mild pharyngitis and cough. During the week of February 21, horse A developed mucopurulent ocular and nasal discharge and lethargy. On February 29, patient A began administering 10 days of sulfadiazine to horse A, which recovered without incident.

Patient B, a previously healthy woman aged 71 years and the mother of patient A, developed symptoms consistent with an upper respiratory infection during the week of February 21 while visiting patient A and living in the same household. On March 2, she developed vomiting and diarrhea. On March 3, she was found unconscious and transported to a hospital, where she died that day. Patient B had close contact (i.e., riding, petting, and walking) with horse A on at least February 25 and February 29.

Culture results of nasal swabs collected on March 10 from horse A and two other horses that appeared well were positive for *S. zooepidemicus*. Patient A did not report consumption of unpasteurized dairy products or exposure to other animals, apart from one healthy cat, during the preceding 2 months. A throat culture from patient A obtained March 10 and blood cultures from patient B grew *S. zooepidemicus* isolates indistinguishable by pulsed-field gel electrophoresis from isolates cultured from horse A and a second horse at the facility. *S. zooepidemicus* cultured from a third horse did not match other isolates.

The epidemiologic and laboratory evidence from this investigation linked a fatal *S. zooepidemicus* infection to close contact with an ill horse. Patient B might have been at increased risk for invasive disease by *S. zooepidemicus* because of her age and her possible antecedent upper respiratory infection. Because patient A specifically sought health care and a throat culture as a result of patient B’s death, determining whether the *S. zooepidemicus* infection preceded or followed her mild illness approximately 2 weeks earlier was not possible.

Although *S. zooepidemicus* is a rare zoonotic pathogen in humans, older persons might be at increased risk for a fatal outcome from this infection; in 32 reported cases, the median age was 61 years (range = <1 to 83 years) with 7 deaths (case-fatality rate = 22%) (1). Consistently practicing thorough hand washing with soap and water after contact with horses and other animals or areas where animals are housed is recommended (3). This outbreak highlights the need for more research regarding risk factors for zoonotic transmission and spectrum of human illness associated with *S. zooepidemicus*.

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References