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Norovirus Outbreak Stalks the Iditarod Trail, 2004

Background

On March 3 2004, an Anchorage physician informed the Alaska Section of Epidemiology (SOE) that several Anchorage-based Iditarod support staff were ill with vomiting and diarrhea during the last week of February. The Municipality of Anchorage Department of Health and Human Services (MOA) investigated this report. Eleven Iditarod race staff attended a pre-race meeting in McGrath on February 25. Within two days, nine persons developed vomiting, cramps, and diarrhea. The first person to become ill began vomiting immediately upon arriving in McGrath, prior to the meeting. Other staff members who stayed in the same bunkhouse as this person developed illness 1-2 days later. The duration of illness was approximately 2 days.

On March 3, in conjunction with the MOA, SOE staff contacted McGrath Health Clinic personnel, the Iditarod race marshal, and owners of the bunkhouse where Iditarod staff stayed in McGrath, asking them to immediately report anybody who developed acute vomiting and diarrhea. On March 4, SOE and MOA staff presented information about the outbreak, signs and symptoms of viral gastroenteritis, and methods for disease prevention at the Iditarod mandatory musher's meeting in Anchorage. A fact sheet was provided for race officials, and all persons at the meeting were asked to report new onset of illness to SOE. The ceremonial start of the 32nd Iditarod Race was March 6.

On March 8, the Alaska State Public Health Laboratory in Fairbanks reported that one stool sample from the MOA investigation was positive for norovirus.

Investigation

On March 11, a McGrath provider reported that three persons associated with the Iditarod race had developed gastroenteritis. On the morning of March 12, SOE and Alaska Department of Environmental Conservation (DEC) staff flew to McGrath to identify and interview ill persons, inspect local restaurants, and provide information about disease prevention. One member of the team traveled to Ruby and Cripple Creek to establish a surveillance system along the trail.

Results

Between February 15 and March 18, 57 persons reported having sudden onset of diarrhea and/or vomiting (Table).

Table.

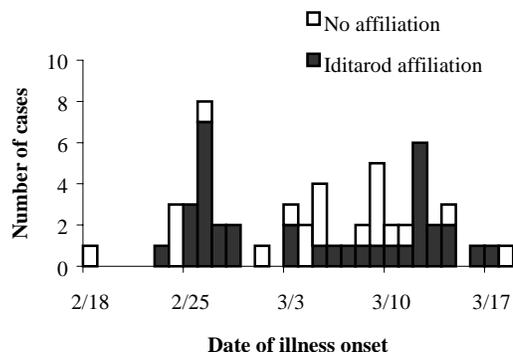
	Number (%)	Comments
Ill	57	
Affiliated with Iditarod	36 (63%)	
Mean age of cases	43	Range, 1 - 92
Symptoms:		
Vomiting	40 (70%)	
Diarrhea	47 (83%)	
Abdominal cramps	34 (60%)	
Fatigue	34 (60%)	
Headache	31 (54%)	
Body aches	31 (54%)	
Feverish	30 (53%)	
Median duration of symptoms	2 days	Range, 1- 8 days
Sought health care	13 (23%)	1 hospitalization

A total of 32 (56%) of case-patients reported being in McGrath at some point during the incubation period for norovirus infection prior to symptom onset. Twenty-two (39%) reported not always washing their hands before eating. Eleven (19%) reported not always washing their hands before preparing food, and 11 (20%) reported not always washing their hands after having a bowel movement. The illness onset dates for case-patients are displayed in the Figure. Three of five stool samples from case-patients were positive for norovirus.

References

1. American Academy of Pediatrics. Caliciviruses. In: Pickering LK, ed. *Red Book: 2003 Report of the Committee on Infectious Diseases*. 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:226.

Figure. Illness Onset Dates for Case-patients



Discussion

DEC and SOE staff are collaborating with the Norton Sound Health Corporation to mobilize local efforts in Nome in an attempt to interrupt disease transmission. Norton Sound sanitarians and public health nurses have notified local food establishments and local residents of measures to reduce risk of norovirus transmission in Nome. Additional media efforts are underway to inform the public.

Noroviruses, small RNA viruses classified as caliciviruses, are highly infectious. Transmission is by person-to-person spread via the fecal-oral route or through consumption of fecally contaminated food or water. The incubation period for norovirus infection is 12-72 hours, and symptoms generally last 24 to 60 hours.^{1,2} Symptoms include acute onset of nausea, vomiting, diarrhea, abdominal cramps, fever (101°F to 102°F), chills, and myalgia. Severe dehydration can occur; however, long-term sequelae of norovirus infection have not been reported.

Recommendations

1. Wash hands carefully using soap and running water for 20 seconds after using the toilet, and before eating or preparing food.
2. Whenever soap and water are not available, waterless alcohol-based hand sanitizers should be used.
3. In order to prevent further spread of illness, Iditarod spectators and support staff who are acutely ill or within 72 hours of symptom resolution should not progress forward along the Iditarod trail.
4. Food handlers with nausea, vomiting and diarrhea should stop working until symptom-free for 72 hours. Meticulous hand washing should be continued since the virus can be shed in stool for 5-13 days after symptoms resolve.¹
5. Hard surfaces that are frequently touched by people (such as counter tops, bathroom surfaces, doorknobs, handrails, telephones, and floors) should be cleaned using standard cleaners and then disinfected using chlorine bleach at a concentration of 1000 ppm (1/2 cup of bleach/gallon of water).
6. Surfaces contaminated with vomit or stool should first receive an initial cleaning to remove all organic material, and then disinfected with chlorine bleach at a concentration of 5000 ppm (2 1/2 cups bleach/gallon of water). Wear gloves when cleaning, and wash hands well afterward.
7. Case-patients identified in Nome and other villages are encouraged to report disease to local public health nurses and health aides, who should report new cases to SOE staff during working hours (907-269-8000) or after hours (800-478-0084). The telephone number for the Nome Health Center is 907-443-3221.