



**Kentucky Public Health**  
Prevent. Promote. Protect.

## **LABORATORY SPECIMENS FOR DIAGNOSTIC TESTING**

The early recognition of the causative agent of gastroenteritis may limit the impact among other residents and staff. **Submit laboratory specimens for diagnostic testing in a timely manner.** Laboratory confirmation plays a vital role in this determination. In outbreaks of unknown etiology, diagnostic specimens should be collected for: bacterial pathogens, norovirus, and *C. difficile*. Norovirus specimen collection and submission guidelines are detailed below.

### **Clinical Specimens:**

#### **Stool-preferred specimen for norovirus testing**

##### **Timing:**

Specimen collection for viral testing should begin on day 1 of the epidemiological investigation. Any delays to await testing results for bacterial or parasitic agents could preclude establishing a viral diagnosis. Ideally, specimens should be obtained during the acute phase of illness (i.e., within 48-72 hours after onset) while the stools are still liquid or semisolid because that is when the level of viral excretion is greatest. In specific cases, specimens might be collected later during the illness (i.e., 7-10 days after onset), if the testing is necessary for either determining the etiology of the outbreak or for epidemiologic purposes (e.g., a specimen obtained from an ill food handler who might be the source of infection). If specimens are collected late in the illness, the utility of viral diagnosis and interpretation of the results should be discussed with laboratory personnel before tests are conducted.

##### **Number and Quantity:**

Specimen collection should occur as early as possible. Ideally, specimens from 7 to 10 ill persons should be obtained during the acute phase of the illness (preferably within 48-72 hours after onset). Bulk samples (i.e., 10-50 ml of stool placed in a stool cup or urine container) are preferred, as are acute diarrhea specimens that are loose enough to assume the shape of their containers. Serial specimens from persons with acute, frequent, high-volume diarrhea are useful as reference material for the development of assays. The smaller the specimen and the more formed the stool, the lower the diagnostic yield. Rectal swabs are of limited or no value because they contain insufficient quantity of nucleic acid for amplification.

##### **Storage and Transport:**

Because freezing can destroy the characteristic viral morphology that permits a diagnosis by EM, specimens should be kept refrigerated at 4C° (39F°). At this temperature, specimens can be stored without compromising diagnostic yield for 2-3 weeks, during which time testing for other pathogens can be completed. If the specimens have to be transported to a laboratory for testing, they should be bagged

and sealed and kept on ice or frozen refrigerant packs in an insulated, waterproof container. Specimens must be shipped overnight. If facilities for testing specimens within 2-3 weeks are not available, specimens can be frozen at -20C°. (-4F°) for antigen or PCR testing.

### ***Vomit***

Vomiting is the predominant symptom among children, and specimens of vomit can be collected to supplement the diagnostic yield from stool specimens during an investigation.

Recommendations for collection, storage, and shipment of vomit specimens are the same as those for stool specimens.

