Navy and Marine Corps Public Health Center
Technical Manual NMCPHC-TM 6221

Norovirus Illness Prevention & Control Guidance for the U.S. Fleet

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1. Introduction

Noroviruses (NoVs) are the predominant cause of gastrointestinal (GI) outbreaks worldwide. They cause approximately 50% of all reported outbreaks based on studies from the U.S. and Europe, and illnesses caused by NoVs are the most costly, pathogen-known, food-related illness in the U.S. in terms of the number of cases occurring and the number of hospitalizations. They are also likely to be the single most important cause of disease-outbreak related morbidity aboard ships in the U.S. Navy; Appendix A summarizes the burden. This document provides guidance to inform your efforts to prevent or eliminate NoV disease transmission. Additional information about the virus, the illness it causes, and its epidemiological characteristics are also available from the CDC at http://www.cdc.gov/norovirus/index.html.

This guide was developed by the Preventive Medicine Department staff at the Navy and Marine Corp Public Health Center. Provide your recommendations to improve this guide via email to NMCPHCPTS-ThreatAssessment@med.navy.mil.

2. Transmission.

Information from recent surveillance data reported to the U.S. CDC indicates that the majority of NoV outbreaks primarily involve person-to-person transmission, and this mechanism of spread is also most important in the shipboard environment. Transmission may occur directly by the fecal-oral route or by the inhalation and ultimate ingestion of aerosolized vomitus. It may also occur indirectly when one's hands contact environmental surfaces/materials that have been contaminated by feces or aerosolized vomit. Contaminated hands can spread the virus to environmental surfaces or deposit the virus in one's mouth.

Studies of re-occurring outbreaks in cruise ships, hotels, and hospitals have shown that contaminated fomites are the most likely factor responsible for sustaining a succession of outbreaks. Ships' heads are very important spaces where vomiting, diarrhea, and environmental contamination are likely to occur and contribute greatest to person-to-person spread. Medical, berthing, foodservice, and other spaces where persons gather may also become contaminated and important sources of new infections.

Foodborne and waterborne transmission may also be important aboard ships. Foodborne sources of the infection may originate from port visits or upstream in the food distribution system through contamination of food by human waste. This has been reported in outbreaks involving raspberries and oysters. A most important food-related transmission source aboard Navy ships is likely to be the infected food handler. Waterborne transmission of NoV aboard ship is also possible but less likely to occur. Waterborne illnesses may occur if the drinking water distribution system becomes contaminated with sewage by cross connections or sewage system leaks, or if the sewage system malfunctions or backs-up and subsequently contaminates the environment. Waterborne transmission could also occur if contaminated water is taken aboard from an unapproved contaminated source.

3. Prevention and Readiness Guidance.

Because person-to-person transmission is a very important mechanism by which NoV infections are spread in the shipboard environment, work to limit exposures and slow transmission among your crew by raising their awareness and enlisting their help. Discuss the NoV threat and NoV illness prevention measures during command indoctrination of new crew members or riders. Leave attendees with standard educational fact sheets which are available from the CDC website at http://www.cdc.gov/norovirus/preventing-infection.html. Add notes to the ship's plan-of-the-day, and provide educational lectures on the ship's closed network televisions prior to port visits, during safety stand-downs, and as needed to maintain high awareness of the threat. Also, ensure your crew knows to notify medical immediately when illnesses are occurring. Early detection enables successful disease control.

Findings from a 2009 study (*Cruise Ship Environmental Hygiene and the Risk of Norovirus Infection Outbreaks: An Objective Assessment of 56 Vessels Over 3 Years*) supported the notion that a lack of consistent simple daily cleaning of all toilet- area surfaces touched by individuals can contribute to the spread of NoV illnesses. Therefore, educate your command's leadership on the importance of instituting a routine program to clean all ships heads daily to prevent norovirus illnesses. Inform your leaders of the importance of ensuring that all toilet-area surfaces (toilet seats, flush handles, toilet-stall handholds, toilet-stall inner door handles, latching devices, door knobs, watertight door levers, hand dryer buttons, sink valve knobs etc.) are cleaned at least daily with a detergent and water-soaked cloth, sponge or a commercial cleaning wipe. Also, stress the importance of making adequate hand washing supplies available in all heads during routine habitability inspections.

