

# Norovirus Toolkit for Camp Outbreaks

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## Introduction

Preventing and controlling norovirus and other types of viral gastroenteritis can be challenging in camp settings. The risk for person-to-person transmission of viral gastroenteritis in camps may be higher due to community dining, group activities, and shared bathroom facilities and sleeping quarters. Camps, especially those in rural areas, may have little or no running water, which can also result in gaps in personal hygiene among campers and staff; this may lead to outbreaks in camp settings. It can also be challenging to differentiate between norovirus and other types of viral gastroenteritis; their symptoms can be similar, and it can be difficult to obtain stool samples to determine the cause of illness through laboratory confirmation. Thus, the California Department of Public Health developed this toolkit to assist local health department staff who investigate suspected and confirmed norovirus outbreaks in camp settings. Though the toolkit focuses on preventing and controlling norovirus outbreaks, the recommendations and control measures discussed throughout may also be applicable to outbreaks caused by other types of viral gastroenteritis. While the target audience for this toolkit is local health departments, parts of the toolkit may also be useful for camp administrators and staff.

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## General Norovirus Information

**What is norovirus?** Norovirus is a very contagious virus that causes acute vomiting and diarrhea. As few as 18 virus particles can cause an infection (6). Norovirus can survive for weeks on surfaces, such as walls, doorknobs, handrails, telephones, and toys, if not properly cleaned and disinfected. Norovirus can spread quickly from person to person in places such as camps and schools. It is sometimes called the “stomach flu” but is not related to influenza (flu) viruses, which primarily cause respiratory infection.

**How common is norovirus infection?** Norovirus is the most common cause of acute viral gastroenteritis in the United States, and causes an estimated 19–21 million illnesses each year. The U.S. Centers for Disease Control and Prevention (CDC) estimates that norovirus contributes to 56,000-71,000 hospitalizations and 570-800 deaths each year in the United States (7).

**When does norovirus infection occur?** It is possible to become infected with norovirus any time of the year, but infections are most common between November and April.

**Can a person get norovirus infection more than once?** A person can get norovirus more than once in their lifetime because there are many different strains, which can circulate at different times and in different geographic areas. When new strains emerge, there can also be an increase in norovirus cases.

**How do people get norovirus infection?** Norovirus is found in the vomit and feces of infected people. When an infected person vomits, norovirus can be sprayed into the air and contaminate nearby surfaces. Contamination of surfaces with fecal matter from unwashed hands can also occur. Norovirus can spread easily from person to person through contaminated food or water, or by touching contaminated surfaces. Typically, a person is contagious as soon as they begin feeling sick and remains contagious until a few days after they recover. However, sometimes an ill person can remain contagious for two weeks or longer after symptoms have ended by shedding it in their feces.

People can become infected in several ways, including:

- Having direct or indirect contact with an infected person (for example, by holding hands, or sharing foods or eating utensils with an infected person).
- Eating food or drinking liquids contaminated with norovirus, such as food touched by an ill person, or undercooked shellfish from contaminated waters.
- Touching contaminated surfaces or objects, and then touching one’s mouth before handwashing.
- Sharing toilet facilities with an ill person.
- Cleaning up vomit or diarrhea from an infected person without proper protective equipment, such as gloves, masks, and gowns.

**What are the symptoms of norovirus infection?** Symptoms usually begin 12 to 48 hours after a person has been exposed to the virus and last for 1 to 3 days. The most common symptoms are vomiting, diarrhea, nausea, and stomach cramps. Other symptoms can include a low-grade fever, headache, and body aches. People with norovirus can feel very ill, and may vomit or have diarrhea many times a day. This can lead to dehydration, especially in young children, older adults, and people with underlying medical conditions. Symptoms of dehydration include decreased urination, dry mouth and throat, and feeling dizzy when standing up. Young children who are dehydrated may cry with few or no tears and be unusually sleepy or fussy.

**How is norovirus infection diagnosed?** Norovirus infection can be diagnosed by testing a person's stool for the presence of norovirus. Confirmation of the cause of illness by a public health laboratory during an outbreak is important in determining what prevention and control methods to take.

**How is norovirus infection treated?** There are no specific treatments for norovirus. It cannot be treated with antibiotics because it is not a bacterial infection. A person should drink plenty of fluids to prevent dehydration due to vomiting and diarrhea.

**How can you prevent norovirus infection?** Things you can do to reduce the risk of getting or spreading norovirus infection include:

- Practice good handwashing techniques using soap and water; hand-sanitizers are not usually effective against norovirus.
- Use safe food-handling techniques, such as washing fruits and vegetables and cooking shellfish thoroughly.
- If you're sick, STAY HOME! Isolate yourself and do not participate in group activities until after you are well.
- Do NOT prepare food or care for others when you are sick with norovirus or any diarrheal illness.
- Clean and disinfect contaminated surfaces or objects with bleach as soon as possible.

For more information, please see the ["Control Measures"](#) section on page 13.

## Best Practices for Camp Outbreak Readiness

Camp settings pose unique challenges for the prevention and control of norovirus. Community dining, group activities, and shared bathroom facilities and sleeping quarters can increase the risk of person-to-person transmission. The following are guidelines to improve outbreak readiness and to reduce transmission in camp settings:

**Review and Revise Camp Policies and Procedures:** There are many policies and procedures that camps can adopt to help prevent and control norovirus outbreaks.

- Include information in the camp agreement documents about the risk of gastrointestinal illness and other outbreaks, and outline the camp's "send-home" policy. Ensure that parents and guardians are aware that campers should not come to camp if they are sick, and that campers who become sick may be sent home early. Consider offering refunds to parents or guardians if their campers become sick and have to be picked up from camp early.
- Per the California Code of Regulations § 30750, all campers must provide a health history and therefore may be screened for recent or current symptoms of norovirus illness (vomiting, diarrhea, or stomach cramps) upon arriving at camp. A [sample screening form is available from the American Camp Association](https://www.acacamps.org/resource-library/forms/health-forms-records) (<https://www.acacamps.org/resource-library/forms/health-forms-records>).
- Ensure that all camp-supplied bedding, such as mattresses, mats, and pads, are covered with impermeable materials that can be easily cleaned. All beds and cots should also be made of materials that are easily cleaned.
- Consider organizing beds, cots, or sleeping bags in a head-to-foot fashion so that each person's head is only next to other people's feet. This may reduce the risk of person-to-person transmission, especially if a person vomits.
- Report all outbreaks to your local health department for assistance, and to review recommended control measures.
- Send notifications to prospective campers about the outbreak, and consider offering refunds to people who choose to cancel their reservations.

**Establish an Ill Employee Policy:** Implement and enforce an ill employee policy for all camp staff, including volunteers. The policy should require camp staff to report illness, especially those involving vomiting and diarrhea, to management immediately. Ill staff should be restricted from working, and should be isolated from well persons for at least 48 hours after their symptoms have ended, or sent home.

**Monitor Illnesses in Campers and Staff:** Consider doing daily illness checks among campers, as they may delay or avoid visits to the health staff or center to avoid missing activities. Those with norovirus symptoms should be isolated from well persons and fully screened by health staff. Also, consider keeping a log at the health center to document all illnesses and injuries. Monitor the log daily to determine if an increase of common symptoms or illness are reported; this may help to identify the start of an outbreak.

