

Guidelines for the Control of Norovirus in Food Establishments



While these guidelines are specific to norovirus, the controls detailed in this document are effective against a variety of gastrointestinal outbreaks. Therefore, even if the cause is unknown, these guidelines should be put in place as soon as a gastrointestinal outbreak is suspected. **Rapidly implementing control measures can prevent additional illnesses.**

Recommended Steps for Controlling a Norovirus Outbreak in a Food Establishment

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|---------------|---|
| Step 1 | Report when you suspect an outbreak
Notify the Southern Nevada Health District at (702) 759-1300, option 2; staff is available after hours to take reports of outbreaks. You may also contact your routine inspector or EH Foodborne Illness at (702) 759-1504 during business hours. |
| Step 2 | Implement control measures <ul style="list-style-type: none">• Review your facility's Biohazard Response Plan.*• Inform and educate staff and guests.• Clean. Disinfect. Wash Hands.• Restrict ill staff and guests. |
| Step 3 | Monitor <ul style="list-style-type: none">• Log incidents of guest and staff illness. See Appendix B for a template.• Send illness log to the Health District via fax to (702) 759-1414 as requested. |

*A sample Biohazard Response Plan can be found in the Southern Nevada Health District regulations entitled [“Regulations Governing the Sanitation and Safety of Public Accommodations Facilities 2006 Appendix I: Biohazard Event Response Plan for Public Areas.”](#)

Table 1. Recommended Bleach Solutions for Norovirus

Food contact surfaces , stainless steel, food/mouth contact items NOT contaminated by vomit or diarrhea that have been cleaned with hot water and detergent	200 ppm or 1 Tbsp bleach/gallon water (1:250 dilution). Ensure the surface stays wet for a full 5-minute contact time. Air dry.
Food contact surfaces , stainless steel, food/mouth contact items contaminated by vomit or diarrhea that have been cleaned with hot water and detergent	1,000 ppm or 1/3 cup bleach/gallon water (1:50 dilution). Ensure the surface stays wet for a full 5-minute contact time. Air dry. Follow with a clear water rinse or a cycle through a ware washing machine before use.
Hard surfaces , non-porous surfaces, tile floor, countertops, sinks, toilets and other areas contaminated by vomit or diarrhea that have been cleaned with hot water and detergent	1,000 ppm or 1/3 cup bleach/gallon water (1:50 dilution). Ensure the surface stays wet for a full 5-minute contact time. Air dry.
Porous surfaces , wooden floors, contaminated by vomit or diarrhea that have been cleaned with hot water and detergent	5,000 ppm or 1 2/3 cups bleach/gallon water (1:10 dilution). Ensure the surface stays wet for a full 5-minute contact time. Air dry.

Section 1: General Recommendations for Cleaning and Sanitizing/Disinfecting

- 1.1 Review existing policies for general cleaning to ensure that they are consistent with these guidelines and ensure they are properly implemented by staff through observation and training.
- 1.2. Ensure proper hand washing among employees. Take the time to retrain all staff on when and how to wash hands, and actively monitor to ensure compliance. Provide reminders and corrections as needed.
- 1.2 Consider installing polite reminders in all restrooms on the need for proper hand washing and proper use of hand sanitizers.
- 1.3 Regularly inspect all areas of the property (including, but not limited to, elevators, bathrooms, walkways, garages and parking lots, casino floor, and employee break rooms) for vomit or evidence of other biohazard incidents. Any biohazards should be cleaned up following the procedures as outlined in Section 2.
- 1.4 Increase frequency of cleaning and disinfecting of all high touch areas including but not limited to the handles of sink faucets, doors handles, railings, menus, condiments, tables, chairs, elevator buttons, etc.
- 1.5 Use disposable cleaning cloths and mop heads for all cleaning and disinfection.
- 1.6 Ensure proper functioning of all ware washing machines during every shift. Consider implementing a log to track how often each machine was checked and the results.
- 1.7 Discard the ice in all ice machines once per week followed by thorough cleaning and disinfection of the machine. Other equipment used to store ice including sinks, bins, and buckets should be emptied, cleaned, and disinfected daily at minimum.