There are a number of routine actions you can take to prevent food services from becoming the source of NoV infections. First, verify that all food service managers and employees are trained and competent (as required by OPNAVINST 4061.4) about the causes of foodborne illnesses and the preventive actions they should take as guided by the Navy Medical Department's NAVMED P-5010 Manual of Naval Preventive Medicine, Chapter 1. Do this during routine food safety inspections, and remember to test the knowledge of foodservice workers with short questions and answers as you inspect foodservice operations. Work to ensure your foodservice workers report to their supervisors when they are ill or when they believe they have been exposed to an outbreak of GI illnesses in out-of-work settings. Urge command leaders to retrain and recertify food service managers and employees who are unable to demonstrate requisite knowledge. Second, educate your crew to ensure that all food brought aboard is from approved sources only as is described in the NAVMED P-5010, Chapter 1. Inspect shipboard food storage facilities & refrigeration units for food that has been smuggled aboard after port visits, and instruct your crew to avoid this activity. Finally and most importantly, exclude ill food service workers (FSWs) from working in the galley until they have been symptom-free for 48 to 72 hours if they exhibited vomiting or diarrhea, and consider excluding those known to be exposed during an outbreak, while on or off the ship, even if they are without symptoms.

To prevent water from becoming a source of infections, conduct a potable water surveillance program as defined in Chapter 6 of the NAVMED P-5010. Evaluate and approve water sources (barges and pier side) prior to allowing bunkering of water onboard. Training to successfully execute a shipboard potable water surveillance program is available on the Navy e-learning web site. The course title and code are *Water Sanitation Afloat* NMCPHC-WSA-1.0.

4. Medical Surveillance.

Monitor weekly incidence rates of acute gastroenteritis in your crew for evidence that disease occurrence in your crew is out of control. Platform-specific disease and injury surveillance spreadsheet templates are available from our web site. You may use them to track your acute gastrointestinal illness rates. Obtain these templates at http://www.med.navy.mil/sites/nmcphc/program-and-policy-support/disease-and-injury-reports/Pages/default.aspx. These tools will indicate when your rates are out of control and will help you track the course of an outbreak. Enter your daily case counts and your crew's size into the tool, and the illness rate per week will turn red if your case count is too high. Instructions to use the tool are included in linked *Reporting and Investigation Guide* at this web site.

Ensure that responsible ship's medical department personnel are knowledgeable, equipped, and trained to report outbreaks of disease to their chain of command and to the Navy's disease surveillance hub via the Disease Reporting System Internet (DRSi). Obtain more guidance for both obtaining a DRSi account and reporting to that system from http://www.med.navy.mil/sites/nmcphc/program-and-policy-support/drsi/Pages/default.aspx. Also, be sure your staff know how and when to consult the Navy's expert disease outbreak investigators from a Navy Environmental & Preventive Medicine Unit (NEPMU).

5. Disease Investigation, Reporting, and Control.

When a surge of (GI) illnesses occurs among your crew, the likelihood that the outbreak is of viral origin is increased when more than 50% of the reported ill are vomiting and the average duration of illness is within 12 to 60 hours. If you suspect an outbreak of gastroenteritis illnesses consider taking the following actions to investigate, report, and control the event:

a. Investigate and Report Disease

(1) Keep a line list of information about the ill with a tool similar to Appendix C. This will aid your efforts to characterize the affected groups and each case. It may aid your efforts to find a single source of the illnesses. Ensure you have a process to avoid counting cases more than once on this list, and ensure that you have a way to trace cases back to the identity of the patient while also protecting their personal information.

(2) Develop a questionnaire like the example in Appendix B to find unreported cases, describe the outbreak, and identify potential areas of disease transmission.

(3) Prepare and submit an urgent medical event report as is required by BUMEDINST 6220.12C.
(4) Contact you're supporting NEPMU, listed in Appendix D, for assistance with medical event reporting. More information about the Navy's medical event reporting system is available on our web site at http://www.med.navy.mil/sites/nmcphc/program-and-policy-support/disease-surveillance/Pages/default.aspx.
(5) Assess the modes of transmission by plotting the distribution of patient symptom onset times on an epidemiologic curve. Contact your supporting NEPMU listed in Appendix D for assistance.
(6) When appropriate, collect an adequate number of laboratory specimens. Contact you're supporting NEPMU listed in Appendix D for assistance with lab testing or guidance on the use of commercial rapid detection tests.
(7) Evaluate the physical environment or ship's spaces associated with the outbreak.

b. Raise Crew Awareness Raise the crew's awareness and request their help. Do this by adding notes to the ship's plan-of-the-day, providing educational guidance via the ships closed network televisions, and by providing educational command leadership briefs. Instruct the crew of:

(1) Signs and symptoms.
(2) Effective handwashing procedure.
(3) The need for them to report to medical all episodes of vomiting which miss the commode (including space where this occurred).
(4) The highly infectious nature of NoVs.
(5) NoVs high resistance to common disinfectants and their survivability in extreme temperatures.
(6) How to clean and disinfect contaminated spaces where vomiting has occurred.
(7) How to handle contaminated laundry safely.
(8) How and when to clean and disinfect frequently touched surfaces in spaces where ill persons have been.
(9) Your guidance/recommendations to cohort ill persons and limit their movement.

c. Managing Food Service Workers (FSWs) and Ensuring Food Safety.