**Create an Outbreak Management Action Plan:** Assign and document outbreak roles and responsibilities for camp staff. Decide which staff will be assigned to the following duties in the event of an outbreak: coordinating communications (that is, with campers, parents, media groups, emergency response providers, local health department staff, etc.), providing medical care to ill persons, obtaining additional cleaning supplies, tracking illness, cleaning and disinfecting contaminated areas, and overseeing meals and group activities for appropriate dining and hygiene practices. The outbreak plan should also include measures for providing separate housing and bathroom facilities for ill persons.

**Train Staff on Outbreak Prevention and Management Procedures:** When training camp staff, including medical staff, include instruction on the camp's outbreak management action plan. Provide general training to staff on measures to assist with outbreak prevention, including: proper handwashing techniques, cleaning and disinfection practices, and the use of personal protective equipment (such as disposable gloves, masks, and gowns). Consider keeping a "camp manual" for staff, with information on camp policies, including outbreak prevention and management practices, and information on how to report possible outbreaks to the local health department.

**Keep and Distribute a Stock of Necessary Supplies:** Ensure that the camp is fully stocked with enough supplies to properly clean and disinfect contaminated areas. Necessary supplies include disposable rubber gloves, face masks, gowns, soap, bleach, and other cleaning tools (such as buckets, disposable towels, and mop heads). Depending on the camp's size, consider distributing supplies throughout the camp so that cleaning or disinfection is not delayed in the event of contamination. If possible, supplies used to clean and disinfect contaminated areas should be thrown away. Otherwise, supplies that are going to be reused should be cleaned and disinfected after each use to prevent cross-contamination in other areas.

**Prepare for Communication with Staff, Campers, Parents, and the Public:** Keep a database of parent and guardian contact information, so that it is easy to contact them if their campers are ill. Be prepared to respond to questions from concerned parents and guardians or media requests. It may also be useful to have templates for signs or communications that will be used in the event of an outbreak. For more information, please see the ["Control Measures"](#) section on page 13.

**Identify External Resources:** Identify community resources that may be available to the camp in the event of an outbreak, including:

- The local health department
- Local suppliers of portable toilets and/or handwashing centers
- Local companies with expertise in environmental cleaning and disinfection

**Encourage Personal Hygiene:** It is important for persons to wash hands before eating or handling food that will be eaten by others. Hands should also be washed after using the restroom, sneezing or coughing, or handling any possibly soiled items. At camp,

persons may be unable to maintain good hygiene, especially if there are few toilets, showers, and handwashing centers, or if there is little or no running water. Of note, hand-sanitizers are not an acceptable substitute for handwashing because they are usually not effective against norovirus. If handwashing centers are limited, consider adding temporary centers, or scheduling handwashing times to ensure that all persons wash their hands often. Buckets of standing water are not acceptable handwashing centers. Ensure that clean water, soap, and paper towels are always available at all handwashing centers and other areas where toileting may occur. If possible, discourage outdoor toileting. Consider enacting a camp rule that all personal items (such as water bottles, pillows, towels, hairbrushes, makeup, contact lens solution, toothpaste, etc.) are not to be shared by campers. For more information, please see the [“Control Measures”](#) section on page 13.

**Test and Treat Drinking and Recreational Water:** Camps using well water should test and treat water sources often to ensure that water is clean. Untested water sources should be marked and should not be used for drinking or cooking. For hikes and other off-site activities where clean water sources may be limited, give persons filtered, boiled, or bottled water and/or water treatment systems, such as iodine tablets. Human-made water sources used for swimming or wading should also be regularly treated and tested. Pools should be properly chlorinated, and ill persons should be excluded from all recreational waters until at least 48 hours after their symptoms have ended. For more information, please see the [“Checklist for Responding to an Outbreak”](#) section on page 11.

## Outbreak Detection and Case Definition

**Detecting a Norovirus Outbreak:** All outbreaks of gastrointestinal illness should immediately be reported to the local health department. The local health department can conduct an investigation to determine the cause of the outbreak, identify risk factors for infection, identify and confirm the strain of norovirus, provide guidance on outbreak management and control, and educate the public on how to prevent further infections.

An outbreak of gastrointestinal illness is defined as: more persons with vomiting or diarrhea than would usually be expected in the camp for that time of year. For example, if two campers or staff are sick with vomiting or diarrhea within one week, and that number of illnesses is more than typically seen, then an outbreak may be occurring. It is important to continually monitor for any increase in illnesses in the entire camp.

**Norovirus Case Definitions:** During an outbreak of gastrointestinal illness, it is important to use specific criteria to determine which persons will be counted as norovirus “cases.” The following case definitions are recommended:

- *Confirmed norovirus case:* Person with norovirus detected in a laboratory specimen.
- *Suspected norovirus case:* Person with vomiting and/or diarrhea (three or more loose stools in a 24-hour period) with symptom onset since (specified date) and whose symptoms have no other apparent cause.\*

\* The use of a new medication or laxative, or other pre-existing health conditions, can cause norovirus-like symptoms.

**Norovirus Outbreak Classifications:** An outbreak of norovirus may be classified as “confirmed” or “suspected.”

- *Confirmed norovirus outbreak:* The signs and symptoms of illness are consistent with norovirus infection, and norovirus is detected in laboratory specimens from two or more ill persons.
- *Suspected norovirus outbreak:* The signs and symptoms of illness are consistent with norovirus infection; however, stool specimens were not collected, stool was not tested for norovirus, norovirus was detected in only one specimen, or norovirus was not detected at all.

When it is not possible to get laboratory confirmation, an outbreak is very likely caused by norovirus if all four Kaplan criteria are met:

- 1) Mean (or median) illness duration of 12 to 60 hours;
- 2) Mean (or median) incubation period of 24 to 48 hours;
- 3) More than 50% of people with vomiting; and
- 4) No bacterial agent found.

However, about 30% of norovirus outbreaks do not meet the Kaplan criteria. Lively et al. have proposed the following alternate set of criteria that are more specific for norovirus

and often more available than the Kaplan criteria:

- 1) A greater proportion of cases with vomiting than with fever;
- 2) Bloody diarrhea in less than 10% of cases; and
- 3) Vomiting in greater than 25% of cases.

For more information, please visit the [CDC's Responding to Norovirus Outbreaks webpage](https://www.cdc.gov/norovirus/php/responding.html) (<https://www.cdc.gov/norovirus/php/responding.html>).

