# FY19 Epi-Tech Surveillance Training

Friday, October 05, 2018 - Monday, September 30, 2019
DCS, APG, MD

***Provided By***
U.S. Army Medical Command

| Activity ID | Course Director | CME Planner |
|---|---|---|
| 2018-1656 | John Ambrose | Mimi C. Eng |

## Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of U.S. Army Medical Command and ARMY PUBLIC HEALTH CENTER. The U.S. Army Medical Command is accredited by the ACCME to provide continuing medical education for physicians.

## Credit Designation

The U.S. Army Medical Command designates this Live Activity for a maximum of 5 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**This is a required handout. It must be disseminated to each learner prior to the start of the activity.**

**Statement of Need/Gap Analysis**

**The purpose of this CME activity is to address the identified gap(s):**

1. Disease identification - verification of disease by established case definitions have been utilized by the local health departments, Centers for Disease Control and Prevention, World Health Organization, and the Department of Defense. With the every changing list of reportable medical events and new emerging infections, case definitions change rapidly. Army epidemiologist conduct verification studies that monitor the efficiency of reporting by local public health experts and have concluded that completeness percentages for reportable medical events range as low as 35% for select diseases.

2. Outbreak reporting - Recent evidence have demonstrated that outbreak reporting and communication between public health agencies is poor. In fact, the Army failed to report six outbreaks in the DRSi between June 2016 and September 2016.

3. Surveillance techniques - Surveillance of common communicable diseases continues to be a problem among local MTFs. In fact, cases of campylobacter were not investigated in 2015 for PACOM MTFS, while 2016 cases of salmonella were not investigated. Civilian public health agencies are required to conduct investigations into all reportable medical events. However, DoD facilities often do not take initiative to conduct this investigation.

**Learning Objectives**

1. Based on case presentation, enhance your ability to improve case finding and surveillance practices within your local MTF.

**Target Audience / Scope of Practice**

Target Audience: The intended audience for this educational activity includes preventive medicine physicians, community health nurses, public health nurses, and epidemiology technicians.

Scope of Practice: This activity will improve the performance of preventive medicine personnel who conduct surveillance activities in inpatient and outpatient settings.

**Disclosure of Faculty/Committee Member Relationships**

It is the policy of the U.S. Army Medical Command that all CME planning committee/faculty/authors disclose relationships with commercial entities upon invitation of participation. Disclosure documents are reviewed for potential conflicts of interest and, if identified, they are resolved prior to confirmation of participation.

**Faculty Members**

| | |
|---|---|
| Gilmore, Jessica | - No information to disclose. |
| Graham-Glover, Bria | - No information to disclose. |
| Kebisek, Julianna | - No information to disclose. |
| Russell, Jamaal | - No information to disclose. |
| White, Duvel | - No information to disclose. |
| Ruiz, Stefani | - No information to disclose. |

**Committee Members**

| | |
|---|---|
| Ambrose, John | - No information to disclose. |
| Brown, Jodi | - No information to disclose. |
| Eng, Mimi | - No information to disclose. |
| Gibson, Kelly | - No information to disclose. |
| Graham-Glover, Bria | - No information to disclose. |
| Holbrook, Victoria | - No information to disclose. |
| Kebisek, Julianna | - No information to disclose. |
| Riegodedios, Asha | - No information to disclose. |
| Rudiger, Courtney | - No information to disclose. |

**Acknowledgement of Commercial Support**

There is no commercial support associated with this educational activity.

# Announcements

- **To register for the Monthly Disease Surveillance Trainings:**
  - Contact your service surveillance HUB to receive monthly updates and reminders
  - Log-on or request log-on ID/password: https://tiny.army.mil/r/zB8A/CME
  - Register at: https://tiny.army.mil/r/EQk1/EpiTechFY19
- **Confirm attendance:**
  - Please enter your full name/email into the DCS chat box to the right or email your service hub
  - You will receive a confirmation email within 48 hours with your attendance record; if you do not receive this email, please contact your service hub
- **Reminder:**
  - Mute your phones by pressing the mute button or pressing *6
  - DO NOT press the “hold” button as the rest of the conference will hear the hold music


# How to Investigate Gastrointestinal Illnesses

STEFANI RUIZ, EPIDEMIOLOGIST

USAFSAM/PHR APRIL 30, 2019

# Objectives

- Be familiar with the epidemiology of organisms that cause GI illness
- Identify appropriate times to use a GI questionnaire and describe when and how to collect an exposure history
- Norovirus epidemiology and control

# Epidemiology of Gastrointestinal Organisms

- Knowing the epidemiology of the organism can provide clues to what the organism is:
  - Incubation period
  - Mode of transmission
  - Number of ill over time
  - Clinical signs/symptoms
  - Duration of symptoms
- The epidemiology can drive next steps and actions to mitigate further disease spread

## Guidelines for Confirming Cause of Foodborne Disease Outbreaks

Bacterial | Chemical | Parasitic | **Viral**

| Etiologic Agent | Incubation Period | Clinical Syndrome | Confirmation |
|---|---|---|---|
| **Hepatitis A** | 15-50 days; median: 28 days | Jaundice, dark urine, fatigue, anorexia, nausea | Detection of immunoglobulin M antibody to hepatitis A virus (IgM anti-HAV) in serum from two or more persons who consumed epidemiologically implicated food |
| **Norovirus (NoV)** | 12-48 hrs (median 33 hours) | Diarrhea, vomiting, nausea, abdominal cramps, low-grade fever | Detection of viral RNA in at least two bulk stool or vomitus specimens by real-time or conventional reverse transcriptase-polymerase chain reaction (RT-PCR)<br>OR<br>Visualization of viruses (NoV) with characteristic morphology by electron microscopy in at least two or more bulk stool or vomitus specimens<br>OR<br>Two or more stools positive by commercial enzyme immunoassay (EIA) |

https://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming_diagnosis.html

| ORGANISM | COMMON NAME OF ILLNESS | ONSET TIME AFTER INGESTING | SIGNS & SYMPTOMS | DURATION | FOOD SOURCES |
|---|---|---|---|---|---|
| ***Bacillus cereus*** | *B. cereus* food poisoning | 10-16 hrs | Abdominal cramps, watery diarrhea, nausea | 24-48 hours | Meats, stews, gravies, vanilla sauce |
| ***Campylobacter jejuni*** | Campylobacteriosis | 2-5 days | Diarrhea, cramps, fever, and vomiting; diarrhea may be bloody | 2-10 days | Raw and undercooked poultry, unpasteurized milk, contaminated water |
| ***Clostridium botulinum*** | Botulism | 12-72 hours | Vomiting, diarrhea, blurred vision, double vision, difficulty in swallowing, muscle weakness. Can result in respiratory failure and death | Variable | Improperly canned foods, especially home-canned vegetables, fermented fish, baked potatoes in aluminum foil |
| ***Clostridium perfringens*** | Perfringens food poisoning | 8–16 hours | Intense abdominal cramps, watery diarrhea | Usually 24 hours | Meats, poultry, gravy, dried or precooked foods, time and/or temperature-abused foods |
| ***Cryptosporidium*** | Intestinal cryptosporidiosis | 2-10 days | Diarrhea (usually watery), stomach cramps, upset stomach, slight fever | May be remitting and relapsing over weeks to months | Uncooked food or food contaminated by an ill food handler after cooking, contaminated drinking water |
| ***Cyclospora cayetanensis*** | Cyclosporiasis | 1-14 days, usually at least 1 week | Diarrhea (usually watery), loss of appetite, substantial loss of weight, stomach cramps, nausea, vomiting, fatigue | May be remitting and relapsing over weeks to months | Various types of fresh produce (imported berries, lettuce, basil) |
| ***E. coli (Escherichia coli)* producing toxin** | *E. coli* infection (common cause of "travelers' diarrhea") | 1-3 days | Watery diarrhea, abdominal cramps, some vomiting | 3-7 or more days | Water or food contaminated with human feces |
| ***E. coli* O157:H7** | Hemorrhagic colitis or *E. coli* O157:H7 infection | 1-8 days | Severe (often bloody) diarrhea, abdominal pain and vomiting. Usually, little or no fever is present. More common in children 4 years or younger. Can lead to kidney failure | 5-10 days | Undercooked beef (especially hamburger), unpasteurized milk and juice, raw fruits and vegetables (e.g. sprouts), and contaminated water |

https://www.fda.gov/food/foodborneillnesscontaminants/foodborneillnessesneedtoknow/default.htm

# Question

- How do you know if you need to investigate GI illness?
- Do all GI cases need to be investigated?

Answer is based on:

a) if the organism is known or unknown and

b) if the case is isolated or part of an outbreak

# GI Questionnaire for Known Organism

# GI Questionnaire – **KNOWN** Organism

- Air Force (isolated organism)

PH Kx Epidemiology Toolbox

https://kx2.afms.mil/kj/kx7/PublicHealth/Pages/content.aspx#/Comm/CommHealth

## USAFSAM Investigative Recommendations:

- Anthrax - Investigation Recommendations | Investigation Form
- Campylobacter - Investigation Recommendations | Investigation Form
- Cryptosporidiosis - Investigation Recommendations | Investigation Form
- E. coli STEC - Investigation Recommendations | Investigation Form
- Hepatitis A - Investigation Recommendations | Investigation Form
- Legionellosis - Investigation Recommendations | Investigation Form
- Measles - Investigation Recommendations | Investigation Form
- Meningococcal Disease - Investigation Recommendations | Investigation Form
- Mumps - Investigation Recommendations | Investigation Form
- Salmonellosis - Investigation Recommendations | Investigation Form

https://www.oregon.gov/oha/ph/DISEASESCONDITIONS/COMMUNICABLEDISEASE/REPORTINGCOMMUNICABLEDISEASE/REPORTINGFORMS/Pages/index.aspx

Oregon Health Authority

### Case Report Forms

Public Health Communicable Disease Reporting

### Download Forms

**NOTE: Forms are updated periodically. To ensure you have the most current version, we strongly recommend using Orpheus or DUDE.**

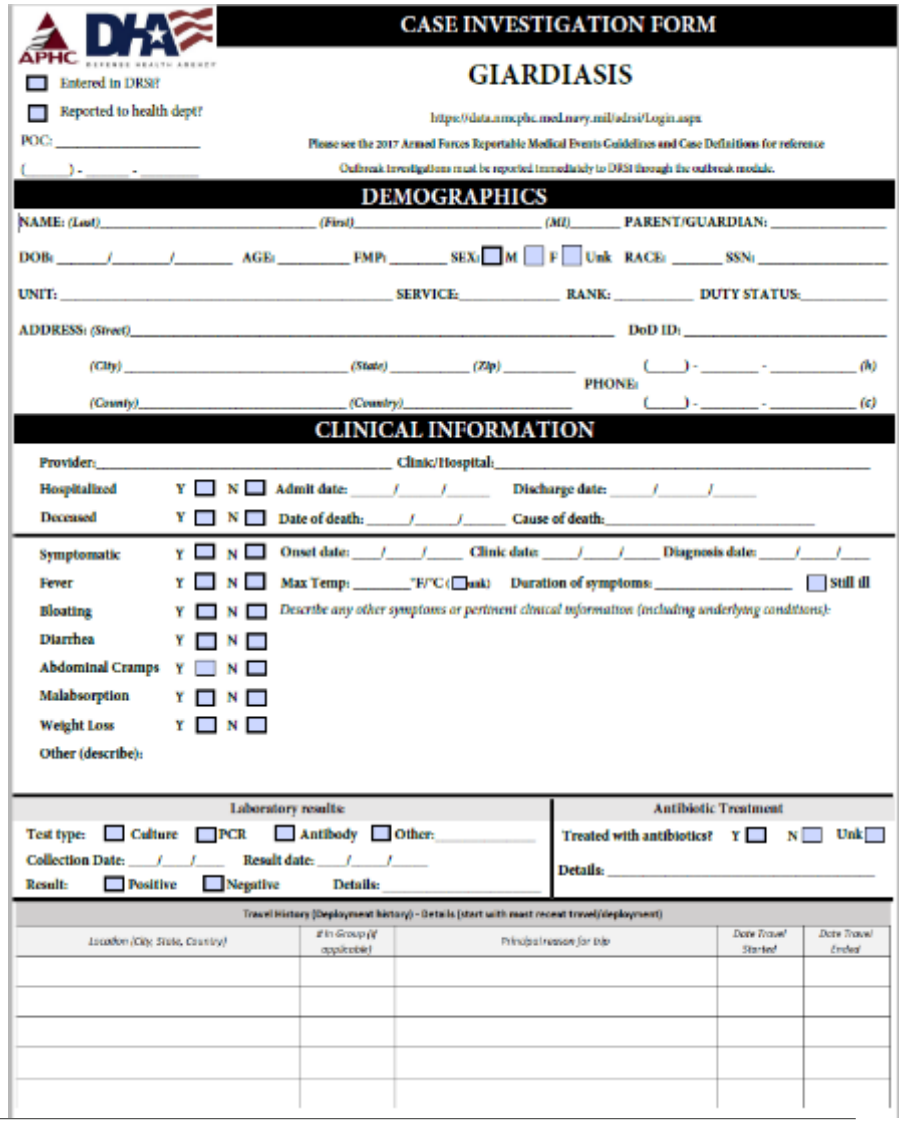
| Disease Form | Last Updated | Synched w/ Orpheus? |
|---|---|---|
| Anaplasmosis - CDC form | | No |
| Animal Bites and Rabies | 06/2003 | No |
| Anthrax | 04/2013 | No |
| Babesiosis - CDC form | 04/2015 | No |
| Botulism | 05/2013 | No |
| Brucellosis - CDC form | | No |
| Campylobacteriosis | 02/2018 | Yes |
| Carbapenem-resistant *Enterobacteriaceae* | 06/2016 | No |
| Chikungunya - Draft form | 07/2014 | No |
| Cholera - See *Vibrio* infection, below | | |
| Coccidioidomycosis Valley Fever - CDC form | | No |
| Colorado tick fever - CDC form | | No |
| Confidential Oregon Morbidity Report | 11/2015 | No |
| Cryptosporidiosis | 07/2018 | Yes |
| Cyclosporiasis | 12/2004 | No |
| Diphtheria | 06/2003 | No |