(1) Identify all ill FSWs and exclude them from working in the galley until they have been symptom free for 48 to 72 hours.
(2) Ensure all excluded FSWs are cleared by medical before they return to handling food.
(3) Ensure all remaining FSWs wash their hands frequently as trained, and use gloves to handle any ready to eat foods and utensils.

(4) If manpower is available, step up the frequency of informal food safety inspections to ensure safe food handling and preparation.
(5) Eliminate all self-service practices from the galleys/food service lines until the illness rates return to base line levels.
(6) Discard all food items believed to be contaminated. Save, refrigerate and place on medical hold samples of suspicious food items. Place them in sterile urine specimen cups stored in plastic bags and away from all other food items. Seek guidance on specimen handling and submission from your supporting NEPMU listed in Appendix D.

d. Managing the Ill and Exposed Crew Members.

(1) If operationally feasible, instruct command leaders to cohort ill persons together in specific berthing spaces or parts of them until ill members have been free of illness for 48 to 72. Studies show that only 10 to 20% of the ill persons will seek medical care during outbreaks, so it is also important to identify those who are sick but not seeking care. See http://www.cdc.gov/hicpac/pdf/norovirus/Norovirus-Guideline-2011.pdf for additional recommendations for cohorting and isolation precautions.
(2) Designate specific heads or portions of them for use by ill persons only.
(3) Limit movement about the ship of all ill, likely exposed, and recovering persons as much as operationally feasible to limit environmental contamination. You may want to have boxed lunches brought to them, and you may want to have contaminated laundry picked up from their spaces.
(4) Remove and wash clothing or linens that may be contaminated with vomit or fecal matter. Ensure that those who handle soiled items do so carefully—without agitating them—to avoid spreading the virus. Soiled items should be placed directly into a bag at the point of removal by a person wearing plastic gloves. Soiled items should be laundered with detergent at the maximum available cycle length and then machine dried.
(5) Limit unnecessary group activities or group gatherings, and consider closing access to spaces where this occurs such as workout spaces, etc.

e. Handwashing. During outbreaks, the use of soap and water is the preferred method of hand hygiene. All aspects of proper handwashing (scrubbing, rinsing, and drying) are important to reduce microbial transients on the hands. Friction and water have been found to play the most important role. The amount of time (20 seconds minimum) spent scrubbing is critical to effective handwashing. The use of waterless, alcohol-based hand rubs with a minimum ethanol concentration of 70% is not an adequate replacement for handwashing, but it is better than nothing and should be used when soap and water is not available.

(1) Ensure all personnel wash before and after each meal, and after each visit to the head.

(2) Ensure all FSWs wash their hands in accordance with guidance in Chapter 1 of the NAVMED P-5010.
(3) Ensure all medical personnel perform handwashing according to standard precautions (i.e. prior to contact with patients, prior to medication preparation, prior to preparation or consumption of food, prior to the insertion of invasive devices, etc.).

f. Environmental Contamination. After an episode of illness, such as vomiting or diarrhea caused by a NoV, it is critical to immediately clean and disinfect the contaminated environment. Cleaning of contaminated surfaces to remove visible debris (organic loads) such as fecal material or vomit should be performed first before disinfection with bleach or another hospital disinfectant identified by the U.S. Environmental Protection Agency (EPA) as effective against NoVs. The EPA hospital disinfectants list is available at http://epa.gov/oppad001/list_g_norovirus.pdf. Note that some of these EPA registered products now include quaternary ammonia-based disinfectants but in combination with alcohols. Claims of their effectiveness are based on in-vitro studies usually using feline calicivirus. Their field effectiveness in the context of outbreaks has not been evaluated. Also note NOT ALL EPA REGISTERED HOSPITAL DISINFECTANTS ON THE LIST ARE APPROVED FOR USE IN FOOD FACILITIES. The product label must state it has been approved for use in food facilities by the FDA.

(1) Handle vomiting incidents which miss the commode similar to spills of infectious medical waste as described in the Office of the Chief of Naval Operations (OPNAV) *Afloat Medical Waste Management Guide*:
(a) Limit access to the contaminated space to trained cleaning personnel.
(b) Use trained personnel, who have recently recovered from the illness if possible, to clean and disinfect a contaminated space.
(c) Ensure those who are assigned cleaning and disinfection duties wear the personal protective equipment describe in OPNAV's *Afloat Medical Waste Management Guide* (disposable coveralls, rubber boots, rubber gloves, and eye protection like a face shield).
(d) Use a spill containment cleanup kit with double layers of absorbent materials (i.e. cat litter, paper towels, etc.).
(e) Clean first and then disinfect all washable surfaces in the space within six feet of the vomiting or fecal accident.
1. Pools of vomit should be cleaned with an absorbent material first while minimizing agitation.
2. Use a recommended EPA disinfectant or the 5000 ppm chlorine-based disinfectant solution (described later in this guide) to disinfect areas where vomiting or fecal accidents have occurred. Wait 5 minutes after applying this

disinfectant before rinsing it away. If other disinfectants recommended by the EPA are used, follow the manufactures application guidance.