## Checklist for Responding to a Norovirus Outbreak

If a norovirus outbreak is suspected, camps should immediately employ infection control measures to help prevent the spread of illness. To ensure a comprehensive outbreak response, the California Department of Public Health (CDPH) recommends that camps take the following steps:

- Notify the Local Health Department:** Report the outbreak to the local health department immediately. A list of local health department contacts is available on [CDPH's CCLHO information webpage](https://www.cdph.ca.gov/Programs/CCLHO/Pages/LHD%20Contact%20Information.aspx) (<https://www.cdph.ca.gov/Programs/CCLHO/Pages/LHD%20Contact%20Information.aspx>). Refer to the [“Outbreak Detection and Case Definition”](#) section on page 9 for more information.
- Assign Staff Roles and Responsibilities:** Designate camp staff to handle duties related to outbreak management.
  - Coordinating communications.
  - Providing medical care to ill persons.
  - Obtaining additional cleaning supplies.
  - Tracking illnesses.
  - Clean and disinfecting contaminated areas.
  - Overseeing meals and group activities for good dining and hygiene practices.
- Track Ill Persons:** Track the number of ill persons using a log sheet such as the [Sample Acute Gastrointestinal/Norovirus Illness Line List](#) (Appendix A).
- Educate Staff, Campers, and Parents:** Inform staff, campers, and parents or guardians about the outbreak, symptoms of norovirus, and suggested prevention measures to use at home and camp (that is, frequent handwashing and staying home when ill), during and even after the outbreak to reduce transmission. Useful tools which could be employed together include:
  - [Centers for Disease Control and Prevention “Norovirus Illness: Key Facts”](#) (Appendix B).
  - [Centers for Disease Control and Prevention “Norovirus: Facts for Food Workers”](#) (Appendix C).
  - [Clean-up and Disinfection for Norovirus \(“Stomach Bug”\)](#) (Appendix D).
  - [Sample Notification Letter](#) (Appendix E).
  - [Sample Press Release](#) (Appendix F).
  - Post [outbreak notices](#) and [handwashing signs](#) throughout the camp (for example, entrances, restrooms, dining areas) to remind all campers and staff to practice frequent handwashing (Appendices G and H).
  - Post the [Centers for Disease Control and Prevention “Diarrhea and Swimming Don’t Mix”](#) (Appendix I) flyer near recreational water sources to remind campers and staff not to swim if they have diarrhea.

- ❑ **Implement Camp-Wide Control Measures:**
  - ❑ Restrict sick campers and staff from coming to the camp or facility until at least 48 hours after their vomiting and diarrhea have ended. If this is not possible, house ill campers and staff in isolated areas (preferably with their own bathroom facilities) away from well persons until at least 48 hours after their vomiting and diarrhea have ended. Also, do not let ill campers and staff dine or participate in group activities with well persons.
  - ❑ Clean and disinfect frequently-touched surfaces and all possibly contaminated areas. Please see the [“Cleaning and Disinfection Guidelines”](#) section on page 16 for more information. Refer to the [Clean-up and Disinfection for Norovirus \(“Stomach Bug”\)](#) sheet (Appendix D) for more information.
  - ❑ Enforce strict handwashing policies for all campers and staff (have staff supervise the handwashing of younger campers). For more information, please see the [“Control Measures”](#) section on page 13.
  - ❑ Consider cancelling or postponing group activities.
  - ❑ Ensure that human-made recreational water sources are appropriately chlorinated. Refer to the [Centers for Disease Control and Prevention “Your Disinfection Team: Chlorine & pH”](#) sheet (Appendix J) for more information.
- ❑ **Consider Limiting Visitors from Accessing Affected Areas of Camp:** If possible, limit visitor access, especially to areas that may be contaminated (for example, encourage parents or guardians to pick children up at the front of the camp rather than coming inside).
- ❑ **Consult with the Local Health Department on Laboratory Testing:** Work with the local health department to coordinate stool specimen collection and laboratory testing. For more information, please see the [“Laboratory Testing Information”](#) section on page 18.
- ❑ **Work with the Local Health Department to Assess How the Outbreak is Evolving:** Outbreaks can be prolonged, sometimes lasting months. An outbreak that begins at one camp can spread to other camps and through the community by person-to-person transmission. Campers, staff, family, and friends can become infected and further spread the virus to other camps, communities, or facilities. It is important to keep the local health department informed about the spread of norovirus infections within your camp and to other facilities, localities, or regions.
- ❑ **Determine When the Outbreak is Over:** In general, an outbreak in a camp may be over if no new illnesses have occurred after two incubation periods (that is, 4 days, since the average incubation period for norovirus infection is 2 days; other gastrointestinal illnesses can have longer incubation periods). However, it is important to work with the local health department to determine when the outbreak should be declared over.

## Control Measures

Because norovirus is highly contagious, it is critical that infection control measures are carried out as soon as an outbreak is suspected. The California Department of Public Health recommends enacting the following control measures:

**Handwashing and Personal Hygiene:** It is critical that both ill and well persons wash their hands often. It may be helpful to schedule handwashing breaks for campers and staff to encourage frequent handwashing. During outbreaks, camps may consider periodically broadcasting public announcements to remind campers and staff to practice frequent handwashing, especially before meal and snack times. Proper handwashing includes covering all parts of the hands, including fingernails, with soap; rubbing lathered hands together vigorously for at least 20 seconds; thoroughly rinsing hands with water; and drying hands with a paper towel. Placing handwashing signs in restrooms and at other locations throughout the camp can be helpful to remind campers and staff to wash their hands frequently, and to provide guidance on proper handwashing techniques ([Appendix H](#)). Staff should supervise the handwashing of young campers to ensure that hands are thoroughly washed. Of note, **hand-sanitizers are not an acceptable substitute for handwashing because they are usually not effective against norovirus.** Campers and staff should always:

- Wash hands after using the restroom, changing diapers, sneezing or coughing, cleaning up vomit or diarrhea, handling soiled items, or helping campers in the restroom.
- Wash hands before eating, preparing or serving food, or feeding campers.

**Vomit Containment:** Have buckets or other easily-cleanable or disposable containers available to use in the event of vomiting emergencies. This will help to keep the vomit contained, and reduce the risk of additional transmission. Keep “barf buckets” in all sleeping quarters, dining halls, outdoor activity areas, and in other common spaces. Be sure to immediately remove the “barf buckets” if accidents occur, and clean and disinfect or discard the containers.

**Exclusion:** Exclusion of sick and recovering persons will reduce the likelihood that more campers and staff will be exposed. Campers and staff who are sick with either vomiting or diarrhea should not come to camp, should be sent home, or at least should not participate in group dining or activities for a minimum of 48 hours after symptoms have ended. (For example, if Mary last vomited at noon on Tuesday, then she should not return to camp, or participate in group activities, until Friday.) If ill campers are to be sent home, parents or guardians should be contacted immediately and asked to pick up their children as soon as possible; ill campers should be held in an isolated area until they are picked up. Resident (overnight) camps should designate an area to house ill persons, preferably in buildings that have their own restrooms, away from well campers and staff. Ill campers and staff should not eat in dining areas with well persons. Resident camps can also consider hosting alternative activities for ill persons.

**Grouping:** Try to keep all staff who worked with sick campers in the same sleeping quarters or areas to limit the spread of infection. (For example, if there is an outbreak in “Cabin 5,” then keep the same staff working in “Cabin 5” until the outbreak is over, rather than allowing them to work in other cabins.) Sick campers and staff should use separate toilets and be housed separately from well persons, if possible. Be sure to keep sick campers who are waiting to be picked up in an isolated area away from well persons.

**Cleaning:** Wearing gloves and a mask, immediately remove vomit or diarrhea, and use soap and water to clean any surfaces that may be contaminated. Norovirus can remain on surfaces that have been cleaned and can still cause infection. Be sure to disinfect all surfaces after cleaning. Wear disposable gloves and masks when cleaning contaminated surfaces or handling contaminated items. Machine wash and dry laundry soiled by vomit or diarrhea with hot water and detergent right away. Handle items carefully to avoid spreading the virus. For outdoor vomiting and diarrhea accidents, remove as much of the waste as possible, and cover the affected area with dirt or soil. For more information on proper cleaning practices, please see the [“Cleaning and Disinfection Guidelines”](#) section on page 16.

