Focus on Norovirus, Part 1

Noroviruses are single-stranded, non-enveloped RNA viruses that are part of the Caliciviridae family. They are classified into 10 genogroups and 49 genotypes, with groups I, II and IV affecting humans. Genogroups are further divided into genotypes and then strains.

The most common cause of human norovirus infection is GII (mostly GII.4 and GII.17), followed by GI and GIV. GII.4 viruses are associated with more severe outcomes, including higher hospitalization and death rates.

Noroviruses are the leading cause of viral gastroenteritis worldwide, with an estimated 19 to 21 million people affected yearly in the United States. Noroviruses often cause acute gastroenteritis outbreaks. In most countries where rotavirus vaccines have been included in the national immunization program, noroviruses have become the most common cause of gastroenteritis in children younger than 5 years old.

Illness due to norovirus is characterized by watery diarrhea, non-bloody and nonbilious vomiting, abdominal pain, myalgias, malaise and headache which usually resolve without treatment in 1-3 days. Fever occurs in approximately half of cases. Severe manifestations have been observed among older adults, children younger than 12 months old, and immunocompromised individuals. Neurologic complications have been reported in children. The most commonly reported chronic sequela of norovirus infection is chronic diarrhea among immunocompromised patients. Recurrent infection can occur given the diversity of norovirus strains and the lack of full cross-strain or long-term immunity.

Peak viral shedding occurs over the first 24 to 48 hours after illness onset, although the virus can be detected in stool up to 4 weeks following infection. In immunocompromised hosts, viral shedding can persist for months following infection. Stool shedding in asymptomatic individuals is common, especially in children. Excluding ill individuals from higher risk activities and/or settings (e.g., providing healthcare, preparing food, attending/working in preschool/child care settings, performing caregiving activities, etc.) until they have been symptom-free for at least 48 hours can help reduce transmission.

Outbreaks due to norovirus occur throughout the year, although there is a seasonal pattern of increased activity during the winter months. In addition, periodic increases tend to occur in association with the emergence of new strains.

About the Communicable Disease Control Program

The Communicable Disease Control Program is available to help meet the reporting needs and answer the questions of San Mateo County providers. To report a disease or outbreak, please call 650-573-2346 Monday through Friday, 8:00 am to 5:00 pm, or fax a Confidential Morbidity Report (CMR) to 650-573-2919. You may download an electronic copy of the CMR at smchealth.org/communicablediseasereporting. Web-based reporting via CalREDIE is also available. Please contact us if you would like to know more about, and sign up for, web-based reporting. Non-urgent questions and/or general inquiries may be directed to SMCCDControl@smcgov.org.