3. Important surfaces include but are not limited to toilet seats, flush handles, toilet-stall handholds, toilet-stall inner door handles plus latching devices, door knobs, watertight door levers, hand dryer buttons, sink valve knobs, light switches, hand railings, phones, etc.

(2) Clean and disinfect soiled cloth furniture and carpeting. Visible pools/debris should be cleaned with a double layer of an absorbent material while minimizing agitation. Next clean with hot water and detergent followed by steam cleaning at 158ºF for five minutes or 212ºF for one minute to ensure complete inactivation of the virus. Do not dry vacuum.

(3) Upon completion of the clean-up, have personnel removed contaminated clothing and place it in a double plastic bag for sterilization (if possible) or laundering.

(4) Dispose of used cleaning, absorbent materials containing NoVs as infectious waste according to OPNAV's *Afloat Medical Waste Management Guide*.

(5) Ensure clean-up personnel take a hot shower immediately afterward, using plenty of soap and hot water.

(6) Routinely clean and disinfect frequently touched environmental surfaces (door handles plus latching devices, door knobs, watertight door levers, light switches, hand railings, phones, etc.) and equipment in cohorting areas, clinical areas, and high traffic areas during the course of the outbreak. Use any approved EPA disinfectant or the 1000ppm disinfectant solution described below for this purpose.

g. Chlorine-based Disinfectant Solutions. The stability of the virus in relatively high concentrations of chlorine, and its stability in a wide range of temperatures, facilitates its spread. However, chlorine disinfectant solutions in concentrations of 1000ppm to 5000ppm are effective at destroying NoVs and they are widely recommended for environmental decontamination. Use 5000ppm solutions for vomiting incidents. Use 1000ppm solutions for all other purposes as described above. Since none of the EPAs recommended disinfectants are currently on the navy ships approved Authorized Medical Allowance Lists, specific instructions for using onboard chlorine-based compounds to make recommended disinfecting solutions follows.

(1) Chlorine is available for shipboard use as calcium hypochlorite also known as High Test Hypochlorite (HTH). It's a granular solid which provides 65-70% available chlorine and comes in a six ounce bottle. It is most frequently used in the fleet because of its relatively long shelf life and reduced storage space requirements. Common household bleach (unscented) in a 5.25% solution of sodium hypochlorite may also be available.

(2) To prepare a 1000 ppm batch of sanitizing solution from HTH, dissolve 0.2 oz (1-2 teaspoons) of HTH powder into one gallon of warm water (80°F to 100°F) and allow the suspended matter to settle out. Next pour off the supernatant into small buckets, bottles or like dispersal equipment. Ensure the solution is made by personnel wearing proper PPE in a well-ventilated space absent of any flammable materials. To prepare a 5000 ppm batch of sanitizing solution from HTH, dissolve 1.0 oz. (2 tablespoons) of HTH powder into one gallon of warm water.

(3) To prepare a 1000 ppm batch of sanitizing solution from standard unscented liquid bleach add 1/3 cups of 5.25% liquid bleach to one gallon of water. To prepare a 5000 ppm batch add 1 and 2/3 cups of 5.25% liquid bleach to one gallon of water.