**Disinfection:** Bleach is widely recommended because it is the most effective disinfectant for norovirus. Because bleach can be an irritant to some persons and may damage textiles or vulnerable surfaces, a U.S. Environmental Protection Agency (EPA)-approved disinfectant can also be used. For the [list of EPA-approved disinfectants for norovirus \(EPA List G\)](#), see the EPA’s Registered Antimicrobial Products list (<https://www.epa.gov/pesticide-registration/list-g-epas-registered-antimicrobial-products-effective-against-norovirus>). Quaternary ammonia solutions (which are often used) are not effective against norovirus. For more information on proper disinfection practices, please see the [“Cleaning and Disinfection Guidelines”](#) section on page 16.

**Food Handling and Dining:** Norovirus can spread through contaminated food or water, so it is critical that facilities employ safe food-handling techniques, including:

- Excluding ill food service staff from work until at least 48 hours after symptoms have ended.
- Requiring food service staff to wear personal protective equipment (such as disposable gloves and masks) when handling, serving, or preparing food.
- Ensuring that clean water, soap, and paper towels are available in dining areas and other areas where eating may occur.
- Throwing away all potentially contaminated food.
- Cleaning and disinfecting food preparation equipment and surfaces.
- Ensuring that all food service staff have access to a dedicated bathroom facility that is not shared with campers or other non-food service staff.
- Ensuring that all food service staff wash their hands thoroughly before food handling and immediately after using the restroom.
- Prohibiting campers from participating in meal preparation, table-setting, and food service.

- Providing individual meals to campers and staff instead of family-style meals, self-serve buffets, or communal food items. If buffet lines must be used, food should be served by food service staff, and the buffet lines should be covered by sneeze guards.
- Prohibiting the use of shared dining items, such as serving utensils, water pitchers, salt and pepper shakers, and cups.
- Running dishes, utensils, and cups through a dishwasher (using hot water and dishwasher detergent) immediately after use; consider using single-use dining materials if reusable ones are not available and cannot be thoroughly cleaned.

For more information on proper food handling practices, see the [Centers for Disease Control and Prevention “Norovirus: Facts for Food Workers”](#) sheet (Appendix C).

**Postponing or Canceling Group Activities:** Consider postponing or canceling group activities, such as communal meals, sporting events, or social/recreational groups, until the outbreak is over. This will minimize person-to-person contact and transmission risk. Resident (overnight) camps can consider hosting alternative activities for ill campers and staff.

**Camp Closures:** In general, camps are not required to close during a norovirus outbreak. However, closures may be considered on a case-by-case basis if a large number of illnesses are occurring, recommended control measures have not been effective, or closure is needed to perform effective environmental cleaning. Consult with the local health department to determine whether camp closure is appropriate. A camp may also be closed by public health order from a local health officer if she or he deems it necessary.

## Cleaning and Disinfection Guidelines

**General Principles:** Remove vomit or diarrhea right away! Remember that norovirus particles can settle on and contaminate objects and surfaces, especially if an ill person has vomited nearby. All areas, items, and surfaces, especially in restrooms, dining halls, and kitchens that may have been contaminated (within a 10- to 25-foot radius of the vomit incident) must be cleaned and disinfected in order to kill norovirus. Cleaning removes visible dirt and debris on objects and surfaces, and results in the removal of some germs. Disinfection kills any remaining germs on the objects and surfaces. If possible, increase the frequency of cleaning and disinfection to at least twice a day. High-touch surfaces may need to be cleaned multiple times a day. In addition, camps may need to bring in additional cleaning staff to manage the outbreak. Make sure rooms are well ventilated. Campers and staff should stay away from contaminated objects and areas until proper cleaning and disinfection has occurred. Refer to the [Clean-up and Disinfection of Norovirus \(“Stomach Bug”\)](#) sheet (Appendix D) for more information.

Be careful and wear protective materials (such as disposable gloves, masks, safety goggles, and gowns) when handling anything contaminated with vomit or diarrhea, and when cleaning and disinfecting contaminated areas. Start by cleaning and disinfecting surfaces with a lower likelihood of norovirus contamination (such as light switches or door handles) then moving to surfaces likely to be highly contaminated (such as bathroom surfaces and dining areas). Consider using disposable mop heads, and change mopping water often. Wash hands with soap and water after any cleaning.

**Cleaning:** First, soak up vomit and diarrhea using disposable absorbent materials, such as cloth, baking soda, paper towels, sawdust, or kitty litter. Do not vacuum material; using gloves, pick it up using paper towels. Then, use soap and water to wash and rinse the area or object. Wipe dry with paper towels. Dispose of all waste in a plastic trash or biohazard bag and immediately close and dispose of the bag.

**Disinfection:** After an area or object has been cleaned, it must be disinfected. Although there may be health concerns with using bleach because it can be an irritant, a bleach solution is recommended for norovirus outbreaks. Please note that bleach should never be mixed with other cleaners/disinfectants as it can create poisonous gases. Bleach may damage metal surfaces, floor finishes, carpets, clothing, and other textiles.

To prepare a bleach solution, use 3/4 cup concentrated bleach (or 1 cup of regular strength bleach) to one gallon of water; the disinfection method will vary depending on the type of surface or material being disinfected (see below). Be sure to prepare fresh bleach solutions daily, because bleach can lose effectiveness if left out and exposed to air. When disinfecting, leave bleach on the surface for at least 5 minutes covering the entire surface and then rinse thoroughly with clean water.

A U.S. Environmental Protection Agency (EPA)-approved disinfectant for norovirus ([EPA List G](#)) can be used in certain situations. However, these disinfectants were tested against a different virus similar to norovirus and may not be as effective as bleach. The

use of a bleach solution is recommended for use during norovirus outbreaks whenever possible. Be sure to read the product labels, as there may be separate directions for using the products as disinfectants versus as cleaners. Follow the manufacturer's instructions to ensure appropriate dilution and contact time, which will vary depending on the type of surface.