# GI Questionnaire – **KNOWN** Organism

- Navy (isolated organism):
  - Collect as much information as possible in AHLTA/CHCS
  - Identify if high risk situation (food handler, day care attendee, close living environment like ship or recruit training)
  - Refer to local/state civilian case forms or CDC case forms if high risk
  - Contact your NEPMU to determine next steps if
    - Potential outbreak
    - High risk exposure has occurred
  - Work closely with civilian counterparts

# GI Questionnaire – **KNOWN** Organism

- Army (isolated organism):
  - Contact APHC for fact sheets/investigation forms
  - Collect as much information as possible in AHLTA/CHCS
  - Work closely with Preventive Medicine department
  - Contact local health department for additional guidance
  - DO NOT contact Centers for Disease Control



CASE INVESTIGATION FORM

GIARDIASIS

Entered in DRSi?
Reported to health dept?
POC:
https://data.nmcphc.med.navy.mil/adrsi/Login.aspx
Please see the 2017 Armed Forces Reportable Medical Events Guidelines and Case Definitions for reference
Outbreak investigations must be reported immediately to DRSi through the outbreak module.

DEMOGRAPHICS

NAME: (Last) (First) (MI) PARENT/GUARDIAN:
DOB: AGE: FMP: SEX: M F Unk RACE: SSN:
UNIT: SERVICE: RANK: DUTY STATUS:
ADDRESS: (Street) DoD ID:
(City) (State) (Zip) PHONE: (h)
(County) (Country) (c)

CLINICAL INFORMATION

Provider: Clinic/Hospital:
Hospitalized Y N Admit date: Discharge date:
Deceased Y N Date of death: Cause of death:

Symptomatic Y N Onset date: Clinic date: Diagnosis date:
Fever Y N Max Temp: °F/°C (Unk) Duration of symptoms: Still ill
Bloating Y N Describe any other symptoms or pertinent clinical information (including underlying conditions):
Diarrhea Y N
Abdominal Cramps Y N
Malabsorption Y N
Weight Loss Y N
Other (describe):

Laboratory results:
Test type: Culture PCR Antibody Other:
Collection Date: Result date:
Result: Positive Negative Details:

Antibiotic Treatment
Treated with antibiotics? Y N Unk
Details:

Travel history (Deployment history) - Details (start with most recent travel/deployment)

| Location (City, State, Country) | # in Group (if applicable) | Principal reason for trip | Date Travel Started | Date Travel Ended |
|---|---|---|---|---|
| | | | | |
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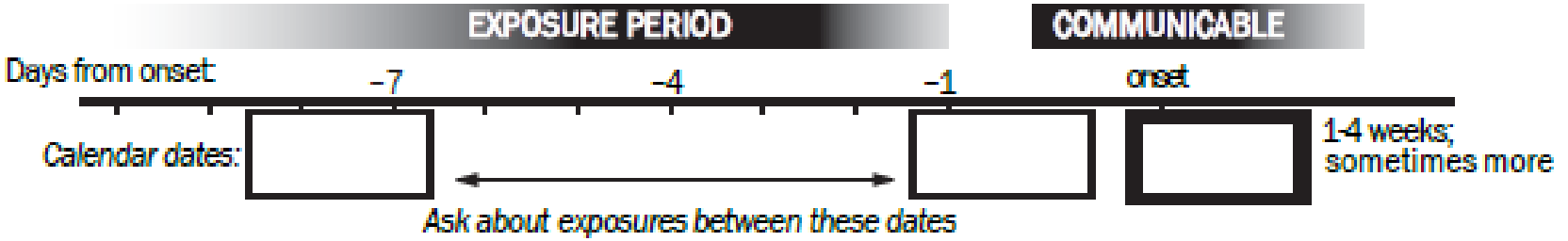
# GI Questionnaire – **KNOWN** Organisms

- *Systematically* ask about ***all*** exposures a minimum of 1 incubation prior to illness
  - This means that if you are investigating *E. coli*, you will not do a standard 3 day exposure history because *E. coli's* incubation period can extend up to 7-10 days.

**Shiga toxin producing *E. coli* (STEC)**

**INFECTION TIMELINE**

Enter onset date in heavy box. Count back to figure the probable exposure period. Ask the below risk questions pertaining to this time period.



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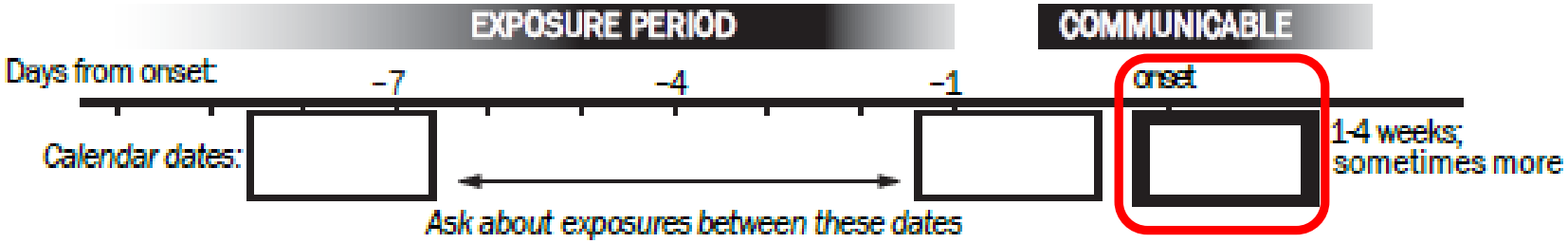

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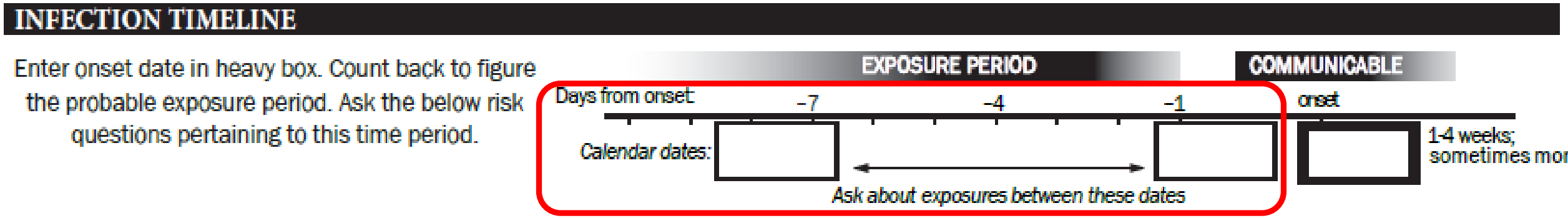

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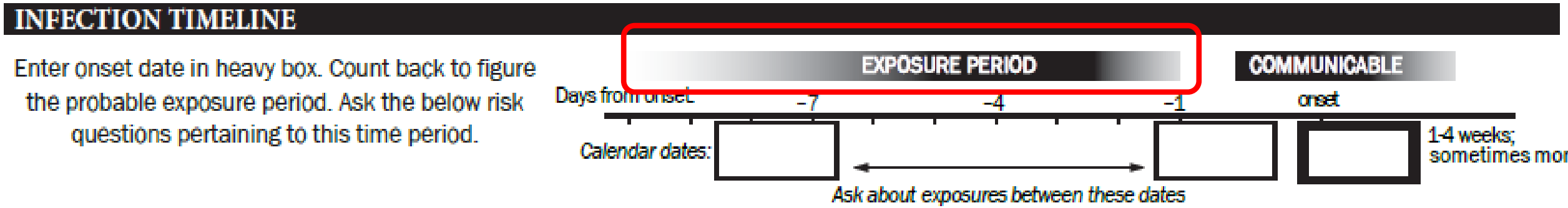

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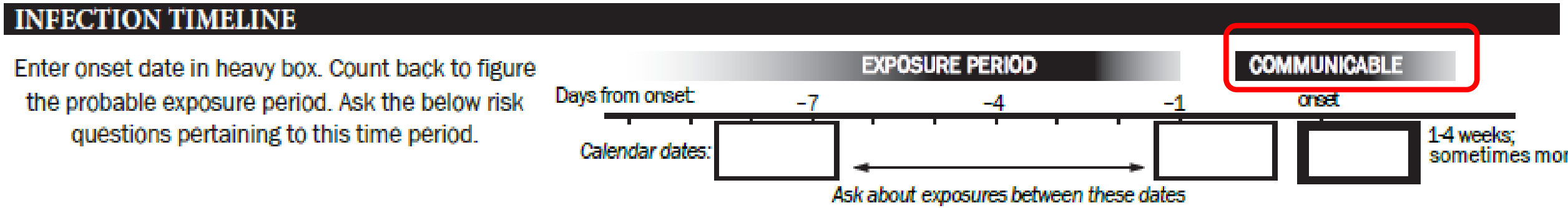


# GI Questionnaire – **KNOWN** Organisms

**POSSIBLE SOURCE(S) OF INFECTION DURING EXPOSURE PERIOD**

Provide ancillary details (names, locations, details) about possible sources and risk factors. Ask about any leftovers including packaging or containers in the trash, collect some for testing. Contact USAFSAM/PHR for details.

| Yes | No | Unk | HIGH RISK FOODS |
|---|---|---|---|
| ☐ | ☐ | ☐ | Ground beef handling or cooked in home |
| ☐ | ☐ | ☐ | Any ground beef |
| ☐ | ☐ | ☐ | Raw/rare meat |
| ☐ | ☐ | ☐ | Raw milk |
| ☐ | ☐ | ☐ | Queso fresco/raw milk cheese |
| ☐ | ☐ | ☐ | Venison or other game |
| ☐ | ☐ | ☐ | Dried meat (salami, jerky, etc.) |
| ☐ | ☐ | ☐ | Fresh spinach, lettuce or leafy greens |
| ☐ | ☐ | ☐ | Sprouts (alfalfa, clover, bean) |
| ☐ | ☐ | ☐ | Unpasteurized juice or cider |

| Yes | No | Unk | OTHER POTENTIAL SOURCES |
|---|---|---|---|
| ☐ | ☐ | ☐ | Food at restaurants, fast food, vendors |
| ☐ | ☐ | ☐ | Food at other gatherings (potlucks and events) |
| ☐ | ☐ | ☐ | Work exposure to human or animal excreta |
| ☐ | ☐ | ☐ | Contact with diapered children or adults |
| ☐ | ☐ | ☐ | Recreational water exposure (pools, lakes, rivers, water parks, backyard splash pools....) |
| ☐ | ☐ | ☐ | Livestock or farm exposure |
| ☐ | ☐ | ☐ | Petting zoos, county fairs, 4H |

| Y | N | TRAVEL |
|---|---|---|
| ☐ | ☐ | CONUS to _____ |
| ☐ | ☐ | OCONUS to _____ |

Provide details about all travel:
Departure ___/___/___ Return ___/___/___
Departure ___/___/___ Return ___/___/___