Section 2: Vomiting and Diarrhea: Removal, Cleaning, and Disinfection

- 2.1 Report evidence of vomit or diarrhea (biohazard events) to appropriate personnel. Document all biohazard events in a log (Appendix A) including date, time, location, persons affected (if known), the names of the persons reporting the event, type of incident, the names of the responders, and a short description of the response to the accident.
- 2.2 Treat all biohazards as if they are contaminated with norovirus, even if they are at the bar area or from a small child.
- 2.3 Clean up vomit immediately and thoroughly. Because virus particles can float in the air after a vomiting incident, it is important to close or cordoned off the area around the vomit up to a 25-foot radius in all directions.
- 2.4 Ensure that all biohazard events are only cleaned by staff trained and properly protected for such clean-up activities. Consider having a specially trained cleaning team available.
- 2.5 Refer to your Biohazard Response Plan for your facility's biohazard clean up procedure. A detailed sample plan can be found in the Regulations Governing the Sanitation and Safety of Public Accommodation Facilities 2006 Appendix I: Biohazard Event Response Plan for Public Areas. At a minimum, the following steps should be covered:
 - a. Wear appropriate personal protective equipment (PPE) including gloves, shoe covers, gown, and mask as needed.
 - b. Use cloths, paper towels, or absorbent powder to soak up excess liquid.
 - c. Transfer these absorbent materials and any solid matter directly into a biohazard bag.
 - d. Clean the soiled area with detergent and hot water, using a disposable cloth. Then rinse off detergent with clear water or damp cloth.
 - e. Disinfect the contaminated area with the appropriate disinfectant. Make sure the surface stays wet for the required contact time specified on the disinfectant label.
 - f. The area to be disinfected should include 25 feet out in all directions and up to 8 feet high on any wall within the contaminated zone. Refer to Appendix A of this document for how to make an appropriate disinfectant solution using bleach.
 - g. Dispose of mop heads, cleaning cloths, other materials used in the cleanup, and PPE into the biohazard waste bag. Be sure to remove PPE carefully to prevent contamination.
 - h. Wash hands thoroughly after completing the clean-up procedure and again after completing the disposal procedure.

Section 3: Responding to Vomit Events in Food Preparation or Service Areas

- 3.1 Send ill employees home as per the recommendations in Section 6 and report event to your Southern Nevada Health District inspector.
- 3.2 Stop all food preparation and service until clean-up is completed. Discard all exposed food, food that may have been contaminated, and food that has been handled by the infected person.
- 3.3 Follow the procedures outlined in Section 2 for cleaning. Review each chemical's label to ensure they are approved for use in food preparation areas. Approved chemicals may have a separate set of instructions for use in food preparation areas and often require a rinse with clear water and/or the use of sanitizer after disinfecting. Be sure to include refrigerator doors and handles, microwave oven (inside and out), counters, and all cooking equipment and utensils.
- 3.4 All exposed food contact surfaces within a 25-foot radius may be contaminated. Disinfect these items using the bleach concentration for hard surfaces in the table in Table 1 in Appendix C. Food contact surfaces must be rinsed with clear water or a passed through the ware wash machine to remove any unsafe residual chemical after disinfection with a bleach concentration higher than 200ppm chlorine.

Section 4: Cleaning Procedures for Contaminated Soft Surfaces

- 4.1 Visibly contaminated linen and other fabric materials should be placed carefully into separate laundry bags by individuals wearing appropriate PPE. Machine wash contaminated items with detergent, hot water and bleach if recommended, choosing the longest wash cycle. Machine dry. If an outside laundry is used, inform them that the laundry is potentially infectious.
- 4.2 Contaminated carpets should be cleaned in a three-step process. First, carpets must be cleaned with carpet detergent and hot water. Second, carpets must be disinfected by applying an appropriate disinfectant. Finally, carpets should be steam cleaned (158°F for 5 minutes or 212°F for 1 minute is needed for complete inactivation). Soft furnishings should be appropriately disinfected. If items are unable to be disinfected, they should be discarded.