### **Cleaning Specific Surfaces/Items:**

- **High-Touch Surfaces:** Objects that are frequently touched include door handles, hand rails, light switches, toilets, faucets, tables, counters, chairs, walls, toys, phones, recreation/gym equipment, mats, blankets, sheets, keyboards, and shared items. Carefully remove any vomit and diarrhea, and clean contaminated objects and surfaces with soap and hot water. Then, disinfect with the bleach solution. Be sure to clean nearby objects that may also have been contaminated by vomit or diarrhea. This should be done multiple times a day if possible.
- **Non-Porous (Hard) Surfaces:** For toilets, sinks, furniture, walls, floors and other hard, non-porous surfaces, carefully remove vomit and diarrhea, and clean contaminated objects and surfaces with soap and hot water. Then, disinfect with the bleach solution.
- **Porous Surfaces (Carpets/Upholstery):** For carpets, upholstery, and other porous surfaces, carefully remove as much vomit and diarrhea as possible, and clean with soap and hot water. Then, steam clean at a temperature of 158° F for five minutes or 212° F for one minute. To minimize aerosolization of particles, do not vacuum.
- **Food/Mouth Contact Items:** For objects that may come in contact with food or the mouths of people (such as toys or dishes), carefully remove vomit and diarrhea. Then, disinfect with the bleach solution. Rinse thoroughly with clean water afterwards. Alternatively, dishes, utensils, and cups can be cleaned with a dishwasher (using hot water and dishwasher detergent) immediately after use.
- **Cloth and Plush Items:** For clothing/linens/textiles and plush items, including stuffed animals, bedding, curtains, and mattress covers, carefully remove as much vomit and diarrhea as possible. Then, wash items in a pre-wash cycle, followed by a regular wash cycle with detergent. Dry items at a temperature greater than 170° F. Do not mix contaminated and uncontaminated items in one load; it is better to discard soiled materials than to risk exposure during cleaning. If there are no on-site laundry facilities, double wrap soiled items in plastic bags, and take them to an off-site facility to be washed and dried. If soiled items are sent home, be sure to provide guidance on proper washing and drying procedures to parents or guardians.
- **Diaper Changing Surfaces and Potty Chairs:** For diaper changing stations and potty chairs, clean with soap and hot water, and disinfect using the bleach solution after each use (including equipment or supplies that were touched). Rinse thoroughly with clean water afterwards.
- **Objects Not Easily Cleaned:** Items that are difficult to clean, like board games, playing cards, books, puzzle pieces, crayons, and clay, should be discarded.
- **Outdoor Areas:** Remove waste, and cover the affected area with dirt or soil.

## Laboratory Testing Information

**Importance of Testing:** The symptoms of norovirus alone cannot distinguish it from other gastroenteric viruses (such as rotavirus, sapovirus, astrovirus, and adenovirus) or bacterial causes (such as *Salmonella*). Tests must be conducted on stool specimens from ill persons to confirm that norovirus is the cause of illness, and to help determine if other illnesses or outbreaks are linked. The information provided by tests can help local and state health departments to identify sources of outbreaks and implement infection control measures to prevent the spread of illnesses.

**Coordinating Tests:** A minimum of two norovirus-positive specimens from at least two different ill persons is needed to confirm a norovirus outbreak. In order to increase the likelihood of laboratory confirmation of an outbreak (that is, to detect virus in at least two specimens), the California Department of Public Health requests that local health departments attempt to collect stool specimens from three or more ill persons for each outbreak for laboratory confirmation of norovirus or other gastroenteric viruses. For a sample template to document verbal consent to test for norovirus, see [Appendix K](#).

Ideally, stool specimens should be collected within 48-72 hours of diarrhea onset. However, norovirus can sometimes be detected up to 7-10 days after diarrhea onset. Stool specimens should be stored in a tightly closed container (away from food) and kept refrigerated at 4° C (39.2° F), the typical temperature of a functioning refrigerator, until they can be sent to the public health laboratory. Specimens stored at 4° C can be kept for 2-3 weeks without compromising diagnostic yield. Specimens should be frozen at -70° C (-94° F) if they cannot be shipped to the laboratory within 3 weeks.

A number of local public health laboratories that are part of the California Norovirus Laboratory Network provide norovirus polymerase chain reaction testing services for outbreak investigation; please contact the local health department for more information. Specimens that are positive for norovirus should then be sent to the California Department of Public Health Viral and Rickettsial Disease Laboratory or another California public health laboratory that is a certified CaliciNet laboratory for genetic sequencing. Specimens that are negative for norovirus can also be sent to the California Department of Public Health Viral and Rickettsial Disease Laboratory to be tested for other gastroenteric viruses; guidelines for specimen submission are available on the [Viral and Rickettsial Disease Laboratory webpage](#): ([https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/VRDL\\_Specimen\\_Submittal\\_Forms.aspx](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/VRDL_Specimen_Submittal_Forms.aspx)).

**Surveillance:** [CaliciNet](https://www.cdc.gov/norovirus/reporting/calicinet/index.html) (<https://www.cdc.gov/norovirus/reporting/calicinet/index.html>) is a national norovirus outbreak surveillance network of federal, state, and local public health laboratories in the United States. Participating public health laboratories submit data, including genetic sequences of norovirus strains and epidemiological data from norovirus outbreaks, to the CaliciNet database. Submitted norovirus strains can be compared with other norovirus strains in the database, helping the Centers for Disease Control and Prevention link outbreaks to a common source, monitor norovirus strains that are circulating, and identify newly emerging norovirus strains.

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**Appendix A: Sample Acute Gastrointestinal/Norovirus Illness  
Line List**

## Sample Acute Gastrointestinal/Norovirus Illness Line List

Reporting Facility:	Contact Person:	Phone Number:	Date:
Street Address:	Setting of Exposure (resident camp, day camp, etc.): _____		
County:	Estimated Number of Exposed: Campers _____		Staff _____

Demographics				Case Location		Symptoms						Outcome		Notes				
Ex	Name (Last, First)	Camper or Staff (C/S)	Sex (M/F)	Age	Unit/Tent/Dorm	Counselor	Symptom Onset Date (MM/DD/YY) and Time (including AM or PM)	Nausea (Y/N)	Vomiting (Y/N)	Diarrhea (≥3 loose stools within 24 hours) (Y/N)	Bloody Diarrhea (Y/N)	Abdominal Cramps (Y/N)	Fever (Y/N)	Date of Last Diarrhea or Vomit (MM/DD/YY) and Time (including AM or PM)	Medical Visit (Y/N)	Stool Specimen (Y/N)	Additional Comments (e.g. other symptoms, exposure details, etc.)	
1	Doe, Jane	C	F	11	14	Smith	07/17/18 10:10 AM	Y	Y	N	N	Y	N	7/19/2018 1:30PM	Y	Y	Notified parents by phone on 7/17/18.	
2																		
3																		
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5																		
6																		
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Return to: \_\_\_\_\_

**Appendix B: Centers for Disease Control and Prevention  
“Norovirus Illness: Key Facts”**

# Norovirus Illness: Key Facts

## Norovirus—the stomach bug

Norovirus is a highly contagious virus. Norovirus infection causes gastroenteritis (inflammation of the stomach and intestines). This leads to diarrhea, vomiting, and stomach pain.

Norovirus illness is often called by other names, such as food poisoning and stomach flu. Noroviruses can cause food poisoning, as can other germs and chemicals. Norovirus illness is not related to the flu (influenza). Though they share some of the same symptoms, the flu is a respiratory illness caused by influenza virus.



### Anyone can get norovirus illness

- Norovirus is the most common cause of acute gastroenteritis in the U.S.
- Each year, norovirus causes 19 to 21 million cases of acute gastroenteritis in the U.S.
- There are many types of norovirus and you can get it more than once.

### Norovirus illness can be serious

- Norovirus illness can make you feel extremely sick with diarrhea and vomiting many times a day.
- Some people may get severely dehydrated, especially young children, the elderly, and people with other illnesses.
- Each year, norovirus causes 56,000 to 71,000 hospitalizations and 570 to 800 deaths, mostly in young children and the elderly.

### Norovirus spreads very easily and quickly

- It only takes a very small amount of norovirus particles (fewer than 100) to make you sick.
- People with norovirus illness shed billions of virus particles in their stool and vomit and can easily infect others.
- You are contagious from the moment you begin feeling sick and for the first few days after you recover.
- Norovirus can spread quickly in enclosed places like daycare centers, nursing homes, schools, and cruise ships.
- Norovirus can stay on objects and surfaces and still infect people for days or weeks.
- Norovirus can survive some disinfectants, making it hard to get rid of.

