

## *Cryptosporidium* transmission in the Midwest United States

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*Cryptosporidium* is a waterborne parasite that causes cryptosporidiosis, an infectious disease affecting animals and humans for which there is no effective treatment. *C. parvum* and *C. hominis* are the primary species causing human disease. *C. hominis* exclusively infects humans, while *C. parvum* infects both humans and cattle and may have a zoonotic or anthroponotic transmission cycle. In Minnesota and Wisconsin, which have among the highest incidences of cryptosporidiosis in the US, most cases are caused by *C. parvum*. We determined the relationship between human and cattle *C. parvum* isolates in the region using a multi-locus genotyping approach targeting seven loci. We also assessed the contribution of cattle and wildlife to surface water contamination in a rural watershed. Two multi-locus types were predominant in cattle and these types were also found in humans, supporting zoonotic transmission. Cattle, small mammals and deer were all identified as sources of surface water contamination. However, cattle were not a source of *C. parvum*. Instead they were a source of *C. andersoni*, a cattle adapted species that has only rarely been found in humans. Together, these studies suggest that while cattle are likely to be a significant source of human *Cryptosporidium* infections in the region, waterborne transmission may be less important.