The Poop Panel

Health, Hygiene, and Habitats when "Human Waste" Happens

Panelists			Moderator
José Gonzalez, Ed.D.	Paul Dreyer, MS	Nadia Kimmel, MS, RN	Neal Fox, Ph.D.
Outward Bound USA	Where There Be Dragons	Desert Mountain Medicine	Sierra STEM



THURSDAY OCTOBER 22, 2026 8:30 AM - 10:00 AM PDT | CLACKAMAS ROOM

The Poop Panel:

Health, Hygiene, and Habitats when "Human Waste" Happens



Neal Fox, Ph.D
Executive Director
Sierra STEM

Moderator



Paul Dreyer
Director of Strategic Relations
Where There Be Dragons

Panelist



Nadia Kimmel MS, RN
CEO
Desert Mountain Medicine

Panelist



José H. González, Ed.D.
Director of Safety & Programs
Outward Bound USA

Panelist

Our Plan for this Session

- Moderated Panel (65 min)
  - Introductions
  - Why “The Poop Panel”?
  - Pre-Program: Systems & Supplies
  - On Program: Communication & Inclusion
  - When Things Go Wrong: A Slightly Messy Scenario
- Audience Q&A (20 min)
- Final Thoughts (5 min)

Our Panelists

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Our Audience: Tell Us About Yourselves!

- Field Staff? Program Administrators?
- Work primarily with youth?
- Operate (mostly) domestically? Internationally?
- Wilderness settings? Frontcountry/Camps/Rural settings? Urban settings?
- Medical Certification Level?
- Experienced/Dealt with a GI illness or outbreak in the field?

Action Items

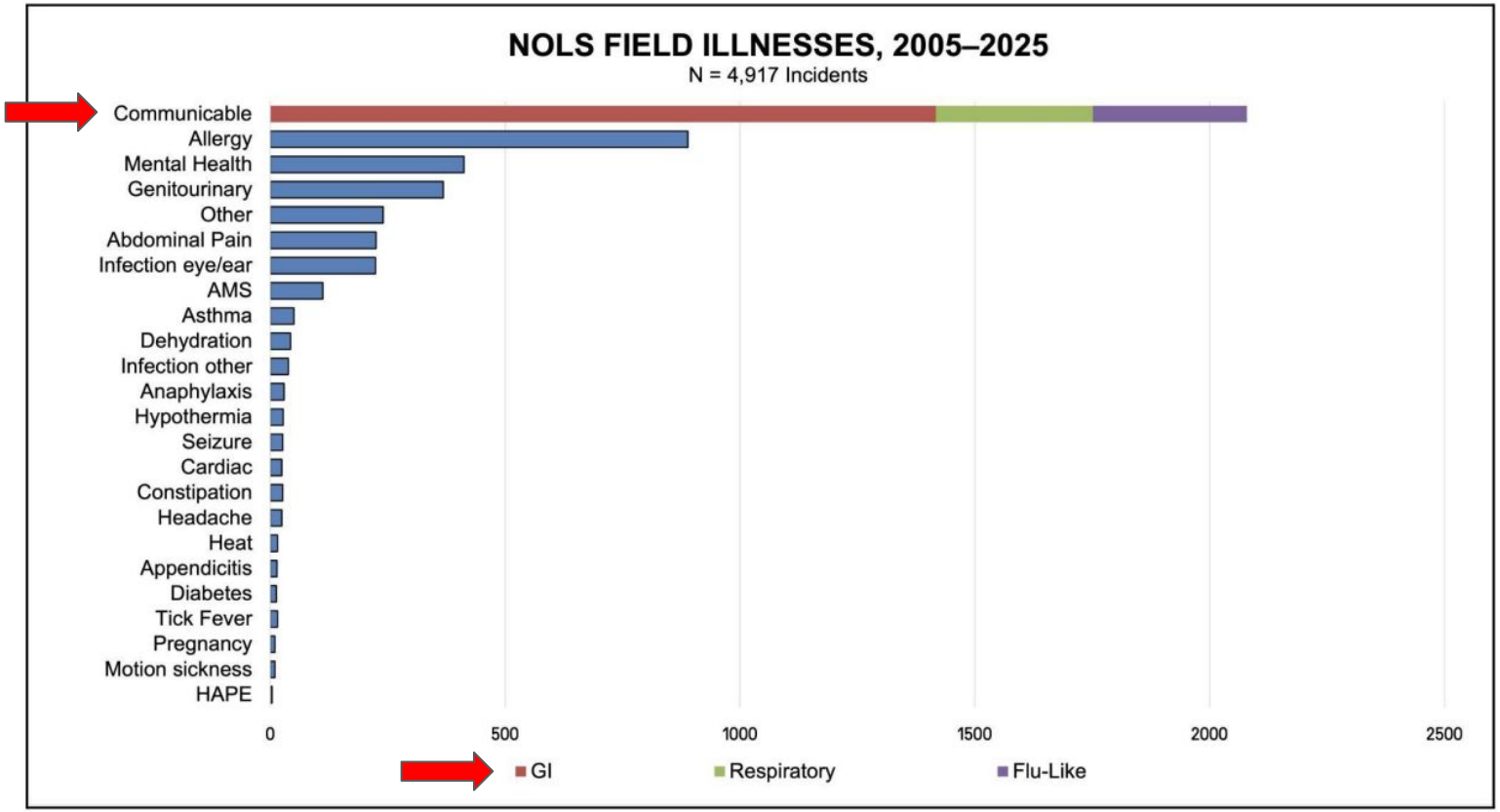
1. Implement a human waste management decision framework appropriate to the places where you operate

