CRYPTOSPORIDIOSIS IN BAKER CITY; PROPOSED ADMINISTRATIVE RULE CHANGES

F rom July 29–31, 2013 five lab-confirmed cases of cryptosporidiosis in Baker City (population 9,828), with onsets during the preceding week, were reported to the Baker County Health Department; the most recently reported case of cryptosporidiosis in Baker County was in 2007. A public health investigation ensued, to determine the source of the outbreak and implement control measures. This CD Summary presents preliminary results of the investigation.

WHAT IS CRYPTO?
Cryptosporidiosis is a gastrointestinal illness caused by the protozoan Cryptosporidium. Infection occurs through fecal-oral transmission of oocysts. Although cryptosporidiosis is often asymptomatic, the most frequent symptoms are diarrhea and abdominal cramps. Infected individuals may continue to shed oocysts for several weeks after symptoms resolve. Oocysts are able to survive typical water chlorination but can be killed by heat, inactivated by ultraviolet light, ozone, or prolonged disinfection, or removed by specific filtration techniques. Cryptosporidium can infect animals as well as humans: cattle and other livestock often serve as reservoirs.

Cryptosporidiosis outbreaks have been linked to swimming in or drinking contaminated water and to person-to-person transmission. During a very large outbreak of cryptosporidiosis linked to municipal drinking water in Milwaukee, Wisconsin in 1993, more than 400,000 people were sickened and at least 54 people died. Closer to home, we have had cryptosporidiosis outbreaks in Talent drinking water; and in swimming pools.  

THE OUTBREAK
The initial case investigations revealed no common exposures aside from municipal drinking water; a precautionary boil water advisory was issued July 31. These suspicions were confirmed when Cryptosporidium oocysts were detected in samples of city water.*

To assess the attack rate and to evaluate the effectiveness of the boil water advisory, the Public Health Division in collaboration with Baker County Health Department surveyed Baker City residents door-to-door during August 18–22. One-hundred ninety-nine household surveys were completed, with information about illness in 493 individuals. One randomly selected individual from each household was asked additional questions about their water consumption habits.

Illness onsets were July 1 – August 17, 2013 (Figure). The overall attack rate was ~25% (123/493). Males and females were equally affected. Attack rates decreased with increasing age: 31% of individuals <18 years old experienced illness compared to 15% individuals ≥65 years of age. Attack rates were higher in groups drinking ≥10 (8oz) glasses of Baker City municipal water daily (35%), compared to those drinking <10 glasses daily (23%).

Results of ongoing water testing by Baker City were negative for Cryptosporidium oocysts, and the boil water advisory was lifted August 20. Baker City officials continue to discuss options to reduce the future risk of Cryptosporidium in drinking water.

Healthcare providers should consider cryptosporidiosis in patients presenting with diarrhea lasting ≥3 days. Cryptosporidium testing should be specifically requested because routine O&P exam may not include testing for Cryptosporidium. Commercially available immunoassay kits are also available. Depending on the lab, stool may be tested using direct fluorescence assay (DFA), enzyme immunoassay (ELA), or a rapid immunostat assay. Because of the low positive predictive value, ImmunoCard™ STAT! tests are not considered adequate to confirm cryptosporidiosis.

FOR MORE INFORMATION:

REFERENCES
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