

TIPS FOR IDENTIFYING AN OUTBREAK OF NOROVIRUS AND INSTRUCTIONS FOR COLLECTING SPECIMENS

As you begin investigating a gastrointestinal illness outbreak, you often need to determine the etiology of the outbreak. Sometimes at the beginning of an investigation it is difficult to tell if you are dealing with norovirus or a bacterium (particularly *Salmonella*). Similarities between these two organisms include that both cause diarrheal illnesses and have an incubation period of about 1-2 days. Although persons with norovirus illness are more likely to have vomiting along with diarrhea, vomiting without diarrhea has also been reported. Fever may be present in patients with norovirus, but it is generally low-grade (less than 101°F); people may simply report that they “felt warm.” In contrast, high fevers are characteristic of *Salmonella* infections. During a *Salmonella* outbreak, individuals are likely to seek medical care and be hospitalized, while in a norovirus outbreak, individuals may feel bad but are less likely to seek medical attention. Hospitalizations as a result of norovirus infections are uncommon, even in nursing home settings. During outbreaks of norovirus, people usually recover within 1-2 days; such rapid recovery would not be typical in a *Salmonella* outbreak.

In an institutional setting, such as a nursing home, it is usually quite easy to clinically identify a norovirus outbreak. These outbreaks often begin with a few people becoming ill on one wing, with additional cases identified a day or two (i.e., one incubation period) later. If control measures are not implemented effectively, illness can spread throughout the facility and affect up to 60-75% (or more) of the residents, as well as the employees. This rapid person-to-person transmission would not be typical in a *Salmonella* outbreak.

Guidelines for controlling norovirus outbreaks are available from VDH, but they must be implemented early and must be completely followed to be effective. Facilities may report that they are following the recommendations, but a visit and/or assessment by the health department may indicate that this is not the case. Therefore, in some situations it is important for health department staff to be “on the scene” during an outbreak.

Collecting specimens: You must notify the Division of Consolidated Laboratory Services (DCLS) if you are collecting specimens for norovirus testing by calling 804-648-4480 (extensions 292 or 205). Follow these guidelines during specimen collection:

1. Collect an unpreserved stool specimen in a sterile stool or urine container (filling at least half way) during the first 48 hours of illness. If a spatula is used to collect stool (e.g., from a bedpan or diaper/incontinence pad), plastic should be used rather than wood. Staff should wear appropriate personal protective equipment when collecting specimens.
2. A portion of the stool specimen should be placed in Cary Blair enteric transport medium (pink liquid) in order for DCLS to rule out *Salmonella*, *Shigella* and *Campylobacter*.
3. Prepare each specimen for shipment to DCLS as follows:
 - a. Ensure that each container is labeled with the patient's first name, last name, date of collection, and the name of the facility.
 - b. Complete all of the information requested on the submission form clearly and carefully. Testing may not be performed if the specimen container is improperly labeled or if the submission form is incomplete. Please ensure that each form has the facility name and include the outbreak ID number, if possible. Numerous norovirus outbreaks may be under investigation within a single geographic area, and the facility name and outbreak ID number are used to track the specimen and direct the results to the appropriate health department.
 - c. Please indicate “Norovirus Testing, PCR” on the outside of the shipping container. Thousands of specimens are received by DCLS each day; labeling the shipping container properly will help to rapidly direct the specimens to the appropriate laboratories for testing.
4. Raw stool specimens for norovirus testing should be refrigerated (not frozen) after collection and placed on ice during transport to DCLS. Specimens collected in Cary Blair transport medium should be maintained at room temperature; DO NOT ship specimens in Cary Blair medium on ice.
5. Please note: While norovirus can be detected from vomitus specimens, this specimen type is NOT preferred. If vomitus is the only specimen available for testing, it may be submitted if testing is pre-coordinated and approved by DCLS. Even individuals who do not have diarrhea will shed norovirus in their stool; therefore, stool is the preferred specimen for testing.
6. Specimens and submission forms should be shipped to DCLS using overnight delivery by the DCLS courier system. If specimens are collected over a weekend, the specimens should be held at the defined temperatures and processed for shipment to DCLS on Monday, unless specific arrangements have been pre-coordinated with DCLS.