2. Standardize hygiene and illness-prevention protocols, including a way to assess whether people are following them

3. Discuss and practice communication about toileting with staff, participants, and other relevant stakeholders

Field Incident Data

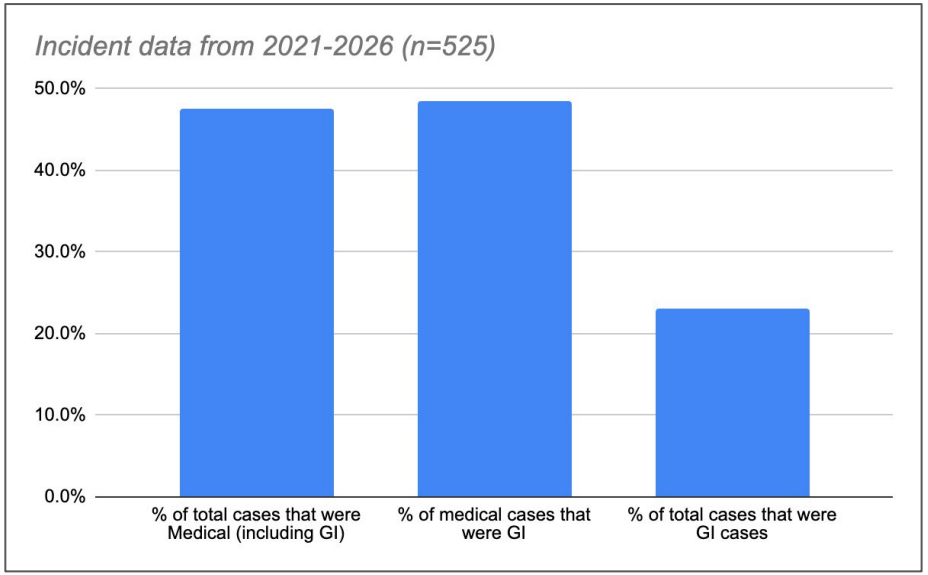
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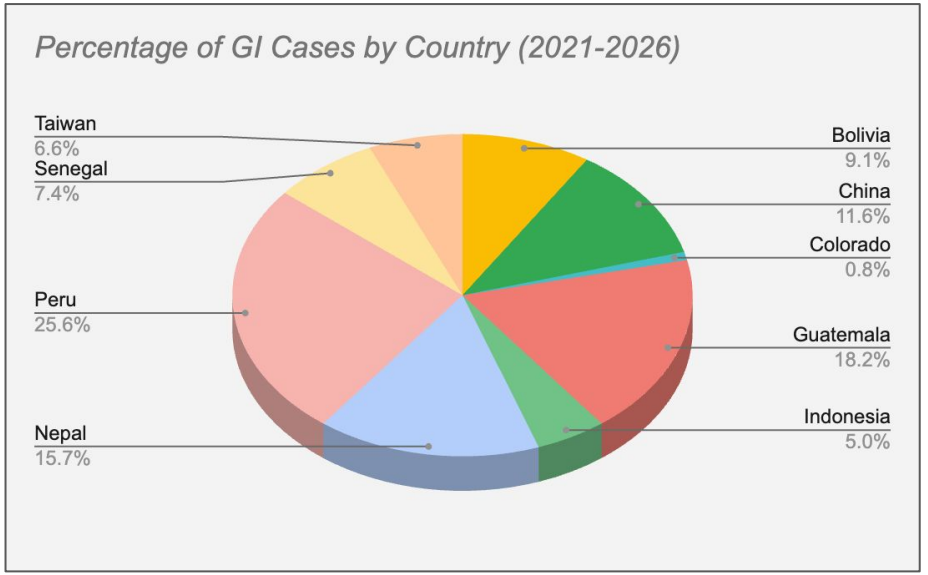