*OTHER FOLLOW-UP.* Provide details as appropriate.

| Yes | No | Unk | |
|---|---|---|---|
| ☐ | ☐ | ☐ | Does the patient know anyone with a similar illness? |
| ☐ | ☐ | ☐ | Does the patient work or attend daycare? |
| ☐ | ☐ | ☐ | Are other children/staff ill? |
| ☐ | ☐ | ☐ | Daycare/work restriction for patient? |

| Yes | No | Unk | |
|---|---|---|---|
| ☐ | ☐ | ☐ | Daycare inspection as part of investigation? |
| ☐ | ☐ | ☐ | Prepared food for public/private gatherings? |
| ☐ | ☐ | ☐ | Restaurant inspection? |
| ☐ | ☐ | ☐ | Water supply testing? |

**Shiga toxin producing *E. coli* (STEC)**

# GI Questionnaire – **KNOWN** Organisms

If the organism is reportable:

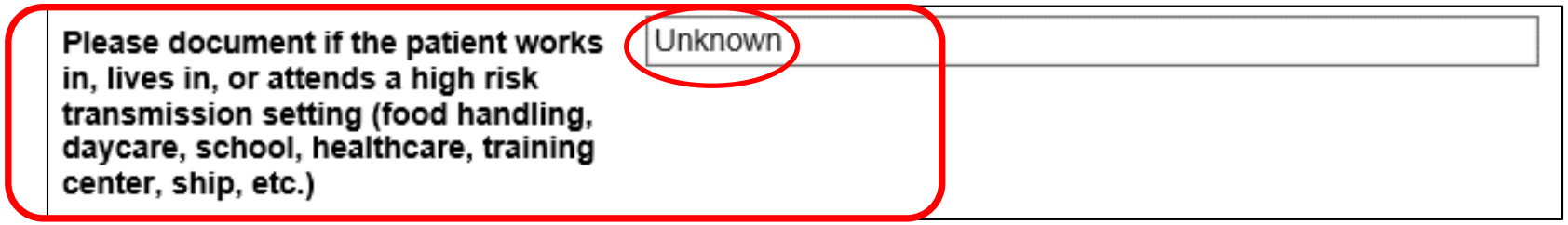
- Interview **all isolated cases**
- Do not wait until you have an outbreak before interviewing
- Might take a month to exceed the baseline
- Very difficult to go back to the first case and ask about exposures from a month ago

- Depth of interview dependent upon:
  - Organism
  - Isolated case vs. outbreak
  - State requirements

# GI Questionnaire – **KNOWN** Organisms

## Investigating isolated cases

- At *minimum* obtain the following:
  - **Epi data**
    - Symptoms, onset date, exposure date (if known), duration of illness, etc.
  - **Sensitive occupation: case/ household contacts**
    - Food handling, day care, school, group living, healthcare, training center, or ship
    - Highly protected population that can not get sick: Special Ops/ Special Forces, etc.



# GI Questionnaire – **KNOWN** Organisms

Ohio Examples (isolated cases)

- Organisms that only require identifying epi data and sensitive occupation/high risk transmission setting:
  - e.g., Campylobacter, Shigella, Norovirus, Salmonella, Giardia, Amebiasis
  - If none, the interview is over and no further work up is needed

- Organisms that require completion of the entire questionnaire:
  - e.g., Hepatitis A

# GI Questionnaire Unknown Organisms

# GI Questionnaire – **UNKNOWN** Organisms

- You will not interview everyone with unknown GI illness, only those who:

  a) exceed the baseline for GI illness

  b) meet the case definition that you define (we don't have an organism yet, so this is not the RME case definitions)

# GI Questionnaire – **UNKNOWN** Organisms

## Baseline:

- What's your daily/weekly (non-outbreak) baseline of GI disease?
  - For operational settings: Medical should monitor sick call log/ binnacle list to track daily increase
  - For fixed MTFs: Use ESSENCE to identify baseline
  - For Day Cares: Simple excel spreadsheet to track daily illness
- Important to track illness on a routine basis (before an outbreak)
- You don't know you have an increase if you don't know your baseline.

# GI Questionnaire – **UNKNOWN** Organisms

- General shipboard sick call log/binnacle list
- Collect routinely (regardless if there is an outbreak)
- Can be used as the beginning of your line list

| Last name | First name | Company | Date | SIQ | Sypmtoms | Provider | COMMENTS |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
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# GI Questionnaire – **UNKNOWN** Organisms

- General sick (absence) log for Day Cares
- Reason can be a pre-defined list of syndrome categories (GI, rash, respiratory, etc.)
- PH collects this weekly (regardless if there is an outbreak)
  - Frequent contact helps maintain a relationship

CDC Exclusion Log  Week Date Range:_____

*Private Information*

| Date | Child Name: Last, First | Child's age | Child's room | Parent Name: Last, First | Parent Unit | Reason of illness |
|---|---|---|---|---|---|---|
| | | | | | | |
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# GI Questionnaire – **UNKNOWN** Organisms

If an increase is noted:

- Summarize data from sick log/binnacle list
  - Any commonalities in symptoms, age, onset date, berthing/dorm room, or Day Care classroom
- Talk to providers
  - What are they seeing and for how long, what do they think the organism is, what are the most common symptoms, how long are they issuing quarters, are they treating with IV fluids, is there blood in the stool, is there vomiting or fever
- This is the *beginning* of your outbreak <u>case definition</u>

# GI Questionnaire – **UNKNOWN** Organisms

- Goals of an outbreak investigation influence next steps
- Nature of the organism, context (deployed, not deployed, amount of resources on hand, number of cases, etc), and goals of the outbreak will direct amount of time spent interviewing
- Goals of outbreak have to match resources available

# GI Questionnaire – **UNKNOWN** Organisms

If your goals are to:

1) Stop the outbreak (not identify source):

   ➡ Limit interviewing, spend more time controlling the spread

2) Identify the source:

   ➡ Spend more time interviewing; Complete full exposure assessment and entire questionnaire

3) Stop the outbreak ***and*** identify the source

   ➡ Time and resources must be balanced with interviewing and controlling the spread

# GI Questionnaire – **UNKNOWN** Organisms

Instruct providers to:

1. Test patients who meet the case definition
   - As soon as a common organism is identified [5-8 samples], testing can stop (unless there's a reason to continue)
2. Send patients who meet the case definition to PH/PM for interviewing
   - In operational settings PH/PM may not be co-located with the unit; providers may need to do their own interviewing and communicating with each other about illness upticks and case definitions.
3. How to order in CHCS (for fixed MTFs)

# GI Questionnaire – **UNKNOWN** Organisms

Need to have good communication with providers:

ALCON:

Public Health and ER Physicians have identified a potential outbreak of hemorrhagic diarrhea. Currently there are 6 suspect cases. These patients have been preliminarily linked to the Tough Mudder race held in the Las Vegas area October 6 and 7. We are currently still within the incubation period of most causes of hemorrhagic diarrhea and may see more patients within the next few days or week. If you attend to a patient that has diarrhea and their history includes attending the Tough Mudder race or if you see any cases of hemorrhagic diarrhea please collect a stool sample and contact information for teammates. Refer patient and contact information to Public Health. Thank you for your time and consideration.

# GI Questionnaire – **UNKNOWN** Organisms

## Navy Case Intake Form:

- Providers document symptoms, epi data, sensitive occupation when the patient is in the clinic
- Helps standardize data collection across multiple providers
- Requires additional exposure questionnaire:
  - Check with your NEPMU; they can help you compile a questionnaire

**Diarrheal Outbreak Questionnaire Example**

***Please complete questionnaire for all patients who present with signs or symptoms of either diarrhea or vomiting.***

Today's Date: _____

Last Name: _____First Name: _____ MI: ___

DoD ID: _____Date of Birth:_____ Sex: _____

Clinic: _____ Ship: _____ Rank if not recruit:_____

Does the patient have any of the following symptoms (Circle Yes or No):

Nausea Yes No

Vomiting Yes No

Abdominal cramps 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

Number of vomiting incidents in the past 24 hours (Circle Answer)
0 1 2 3 4 more than 4

Date and time patient's symptoms began: _____

Was the patient hospitalized for symptoms? Yes No
If yes, dates of hospitalization: _____

Was the patient placed SIQ for symptoms? Yes No

Were stool or vomitous samples taken? Yes No

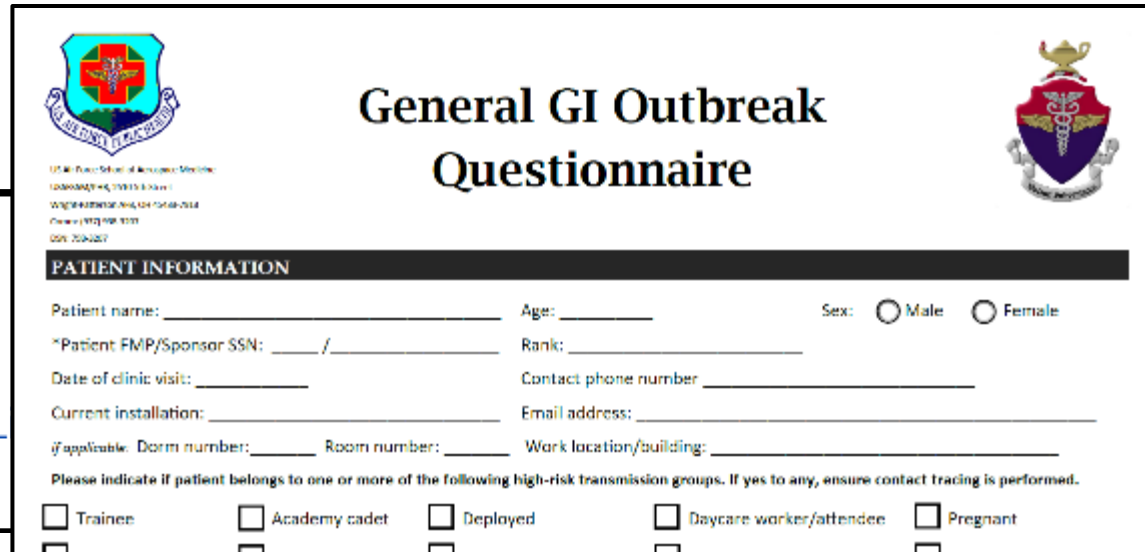
# GI Questionnaire –**UNKNOWN** Organisms

Air Force:

- Use a 7-day exposure questionnaire
  - On the Air Force PH Kx under Epidemiology Toolbox: (https://kx2.afms.mil/kj/kx7/PublicHealth/Pages/content.aspx#/Comm/CommHealth)
- Once an organism has been identified, switch to disease specific questionnaires

Outbreak Response Tools:

- Outbreak Response Kit
- School/CDC Norovirus Outbreak Kit + School/CDC Norovirus Line L
- GI Outbreak Questionnaire + Summary Doc (excel) + Directions