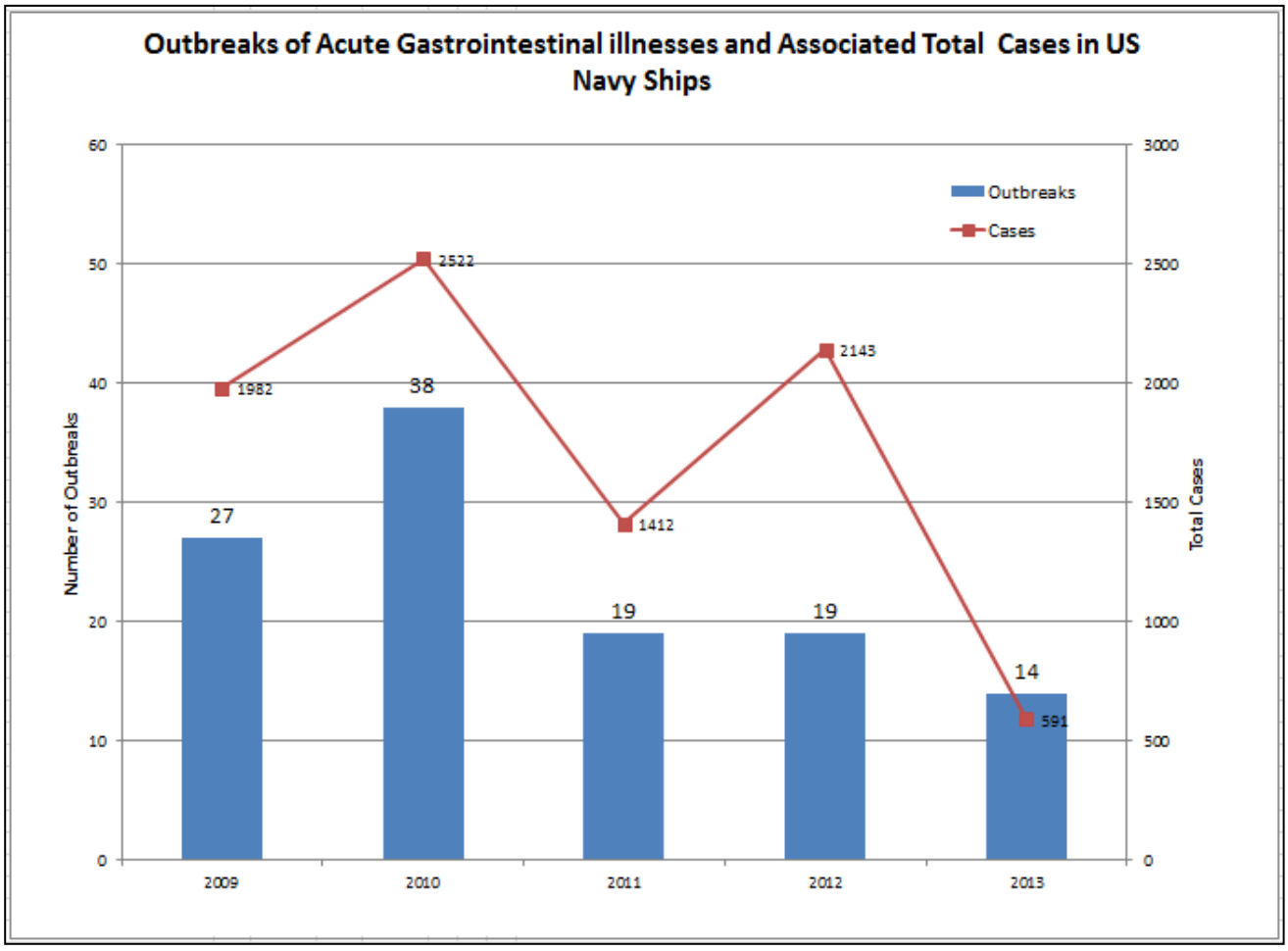
(4) Prepared solutions should be made daily as needed during the course of the outbreak. If this is impractical for 1000ppm solutions, you can double the concentration to 2000 ppm then store the solution in dark (light-proof) containers which should be discarded after 30 days.

