

Practical Guidance for Handling Norovirus

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BACKGROUND

While Noroviruses, affecting people for many decades, are most known for causing outbreaks of illness among large numbers of people on cruise ships, the magnitude of these viruses extends much further than a journey on the water! In 2014, the U.S. Centers for Disease Control and Prevention (CDC) estimates about 20 million people get sick from norovirus each year.

- More than eighty percent of foodborne norovirus outbreaks are reported to occur in restaurants and banquet facilities.
- The majority of non-foodborne norovirus outbreaks are reported to occur in long term care facilities, and the next highest venue is in schools.
- Norovirus is also a common cause of gastroenteritis outbreaks in Europe and other countries.

SYMPTOMS & DISEASE PROCESS

Norovirus infection causes acute gastroenteritis: nausea, frequent, sudden and occasionally violent vomiting, and/or diarrhea. Other symptoms include low-grade fever, chills, headache, muscle ache and fatigue.

Symptom onset can occur as soon as 12 hours after exposure, but more often it is 24 to 48 hours after ingesting the virus. The illness usually lasts one to two days, and in most cases recovery occurs without further complications. However, dehydration and related complications can be a risk in very young, elderly or immunocompromised persons.

Norovirus is extremely contagious due to its low infectious dose of as few as 10 to 100 viral particles. This means that low-level contamination of food, water, and surfaces could lead to outbreaks if others come in contact with the norovirus particles.

People can start to shed the virus before they start feeling ill and this can continue for days to weeks after symptoms resolve.

Individuals can become re-infected with norovirus since immunity lasts for just a short time.

Diagnosis of foodborne norovirus illness is often based on symptoms, due to challenges in detection of these viruses in foods. (Additionally, fecal tests run by healthcare providers when they are diagnosing diarrheal disease do not routinely include norovirus.)

PRIMARY ROUTES OF TRANSMISSION

Noroviruses are present in the feces or vomitus of infected people, frequently at very high levels (millions to billions of viral particles per gram) especially in the early days of their illness. Because of this, a person suspected of having norovirus infection needs to be excluded from handling food, equipment or packaging materials. Many foodborne outbreaks of norovirus illness are likely caused by direct contamination of food by a food handler. Also, norovirus can be carried by aerosols over distances longer than three feet where they can subsequently contaminate a surface. Transmission can occur when people touch these contaminated surfaces and then transfer the virus to themselves by

touching their mouths or a ready-to-eat food. Norovirus cannot infect a person through the respiratory system (that is, by breathing in virus particles), but virus particles contained in aerosol droplets can enter the gastrointestinal tract by contact with the tissues in the mouth or nose.

Outbreaks have frequently been associated with consumption of ready-to-eat foods, including various salads, sandwiches; bakery products and other shelf stable foods. Liquid or semi-solid items (i.e., cake icing) in which the virus is dispersed throughout the food have also been implicated as a cause of outbreaks. Additionally, food can be contaminated at its source; for example, oysters harvested from norovirus-contaminated waters have been associated with widespread outbreaks of gastroenteritis. Fresh produce items, such as berries and leafy greens, may become contaminated from dirty irrigation water or when infected food handlers harvest the product.

Case Study—Houston Astrodome when it housed hurricane Katrina evacuees: A large norovirus outbreak, likely involving person-to-person spread, impacted more than 1,000 people in the Houston Astrodome. Inadequate sanitary conditions, the lack of adequate hand-washing facilities, delays in cleaning and decontaminating soiled areas and bedding, and close proximity of people contributed to the spread.

CONTROL OF NOROVIRUS

Having a written plan and being prepared to implement the plan are important elements for effectively responding to and managing situations involving potential norovirus contamination.

- Have the necessary equipment on hand (i.e., disinfectant products effective against norovirus, personal protective equipment, biohazard clean-up kits, etc.)
 - Properly train employees properly before an incident
 - Exclude ill individuals from food handling activities and the food establishment itself. (Facilities should have policies in place prohibiting individuals ill with norovirus symptoms from working.)
 - Implement proper hand washing protocols and ensure that all individuals working in a food establishment are trained, following FDA's Food Code. Limit or prohibit bare hand contact with ready to eat foods, per local health department regulations.
 - Follow guidance to assist the retail food industry in preparing for and effectively handling the cleaning and disinfection of a potential norovirus incident directly associated with vomitus and/or fecal materials. The recommendations in this guidance can be incorporated into cleaning and disinfection procedures for spills related to a suspected norovirus infection and/or associated with contaminated hard surfaces including, but not limited to: restrooms, floors, walls, countertops, display cases and food preparation areas and equipment.
- With norovirus being so prevalent, focused effort by food handlers and janitorial staff is needed to stem the increasing tide of norovirus outbreaks in food establishments. These individuals can play a key role in management of this tenacious infection.