General GI Outbreak Questionnaire

PATIENT INFORMATION

Patient name: _____ Age: _____ Sex: ◯ Male ◯ Female

*Patient FMP/Sponsor SSN: ____/_____ Rank: _____

Date of clinic visit: _____ Contact phone number _____

Current installation: _____ Email address: _____

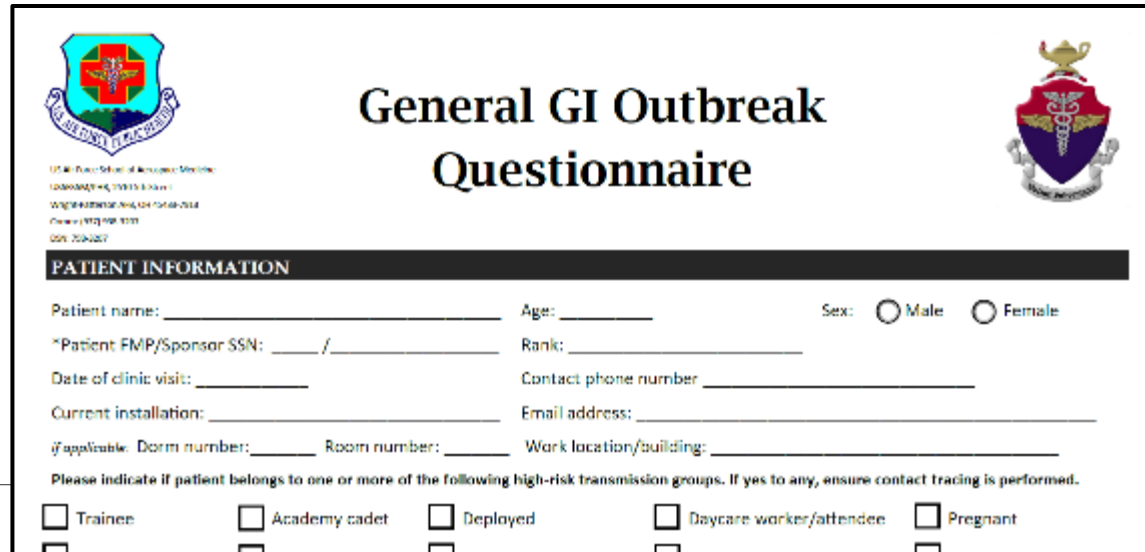
if applicable: Dorm number:_____ Room number: _____ Work location/building: _____

Please indicate if patient belongs to one or more of the following high-risk transmission groups. If yes to any, ensure contact tracing is performed.

☐ Trainee ☐ Academy cadet ☐ Deployed ☐ Daycare worker/attendee ☐ Pregnant

# GI Questionnaire – **UNKNOWN** Organism

- If each patient is electronically entered in the PDF as you are interviewing:
  - Adobe is set up in the background to automatically create an Excel line list (merges all PDF questionnaires together)
  - Separate Excel summary sheet automatically summarizes all responses for each question
  - Huge time savings: only enter data once (while you are interviewing)



General GI Outbreak Questionnaire

PATIENT INFORMATION

Patient name: _____ Age: _____ Sex: ◯ Male ◯ Female

*Patient FMP/Sponsor SSN: ____/_____ Rank: _____

Date of clinic visit: _____ Contact phone number _____

Current installation: _____ Email address: _____

*if applicable* Dorm number:_____ Room number: _____ Work location/building: _____

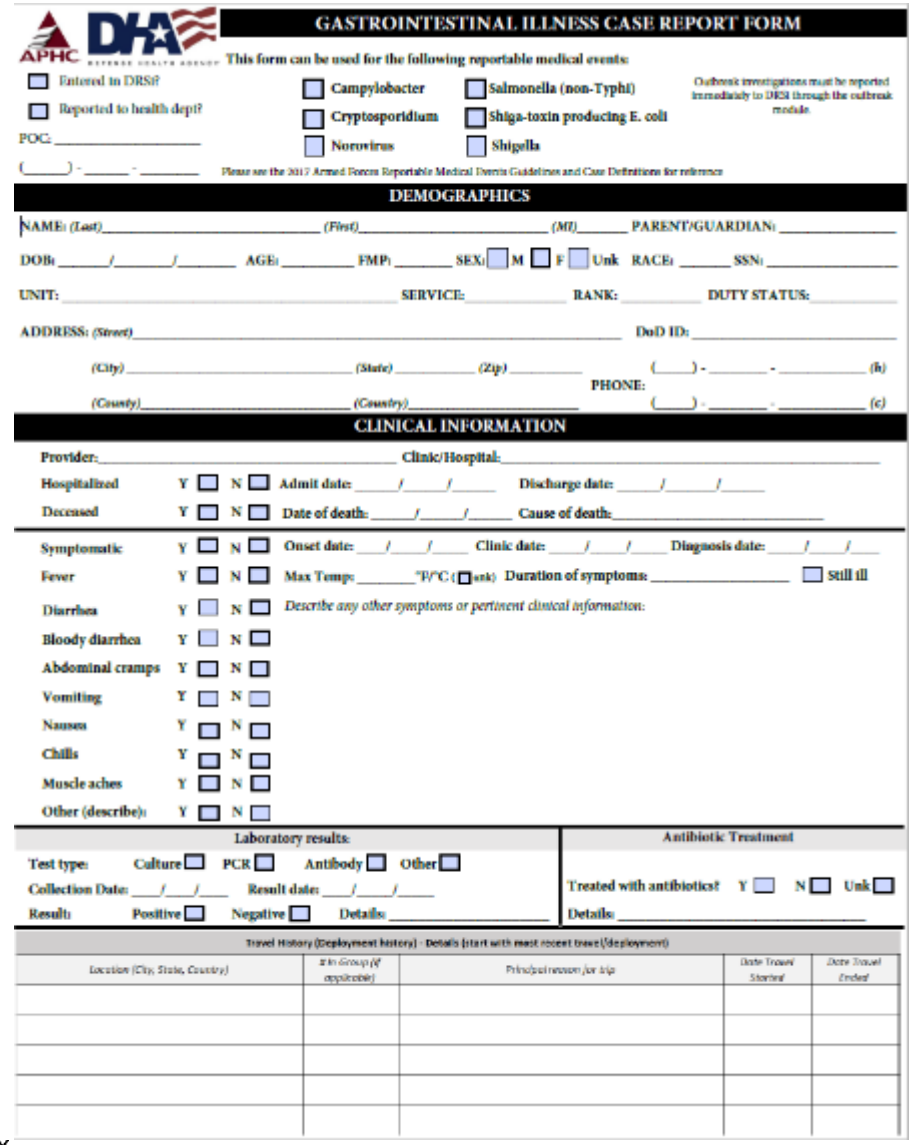
Please indicate if patient belongs to one or more of the following high-risk transmission groups. If yes to any, ensure contact tracing is performed.

☐ Trainee ☐ Academy cadet ☐ Deployed ☐ Daycare worker/attendee ☐ Pregnant

# GI Questionnaire –**UNKNOWN** Organisms

Army Case Investigation Form:

- Standardized form that asks about all exposures from past 7 days



**GASTROINTESTINAL ILLNESS CASE REPORT FORM**

This form can be used for the following reportable medical events:

Entered in DRSi? Reported to health dept? POC: (_____) - _____ - _____

Campylobacter; Cryptosporidium; Norovirus; Salmonella (non-Typhi); Shiga-toxin producing E. coli; Shigella

Outbreak investigations must be reported immediately to DRSi through the outbreak module.

Please see the 2017 Armed Forces Reportable Medical Events Guidelines and Case Definitions for reference

**DEMOGRAPHICS**

NAME: (Last)_____ (First)_____ (MI)_____ PARENT/GUARDIAN: _____

DOB: _____/_____/_____ AGE: _____ FMP: _____ SEX: M F Unk RACE: _____ SSN: _____

UNIT: _____ SERVICE: _____ RANK: _____ DUTY STATUS: _____

ADDRESS: (Street)_____ DoD ID: _____

(City)_____ (State)_____ (Zip)_____ (____) - _____ - _____ (h)

PHONE:

(County)_____ (Country)_____ (____) - _____ - _____ (c)

**CLINICAL INFORMATION**

Provider: _____ Clinic/Hospital: _____

Hospitalized Y N Admit date: _____/_____/_____ Discharge date: _____/_____/_____

Deceased Y N Date of death: _____/_____/_____ Cause of death: _____

Symptomatic Y N Onset date: ____/____/____ Clinic date: ____/____/____ Diagnosis date: ____/____/____

Fever Y N Max Temp: _____°F/°C (unk) Duration of symptoms: _____ Still ill

Diarrhea Y N

Bloody diarrhea Y N

Abdominal cramps Y N

Vomiting Y N

Nausea Y N

Chills Y N

Muscle aches Y N

Other (describe): Y N

*Describe any other symptoms or pertinent clinical information:*

**Laboratory results:**

Test type: Culture PCR Antibody Other

Collection Date: ____/____/____ Result date: ____/____/____

Result: Positive Negative Details: _____

**Antibiotic Treatment**

Treated with antibiotics? Y N Unk

Details: _____

**Travel History (Deployment history) - Details (start with most recent travel/deployment)**

| Location (City, State, Country) | If in Group (if applicable) | Principal reason for trip | Date Travel Started | Date Travel Ended |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**CONTACTS**

List all household contacts, ill or not ill, and any close contacts regardless of where they live (i.e. caregivers, partners, etc). Indicate for all contacts if high risk; if symptomatic give onset date and testing information. List additional contacts on the last page of this form if needed.

| Name/Contact | Age | Relationship to case | Symptoms | | Onset Date | Lab testing | High Risk | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Yes | No | | Y/N, coll. date, result | Day care | Health care | Food Svc. |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**ENVIRONMENTAL EXPOSURES**

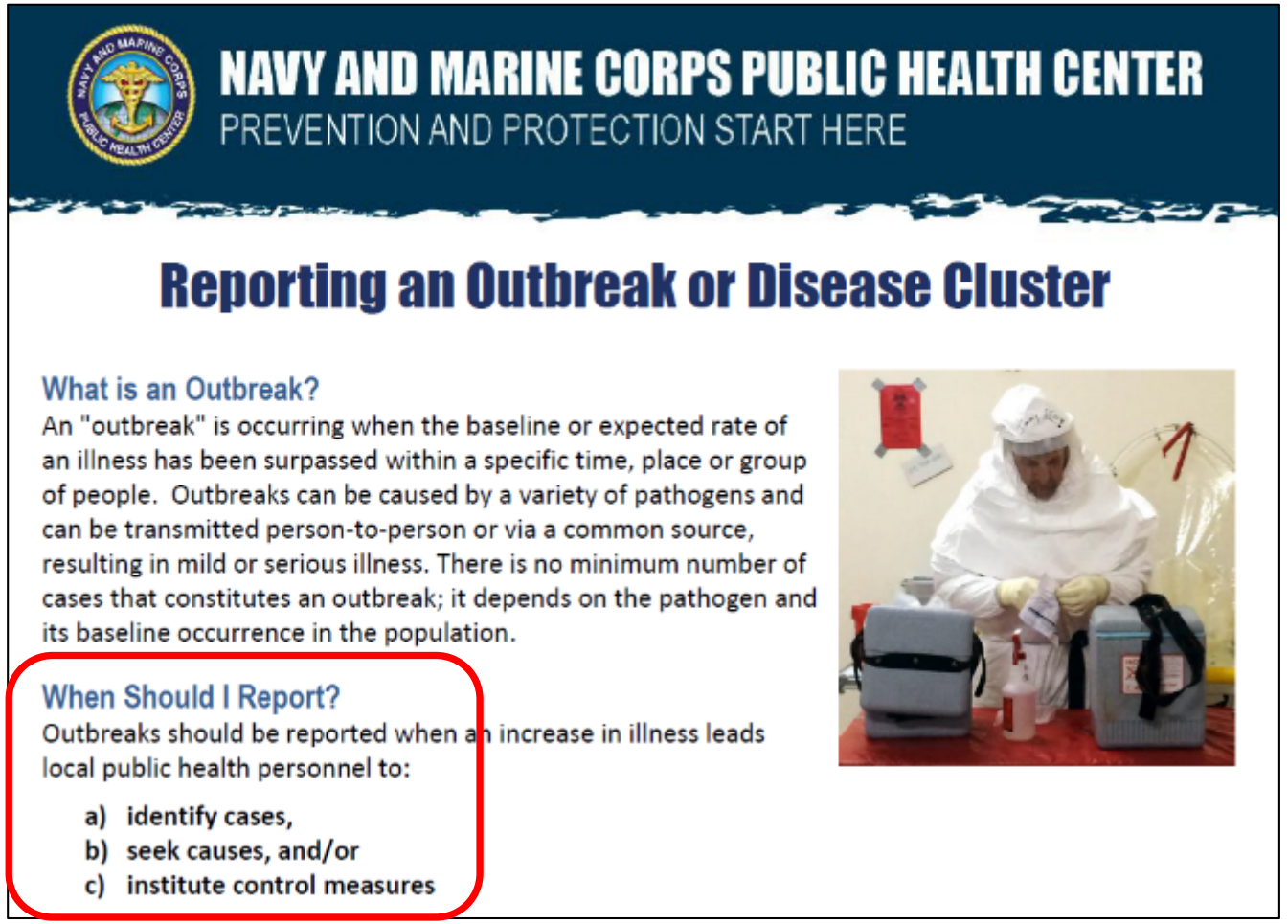
In the 7 days before illness onset, from ____/____/____ to ____/____/____ did [you/your child]:

| WATER RELATED EXPOSURES | YES | NO | UNK | If yes, details: |
|---|---|---|---|---|
| 1. Stay in a home with a septic system? | | | | |
| 2. Primarily use water from a well for drinking water? | | | | Treatment: |
| 3. Primarily drink bottled water? | | | | Brand(s): |
| 4. Drink any untreated water (pond, lake, etc)? | | | | |
| 5. Swim or wade in untreated water? | | | | Where? |
| 6. Swim or wade in treated water (pool, hot tub, etc)? | | | | Where? |
| **ANIMAL CONTACT** | **YES** | **NO** | **UNK** | **If yes, details:** |
| 1. Have contact with an animal? | | | | |
| If yes, did [you/your child] have contact with a: | | | | |
| a. Dog | | | | |
| b. Cat | | | | |
| c. Other pet mammal | | | | Specify: |
| d. Reptile or amphibian | | | | Specify: |
| e. Live poultry | | | | |
| f. Pet bird | | | | |
| g. Cattle, goat, or sheep | | | | Specify: |
| h. Pig | | | | |
| i. Other animal | | | | Specify: |
| j. Pet with diarrhea | | | | |
| 2. Visit, work, or live on a farm, ranch, or petting zoo? | | | | Specify: |
| 3. Have exposure to a daycare or nursery? | | | | Where? |
| 4. Have a household or close contact with diarrhea? | | | | Who? |
| 5. Work in a restaurant or prepare food for others? | | | | Specify: |

# DRSi Reporting

# Reporting in DRSi

Outbreak case definition



NAVY AND MARINE CORPS PUBLIC HEALTH CENTER

PREVENTION AND PROTECTION START HERE

## Reporting an Outbreak or Disease Cluster

### What is an Outbreak?

An "outbreak" is occurring when the baseline or expected rate of an illness has been surpassed within a specific time, place or group of people. Outbreaks can be caused by a variety of pathogens and can be transmitted person-to-person or via a common source, resulting in mild or serious illness. There is no minimum number of cases that constitutes an outbreak; it depends on the pathogen and its baseline occurrence in the population.

### When Should I Report?

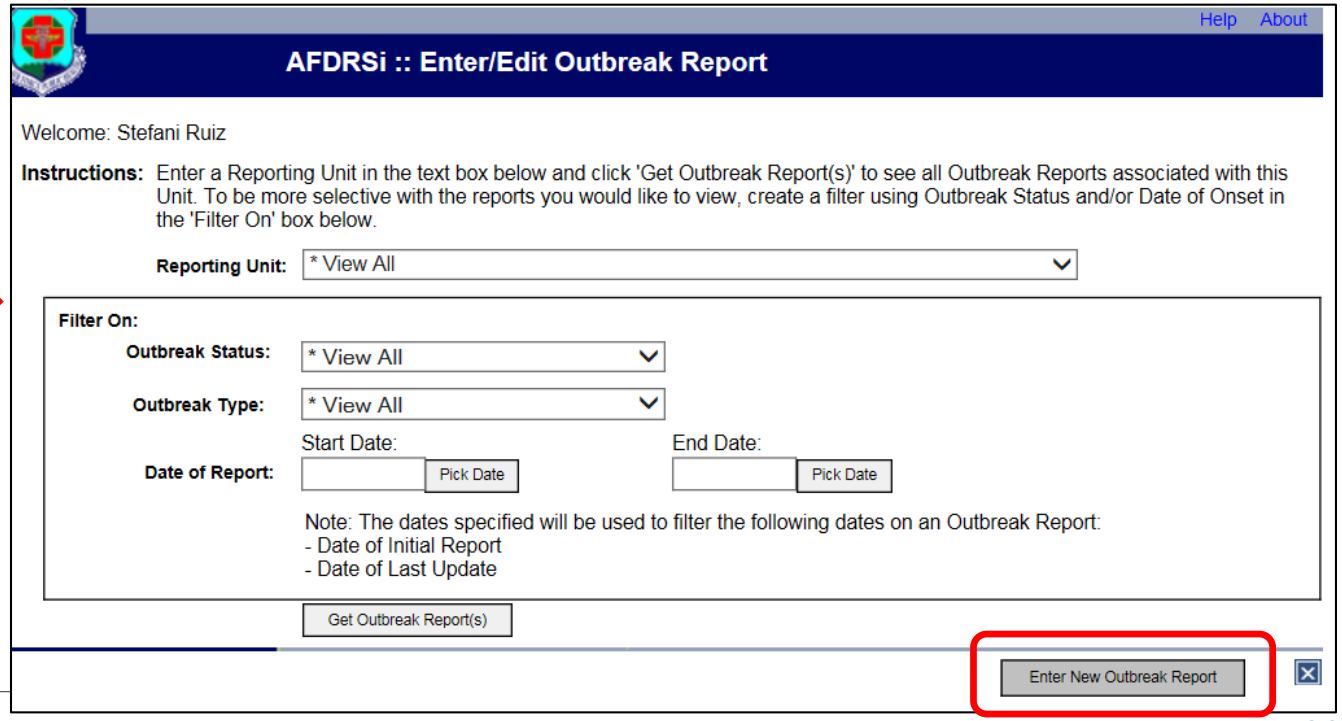
Outbreaks should be reported when an increase in illness leads local public health personnel to:

a) identify cases,
b) seek causes, and/or
c) institute control measures

https://www.med.navy.mil/sites/nmcphc/Documents/program-and-policy-support/OutBreakDescription_Fact-Sheet_PPS_2016_final.pdf

# Reporting in DRSi

- Report **ALL** outbreaks in the DRSi outbreak module
  - Even if the causative agent is **NOT ON** the RME list
    - Example: Hand, foot, and mouth disease; scabies; rotavirus; unknown organism, etc.

# Reporting in DRSi

IF outbreak is **ON** the RME list:

Air Force and Army:

- Report the outbreak in the DRSi outbreak module **AND**
- Report each individual case who meets the RME case definition

Navy:

- Only need to report the outbreak in the DRSi outbreak module

# Special Considerations:

# Norovirus (NoV)

# Special Considerations: NoV

- Leading cause of GI outbreaks
- DO NOT treat norovirus like any other GI organism
- Norovirus is *SPECIAL*
  - Multiple modes of transmission
    - Person to person, fomite, fecal-oral, vomit-oral, food, water, droplet through aerosolized virus from vomit
  - *HIGHLY* contagious
    - An extremely low infectious dose – as low as18 virus particles.
  - Profuse shedding of billions of viruses *even among those who are asymptomatic*.
  - Prolonged shedding of virus *even after symptoms have resolved.*

# Special Considerations: NoV

- **Prolonged survivability in the environment on hard surfaces (2 weeks).**
  - i.e., virus particles on fomites can remain alive and infect someone for up to 2 weeks.
- **Resistant to common disinfectants** (including bleach if too low of a concentration or too short of contact time).
  - It is one of the most difficult viruses to kill.
  - If one family member has it, the whole household usually gets it.
- Resistant to heat up to 145º F (63º C).
  - It can survive the laundry or dish washer (and contaminate everything in the same load) if the temperature does not exceed 145º F (63º C).
- Short-lived immunity which lasts only up to 14 weeks;
  - Therefore, an individual can get re-infected easily if the environment is still contaminated.

# Special Considerations: NoV

**To summarize why NoV is special:**

**If it's on your ship or in your Day Care or training center,**

**it can impact the entire mission**

# Special Considerations: NoV

- If you think it's NoV, do not wait for labs to come back before responding

- Typical symptoms:
  - Diarrhea, typically watery and without blood
  - Vomiting
  - Nausea
  - Abdominal cramps/ stomach pain

# Special Considerations: NoV

- When to suspect NoV without lab support:
  - If all of the following are present, high likelihood it's norovirus (Lively criteria):
    - More vomiting than fever **and**
    - <10% with bloody diarrhea **and**
    - > 25% with vomiting

Clinical and Epidemiologic Profiles for Identifying Norovirus in Acute Gastroenteritis Outbreak Investigations

Joana Y. Lively,[1,2] Shacara D. Johnson,[3] Mary Wikswo,[2] Weidong Gu,[3] Juan Leon,[1] and Aron J. Hall[1,2]

[1]Rollins School of Public Health, Emory University, Atlanta, Georgia; [2]Division of Viral Diseases, National Center for Immunization and Respiratory Diseases, and [3]Division of Foodborne Waterborne and Environmental Diseases, National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia.

  - Note that an outbreak can still be NoV even if not all of the criteria are met
  - Navy's criteria:
    - Equal distribution of both vomiting and diarrhea
    - Illness lasting 12 – 60 hrs
    - Public vomiting
    - Very little fever
    - High attack rate (and case numbers)
    - If training center, IV fluid intervention is often required

# Special Considerations: NoV Control

Control efforts should be multi-faceted and should center on all modes of transmission

- Exclusion from sensitive occupations/ high transmission settings
  - Food handling, day care, school, group living, healthcare, training center, or ship
  - Highly protected population that can not get sick: Special Ops/ Special Forces, etc.
- Remove source (food/ water if food/ waterborne)
- Close any self service food lines (e.g., salad bar)
- Cohort: toilets, dorms/berthing sections, exam rooms, Child Care classrooms
- PPE and barrier protection: mask and gloves

# Special Considerations: NoV Control

## Control efforts (continued)

- Communicate to physicians, affected units, patients, Day Cares Directors, parents, Services, Contracting
- On Navy ships, communication is huge since norovirus can sweep through an entire ship in no time
  - PM should post signage in bathrooms instructing proper hand washing and notification to medical if **any** vomiting/diarrhea.
  - PM should ensure entire chain of command is on board with control recommendations
- Frequent hand washing
- **Environmental cleaning**

# Special Considerations: NoV Questionnaire

- Because it's so communicable, NoV management is about time management
  - Interviews vs. controlling the spread of disease
  - Goes back to the goals and context of the outbreak

# Special Considerations: NoV Questionnaire

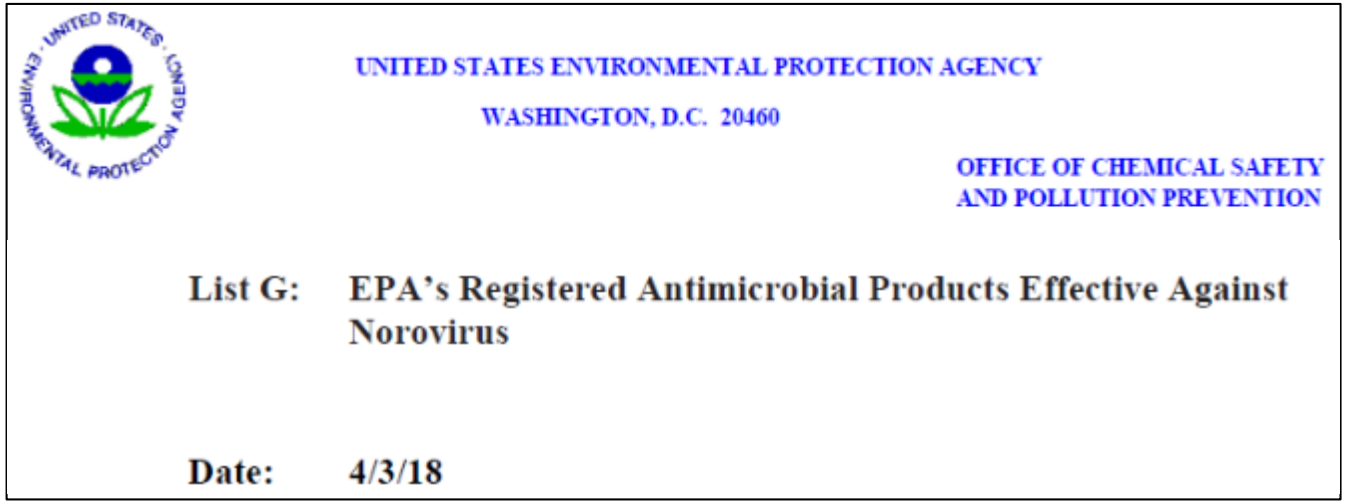
- If the outbreak is a point source (food/waterborne), your goal is to find and remove the source
  - Spend most of your time interviewing and data analysis
  - Complete the entire questionnaire; collect a full exposure history on all cases
    - Will need to interview controls as well
- NoV is so communicable, if it begins as foodborne, it won't stay that way.

