Medical Xpress

Pets and children are a potential source of C. difficile in the community

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Household transmission of *Clostridium difficile* to pets and children may be a source of community-associated *C. difficile* infections according to findings from a new study published today in *Infection Control & Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America. The study found that patients with this bacteria can colonize or infect household contacts following or during treatment for an infection.

"*C. difficile* is primarily a healthcare-associated infection, but we now know that it can spread beyond the hospital," said Vivian Loo, MD, MSc, a lead author of the study and an infectious disease specialist and medical microbiologist at the McGill University Health Centre (MUHC), investigator at the Research Institute of the MUHC, and professor at McGill University. "These infections, causing diarrhea and inflammation of the colon, can be serious, so it is important that everyone follows simple hygienic practices, like hand washing with soap and water, even in your own home."

The prospective study included 51 patients treated for *C. difficile* infection in hospital or outpatient settings, along with members of their households, and pets. Researchers visited each household monthly, collecting stool samples or rectal swabs at each visit. The samples were tested for *C. difficile*, to determine whether those who tested negative for the bacterium initially eventually became infected or colonized. Colonized individuals with *C. difficile* have the bacteria present in their stool, but without diarrhea.

The results revealed 13.4 percent of the 67 human household contacts had *C. difficile* isolated from their stool or rectal samples. One adult household member had diarrhea and the remaining 8 were asymptomatically colonized. Sixty-six percent of those colonized were younger than five years old, including five in diapers.

More than a quarter (26.7 percent) of the 15 domestic pets were asymptomatic carriers of the bacterium, as well. When analyzing the bacteria strains from pets, researchers found that the strains carried by the pets and by their human contacts were indistinguishable or closely related, suggesting interspecies transmission. The study concluded that pets can be reservoirs for re-infection or transmission of *C. difficile* within the household.

"Our research suggests that household transmission from patients with *C. difficile* infection could be responsible for a bacterial reservoir for community-associated cases," said Loo.

More information: Vivian G. Loo et al, Household Transmission of Clostridium difficile to Family Members and Domestic Pets, *Infection Control & Hospital Epidemiology* (2016). DOI: 10.1017/ice.2016.178

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