Section 5: Be on the Lookout for Employee Illness

- 5.1 Often, in outbreaks, employee illness increases before guest illness. Have managers look for obvious signs of employee illness such as increased restroom use.
- 5.2 Maintain a log of employee illnesses. Refer to Appendix D for a template. Review log frequently to identify if employee illness has been increasing over time.
- 5.3 When requested, submit employee illness information to the Southern Nevada Health District electronically (specific guidance will be provided when applicable).
- 5.4 During an outbreak, do not allow ill employees to return to work until they have been symptom-free, without the aid of medication, for 72 hours.
- 5.5 Prevent employee illness by promoting frequent, thorough handwashing amongst staff and guests. Re-train staff on proper handwashing:
 - Turn on warm water. Wet hands.
 - Use soap and scrub hands, wrists, and fingernails thoroughly for 15-20 seconds outside of the flow of water.
 - Rinse hands.
 - Dry with paper towels.
 - Turn off water faucet with paper towels.

Section 6: Communicating with Employees During Outbreaks

- 6.1 Notify employees in all areas of outbreak and provide Norovirus Facts for Food Workers handout. (Appendix E)
- 6.2 Consider providing regular updates to employees, to include:
 - a. Status of the outbreak response
 - b. Talking points to be used in dealing with guests
 - c. Reminders on proper handwashing
 - d. Procedures for reporting illness
- 6.3 Require that all employees, regardless of job duty, who report having experienced vomiting, diarrhea, or “stomach flu” symptoms, remain off duty for 72 hours symptoms free without the aid of medication.

The purpose of this document is to log biohazard incidents, to prevent extended environmental exposure, and to ensure responding personnel are protected. Provide a copy of the facility's Biohazard Response Policy with this log and refer to it for proper clean up and disposal instructions. Management to review this log regularly (**Mark one:** Daily ___ Weekly ___ Monthly ___ Each Page ___) for sudden increases that may indicate the beginning of an outbreak. Contact the Southern Nevada Health District as soon as an outbreak is suspected: **(702) 759-1300**.

Date and Time	Hazard Type	Location of Hazard	Person Reporting	Ill Person (If Known)	Person Responding to Incident	PPE Used	Description of Response
	<input type="checkbox"/> Vomit <input type="checkbox"/> Diarrhea <input type="checkbox"/> Blood <input type="checkbox"/> _____					<input type="checkbox"/> Gloves <input type="checkbox"/> Mask <input type="checkbox"/> Apron/Suit <input type="checkbox"/> Shoe Covers <input type="checkbox"/> Goggles <input type="checkbox"/> _____	
	<input type="checkbox"/> Vomit <input type="checkbox"/> Diarrhea <input type="checkbox"/> Blood <input type="checkbox"/> _____					<input type="checkbox"/> Gloves <input type="checkbox"/> Mask <input type="checkbox"/> Apron/Suit <input type="checkbox"/> Shoe Covers <input type="checkbox"/> Goggles <input type="checkbox"/> _____	
	<input type="checkbox"/> Vomit <input type="checkbox"/> Diarrhea <input type="checkbox"/> Blood <input type="checkbox"/> _____					<input type="checkbox"/> Gloves <input type="checkbox"/> Mask <input type="checkbox"/> Apron/Suit <input type="checkbox"/> Shoe Covers <input type="checkbox"/> Goggles <input type="checkbox"/> _____	
	<input type="checkbox"/> Vomit <input type="checkbox"/> Diarrhea <input type="checkbox"/> Blood <input type="checkbox"/> _____					<input type="checkbox"/> Gloves <input type="checkbox"/> Mask <input type="checkbox"/> Apron/Suit <input type="checkbox"/> Shoe Covers <input type="checkbox"/> Goggles <input type="checkbox"/> _____	
	<input type="checkbox"/> Vomit <input type="checkbox"/> Diarrhea <input type="checkbox"/> Blood <input type="checkbox"/> _____					<input type="checkbox"/> Gloves <input type="checkbox"/> Mask <input type="checkbox"/> Apron/Suit <input type="checkbox"/> Shoe Covers <input type="checkbox"/> Goggles <input type="checkbox"/> _____	
	<input type="checkbox"/> Vomit <input type="checkbox"/> Diarrhea <input type="checkbox"/> Blood <input type="checkbox"/> _____					<input type="checkbox"/> Gloves <input type="checkbox"/> Mask <input type="checkbox"/> Apron/Suit <input type="checkbox"/> Shoe Covers <input type="checkbox"/> Goggles <input type="checkbox"/> _____	