# Special Considerations: NoV Questionnaire

- Once it transitions to person-to-person/fomite, your goal is to stop the spread of disease
  - Shorten the interview to collecting epi data (symptoms, onset, duration) and ascertain high transmission setting.  Do not need to collect a food history
  - Navy: Medical can do this for you (GI case intake form)
  - Spend most of your time managing the environment

# Environmental Management of Norovirus

# NoV Environmental Management: Sanitizing



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

**List G:** **EPA's Registered Antimicrobial Products Effective Against Norovirus**

**Date:** **4/3/18**

https://www.epa.gov/sites/production/files/201804/documents/list_g_disinfectant_list_3_15_18.pdf

List G is EPA's 4 page list of registered disinfectants that can kill norovirus

# NoV Environmental Management: Sanitizing

- **Choosing a NoV cleaning product:**
  - Does the product label say 5.25% or greater hypochlorite (aka: chlorine/bleach/sodium hypochlorite) or
  - Does the product label say it's effective against norovirus, non-enveloped viruses, or feline calicivirus or
  - Is the product listed on EPA List G
- If yes to any, it's effective against NoV (at the right concentration for the right contact time)
- If no to all, need a different product
- Beware of faulty label claims
- Iodine and green products are ineffective against NoV

# NoV Environmental Management: Sanitizing

- **Choosing a NoV cleaning product:**
  - Air Force and Army:
    - Bleach at 5.25% or greater hypochlorite is your 1st go-to
    - List G is your back-up
  - Navy:
    - List G is your 1st go-to
    - Liquid chlorine is a hazardous material; it's use is controlled on ships.
    - Solid form of chlorine is available shipboard (as High Test Hypochlorite); subject to chain of command approval

# NoV Environmental Management: Sanitizing


## SANI-CLOTH® BLEACH
## GERMICIDAL DISPOSABLE WIPE

**Ideal for disinfecting high risk areas endemic with Multidrug-Resistant Organisms, *Clostridium difficile* spores and Norovirus.**

| Contact Time (Minutes) | # of Microorganisms Effective Against | Disinfection Formulation |
|---|---|---|
| Disinfects in 4 Minutes | 50 | 1:10 Bleach Dilution |

### Sani-Cloth® Bleach Benefits:

- Meets CDC, OSHA and CMS Tag F441 guidelines
- Bactericidal, Fungicidal, Tuberculocidal, Virucidal
- Compatible with a broad range of surfaces and equipment in healthcare
- For use when taking a pathogenic specific approach to disinfection

Effective against 50 microorganisms in 4 minutes including the following MDROs, bloodborne pathogens and viruses:[1]

- *C.difficile* spores
- *Acinetobacter baumannii*
- *Klebsiella pneumoniae*
- *Candida albicans*
- ESBL-resistant *E. coli*
- ESBL-resistant *Klebsiella pneumoniae*
- Norovirus
- MRSA
- VRE
- VRSA
- HIV
- HBV
- HCV

Use of trade names and commercial sources is for identification only and does not imply endorsement by the US Air Force.

# NoV Environmental Management: Bleach

**Though bleach is the standard disinfectant,**

**NoV is generally resistant to bleach**

**BUT**

- Bleach at the *right concentration* for the *right contact time* can kill norovirus
- The physical mechanics of removing bleach from a surface by scrubbing and wiping will remove remaining norovirus particles that bleach does not kill.

# NoV Environmental Management: Bleach

**Though bleach is the standard disinfectant,**

**NoV is generally resistant to bleach**

**BUT**

- Bleach at the *right concentration* for the *right contact time* can kill norovirus

**10 minutes**

- The physical mechanics of removing bleach from a surface by scrubbing and wiping will remove remaining norovirus particles that bleach does not kill.

# NoV Environmental Management: Bleach Dilutions

- For **hard non-porous** (non-food prep) surfaces, bleach concentration should be 1,000 – 5,000 ppm
- Use 5,000 ppm for highly contaminated (non-food prep) surfaces
- If using liquid bleach with a starting base strength of 5.25%:
  - Surfaces must be free of visible vomit/diarrhea prior to bleaching
  - 1/3 cup bleach to a gallon water = 1,000 ppm
  - 1 2/3 cups bleach to a gallon water = 5,000 ppm

# NoV Environmental Management: Bleach Dilutions

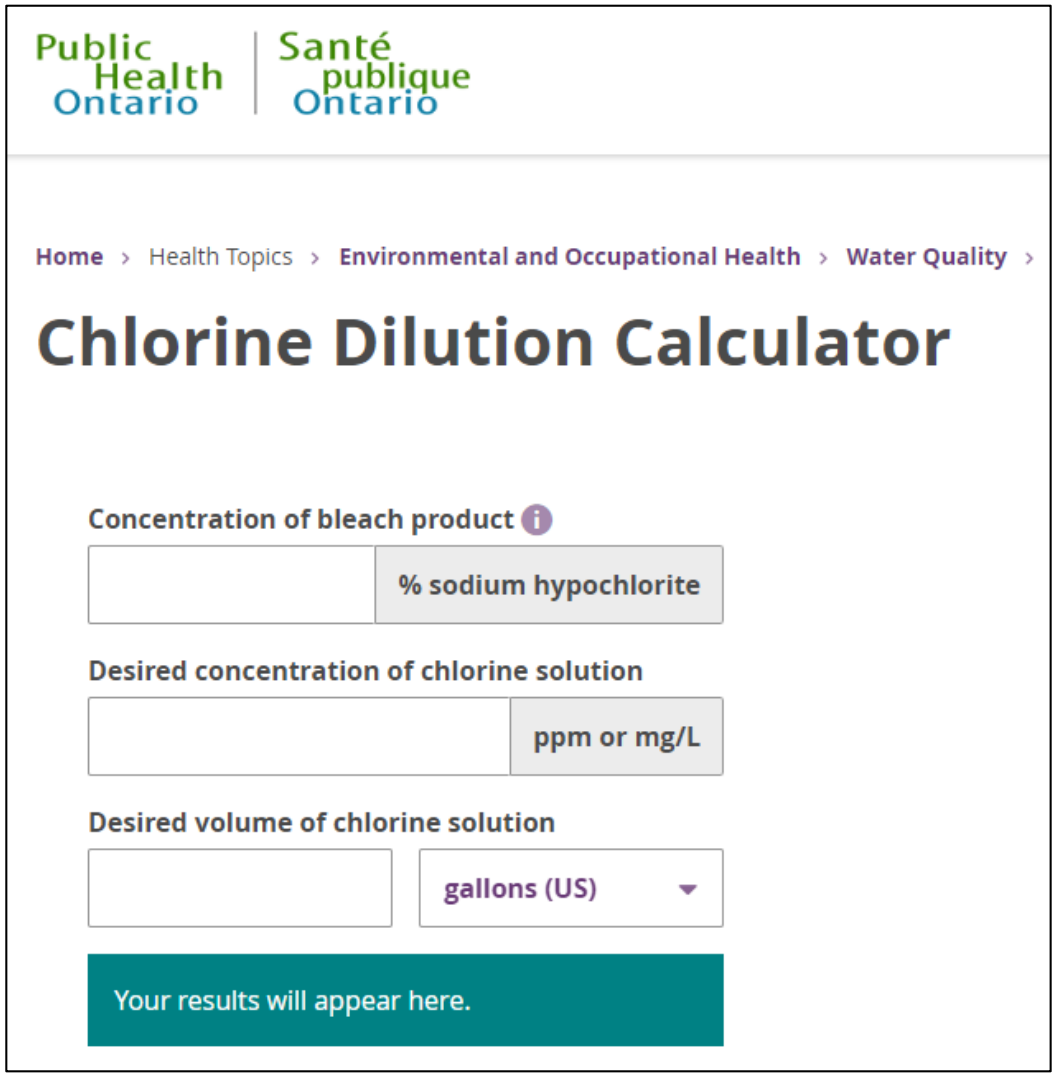
- For **food prep surfaces**, bleach concentration should be 200 ppm

- If using liquid bleach with a starting base strength of 5.25%:
  - Surfaces must be free of visible debris prior to bleaching
  - 1 TBS bleach to a gallon water = 200 ppm

- After sanitizing, rinse with water

# NoV Environmental Management: Bleach Dilutions

- Can use any on-line calculator to calculate dilutions
- Verify with extra high level chlorine test strips

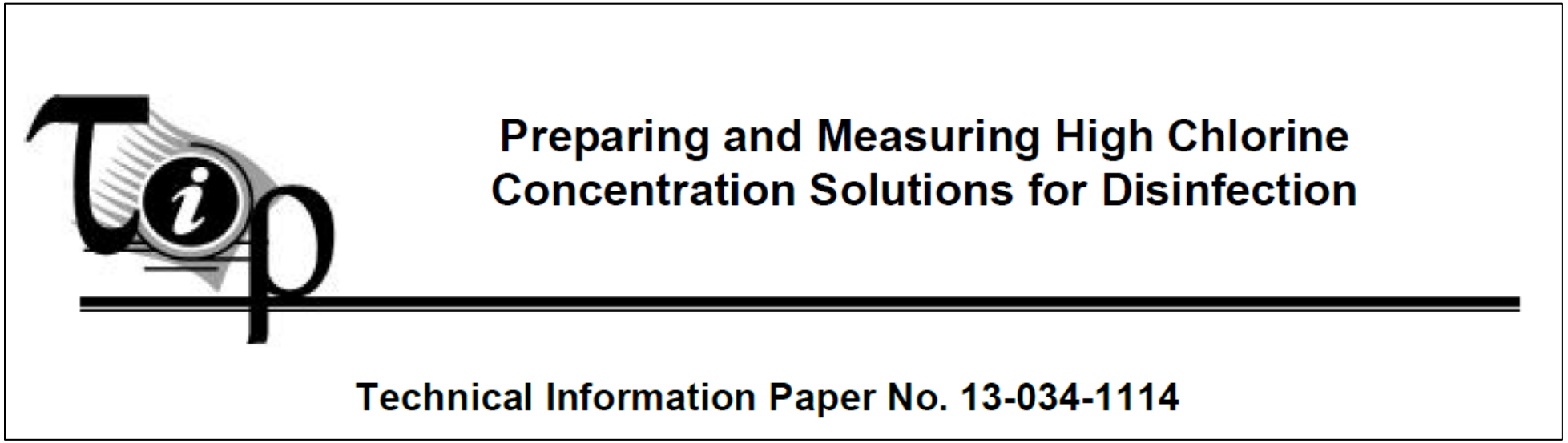


# NoV Environmental Management: Bleach Dilutions

- Need to have extra high level test strips that go up to 5,000 – 10,000 ppm
- Most test strips to detect free available chlorine only go up to 200 – 400 ppm

# NoV Environmental Management: Bleach Dilutions

- Bleach procured from other countries has different starting base strengths
- See the Army Technical Information Paper if using bleach from other countries



# NoV Environmental Management: Bleach Dilutions

- The Army Technical Paper lists the base strength of bleach from many countries and tells you how to dilute it to get the right concentration.