Field Incident Data

Where There Be Dragons

Data presented here is from SUMMER programs only (3-6 week courses)





Principles for Hygiene Systems People Actually Use

1. Focus on what matters

   (high probability or high consequence)

2. Staff materials that are relevant, easy to train on, and easy to access in the field

3. Build redundancy (participant briefing)

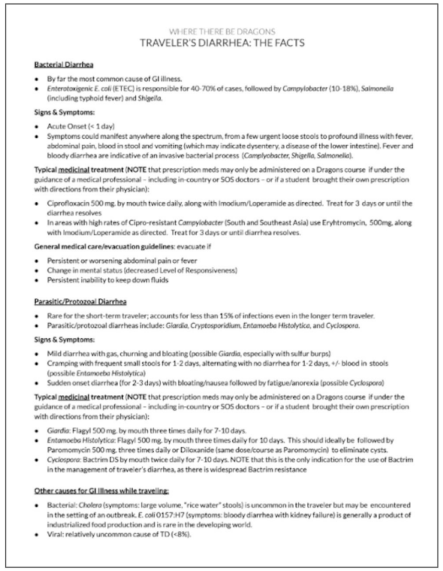
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WHERE THERE BE DRAGONS

TRAVELER'S DIARRHEA: THE FACTS

Bacterial Diarrhea

- By far the most common cause of GI illness.
- *Enterotoxigenic E. coli* (ETEC) is responsible for 40-70% of cases, followed by *Campylobacter* (10-18%), *Salmonella* (including typhoid fever) and *Shigella*.

Signs & Symptoms:

- Acute Onset (< 1 day)
- Symptoms could manifest anywhere along the spectrum, from a few urgent loose stools to profound illness with fever, abdominal pain, blood in stool and vomiting (which may indicate dysentery, a disease of the lower intestine). Fever and bloody diarrhea are indicative of an invasive bacterial process (*Campylobacter, Shigella, Salmonella*).

Typical medicinal treatment (NOTE that prescription meds may only be administered on a Dragons course if under the guidance of a medical professional – including in-country or SOS doctors – or if a student brought their own prescription with directions from their physician):

- Ciprofloxacin 500 mg, by mouth twice daily, along with Imodium/Loperamide as directed. Treat for 3 days or until the diarrhea resolves
- In areas with high rates of Cipro-resistant *Campylobacter* (South and Southeast Asia) use Erythromycin, 500mg, along with Imodium/Loperamide as directed. Treat for 3 days or until diarrhea resolves.

General medical care/evacuation guidelines: evacuate if

- Persistent or worsening abdominal pain or fever
- Change in mental status (decreased Level of Responsiveness)
- Persistent inability to keep down fluids

Parasitic/Protozoal Diarrhea

- Rare for the short-term traveler; accounts for less than 15% of infections even in the longer term traveler.
- Parasitic/protozoal diarrheas include: *Giardia, Cryptosporidium, Entamoeba Histolytica*, and *Cyclospora*.