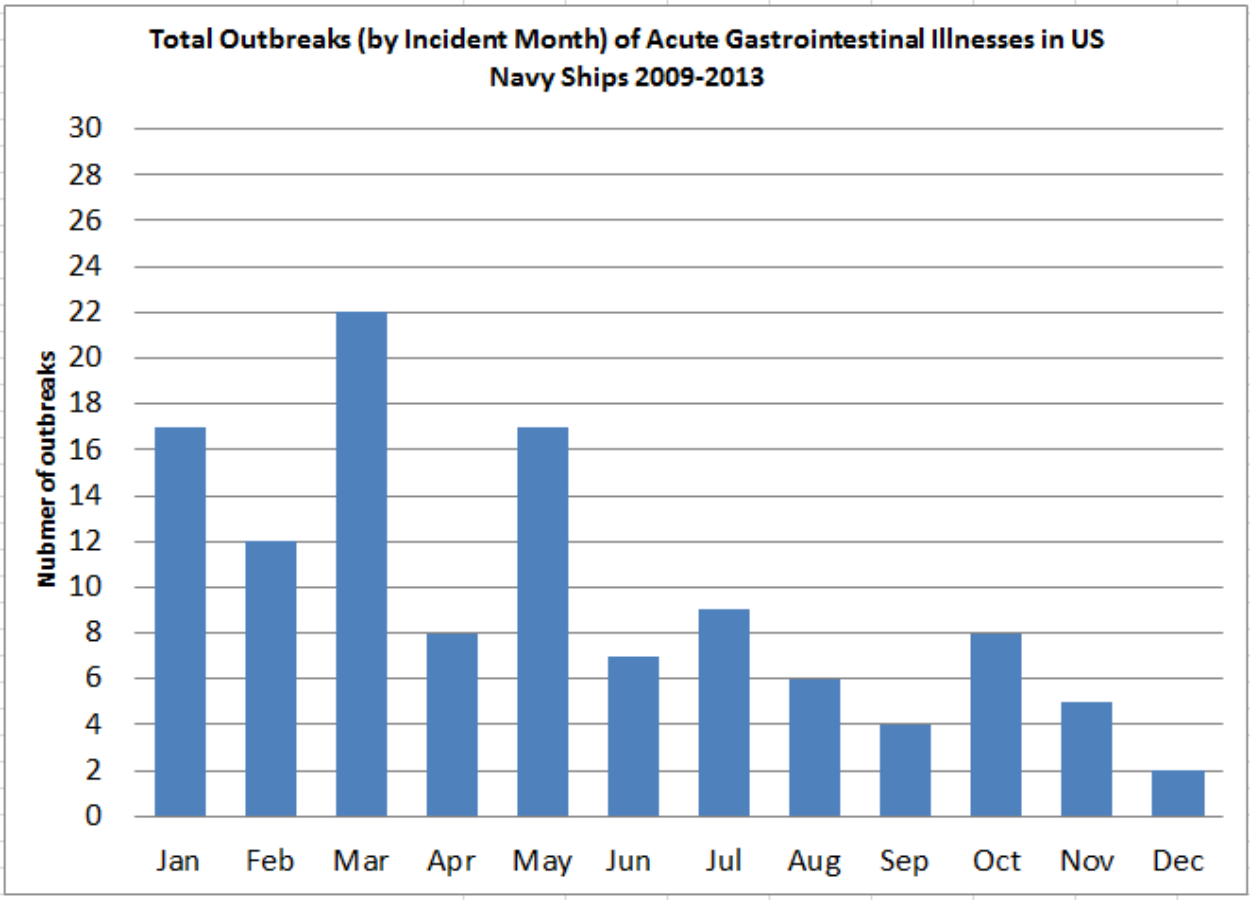
Appendix A

Burden of NoV Infections on U.S. Fleet

The precise burden of norovirus illnesses on the U.S. Fleet is difficult to determine because of underreporting and a lack of causative agent identification in reported events. However, a review of the number of outbreaks of acute gastroenteritis may provide some insight since reports from the U.S. Centers for Disease Control indicate that as many as 50% of reported outbreaks of acute gastroenteritis in the United States can be attributed to NoVs.

Below is a summary of information we have about outbreaks of acute gastroenteritis in US Navy ships. It was extracted from disease non-battle injury reports (DNBI), medical event reports (MERs), media reports, and reports from disease outbreak investigations. We included any events where a shipboard unit reporter specifically identified a medical event as an outbreak of acute gastrointestinal illness in a MER or in a DNBI report. Also included are instances from DNBI reports where 3% or more of any ship's crew sought care for acute gastrointestinal illnesses within any 21 day period whether or not the unit level reporter called the event an outbreak. We learned of one outbreak from media reports. Note that Military Sealift Command ships first began reporting their DNBI in October of 2009.





Oubreaks of Acute Gastrointestial Illnesses in US Fleet by Ship Class						
Ship Class	**2009**	**2010**	**2011**	**2012**	**2013**	**Total**
CVN		4 (10.5%)	2 (10.5%)	9 (47.4%)	7 (50%)	22 (18%)
CG	1 (3.7%)	1 (2.6%)	1 (5.3%)			3 (2.6%)
DDG	5 (18.5%)	5 (13.2%)	4 (21.1%)		2 (14.3%)	16 (13.7%)
FFG	3 (11.1%)	3 (7.9%)	2 (10.5%)			8 (6.8%)
LHD	6 (22.2%)	6 (15.8%)	3 (15.8%)	3 (15.8%)	2 (14.3%)	20 (17.1%)
LPD	4 (14.85)	4 (10.5%)	2 (10.5%)	2 (10.5%)		12 (10.3%)
LSD	2 (7.4%)	1 (2.6%)	2 (10.5%)	3 (10.8%)	2 (14.3%)	10 (8.5%)
LCC			1 (5.3%)			1 (0.9%)
SSN/SSBN	6 (22.2%)	6 (15.8%)		1 (5.3%)	1 (7.1%)	14 (12.0%)
T-AOE		1 (2.6%)				1 (0.9%)
AS		2 (5.3%)				2 (1.7%)
LCS						
T-AH		1 (2.6%)		1 (5.3%)		2 (1.7%)
T-AKE		2 (5.3%)				2 (1.7%)
T-ARS		2 (5.3%)				2 (1.7%)
T-AO			2 (10.5%)			2 (1.7%)
Total	27 (100%)	38 (100%)	19 (100%)	19 (100%)	14 (100%)	117 (100%)

The table below summarizes reported attack rates from 104 of the 117 outbreaks of acute gastroenteritis we believe occurred in Navy ships from 2009 to 2013. Attack rates noted here are equivalent to rates of initial unique visits to a ship's medical department that we believe were the result of a disease outbreak as we defined one above. Bouts of outbreak-associated illnesses which did not result in a health care encounter were not included. Surface combatants include guided missile cruisers (CGs), guided missile destroyers (DDGs), guided missile frigates (FFGs), and littoral combat ships (LCSs). Combat Logistics ships for this report include hospital ships (T-AHs), oilers (T-AOs), dry cargo and ammunition ships (T-AKEs), salvage ships T-ARSs, and combat support ships (AOEs). We placed the combat support command ships (LCCs) with the combat logistics ships. Other ship groupings are as defined by the Naval Sea Systems Command Shipbuilding Support Office in their *Naval Vessel Register*.

