

TITLE: Continuous common source viral gastroenteritis outbreak at a small freshwater beach in Maine, 2018

BACKGROUND

On Friday July 6, 2018, a member of the public contacted Maine Center for Disease Control and Prevention (Maine CDC) Division of Disease Surveillance when family and friends became ill with gastrointestinal symptoms after attending and swimming at a public access beach on Woods Pond operated by the Town of Bridgton. An outbreak team formed to determine the cause of illness and prevent further illness.

METHODS

Using the initial information provided by the member of the public, Maine CDC conducted open ended interviews with seven heads of household to generate a list of questions for a wider participant survey. Using the Maine CDC Facebook page, Maine CDC issued a call for cases and identified additional individuals exposed to the pond between 7/1/18 – 7/6/18. Heads of household provided answers for multiple family members. Maine CDC requested ill respondents to submit stool specimens for viral and bacterial testing at the Maine Health and Environmental Testing Laboratory (HETL). Data collected from surveys were analyzed using Epi Info 7.

RESULTS

Maine CDC interviewed thirty-four (34) heads of household by phone, and collected data on 148 people who attended the pond or were exposed at home to ill individuals. 139 people reported attending the pond between 7/1 – 7/6. Of those who attended the pond, 97 people reported being sick (attack rate: 69.8%). Pond attendees who went under the water or swallowed the water while swimming were over three times more likely to be sick than those who did not (Relative Risk = 3.13, $p < 0.001$). There were no significant relative risks for other exposures such as using the playground and eating or drinking at the beach. Health care providers collected four human stool specimens for bacterial and viral analysis at HETL. Two out of four human stool specimens tested positive for Norovirus GI.

CONCLUSION

Based on collected data and two positive human specimens, this is a confirmed continuous common source waterborne outbreak of norovirus with secondary person-to-person transmission. Although the outbreak is associated with swimming underwater at the beach, the source of the norovirus contamination is undetermined.

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