**Table 2. Liquid Base Strength Bleach by Brand or Country of Origin**[2]

| Bleach Brand; Country Manufactured or Used | % Active Chlorine *(base strength)* | Volume of Water Added to 1 Part Bleach to Prepare a 5,000 ppm Concentration[a] |
|---|---|---|
| 8 °chlorum[b] | 2.4% | 4 |
| JIK (Kenya, Liberia) | 3.5% | 6 |
| Ajax (Jamaica) | | |
| 12 °chlorum[b] | 3.6% | 6 |
| Bref Javel (Senegal) | 4% | 7 |
| Eau de Javel (France) | 5% | 9 |
| Household bleach (USA[c], Indonesia, Canada) | 5.25% | 9 |
| ACE (Turkey,) | | |
| Blanquedor, Cloro (Mexico) | 6% | 11 |
| Household bleach (USA) *(Clorox® and other brands)* | 8.25% | 15 |
| Blanquedor (Mexico) | 8% | 15 |
| Lavindina (Bolivia) | | |
| Chloros (UK) | 10% | 19 |
| La Croix Eau (Guinea) | 14% | 27 |
| Chloros (UK) | 15% | 29 |
| Extrait de Javel (France) | | |
| 48 °chlorum[b] | | |

[a] Reads as one part (e.g., cup or liter) concentrated bleach to *x* parts water (e.g., for JIK mix 1 cup bleach with 6 cups water for a total of 7 cups).
[b] In some countries the concentration of sodium hypochlorite is expressed in chlorometric degrees (°chlorum); one °chlorum is approximately equivalent to 0.3% available chlorine.
[c] Chlorine bleach manufacturers in the United States are moving away from a 5.25% base strength and are now producing products with an 8.25% base. The product strength is indicated on the label.

# Sanitizing Specific Things against Norovirus

# NoV Environmental Management

- **Contact time: 10 minutes! (spray and walk away)**
- Make fresh bleach dilutions *daily* from a bottle of undiluted bleach that has been opened for *less than 30 days*
  - Chlorine decomposes over time and at increased temperatures
  - Test chlorine concentration using test strips prior to each use
- Disinfect after every episode of vomiting or diarrhea
- Disinfect the facility twice a day
  - Clean from the areas of lowest to highest contamination (i.e., sinks to toilets)
- Disinfect frequently touched items 3 times a day
- Disinfect at *home* the same way

# NoV Environmental Management: Laundry

- Sanitizing laundry/clothing/bedding/plush toys:
  - Do not hand wash; temperature will not get high enough to kill NoV
  - Use a pre-wash cycle with bleach using the hottest temperature setting
    - Do not agitate (can aerosolize virus)
  - Then wash items in a regular cycle with bleach and detergent using the hottest temperature and maximum cycle length
  - Dry items on the hottest setting at a temperature greater than 170º F
    - Do not air-dry
  - If the item will not tolerate bleach and high temperatures, discard.

# NoV Environmental Management: Carpet

- Sanitizing carpet:
  - Pick up all visible vomit/diarrhea (without scrubbing/aerosolizing virus)
  - Steam clean 212°F for 1 minute
  - DO NOT VACUUM carpet

# NoV Environmental Management: Shared Equipment

- Shared equipment (gas masks, helmets, pugil sticks, etc.):
  - Best not to share anything if there is NoV
  - Sanitize the item by wiping contact surfaces with as high of a concentration of bleach as the item will allow
    - May need to test a small portion first
    - Wipe with water afterwards

# NoV Environmental Management: Toys

Sanitizing toys en-masse

- Aim for a minimum of 1,000 ppm
  - Fill 50 gallon (unused) trash bin ½ way with water
    - Add 1 gallon (5.25%) bleach
    - Stir with a stick (e.g., broom handle)
    - Add toys
  - Make sure all toy surfaces are immersed for 10 minutes: Stir so toys don’t float

# NoV Environmental Management: Toys

Sanitizing toys en-masse (continued)

- Rinse (**critical if toys could be mouthed**)
  - Can drape a hose in trash bin and let it run/overflow for 20 min
  - Indoor alternative: use a 2 trash bin process:
    - 1st trash bin is bleach solution
    - 2nd trash bin is rinse water
    - Must use test strips to make sure rinse water does not exceed 50 ppm chlorine
- Do not need to scrub toy surface

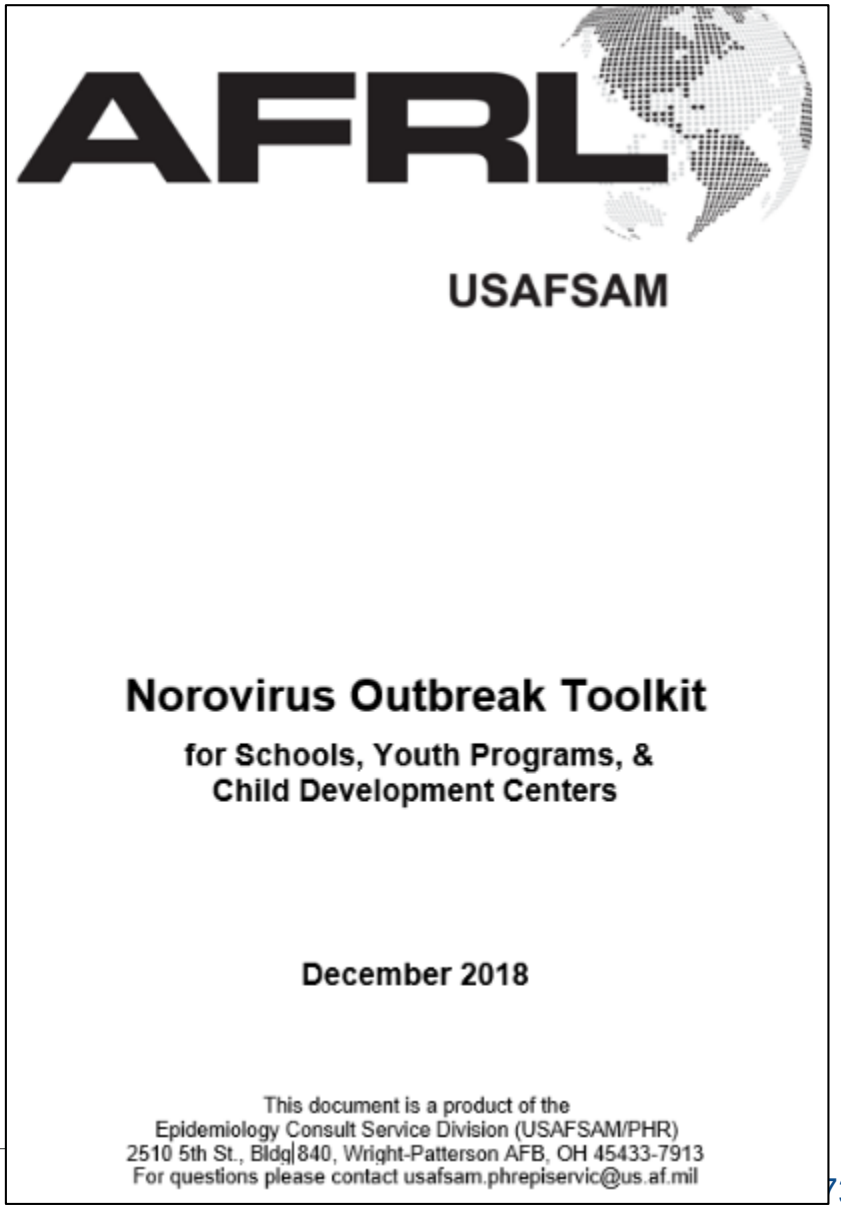
# NoV Environmental Management: Toys

Grand Forks PH
CDC NoV Outbreak (Jan 2019)

Hurlburt PH
CDC NoV Outbreak (Nov/ Dec 2017)

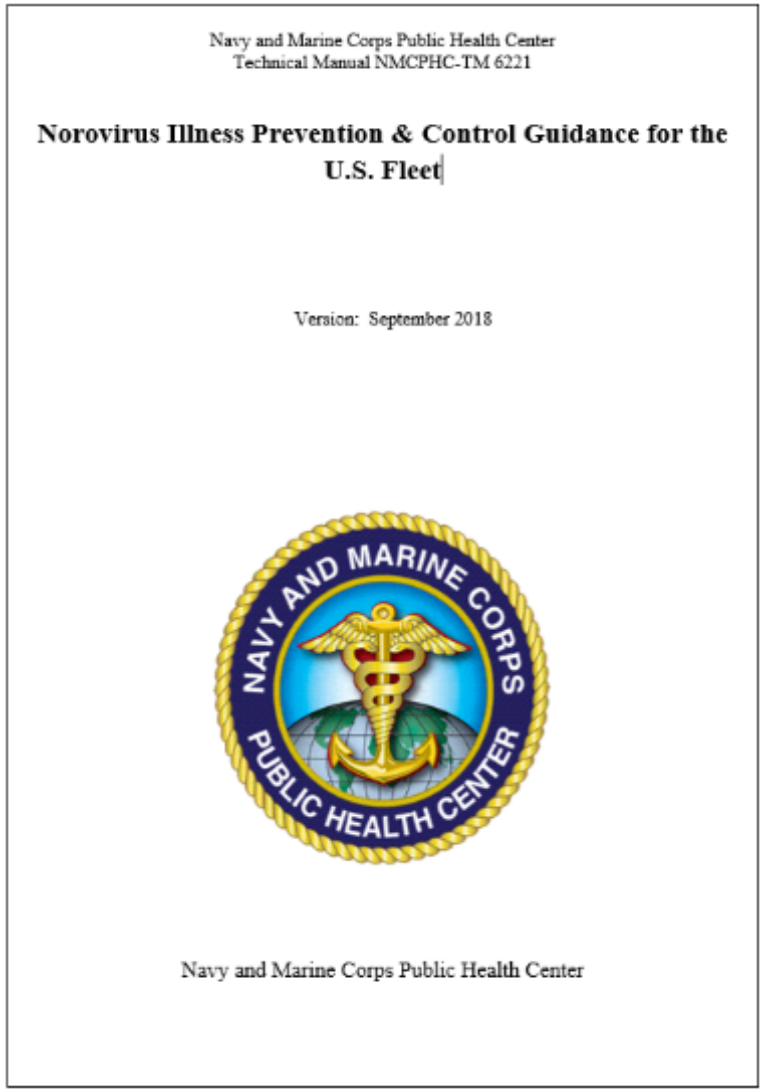
# NoV Environmental Management

- Discard things that can not be sanitized
- Additional cleaning details are in the USAFSAM Norovirus Outbreak Toolkit



# NoV Environmental Management

- Navy Fleet Norovirus Resources
  - https://www.med.navy.mil/sites/nmcphc/program-and-policy-support/Pages/Norovirus-Illness.aspx



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

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

Version: September 2018

Navy and Marine Corps Public Health Center

# Norovirus and Contracting

# Contracting

- If a separate cleaning contract will be written, PH/PM should liaise with the affected unit, Services, and Contracting to assure the correct wording is included in a contract
- Do not leave it up to the contract company to decide what chemical agents to use and how to clean; the contract must specify it directly
- Contract should spell out in detail:
  - Appropriate cleaning agent (5.25% bleach or product on EPA's List G)
  - Concentration of bleach (1,000 – 5,000 ppm for non food prep surfaces; 200 ppm for food prep surfaces) and how it should be made

# Contracting

- Contract should spell out in detail (continued):
  - Frequency of making fresh bleach solutions (minimum daily or as often as the ppm falls below the desired concentration; can be multiple times a day in deployed locations due to hot temperatures)
  - How bleach concentration will be tested (extra high level test strips that go up to 5,000 – 10,000 ppm)
  - Frequency of testing (every time a fresh solution is made and throughout the day in hot environments)
  - Duration of bleach contact time (10 minutes)

# Contracting

- Contract should spell out in detail (continued):
  - Frequency of sanitizing the environment (after every episode of vomiting/diarrhea; facility: twice a day; high touch items: three times a day)
  - Examples of specific items and surfaces that should be sanitized
  - A steam cleaner that reaches 212°F for carpets/ upholstery
  - PPE including gloves, gowns, masks
  - Cleaning needs to meet Public Health standards