Manager Review: Date: _____ Name: _____ Signature: _____

Several commercially available products have been approved by the Environmental Protection Agency (EPA) for use against norovirus. Because norovirus is difficult to grow in laboratory conditions, these products have been tested against Feline Calicivirus (FCV), a surrogate for norovirus.

This list is provided solely as a courtesy. The Health District does not recommend any product or manufacturer. This list is based on products known to the Health District at the time this document was created and should not be assumed to be comprehensive. If you have questions or concerns about a product, please contact the manufacturer or the assigned inspector for your facility. The EPA has produced a list of recommended disinfectants that can be found at the following link: www.epa.gov/sites/production/files/2020-03/documents/list_g_disinfectant_list_003.pdf

Method/Chemical	Product	Manufacturer
Bleach (Sodium hypochlorite)*	Generic – 1000ppm	
Ethanol	Generic – 75% Ethanol	
Heat	> 170°F	
Hydrogen peroxide	Peroxide Multi Surface Cleaner Disinfectant	Ecolab
Hypochlorous acid	Envirocleanse A	Envirocleanse LLC
Potassium peroxomonosulphate	Virkon®	Laxness Corporation
Quaternary Ammonia (hospital grade)	MIKRO-QUAT	Ecolab

* More information on bleach provided in Appendix B.

** Note: regular quaternary ammonia is not effective against norovirus.

The main ingredient in bleach is chlorine in the form of sodium hypochlorite. Chlorine percentages in commercially available bleaches may range from 3.5% to 12.5%. Always check the labels.

- Chlorine bleach concentrations in this Appendix are based on a 5.25% sodium hypochlorite concentrated chlorine bleach and may not be appropriate for other concentrations.
- Obtain new, unopened bottles of concentrated chlorine bleach every 30 days. Open bottles of concentrated chlorine bleach lose strength after opening.
- Ventilate areas during mixing and application.
- Ensure clean up and disinfection of biohazard incidents are conducted by trained staff.
- Wear non-latex disposable gloves and any other necessary personal protective equipment.
- Prepare dilutions daily and discard unused portions of diluted bleach.
- Leave bleach on surfaces for 5 minutes.
- Food contact surfaces that may have been contaminated can be disinfected using the concentration listed below for hard surfaces followed by a clear water rinse or a pass through the ware wash machine to remove residual chemical.
- Change in-use bleach solution every 30 minutes and always use a new clean wiping cloth.
- Avoid spray bottle application to reduce inhalation and respiratory irritation.
- Other disinfectants approved by the Environmental Protection Agency (EPA) to be effective against norovirus can be found at www.epa.gov in List G.