	Reported Acute GI Illness Attack Rates per hundred crew (2009-2013)				
	Surface Combatants n = 22	Submarines n = 13	Amphibious Warfare Ships n = 39	Aircraft carriers n = 22	Combat Logistics Ships n = 8
Low	2.32	3.01	3.10	2.50	4.00
High	20.97	15.86	15.86	18.49	47.37
Mean	8.20	6.51	6.51	6.55	9.69
Median	5.45	5.45	5.45	5.44	7.01

Appendix B

Last Name: _____, First Name: _____, MI: ___, Today's Date: _____

Last 4 SSN: _____, Rate: _____, Rank:_____, Age:_____, Sex: _____,

Work Center Phone Number: _____

Are you (circle one): Ship's Company, Air Wing, Embarked Marine, Other

Permanent Assignment Dept./Squadron/Battalion/Detachment: _____

Permanent Assignment Division: _____

Primary Work Center Compartment Number: _____ Primary Galley: _____

Berthing Compartment Number: _____

Live off of ship: Y or N

Do you have any of the following symptoms (Circle Yes or No):

Nausea	**Yes**	**No**
Vomiting	**Yes**	**No**
Muscle Aches	**Yes**	**No**
Cramping	**Yes**	**No**
Fever	**Yes**	**No**
Diarrhea	**Yes**	**No**

Number of loose stools in the past 24 hours (Circle Answer): 0 1 2 3 4 more than 4

Date and time that your symptoms began: _____

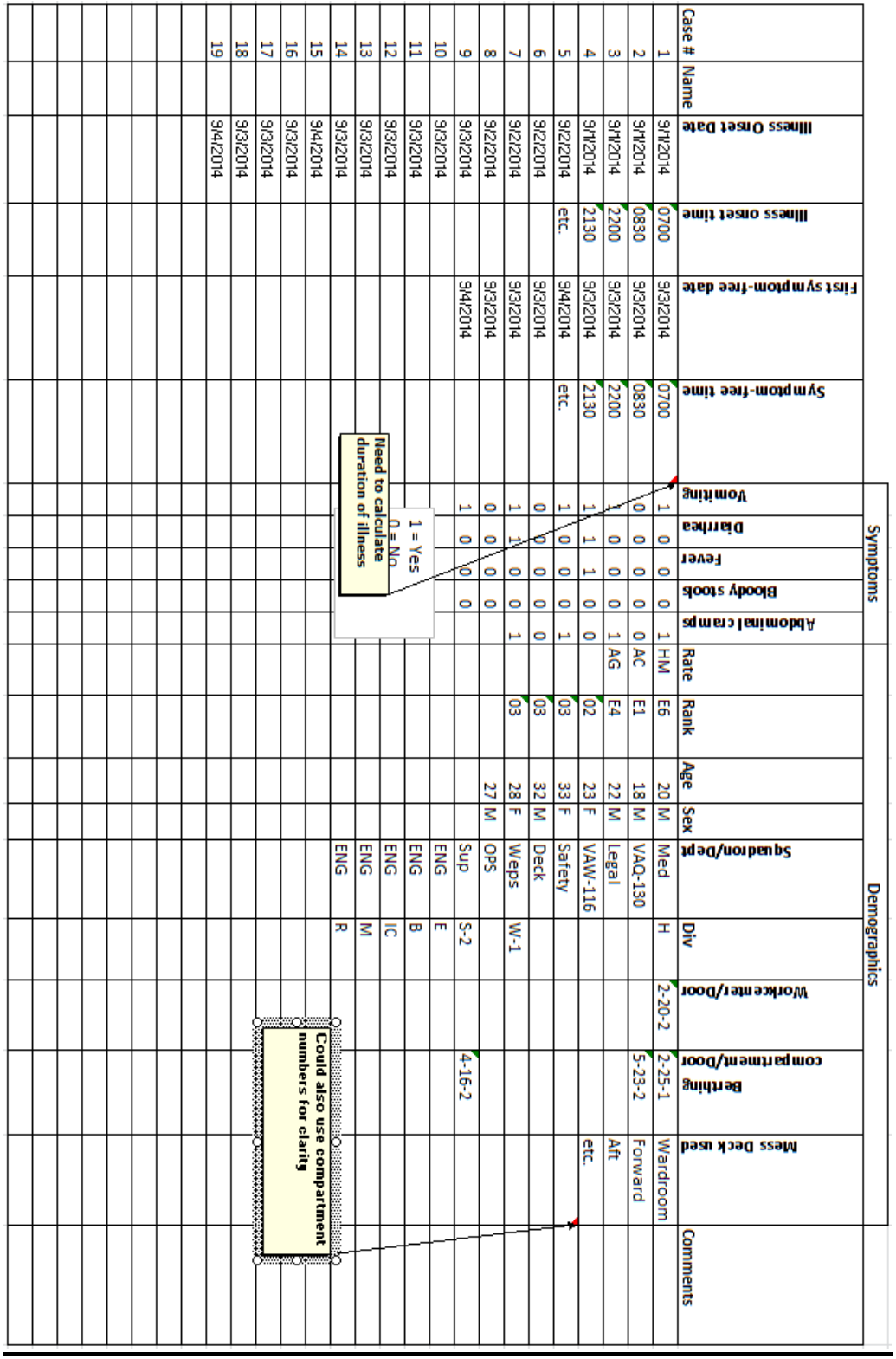
Did you receive medical treatment aboard ship? Yes No