### Norovirus can spread in many ways

Norovirus can spread to others by—

- having direct contact with an infected person, for example, touching an infected person while caring for them,
- eating food or drinking liquids that are contaminated with norovirus,
- touching objects that have norovirus on them and then putting your fingers in your mouth, for example, touching a countertop that has vomit droplets on it and then putting your fingers in your mouth and
- sharing utensils or cups with people who are infected with norovirus.

### There's no vaccine to prevent norovirus infection and no drug to treat it

- Antibiotics will not help with norovirus illness because antibiotics do not work on viruses.
- When you have norovirus illness, drink plenty of liquids to replace fluid loss and prevent dehydration.
- If you or someone you are caring for is dehydrated, call a doctor.



### What is the Right Way to Wash Your Hands?

1. Wet your hands with clean, running water (warm or cold) and apply soap.
  2. Rub your hands together to make a lather and scrub them well; be sure to scrub the backs of your hands, between your fingers, and under your nails.
  3. Continue rubbing your hands for at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice.
  4. Rinse your hands well under running water.
  5. Dry your hands using a clean towel or air dry them.
- See Handwashing: Clean Hands Saves Lives ([www.cdc.gov/handwashing/](http://www.cdc.gov/handwashing/))

## 5 Tips to Prevent Norovirus From Spreading

### 1. Practice proper hand hygiene

Always wash your hands carefully with soap and water—

- after using the toilet and changing diapers, and
- before eating, preparing, or handling food.

Alcohol-based hand sanitizers can be used in addition to hand washing. But, they should not be used as a substitute for washing with soap and water.

### 2. Wash fruits and vegetables and cook seafood thoroughly

Carefully wash fruits and vegetables before preparing and eating them.

Cook oysters and other shellfish thoroughly before eating them.

Be aware that noroviruses are relatively resistant. They can survive temperatures as high as 140°F and quick steaming processes that are often used for cooking shellfish.

Food that might be contaminated with norovirus should be thrown out.

Keep sick infants and children out of areas where food is being handled and prepared.

### 3. When you are sick, do not prepare food or care for others

You should not prepare food for others or provide healthcare while you are sick and for at least 2 to 3 days after you recover. This also applies to sick workers in schools, daycares, and other places where they may expose people to norovirus.

### 4. Clean and disinfect contaminated surfaces

After throwing up or having diarrhea, immediately clean and disinfect contaminated surfaces. Use a chlorine bleach solution with a concentration of 1000–5000 ppm (5–25 tablespoons of household bleach [5.25%] per gallon of water) or other disinfectant registered as effective against norovirus by the Environmental Protection Agency (EPA).

### 5. Wash laundry thoroughly

Immediately remove and wash clothes or linens that may be contaminated with vomit or stool (feces).

You should—

- handle soiled items carefully without agitating them,
- wear rubber or disposable gloves while handling soiled items and wash your hands after, and wash the items with detergent at the maximum available cycle length then machine dry them.

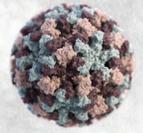


Visit CDC's Norovirus Web site at [www.cdc.gov/norovirus](http://www.cdc.gov/norovirus) for more information.

**Appendix C: Centers for Disease Control and Prevention  
“Norovirus: Facts for Food Workers”**

# Norovirus: Facts for Food Workers

*Norovirus spreads easily and can make you very sick with diarrhea, throwing up, and stomach pain. All food workers should know how to prevent the spread of norovirus.*



## Foods contaminated with norovirus can make people sick

Norovirus is the leading cause of illness from contaminated food in the United States. The virus can easily contaminate food because it is very tiny and spreads easily. It only takes a very small amount of virus to make someone sick.

Food can get contaminated with norovirus when—

- infected people who have poop or vomit on their hands touch the food,
- food is placed on counters or surfaces that have infectious stool or vomit on them, or
- tiny drops of vomit from an infected person spray through the air and land on the food.

Foods can also be contaminated at their source. For example:

- oysters that are harvested from contaminated water, or
- fruit and vegetables that are contaminated in the field.

## Food workers with norovirus illness can spread the virus to others

People ill with norovirus can shed billions of norovirus particles

You are most contagious—

- when you are sick with norovirus illness, and
- during the first few days after you recover.

If you work with food when you have norovirus illness, you can spread the virus to others. You can easily contaminate food and drinks that you touch. People who consume the food or drinks can get norovirus and become sick. This can cause an outbreak.

Outbreaks of norovirus illness occur in nursing homes, hospitals, restaurants, cruise ships, schools, banquet halls, summer camps, and even at family dinners. These are all places where people often eat food handled or prepared by others.

Norovirus causes about half of all outbreaks of food-related illness. Food workers cause most reported norovirus outbreaks from contaminated food.



**Norovirus causes about half of all outbreaks of food-related illness.**

Foods commonly involved in outbreaks include—

- leafy greens (such as lettuce)
- fresh fruits
- shellfish (such as oysters)

Any food served raw or handled after being cooked can get contaminated

# 5 Tips to Prevent Norovirus From Spreading

## 1. Practice proper hand hygiene

Always wash your hands carefully with soap and water—

- especially, after using the toilet and changing diapers, and
- always before eating, preparing, or handling food.

Alcohol-based hand sanitizers can be used in addition to hand washing. However, they should not be used as a substitute for washing with soap and water.

## 2. Wash fruits and vegetables and cook seafood thoroughly

Carefully wash fruits and vegetables before preparing and eating them. Cook oysters and other shellfish thoroughly before eating.

Thorough cooking is important because noroviruses can survive temperatures as high as 140°F and quick steaming processes that are often used for cooking shellfish.

Food that might be contaminated with norovirus should be thrown out.

## 3. When you are sick, do not prepare food for others

Food workers should stay home when sick and for at least 48 hours after symptoms stop. This also applies to sick workers in schools, daycares, healthcare facilities, and other places where they may expose people to norovirus.

Tell your manager if you have symptoms of norovirus illness or were recently sick.

For more information see the FDA Food Code (<http://www.fda.gov/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/>)

## 4. Clean and disinfect contaminated surfaces

After throwing up or having diarrhea, immediately clean and disinfect contaminated surfaces. Use a chlorine bleach solution with a concentration of 1000–5000 ppm (5–25 tablespoons of household bleach [5.25%] per gallon of water) or other disinfectant registered as effective against norovirus by the Environmental Protection Agency (EPA).

See EPA's Registered Hospital Disinfectants Effective Against Norovirus (Norwalk-like virus) ([https://www.epa.gov/sites/production/files/2016-06/documents/list\\_g\\_norovirus.pdf](https://www.epa.gov/sites/production/files/2016-06/documents/list_g_norovirus.pdf))

## 5. Wash laundry thoroughly

Immediately remove and wash clothes or linens that may be contaminated with vomit or stool (poop).

You should—

- handle soiled items carefully without agitating them,
- wear rubber or disposable gloves while handling soiled items and wash your hands after, and
- wash the items with detergent at the maximum available cycle length then machine dry them.

