

Cryptosporidiosis Associated with a Hotel Waterpark

March

Crow Wing County

A routine surveillance interview of a laboratory-confirmed *Cryptosporidium* case conducted by the Minnesota Department of Health (MDH) on March 22, 2012 revealed that the case had gone swimming at a waterpark in Baxter, Minnesota on March 3 while attending a birthday party. It was also reported during the interview that at least one additional birthday party attendee had become ill with similar symptoms after swimming at the waterpark; MDH epidemiologists were able to confirm this information on March 26. Sanitarians from MDH Food, Pools, and Lodging Services (FPLS) were contacted on March 26, and an outbreak investigation was initiated.

Contact information for waterpark groups and aquatics staff was provided to MDH by the waterpark. MDH staff interviewed waterpark guests about their illness and exposure histories. Cases of cryptosporidiosis that were identified through routine surveillance were interviewed to determine if they had exposure to the waterpark. A case was defined as a waterpark user who developed either a laboratory-confirmed *Cryptosporidium* infection or diarrhea (≥ 3 loose stools in a 24-hour period) or vomiting lasting 3 or more days, with illness onset 2 to 14 days following waterpark exposure. Stool kits were sent to three waterpark guests for bacterial, parasitic, and viral testing at the MDH Public Health Laboratory (PHL).

MDH sanitarians visited the waterpark on March 26 to conduct a field assessment of the facility and to interview staff regarding recent illness and job duties.

Illness histories and exposure information were obtained from 118 waterpark guests. Forty-three (36%) cases were identified, including the initial laboratory-confirmed case. Fourteen waterpark guests reported illness but did not meet the case definition, and thus were excluded from further analysis. One waterpark guest submitted a stool sample to MDH PHL; the sample was negative for *Cryptosporidium*. *Cryptosporidium parvum* subtype BGP4 was identified in the one positive specimen received by MDH PHL, from the initial laboratory-confirmed case.

Of the cases, all 43 cases reported diarrhea, 32 (76%) of 42 reported cramps, 15 (35%) reported fever, 9 (21%) reported vomiting, and 8 (20%) of 40 reported weight loss. The median incubation period was 6 days (range, 2 to 12 days) for the 15 cases who only swam at the waterpark once in the 2 weeks prior to illness onset. Cases reported swim dates of March 2 to March 17. The median duration of illness was 7.5 days (range, 3 to 18 days) for the 38 cases who had recovered by the time of interview. Of the 42 cases with known information, 9 (21%) reported visiting a health care provider for their illness, including one case who was hospitalized for 3 days.

No specific location at the waterpark was significantly associated with illness. However, swallowing water while swimming was significantly associated with illness (26 of 34 cases vs. 10 of 49 controls; odds ratio, 12.7; 95% confidence interval, 4.4 to 36.4; $p < 0.001$).

All waterpark staff members were screened for recent illness; no staff reported being recently ill with vomiting and/or diarrhea.

On March 26, the waterpark voluntarily closed in order to be superchlorinated at 20 parts per million for 12.75 hours, the necessary chlorine level and time needed to inactivate *Cryptosporidium*.

Upon inspection, all three waterpark pools were found to be operating properly and were within state regulatory limits for pH and chlorine levels. However, *Cryptosporidium* can survive and be transmitted even in properly operated pools.

The waterpark reopened on March 29; anyone with symptoms of gastrointestinal illness was told by staff not to enter the waterpark until 2 weeks following the resolution of symptoms. Signage was also posted at the facility alerting patrons not to swim if they were experiencing diarrhea.

This was an outbreak of cryptosporidiosis associated with swimming at a hotel waterpark. Although the original source of contamination was not identified, an infectious waterpark user most likely introduced the parasite into the waterpark.