Did you receive medical treatment off the ship? Yes No

This model questionnaire is limited to collecting information about the patients. Know that you may need to add more questions to identify and assess environmental exposures. Preventive Medicine support for questionnaire development may be obtained from your nearest NEPMU.

Appendix C

Disease Outbreak Line List Example



Appendix D

Navy Environmental and Preventive Medicine Unit Contact Information

1. Officer in Charge
Navy Environmental and Preventive Medicine Unit TWO
1285 West D Street, BLDG U238
Norfolk, VA 23511-3394
Com: (757) 953-6600; DSN (312) 377-6600 Fax (757) 953-7212
E-mail : usn.hampton-roads.navhospporsva.list.nepmu2norfolk-threatassess@mail.mil
PLAD : NAVENPVNTMEDU TWO NORFORLK VA

2. Officer in Charge
Navy Environmental and Preventive Medicine Unit FIVE
3235 Albacore Alley
San Diego, CA 92136-5199
Com: (619) 556-7070; DSN (312) 526-7070; Fax (619)-556-7071
Secure Telephone (STU-III): (619) 556-9694: DSN 526-9694
E-mail: HealthSurveillance@med.navy.mil
PLAD: NAVENPVNTMEDU FIVE SAN DIEGO CA

3. Officer in Charge
Navy Environmental and Preventive Medicine Unit SIX
385 South Ave Bldg 618
Joint Base Pearl Harbor-Hickam, HI 96860
Com: (808) 471-0237; DSN (315) 471-0237
E-mail: usn.jbphh.navenpvntmedusixhi.list.nepmu6-threat-assessment@mail.mil
Fax: (808) 471-0157
PLAD: NAVENPVNTMEDU SIX PEARL HARBOR HI

4. Officer in Charge
Navy Environmental and Preventive Medicine Unit SEVEN
PSC 819 Box 67
FPO AE 09645-0085
Com: 011-34-956-82-2230; DSN (314) 727-2230
E-mail: NEPMU7@eu.navy.mil
PLAD: NAVENPVNTMEDU SEVEN ROTA SPAIN

Appendix E

Action Check List for Outbreak of acute Viral GI illness

1. Inform the command leadership of the problem and advise them of necessary command actions.
2. Inform and advise the crew of the problem and actions you expect of them.
3. Submit an "Urgent" Navy Medical Event Report following requirements in the BUMEDINST 6220.12
4. Submit patient specimens as previously planned following guidance of your nearest NEPMU.
5. Distribute questionnaires to Department leaders to identify unreported cases.
6. Prepare a line list of patients meeting your case definition.
7. Construct and evaluate an epidemiologic curve for clues to the source of illnesses
8. Exclude all ill FSWs from working in the galley until they have been symptom free for 48 to 72 hours
9. Ensure all food services workers use gloves and proper hand hygiene before handling any Ready-to-eat foods.
10. Eliminate all self-service practices from the galleys/food service lines until the illness rates return to baseline levels.
11. If operationally, feasible cohort ill persons together in specific berthing spaces or parts of them until 48 to 72 hours after the illness of these groups subside.
12. Execute a plan for handling contaminated clothing and linens contaminated with vomit or feces.
13. Limit unnecessary group activities or group gatherings, and consider closing access to spaces where this occurs such as workout spaces, etc.
14. Ensure the contaminated environment is properly disinfected after any episodes of vomiting/diarrhea
15. Routinely clean/disinfect frequently touched environmental surfaces (door handles plus latching devices, and door knobs/watertight door levers, light switches, hand railings, phones, etc.) and equipment in areas where ill are grouped together, clinical areas, and high traffic areas.
16. Save, refrigerate and place on medical hold samples of suspicious food items in sterile urine specimen cups stored in plastic bags and away from all other food items. Seek guidance on food sample testing from your nearest Navy Environmental and Preventive Medicine Unit (NEPMU).

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