Stanford's Food Safety Culture Shift



It's rare for a university dining department to have a dedicated full time food safety expert on staff, but over two years ago that's exactly what Eric Montell, Executive Director of R&DE Stanford Dining, and Dr. Shirley J. Everett, Senior Associate Vice Provost for Residential & Dining Enterprises, did! Step by step the food safety culture has continued to develop and improve through developing and executing food safety SSOPs (Sanitation Standard Operating Procedures) and conducting trainings and certifications, internal and external audits.

Daniel Archer, MPH, REHS, an experienced former Los Angeles County health inspector with several years experience managing food safety in the private sector became the first Senior Manager of Food Safety, Workplace Safety & Environmental Compliance for Stanford.

Some of Daniel's responsibilities include:

- Making administrative interpretations and policy decisions, which are pertinent to city, county, state and federal laws, ordinances and university policies related to workplace safety, food safety, sanitation and environmental compliance.
- Preparing and recommending new and revised policies, procedures, plans, rules and regulations.
- Developing the R&DE Employee Food Safety Training Manual and Sanitation Standard Operating Procedures (SSOPs).
- Auditing and enforcing policies and programs related to food safety and workplace safety.
- Quarterly training of managers and food service workers around food safety and workplace safety.
- Vendor audit and verification (Adherence to food safety guidelines are now an essential and permanent feature of R&DE's RFPs for produce and meat.) R&DE vendors are also required to have effective product recall procedures in place.
- Aggressively implementing preventative food safety protocols involving outbreaks of infectious or foodborne illness in collaboration with our health center and residence hall staff.



What is your Food Safety Culture?

THE Pacific Region Wellness

Fall Report:

Local college and university efforts to focus on nutrition and healthy habits.



FALL 2014
What is Your Food Safety Culture?

In this edition:

Healthy Tips Department

UC San Diego Dining Services
Food Safety Focus

The First University in California with
a State Approved HACCP Plan

Preventing and Mitigating
a Norovirus Outbreak in Colleges
and Universities

Practical Guidance for Handling Norovirus

Stanford's Food Safety Culture Shift

Pacific Region Nutrition and Wellness Chair and Newsletter Editor:
Elaine Magee, MPH, RD



The Pacific Region's Nutrition and Wellness committee wants to give special thanks to **Dole Packaged Foods** for providing the expertise to produce the Pacific Region Wellness Report.



Healthy Tips Department

By: **Dole** Corporate Chef Rick Perez, C.E.C., AAC

Some may think a chef's highest priorities are creating inventive recipes and cooking delicious food. Ultimately, however, a chef's number one priority is serving food that is safe.

In 2013, about 48 million people in the United States, were effected by a foodborne illness. The most important and reliable way to prevent numbers like these are to create an environment that produces and serves the safest food through staff training.

Not just initial training, but continual training that coincides with checks and balances, systems, procedures, and documentation. Also, making sure that employees have the proper tools to implement these policies lies squarely on the Chefs shoulders.

Every critical control point inside a foodservice operation is exactly that, critical. One of the most recurring themes in all these points is maintaining proper time and temperature. From receiving, storage, preparation, serving, and even disposal each point has the potential to contaminate or be a hazardous environment for food. So, it is absolutely necessary that each employee is equipped and trained to recognize and react to take corrective actions when they become aware of any situation that may be dangerous to the food and ultimately the end customer.

Some ways to help employees remain aware of proper

food handling and safety is conspicuous signage at appropriate locations. Signage can range from hand washing, proper preparation, holding and reheating temperatures, allergen awareness, and cross contamination reminders. Along with the signage it is imperative to review any violations or potential hazards during staff meetings. It should be clear that these reviews are not a blame-session, but rather a tool to learn and grow from any past mistakes.

Key Steps for food safety in the kitchen:

- Training and empowering employees
- Time and temperature logs
- Conspicuous signage
- Frequent safety reviews

Proper training and open discussions about food safety empowers employees to take corrective actions. For instance, if an employee notices an item on the buffet that is below the required holding temperature, some corrective actions include: checking the production log to see

when the food was delivered to the buffet, determining if it has been in the temperature danger zone (TDZ) for an unacceptable amount of time, and deciding whether it should be trashed or simply reheated.