# Contracting

- Provide the “USAFSAM Norovirus Outbreak Toolkit for Schools, Youth Programs and CDCs” or the “Norovirus Prevention & Control Guidance for U.S. Fleet” to affected units, Services, and Contracting for reference

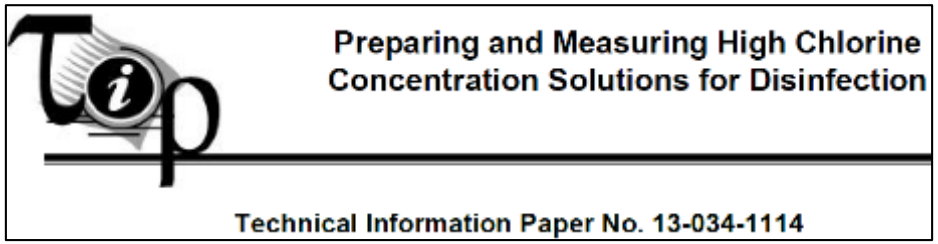
- If the above language is not specified in the cleaning contract, it can be modified; PH should review any contract modification

# Contracting

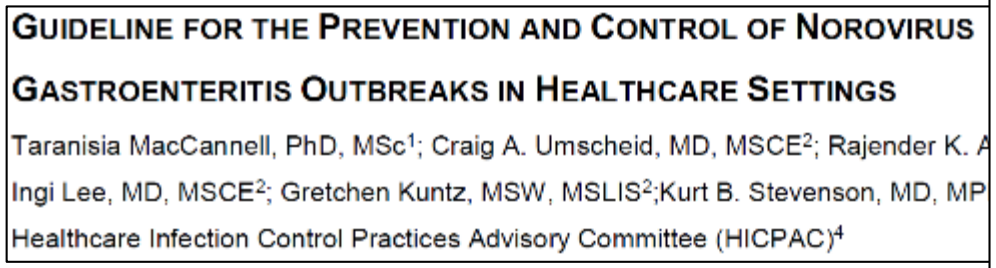
- PH/PM should observe cleaning and perform spot checks
  - Observe what chemicals are being used, proper contact time, correct bleach concentration, assure cleaning starts from areas of lowest contamination to highest, proper PPE, etc.
  - If cleaning happens at night, Services or the unit Commander (or designee) should be on site to observe that cleaning is being done according to NoV specifications.
    - PH should train them on what to look for.

# Conclusion

# Helpful NoV Resources


Preparing and Measuring High Chlorine Concentration Solutions for Disinfection

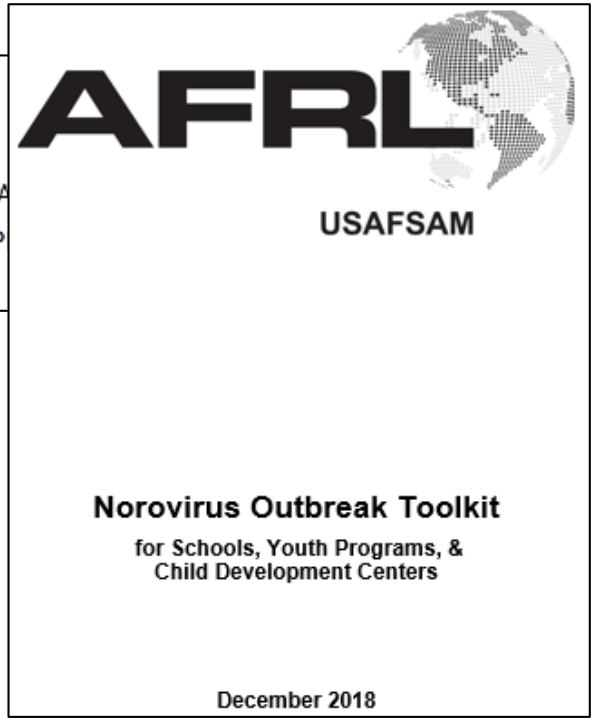
Technical Information Paper No. 13-034-1114


GUIDELINE FOR THE PREVENTION AND CONTROL OF NOROVIRUS GASTROENTERITIS OUTBREAKS IN HEALTHCARE SETTINGS

Taranisia MacCannell, PhD, MSc[1]; Craig A. Umscheid, MD, MSCE[2]; Rajender K. A

Ingi Lee, MD, MSCE[2]; Gretchen Kuntz, MSW, MSLIS[2];Kurt B. Stevenson, MD, MP

Healthcare Infection Control Practices Advisory Committee (HICPAC)[4]

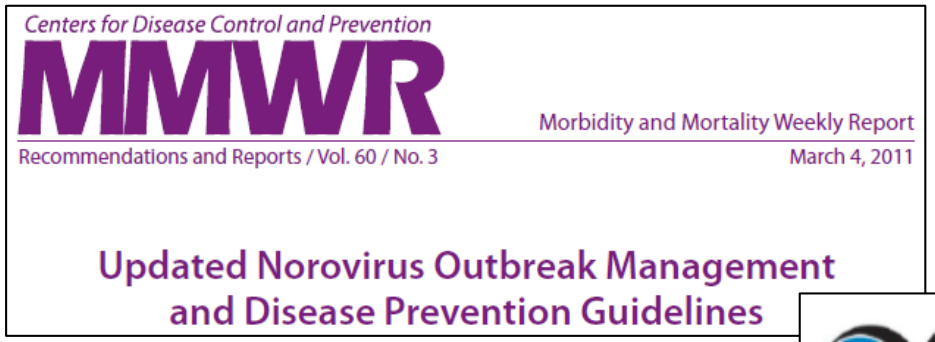

AFRL

USAFSAM

Norovirus Outbreak Toolkit

for Schools, Youth Programs, & Child Development Centers

December 2018


Centers for Disease Control and Prevention

MMWR

Morbidity and Mortality Weekly Report

Recommendations and Reports / Vol. 60 / No. 3 March 4, 2011

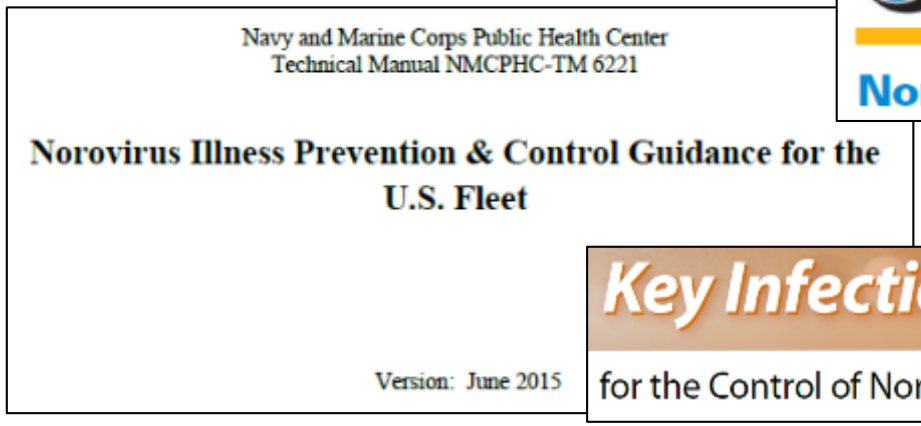
Updated Norovirus Outbreak Management and Disease Prevention Guidelines


Norovirus Illness: Key Facts

Norovirus—the stomach bug


OSHA® FactSheet

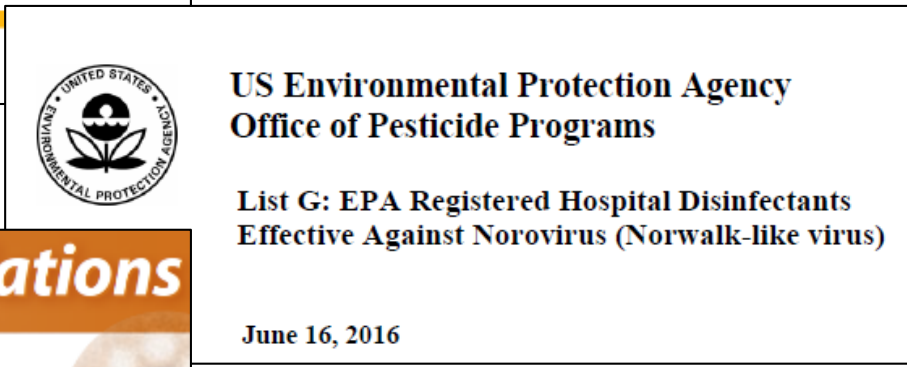
Noroviruses


Navy and Marine Corps Public Health Center

Technical Manual NMCPHC-TM 6221

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

Version: June 2015


US Environmental Protection Agency

Office of Pesticide Programs

List G: EPA Registered Hospital Disinfectants Effective Against Norovirus (Norwalk-like virus)

June 16, 2016


Key Infection Control Recommendations

for the Control of Norovirus Outbreaks in Healthcare Settings

# To Conclude

**Norovirus is resistant to bleach**

Must use bleach at the *right concentration*
for the *right contact time* (10 minutes)

and extra high level chlorine test strips

# To Conclude: Here is What you Need to Do Following this Presentation

- Locate disease specific and generic 7-day questionnaires
  - Can use USAFSAM's or your own installation specific
  - Identify state or service rules for which organisms require minimal questions and which require the entire questionnaire
- Implement daily surveillance in high transmission populations (training centers, deployed locations, Day Cares, ships, etc.)
  - Identify the baseline of GI illness
  - Analyze data weekly

# To Conclude: Here is What you Need to Do Following this Presentation

- Learn about NoV ***NOW***
  - Do not wait until you have a NoV outbreak
  - Read all documents listed in the resources slide (homework)
  - Identify the percentage of hypochlorite you have access to. If outside the U.S. see the Army bleach guide to familiarize yourself with the dilution calculations – *before an outbreak begins*
  - Identify how to procure cleaning agents from List G
- Visit high risk settings:
  - Implement daily surveillance for absences due to illness
  - Review cleaning contract with supervisors
  - Give the AF Norovirus Outbreak Toolkit for Schools, Youth Programs and CDCs, and for the Navy give the Fleet Norovirus Guide to ships

# To Conclude: Here is What you Need to Do Following this Presentation

- Review cleaning contracts with Services
  - Do contracts specify the technical details of how to clean for NoV including the appropriate agent, concentration, contact time, etc.?
  - Is there language that specifies that cleaning needs to meet PH/PM standards?
  - If not, visit Contracting Office and ask for a contract modification
  - Give them the AF Norovirus Outbreak Toolkit for Schools, Youth Programs and CDCs or the Navy Fleet Norovirus Guide
- Include the technical details of NoV control to your Disease Containment Plan

# Questions?

# Contact Information

- **Army**: APHC – Disease Epidemiology Division
  Aberdeen Proving Ground – MD
  COMM: (410) 436-7605 DSN: 584-7605
  Email: usarmy.apg.medcom-aphc.mbx.disease-epidemiologyprogram13@mail.mil

- **Navy**: NMCPHC Preventive Medicine Programs and Policy Support Department
  COMM: (757) 953-0700; DSN: (312) 377-0700
  Email: usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-threatassess@mail.mil
  Contact your cognizant NEPMU

  NEPMU2: COMM: (757) 950-6600; DSN: (312) 377-6600
  Email: usn.hampton-roads.navhospporsva.list.nepmu2norfolk- threatassess@mail.mil

  NEPMU5: COMM: (619) 556-7070; DSN (312) 526-7070
  Email: usn.san-diego.navenpvntmedufive.list.nepmu5-health-surveillance@mail.mil

  NEPMU6: COMM: (808) 471-0237; DSN: (315) 471-0237
  Email: usn.jbphh.navenpvntmedusixhi.list.nepmu6@mail.mil

  NEPMU7: COMM (int): 011-34-956-82-2230 (local): 727-2230; DSN: 94-314-727-2230
  Email: NEPMU7@eu.navy.mil

- **Air Force**: Contact your MAJCOM PH or USAFSAM/PHR
  USAFSAM / PHR / Epidemiology Consult Service
  Wright-Patterson AFB, Ohio
  COMM: (937) 938-3207 DSN: 798-3207
  Email: usafsam.phrepiservic@us.af.mil