## What is the Right Way to Wash Your Hands?

1. Wet your hands with clean, running water (warm or cold) and apply soap.
2. Rub your hands together to make a lather and scrub them well; be sure to scrub the backs of your hands, between your fingers, and under your nails.
3. Continue rubbing your hands for at least 20 seconds. Need a timer? Hum the “Happy Birthday” song from beginning to end twice.
4. Rinse your hands well under running water.
5. Dry your hands using a clean towel or air dry them.

See Handwashing: Clean Hands Saves Lives ([www.cdc.gov/handwashing/](http://www.cdc.gov/handwashing/))



Visit CDC's Norovirus Web site at [www.cdc.gov/norovirus](http://www.cdc.gov/norovirus) for more information.

## **Appendix D: Clean-up and Disinfection for Norovirus ("Stomach Bug")**

# Clean-up and Disinfection for Norovirus ("Stomach Bug")

**THESE DIRECTIONS SHOULD BE USED TO RESPOND TO ANY VOMITING OR DIARRHEA ACCIDENT**

**Note:** Anything that has been in contact with vomit and diarrhea should be discarded or disinfected.

## 1 Clean up

- Remove vomit or diarrhea right away!**
  - Wearing protective clothing, such as disposable gloves, apron and/or mask, wipe up vomit or diarrhea with paper towels
  - Use kitty litter, baking soda or other absorbent material on carpets and upholstery to absorb liquid; do not vacuum material: pick up using paper towels
  - Dispose of paper towel/waste in a plastic trash bag or biohazard bag
- Use soapy water to wash surfaces that contacted vomit or diarrhea and all nearby high-touch surfaces, such as door knobs and toilet handles**
- Rinse thoroughly with plain water**
- Wipe dry with paper towels**

**DON'T STOP HERE: GERMS CAN REMAIN ON SURFACES EVEN AFTER CLEANING!**

## 2 Disinfect surfaces by applying a chlorine bleach solution

Steam cleaning may be preferable for carpets and upholstery. Chlorine bleach could permanently stain these. Mixing directions are based on EPA-registered bleach product directions to be effective against norovirus. For best results, consult label directions on the bleach product you are using.

### a. Prepare a chlorine bleach solution

Make bleach solutions fresh daily; keep out of reach of children; never mix bleach solution with other cleaners.

**IF HARD SURFACES ARE AFFECTED...**  
e.g., non-porous surfaces, vinyl, ceramic tile, sealed counter-tops, sinks, toilets

**3/4 CUP OF CONCENTRATED BLEACH** + **1 GALLON WATER**

**CONCENTRATION ~3500 ppm**

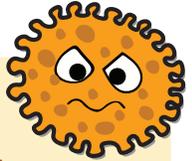
**IF USING REGULAR STRENGTH BLEACH (5.25%), INCREASE THE AMOUNT OF BLEACH TO 1 CUP.**



- Leave surface wet for at least 5 minutes**
- Rinse all surfaces intended for food or mouth contact with plain water before use**

## 3 Wash your hands thoroughly with soap and water

Hand sanitizers may not be effective against norovirus.



### Facts about Norovirus

Norovirus is the leading cause of outbreaks of diarrhea and vomiting in the US, and it spreads quickly.

Norovirus spreads by contact with an infected person or by touching a contaminated surface or eating contaminated food or drinking contaminated water. Norovirus particles can even float through the air and then settle on surfaces, spreading contamination.

Norovirus particles are extremely small and billions of them are in the stool and vomit of infected people.

Any vomit or diarrhea may contain norovirus and should be treated as though it does.

**People can transfer norovirus to others for at least three days after being sick.**

### IF CLOTHING OR OTHER FABRICS ARE AFFECTED...

- Remove and wash all clothing or fabric that may have touched vomit or diarrhea
- Machine wash these items with detergent, hot water and **bleach** if recommended, choosing the longest wash cycle
- Machine dry



Scientific experts from the U.S. Centers for Disease Control and Prevention (CDC) helped to develop this poster. For more information on norovirus prevention, please see <http://www.cdc.gov/norovirus/preventing-infection.html>.



co.somerset.nj.us/health



neha.org



waterandhealth.org



americanchemistry.com



cfour.org

[disinfect-for-health.org](http://disinfect-for-health.org)

Updated March, 2015

## Appendix E: Sample Notification Letter

<Date>

Dear Parent, Guardian, or Staff,

Some campers and/or staff at <Camp> are sick with vomiting or diarrhea. We are working with the <local health department> to investigate the situation. From the information we currently have, it seems that the illness might be caused by norovirus. Fortunately, people infected with norovirus usually recover quickly with rest and hydration.

**What is norovirus?** Norovirus is a highly contagious virus that causes acute vomiting and diarrhea. Norovirus can spread quickly from person-to-person in closed environments and group settings, such as camps. It is sometimes called the “stomach flu” but is not related to influenza (flu) viruses, which usually cause respiratory infection. Therefore, flu shots do not protect against norovirus.

**What are the symptoms of norovirus infection?** Symptoms of norovirus usually begin 12 to 48 hours following exposure, and last for 1 to 3 days. The most common symptoms are vomiting, diarrhea, nausea, and stomach cramps. Other symptoms can include a low-grade fever, chills, headache, muscle aches, or fatigue. People with norovirus can vomit or have diarrhea many times a day, which can lead to dehydration. Symptoms of dehydration include decreased urination, dry mouth and throat, and feeling dizzy when standing up. Young children who are dehydrated may cry with few or no tears and be unusually sleepy or fussy.

**How is norovirus infection treated?** There are no specific treatments for norovirus. It cannot be treated with antibiotics, because it is not a bacterial infection. Drink plenty of fluids to replace fluid lost from vomiting and diarrhea, and to prevent dehydration.

### **What to do if your child is infected:**

- Keep your child home for at least 48 hours AFTER symptoms have ended.
- Ensure that your child stays hydrated by sipping fluids. Talk to your healthcare provider about the best types of fluids.
- Ensure that all members of your household wash their hands often, especially after using the bathroom, cleaning, changing diapers, or before preparing or eating food. Cover all parts of hands with soap, rub lathered hands together vigorously for at least 20 seconds, and thoroughly rinse the hands with water.
- Avoid sharing household items and rooms with your child, and if possible, have your child use only one bathroom (and increase cleaning of used bathroom).
- Disinfect household surfaces with a solution of 3/4 cup of concentrated bleach (or one cup of regular strength bleach) in one gallon of water.
- Work with your camp or local health department to coordinate laboratory testing.
- Contact a healthcare provider if your child is dehydrated, or if you have any concerns.

## Appendix F: Sample Press Release

### <Insert Local Health Department> Works on Controlling Norovirus Outbreaks

Date: <Date>

Contact: <Name of contact person>, <Phone number>

\_\_\_\_\_ <Insert Local Health Department> is working to help control norovirus outbreaks that have increased in the past few weeks, some of which are occurring in camp settings. Norovirus is highly contagious and can spread quickly in settings where people come in close contact with each other such as summer camps, schools, and childcare centers.

Most norovirus cases do not require medical care and may go undiagnosed. The Centers for Disease Control and Prevention (CDC) estimates that there are 19-21 million norovirus cases each year in the U.S. Additionally, CDC estimates that norovirus contributes to 56,000-71,000 hospitalizations and 570-800 deaths each year in the U.S. Fortunately, norovirus illnesses are usually self-limiting and resolve with supportive care.