Table 1. Recommended Bleach Solutions for Norovirus

Food contact surfaces , stainless steel, food/mouth contact items NOT contaminated by vomit or diarrhea that have been cleaned with hot water and detergent	200 ppm or 1 Tbsp bleach/gallon water (1:250 dilution). Ensure the surface stays wet for a full 5-minute contact time. Air dry.
Food contact surfaces , stainless steel, food/mouth contact items contaminated by vomit or diarrhea that have been cleaned with hot water and detergent	1,000 ppm or 1/3 cup bleach/gallon water (1:50 dilution). Ensure the surface stays wet for a full 5-minute contact time. Air dry. Follow with a clear water rinse or a cycle through a ware washing machine before use.
Hard surfaces , non-porous surfaces, tile floor, counter-tops, sinks, toilets and other areas contaminated by vomit or diarrhea that have been cleaned with hot water and detergent	1,000 ppm or 1/3 cup bleach/gallon water (1:50 dilution). Ensure the surface stays wet for a full 5-minute contact time. Air dry.
Porous surfaces , wooden floors, contaminated by vomit or diarrhea that have been cleaned with hot water and detergent	5,000 ppm or 1 2/3 cups bleach/gallon water (1:10 dilution). Ensure the surface stays wet for a full 5-minute contact time. Air dry.

Instructions: Use this log to monitor employee absences due to illness. Tracking absences will enable your establishment to better control the spread of foodborne illnesses. Please review and refer to your establishment's Employee Health Policy. If undiagnosed, refer to the **Foodborne Illness Restriction and Exclusion Guidelines**.

Symptoms Reported to Manager by Employee			Manager/Employee Response						
Date Reported	Employee Name	Symptoms* Vomiting (V), Diarrhea (D), Jaundice (J), Sore Throat with Fever (ST), Infected Wounds (IW)	Other Symptoms	Date Excluded or Restricted from Work*	Date Returned to Normal Work Duties	Consulted with Doctor?	Diagnosed? ** If yes, name the illness.	Contacted the Health District?	Restricted Duties
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	
		<input type="checkbox"/> V <input type="checkbox"/> D <input type="checkbox"/> J <input type="checkbox"/> ST <input type="checkbox"/> IW				YES / NO	YES / NO	YES / NO	

* If symptoms of vomiting and diarrhea, exclude food employee from work until 24 hours after symptoms end.
** If a food employee is diagnosed with Norovirus, E. coli 0157:H7, Shigella spp., Hepatitis A, Salmonella Typhi, AND/OR if jaundiced, then exclude and contact the Health District at (702) 759-1300.



Foodborne Illness Restriction and Exclusion Guidelines without an Illness Diagnosis

Symptom	Restrict/ Exclude Not a HSP facility	Restrict/ Exclude Facility Serves HSP	Lifting Restriction or Exclusion status
Vomiting	Exclude	Exclude	When the food employee has been symptom free for at least 24 hours without the aid of medication or provides a written medical release/ fitness for duty.
Diarrhea	Exclude	Exclude	When the food employee has been symptom free for at least 24 hours without the aid of medication or provides a written medical release/ fitness for duty.
Jaundice	Exclude	Exclude	When the food employee has been jaundiced for more than 7 calendar days or provides a written medical release/ fitness for duty.
Sore throat with fever	Restrict	Exclude	When the food employee provides a written medical release/ fitness for duty.
Exposed infected wounds or boils	Restrict	Restrict	When the infected wound or boil is properly covered.

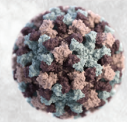
HSP – Highly Susceptible Population – Those who are immunocompromised, preschool-age children, older adults, and individuals who obtain food at a facility that provides services such as custodial care, health care, or assisted living, or in a child or adult day care center, kidney dialysis center, hospital, nursing home, or nutritional or senior center.

Exclusion – a food employee is not permitted to work in or enter a food establishment as a food employee. This requirement applies to areas where food is received, prepared, stored, packaged, served, vended, transported, or purchased.

Restriction – a food employee's activities are limited to prevent the risk of transmitting disease that is transmissible through food. A restricted employee cannot work with exposed food, clean equipment, utensils, linens, or unwrapped single-service or single-use articles.

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



National Center for Immunization and Respiratory Diseases
Division of Viral Diseases