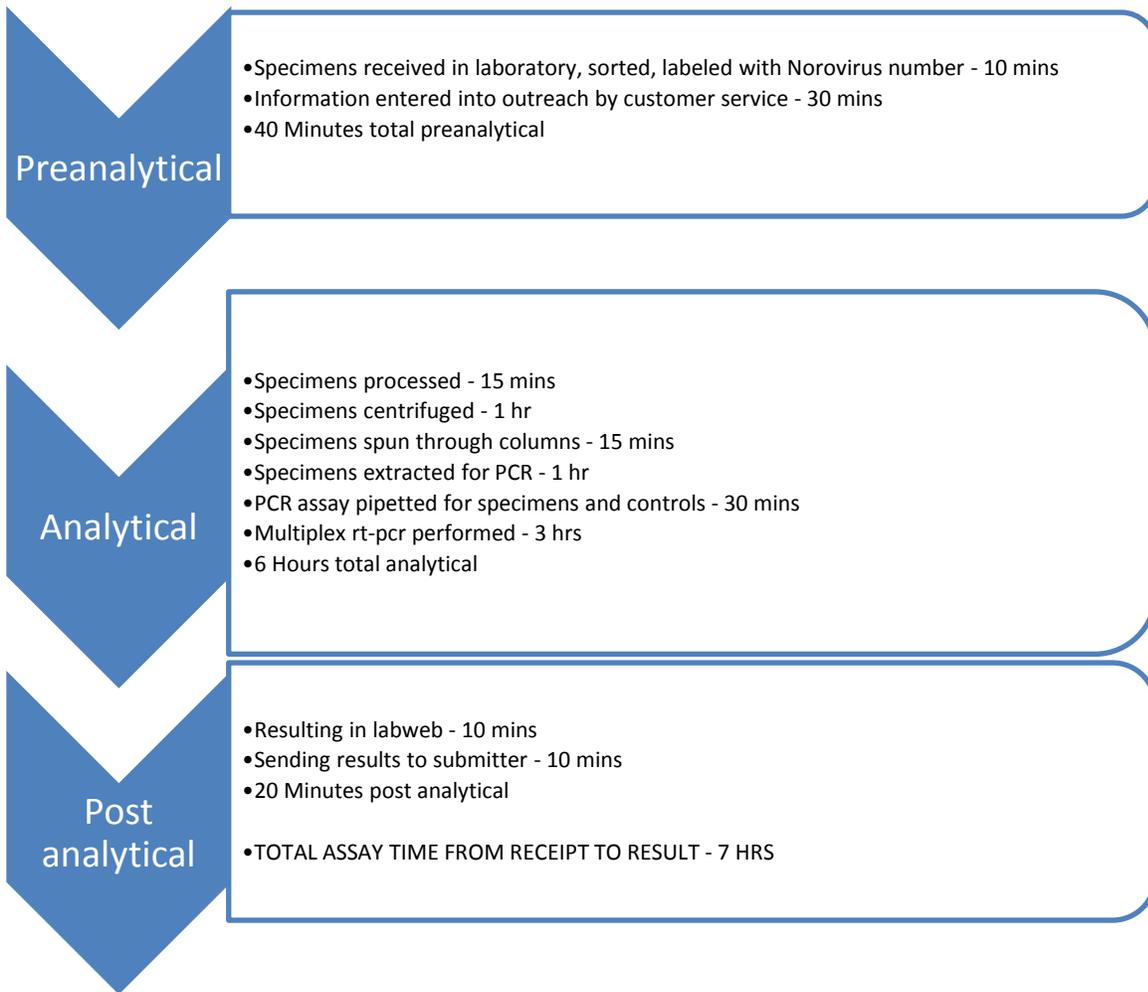
***Note: Raw specimens for norovirus testing should be collected at the same time as collection of specimens for both bacterial cultures and if indicated, C. diff testing. No more than 10 raw specimens for norovirus can be sent to DLS for storage and testing per outbreak. Please advise the Reportable Disease Section (502-564-3418) prior to sending specimens.***

### ***Environmental Specimens***

If a water or food is suspected to be the source of infection, samples should be obtained as early as possible with respect to the time of exposure and preferably stored frozen at -4° F (-20° C). Samples may include food or water that is suspected as the source of infection. DLS will coordinate with CDC for testing of these samples, if deemed necessary. Contact DLS for collection, packaging, and shipping instructions.

Clinical specimen collection packaging and shipping guidance and appropriate lab submission form may be found on p.22-23 of this document or at the Division of Laboratory Services website: <http://chfs.ky.gov/dph/info/lab/>

## Laboratory Processes and Timeline for Results for Norovirus Specimens



# Collection and Packaging of Norovirus



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## Supplies Needed for Norovirus



### Kit Components:

- Cold Pack
- 95kPa Bag with absorbent
- Vial in zip bag with Zorb Sheet
- Lab Form 275

## Collection of Specimen

1. Check expiration date of specimen vial.
2. Make sure two identifiers or lab label is on specimen vial.
3. Fill out lab or Outreach form completely.

### Stool Specimens

1. Collect stool specimen into clean container.  
DO NOT mix urine or water with sample.
2. Open vial carefully. Using the collection spoon attached to the cap, fill vial with specimen until half full.
3. Replace cap tightly.

### Swab Specimens

1. Remove cap and place into clean vial.
2. Break swab shaft evenly with the lip of the vial.
3. Replace cap and tightly.

If larger specimen collection containers are used, contact KY DLS for additional instructions.

## Packaging and Shipping



Place sample vial into zip bag with Zorb sheet



Place sample/samples into 95kPa bag



Place sample bag on top of frozen freezer block and replace styrofoam lid



Place Outreach or Lab Form 275 on top of styrofoam lid



Close box and place appropriate label on top of box