Signs & Symptoms:

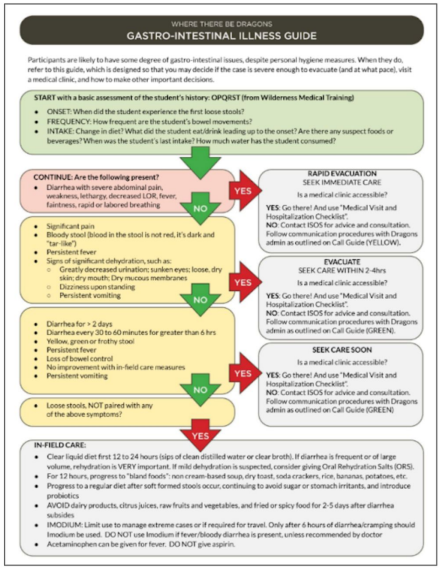
- Mild diarrhea with gas, churning and bloating (possible *Giardia*, especially with sulfur burps)
- Cramping with frequent small stools for 1-2 days, alternating with no diarrhea for 1-2 days, +/- blood in stools (possible *Entamoeba Histolytica*)
- Sudden onset diarrhea (for 2-3 days) with bloating/nausea followed by fatigue/anorexia (possible *Cyclospora*)

Typical medicinal treatment (NOTE that prescription meds may only be administered on a Dragons course if under the guidance of a medical professional – including in-country or SOS doctors – or if a student brought their own prescription with directions from their physician):

- *Giardia*: Flagyl 500 mg, by mouth three times daily for 7-10 days.
- *Entamoeba Histolytica*: Flagyl 500 mg, by mouth three times daily for 10 days. This should ideally be followed by Paromomycin 500 mg, three times daily or Diloxanide (same dose/course as Paromomycin) to eliminate cysts.
- *Cyclospora*: Bactrim DS by mouth twice daily for 7-10 days. NOTE that this is the only indication for the use of Bactrim in the management of traveler's diarrhea, as there is widespread Bactrim resistance

Other causes for GI illness while traveling:

- Bacterial: *Cholera* (symptoms: large volume, "rice water" stools) is uncommon in the traveler but may be encountered in the setting of an outbreak. *E. coli* 0157:H7 (symptoms: bloody diarrhea with kidney failure) is generally a product of industrialized food production and is rare in the developing world.
- Viral: relatively uncommon cause of TD (<8%).



WHERE THERE BE DRAGONS

GASTRO-INTESTINAL ILLNESS GUIDE

Participants are likely to have some degree of gastro-intestinal issues, despite personal hygiene measures. When they do, refer to this guide, which is designed so that you may decide if the case is severe enough to evacuate (and at what pace), visit a medical clinic, and how to make other important decisions.

START with a basic assessment of the student's history: OPQRST (from Wilderness Medical Training)

- ONSET: When did the student experience the first loose stools?
- FREQUENCY: How frequent are the student's bowel movements?
- INTAKE: Change in diet? What did the student eat/drink leading up to the onset? Are there any suspect foods or beverages? When was the student's last intake? How much water has the student consumed?

CONTINUE: Are the following present?

- Diarrhea with severe abdominal pain, weakness, lethargy, decreased LOR, fever, faintness, rapid or labored breathing

YES → **RAPID EVACUATION**
SEEK IMMEDIATE CARE
Is a medical clinic accessible?
YES: Go there! And use "Medical Visit and Hospitalization Checklist".
NO: Contact ISOS for advice and consultation. Follow communication procedures with Dragons admin as outlined on Call Guide (YELLOW).

NO →

- Significant pain
- Bloody stool (blood in the stool is not red, it's dark and "tar-like")
- Persistent fever
- Signs of significant dehydration, such as:
  - Greatly decreased urination; sunken eyes; loose, dry skin; dry mouth; Dry mucous membranes
  - Dizziness upon standing
  - Persistent vomiting

YES → **EVACUATE**
SEEK CARE WITHIN 2-4hrs
Is a medical clinic accessible?
YES: Go there! And use "Medical Visit and Hospitalization Checklist".
NO: Contact ISOS for advice and consultation. Follow communication procedures with Dragons admin as outlined on Call Guide (GREEN).