While Chefs are the driving force behind recipe development, often perceived as mad-scientists playing with exotic ingredients, new techniques and exciting flavors, we take just as much professional pride in providing safe food as we do in serving food that is delicious. Food safety is our utmost responsibility and we owe it to our customers. Not only are is their meals in our hands, but also their trust and well-being.



The First University in California with a State Approved HACCP Plan



In March 2014, the California Department of Public Health approved Stanford Residence & Dining Enterprise's Hazard Analysis Critical Control Point (HACCP) plan making Stanford the first university in California to attain a state approved HACCP plan.

HACCP Hazard Analysis Critical Control Point

A HACCP plan is a written plan that outlines a systematic preventive approach to food safety from biological, chemical and physical hazards in the food production process that can cause the finished product to be unsafe and designs measurements to reduce these risks to a safe level.

R&DE Stanford Dining's Central Production Kitchen (CPK) uses the cook/chill process to produce soups, sauces and other foods in bulk for distribution to other dining units on campus. The food is cooked above the approved minimum internal cooking temperature, bagged, rapidly cooled in a chill tank and held in the walk-in cooler at 34° F. The FDA Model Food Code and California Retail Food Code require food establishments producing foods by the cook/chill and Sous Vide method to have an approved HACCP Plan.

It took over 8 months for Stanford's Food Safety Manager, Daniel Archer, to write and submit the HACCP plan including pre-requisites such as Standard Operating Procedures to the California Department of Public Health in Sacramento and 7 months for it to be approved.

Daniel's advice to universities interested in submitting a HACCP plan is to tailor it to their operational needs, develop good pre-requisite, effective Standard Operating Procedures and keep it simple for employees to follow. Lastly, be patient after submitting the plan because there is only one person at the CA state department of health who reviews and approves all HACCP plans in California.

Preventing and Mitigating a Norovirus Outbreak in Colleges and Universities

By: Daniel E. Archer, MPH, REHS, Senior Manager of Food Safety, Workplace Safety & Environmental Compliance, Stanford University R&DE

How does Norovirus transmission in universities/institutions differ from restaurants?

- Transmission is most usually by person to person contact rather than through food or food handler point source.
- Students who touch objects in the vicinity and put their hands in their mouths will be infected.
- In a single instance of vomiting by an infected student in a restroom, billions of viral particles are aerosolized and released into the surroundings.
- Students or staff who have Norovirus can shed billions of viral particles in their stool prior to showing symptoms and up to 14 days after symptoms disappear.
- If this were to occur in a servery or around food, any of the food in the surrounding area would be potentially contaminated regardless of the cleanup.
- Infected staff or students can easily contaminate surfaces, food, serving utensils and other common touch points.

Suggestions for preventing and mitigating Norovirus outbreak in a university or institutional setting:

Have an effective Food Safety program in place that:

- Continuously educates and trains food handlers on frequent and proper hand washing (including good personal hygiene) and enforces this policy.
- Has an effective employee illness policy in place that ensures team members stay home when sick, inform management if experiencing vomiting, diarrhea, fever with sore throat and jaundice; and if diagnosed with one of the CDC five reportable foodborne illnesses. <http://www.fda.gov/Food/NewsEvents/ConstituentUpdates/ucm267516.htm>
- Prevents bare hand contact with ready-to-eat foods. Encourages use of serving utensils or gloved hands to handle ready-to-eat foods.
- Replaces serving utensils when food on a buffet line is changed.
- Has cleaning guidelines in place for accidental discharge of vomitus in the dining hall, residential hall or other common areas.
- Has an effective process based on retail HACCP for sourcing, receiving, storing, cleaning and rinsing of leafy greens.

Establish an early notification system with a residential Peer Health Educator (PHE), Student Health Center and Residential Education staff

- A student experiencing an onset of diarrhea and vomiting immediately informs the residential staff person, detailing the time of illness onset, food eaten, location and symptoms.
- Residential staff immediately forwards information to the head of the infection control working group at the Student Health Center who determines if a Health Alert is warranted.
- A health alert from the Student Health Center is immediately sent to senior management including Residential Dining and Student Housing Health & Safety Managers.
- Health Alert protocols are immediately implemented in the dining halls and student housing.
- Educate students about mode of transmission and require hand washing prior to entering serving area. Note that hand sanitizers and alcohol swabs are not effective against Norovirus.

