

Suspected Viral Gastroenteritis Associated with a Beach

July

Hennepin County

On July 14, 2017, the Minnesota Pollution Control Agency forwarded the Minnesota Department of Health (MDH) a complaint from an individual who swam at park district beach in Maple Plain on July 4. The complainant reported that 5 of 10 individuals in his party developed vomiting and diarrhea after swimming at the park's main beach (a campground beach is located 0.5 miles away). An outbreak investigation was initiated.

Contact information from campground reservations and boat rentals was obtained from the park. MDH staff interviewed visitors to obtain information on water and food exposures and illness history. A case was defined as a park visitor who subsequently developed vomiting and/or diarrhea (≥ 3 loose stools in a 24-hour period). Routine beach monitoring results were also obtained from park staff and reviewed to see if levels met Environmental Protection Agency (EPA) recreational water quality standards.

Illness histories and exposure information were obtained from 23 park visitors. Two visitors met the case definition. Three individuals reported illness that did not meet the case definition, including one individual from the original complaint group who was likely a secondary case. Both cases reported diarrhea, vomiting, and abdominal cramps, and one case reported fever. The reported incubation periods were 21 and 38 hours, and the illness durations were 5 and 6 days. One case reported visiting a healthcare provider because of their illness.

The two cases were from independent groups who visited the main beach on July 4. One case reported 5 of 10 in his group developed gastrointestinal illness symptoms after swimming at the beach; one of these individuals is the secondary case mentioned above. The other case reported four of four in her group experienced gastrointestinal illness symptoms after swimming at the beach. Unfortunately, despite multiple attempts, information from additional members of both groups could not be obtained.

Swimming at the main beach approached statistical significance (2 of 2 cases vs. 3 of 17 controls; odds ratio, undefined; 95% confidence interval, undefined; $p = 0.059$).

A routine water sample from the main beach collected on July 5 by the Three Rivers Park District had an *E. coli* concentration of 19 most probable number (mpn) per 100 milliliters (ml), which is below the EPA single water sample standard of 235 mpn per 100 ml.

This was a waterborne outbreak of suspected viral gastroenteritis associated with the main beach at a park in Maple Plain. The ultimate source of contamination was not identified; however, an ill swimmer most likely introduced the virus into the water. Beach contamination can be transient, and the result from the water sample collected on July 5 was likely not representative of the water conditions the day prior. Regardless of water quality results, swimmers should always follow healthy swimming practices including not swimming while ill, showering before swimming, and avoiding swallowing water.