Norovirus causes acute vomiting, diarrhea, and stomach cramps. While most people with norovirus get better within 1 to 3 days, the virus can make a person feel extremely ill with vomiting and diarrhea many times a day. This can lead to dehydration, especially in young children, older adults and people with other illnesses. Symptoms of dehydration include decreased urination, dry mouth and throat, and feeling dizzy when standing up. Young children who are dehydrated may cry with few or no tears and be unusually sleepy or fussy. It is important that children with norovirus stay well-hydrated.

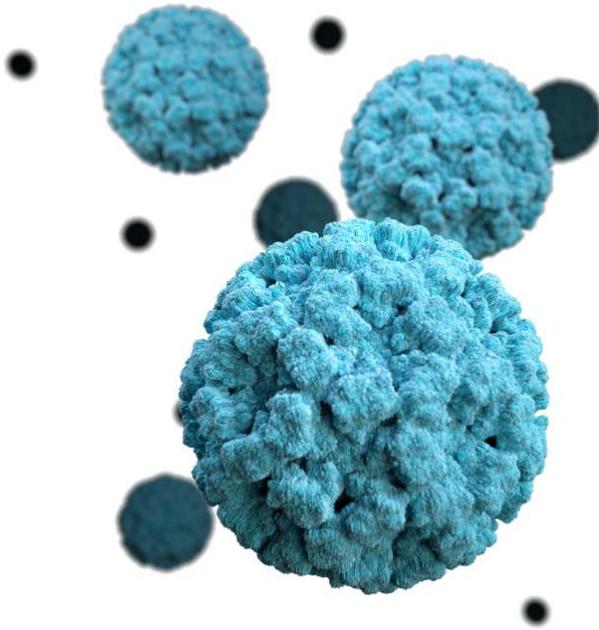
The best ways to stop the spread of norovirus is to properly wash hands and handle food safely. Infected people should stay at home and avoid caring for or preparing food for other people until at least 48 hours after symptoms have ended. Surfaces and objects in contact with vomit or diarrhea should be washed with soap and hot water, and disinfected with a bleach solution or washed in a washing machine with detergent. Wear gloves and wash hands carefully after any contact with contaminated objects.

For more information on norovirus, please visit the [CDPH norovirus website](#) or the [CDC norovirus website](#).

(<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Norovirus.aspx>)

(<https://www.cdc.gov/norovirus/index.html>)

## **Appendix G: Sample Outbreak Notice Sign**



INSERT LOGO  
HERE

# ATTENTION!

## SOME CAMPERS AND STAFF HAVE BECOME ILL WITH A STOMACH VIRUS

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1

Hand sanitizers are not effective against all germs that cause illness. Instead, wash your hands often with soap and water, especially after using the restroom, and before and after eating.

2

Avoid sharing food, drinks, and personal items to prevent the spread of germs.



3

If you have vomiting or diarrhea, visit the medical center immediately.



## **Appendix H: Sample Handwashing Sign**

# ATTENTION!

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## BE SURE TO WASH YOUR HANDS TO PREVENT THE SPREAD OF ILLNESS



- 1 WET hands with clean water, and apply soap
- 2 LATHER hands by rubbing them together, taking care to cover the back of hands, in between fingers, and under fingernails
- 3 SCRUB hands for at least 20 seconds (Tip: time yourself by humming the birthday song twice in a row)
- 4 RINSE hands well using clean water
- 5 DRY hands with clean towel or air dry them

**REMEMBER:** Hand sanitizers do not kill all germs that cause illness!

**Appendix I: Centers for Disease Control and Prevention  
“Diarrhea and Swimming Don’t Mix”**

# Diarrhea and Swimming **DON'T MIX**

If you have diarrhea, stay out of the water.  
Don't share your germs with other swimmers.



For more information, visit [www.cdc.gov/healthyswimming](http://www.cdc.gov/healthyswimming)



Department of Health and Human Services  
Centers for Disease Control and Prevention



**Appendix J: Centers for Disease Control and Prevention  
“Your Disinfection Team: Chlorine & pH”**

# Your Disinfection Team: Chlorine & pH

## Protection Against Recreational Water Illnesses (RWIs)

www.healthyswimming.org

Protecting swimmers and their families from RWIs is the reason that pool staff regularly check both chlorine and pH levels. Chlorine and pH, your disinfection team, are the first defense against germs that can make swimmers sick.

### What does chlorine do?

Chlorine kills germs in pools--but it takes time to work. Therefore, it's important to make sure chlorine levels are always at the levels recommended by the health department (usually between 1.0 - 3.0 ppm).

### Why does chlorine need to be tested regularly?

All sorts of things can reduce chlorine levels in pool water. Some examples are sunlight, dirt, debris, skin, and fecal matter from swimmer's bodies. That's why chlorine levels must be routinely measured. However, the time it takes for chlorine to work is also affected by the other member of the disinfection team, pH.

### Why is pH important?

Two reasons. First, the germ-killing power of chlorine varies with pH level. As pH goes up, the ability of chlorine to kill germs goes down. Second, a swimmer's body has a pH between 7.2 and 7.8, so if the pool water isn't kept in this range then swimmers will start to feel irritation of their eyes and skin. Keeping the pH in this range will balance chlorine's germ-killing power while minimizing skin and eye irritation.

### What else can be done to promote Healthy Swimming?

The best way to kill germs is by routinely measuring and adjusting both chlorine and pH levels. Since a few germs can survive for long periods in even the best - maintained pools, it is also important that swimmers become aware of Healthy Swimming behaviors (don't swim when ill with diarrhea, don't swallow pool water, take frequent bathroom breaks, and practice good hygiene). Combining Healthy Swimming behaviors with good chlorine and pH control will reduce the spread of RWIs.

Water Quality	pH
Poor Chlorine Disinfection Eye Irritation Skin Irritation	> 8.0
Most Ideal for Eye Comfort and Disinfection	7.8
	7.6
Eye Irritation Skin Irritation Pipe Corrosion	7.2
	< 7.0

For more information about pool disinfection, go to [http://www.cdc.gov/healthyswimming/fecal\\_response.htm](http://www.cdc.gov/healthyswimming/fecal_response.htm)

## Appendix K: Sample Norovirus Test Verbal Consent Form

*Please consult with your County Counsel or legal department prior to using this type of a form. This template can be used to document individual consent to test for norovirus obtained verbally (for example, via telephone) from individuals involved in an outbreak in a non-health care setting. For internal use only.*

Name of individual consenting to norovirus test:

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The above named individual providing a specimen for norovirus testing at the [Name of Local Health Department] Laboratory verbally indicates understanding that:

- Testing is voluntary.
- There is no charge for testing.
- The test has no known risks.
- Testing will be used to help determine the cause of the outbreak
- The [Name of Program] Program can tell you the results of the test, but cannot give you a medical diagnosis. For a discussion of the interpretation of the results or any other concerns or questions, you should consult with your physician.
- Your results are confidential. You will be informed of your test results by phone. For a paper copy of your test results, you must submit a signed consent form and proof of identity to our administrative secretary. In some situations, aggregate results (no names) may be shared with those responsible for managing the outbreak.

With acknowledgement of the above points:

- The individual consents to the test.

Interviewer:

Date:

Initials:

For individuals consenting to the test, collect the following information (necessary for the test request form)
Date of Birth
Address