NO →

- Diarrhea for > 2 days
- Diarrhea every 30 to 60 minutes for greater than 6 hrs
- Yellow, green or frothy stool
- Persistent fever
- Loss of bowel control
- No improvement with in-field care measures
- Persistent vomiting

YES → **SEEK CARE SOON**
Is a medical clinic accessible?
YES: Go there! And use "Medical Visit and Hospitalization Checklist".
NO: Contact ISOS for advice and consultation. Follow communication procedures with Dragons admin as outlined on Call Guide (GREEN)

NO →

- Loose stools, NOT paired with any of the above symptoms?

YES →

IN-FIELD CARE:

- Clear liquid diet first 12 to 24 hours (sips of clean distilled water or clear broth). If diarrhea is frequent or of large volume, rehydration is VERY important. If mild dehydration is suspected, consider giving Oral Rehydration Salts (ORS).
- For 12 hours, progress to "bland foods": non cream-based soup, dry toast, soda crackers, rice, bananas, potatoes, etc.
- Progress to a regular diet after soft formed stools occur, continuing to avoid sugar or stomach irritants, and introduce probiotics
- AVOID dairy products, citrus juices, raw fruits and vegetables, and fried or spicy food for 2-5 days after diarrhea subsides
- IMODIUM: Limit use to manage extreme cases or if required for travel. Only after 6 hours of diarrhea/cramping should Imodium be used. DO NOT use Imodium if fever/bloody diarrhea is present, unless recommended by doctor
- Acetaminophen can be given for fever. DO NOT give aspirin.

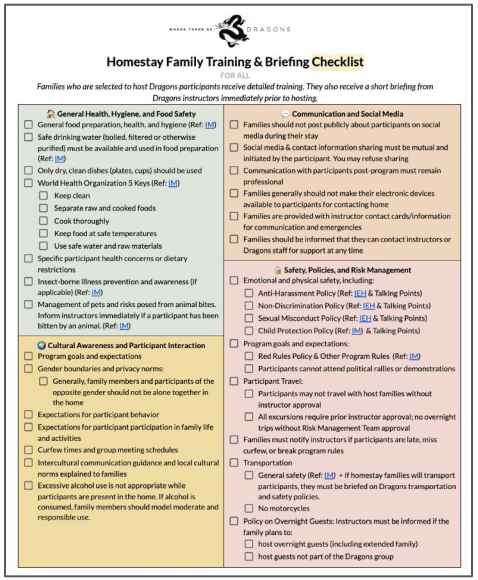
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DRAGONS

Homestay Family Training & Briefing Checklist

FOR ALL

Families who are selected to host Dragons participants receive detailed training. They also receive a short briefing from Dragons instructors immediately prior to hosting.

General Health, Hygiene, and Food Safety

- ☐ General food preparation, health, and hygiene (Ref: IM)
- ☐ Safe drinking water (boiled, filtered or otherwise purified) must be available and used in food preparation (Ref: IM)
- ☐ Only dry, clean dishes (plates, cups) should be used
- ☐ World Health Organization 5 Keys (Ref: IM)
  - ☐ Keep clean
  - ☐ Separate raw and cooked foods
  - ☐ Cook thoroughly
  - ☐ Keep food at safe temperatures
  - ☐ Use safe water and raw materials
- ☐ Specific participant health concerns or dietary restrictions
- ☐ Insect-borne illness prevention and awareness (if applicable) (Ref: IM)
- ☐ Management of pets and risks posed from animal bites. Inform instructors immediately if a participant has been bitten by an animal. (Ref: IM)

Cultural Awareness and Participant Interaction

- ☐ Program goals and expectations
- ☐ Gender boundaries and privacy norms:
  - ☐ Generally, family members and participants of the opposite gender should not be alone together in the home
- ☐ Expectations for participant behavior
- ☐ Expectations for participant participation in family life and activities
- ☐ Curfew times and group meeting schedules
- ☐ Intercultural communication guidance and local cultural norms explained to families
- ☐ Excessive alcohol use is not appropriate while participants are present in the home. If alcohol is consumed, family members should model moderate and responsible use.

