

The growing threat of *Clostridium difficile*: Is there an animal-human link?

Clarke Communication

A *New York Times* article on March 12, 2012 referred to new data recently released by the Centre of Disease Control (CDC) indicating that deaths in the US from gastrointestinal infections more than doubled from 7000 to more than 17000 annually between 1999 and 2007. Two thirds of the deaths were caused by *Clostridium difficile*. Of those who died, 83 percent were over the age of 65. In Canada, *C. difficile* has claimed as many as 2000 victims per year. A significant percentage of infections are contracted in hospitals and nursing homes and often follow the use of antibiotics administered following surgery. The bacteria have grown increasingly virulent and resistant to treatment. Unanswered questions exist about the role of pets and livestock in the epidemiology of *C. difficile*.

Infections from *C. difficile* are opportunistic. Getting an upper hand on the bacteria in a hospital setting can be complicated. Much of the story is centered on prudent use of antimicrobials considering the right patient, the right antibiotic at the right time at the right dosage. It is also about hygiene—not just personal hygiene, and clean floors and doorknobs, but the challenge of cleaning complex pieces of electronic equipment used to take care of patients.

Recent reports of *Clostridium difficile* in food-producing animals and pets have led to questions over the significance of these findings for both animal and human health. *C. difficile* is associated with enteric diseases in animals, including horses, dogs, and pigs. Recent reports indicate that human and animal isolates are often indistinguishable. *C. difficile* ribotypes 027 and 078 have been isolated from a range of animal species, which have raised questions about potential public health issues. *C. difficile*, particularly *C. difficile* ribotype 078, has recently emerged as a more common cause of human disease.

Dogs (and handlers) have been viewed as potential sources of *C. difficile* in hospitals. Dogs that visit human hospitals are at increased risk of shedding this bacterium in their stool, and certain types of contact with people have been identified as increasing the risk of human exposure. Dogs owned by an immunocompromised person are at increased risk of shedding *C. difficile* as are people being treated with antibiotics. The potential for interspecies transmission of this bacterium appears real.ⁱ

ⁱ *Worms & Germs Blog* is an educational website coordinated by Drs. Scott Weese and Maureen Anderson of the Ontario Veterinary College's Centre for Public Health and Zoonoses.

<http://www.wormsandgermsblog.com/articles/diseases/clostridium-difficile-1/>