Establish Meals Delivery Service (MDS) for sick students

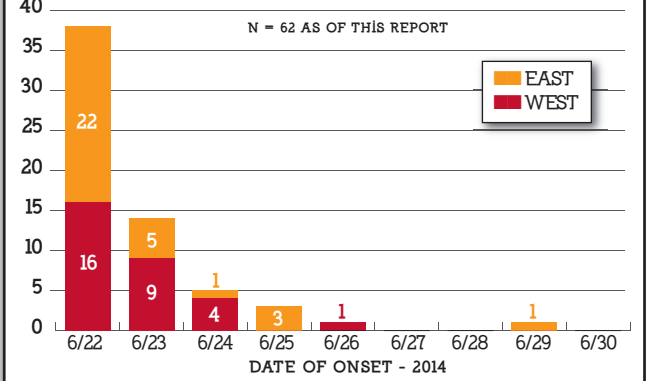
- Keep sick students out of the dining halls by offering them the opportunity to order food to be delivered to their halls by dining staff.
- Establish and practice the MDS before an emergency occurs.

Employee health check

- Determine if any dining staff currently has gastrointestinal symptoms or has had GI symptoms in the past 3-14 days.
- Do not allow employee to work in food handling or service area. They may still be contagious even without showing symptoms.

Incidence of GI Illness at a University Residence.

A total of 475 student residents



Summary:

In a sample Norovirus outbreak scenario where early notification occurred, a health alert protocol (including super sanitizing) implemented and a Meal Delivery Service was put into effect, the trend of infection in 3 days looked like the graph to the left and the Norovirus was successfully contained within one week.

Voluntary closure of dining hall

- If Norovirus is suspected or confirmed, be proactive. Voluntarily close the dining hall and thoroughly clean and super sanitize. Do not wait for your local health department to shut the dining hall down.

Super sanitizing

- Thoroughly sanitize the dining hall with 1,000 – 5,000 ppm of freshly prepared household bleach solution.
- Adding 6 fluid ounces of household bleach solution to a gallon of water will be approximately 2,000 ppm.
- Super sanitizing should take place in the restrooms and common areas of the dining hall servery and kitchen concurrently.

Action for other dining halls

- Suspend buffet style service.
- Begin plating service on disposables.

Determine if there were student activities leading to the outbreak

- Provide the appropriate information to local environmental health officials, public health nurse and epidemiologist.

Communication with students

- Provide clear, open and concise communication to students.
- Involve resident dean (RD), resident fellows (RF) and resident assistants (RA) in the discussions.

Food borne illness questionnaire link

- Require students who are symptomatic to fill out a foodborne illness questionnaire.
- Try to determine common food items eaten by ill students and/or dining staff.

Media

- Have a plan in place to deal with the media.
- Be prepared for news media to come on site.

UC San Diego Dining Services Food Safety Focus

By: Elizabeth Shaw, MS, RD



Food safety is a hot topic for collegiate foodservice. Food safety has been a long-standing part of Dining Services at UC San Diego, with all supervisory staff ServSafe certified. Despite that, we have revamped our general employee education to create our own in-house Food Safety Certification Program, modeled after both ServSafe and the California Food Handler Card Curriculum.

Working with UC San Diego's Environmental Health and Safety Department, we have redesigned our program to focus on the Hazard Analysis Critical Control Points (HACCP). This systematic approach to promote food safety has helped create a sense of fluidity for our staff on the potential areas in which food may become contaminated.

This program is just getting off the ground and we are excited to see how it unfolds over the course of the year. By involving all management levels in the process, we are creating a culture change to continue providing the latest, greatest and safest food possible to our customers!

Here is a clip of the in-house Food Safety Certification Card our Marketing & Communications department has designed, focusing on HACCP.

STORING FOOD

- Refrigerator: < 41°F
- Freezer: < 0°F
- FIFO: First In, First Out

PROPER COOKING TEMPERATURES

- 135°F: Fruits and veggies
- 145°F: Seafood, beef, roasts, pork chops
- 155°F: Ground meat, eggs on line
- 165°F: Poultry, combo foods, casseroles, reheating

COOLING PROCEDURES & RECOMMENDATIONS

- 2 hour mark: < 70°
- 4 hour mark (6 hour total): < 41°

FOOD SAFETY CARD | FRONT SIDE