Communication and Social Media

- ☐ Families should not post publicly about participants on social media during their stay
- ☐ Social media & contact information sharing must be mutual and initiated by the participant. You may refuse sharing
- ☐ Communication with participants post-program must remain professional
- ☐ Families generally should not make their electronic devices available to participants for contacting home
- ☐ Families are provided with instructor contact cards/information for communication and emergencies
- ☐ Families should be informed that they can contact instructors or Dragons staff for support at any time

Safety, Policies, and Risk Management

- ☐ Emotional and physical safety, including:
  - ☐ Anti-Harassment Policy (Ref: IEH & Talking Points)
  - ☐ Non-Discrimination Policy (Ref: IEH & Talking Points)
  - ☐ Sexual Misconduct Policy (Ref: IEH & Talking Points)
  - ☐ Child Protection Policy (Ref: IM) & Talking Points)
- ☐ Program goals and expectations:
  - ☐ Red Rules Policy & Other Program Rules (Ref: IM)
  - ☐ Participants cannot attend political rallies or demonstrations
- ☐ Participant Travel:
  - ☐ Participants may not travel with host families without instructor approval
  - ☐ All excursions require prior instructor approval; no overnight trips without Risk Management Team approval
- ☐ Families must notify instructors if participants are late, miss curfew, or break program rules
- ☐ Transportation
  - ☐ General safety (Ref: IM) + If homestay families will transport participants, they must be briefed on Dragons transportation and safety policies.
  - ☐ No motorcycles
- ☐ Policy on Overnight Guests: Instructors must be informed if the family plans to:
  - ☐ host overnight guests (including extended family)
  - ☐ host guests not part of the Dragons group

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vs.



Handwashing vs. Hand Sanitizer

GI Medications - Commercial First Aid Kit Cheat Sheet

Class	Meds	Action	Indication	Notes
Anti-nausea	Rx: Zofran ODT (ondostron)	Serotonin blocker	• Nausea • Vomiting	⚠ Serotonin syndrome
Antidiarrheal	Imodium (loperamide)	⬇ Peristalsis	• Diarrhea • Short-term	✔ Traveling/evac X Bloody diarrhea X Fever
Antidiarrheal & GI Protectant	Pepto-Bismol (bismuth subsalicylate) Pepto Kids (calcium carbonate)	• Antimicrobial • Anti-Inflammatory • Protective barrier	• Nausea • Upset Stomach • Gas/indigestion • Diarrhea	X Aspirin allergy X Pediatrics (<12 YO) X Bloody diarrhea
Laxative	• Senokot • Ex-Lax • Smooth Move Tea (Sennosides)	⬆ Peristalsis	Constipation	X Bowel obstruction X Bleeding X Inflammatory bowel disease

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Sierra STEM's Approach to the Toileting Briefing

1. Desire
2. Devices
3. Distance
4. Dig
5. Defecate (Do the Deed)
6. Disguise
7. Disinfect
8. Debrief (?!)

The 💩 Scale

1–10	liquid to solid, 5 = “normal”
11	>24h no bowel movement
12	>48h no bowel movement



Part of daily PEN-X check in:

- ***P***hysical - Poop scale, Sleep
- ***E***motional
- ***N***eeds
- ***X***-factor question

Case Study: Dinosaur National Monument

4-Day Commercial Rafting Trip

LOCATION
Green River - Gates of Lodore - 45 Miles

TRIP MEMBERS
24 Clients • **6 Guides** (30 Total)

TIMING & WEATHER
July 2026 • **~98°F / 37°C**



Case Study: Acute Gastrointestinal Illness

DAY 1
1 Case

- Client 1 - N/V

DAY 3
4 Cases

- Client 2 - N/V
- Client 3 - N
- Client 4 - N/V/D
- **Guide 1 - N/V**

DAY 4
6 Cases

- Client 5 - N/V
- Client 6 - N/V/D
- Client 7 - N/V
- Client 8 - N/V
- Client 9 - N/V
- **Guide 2 - N/D**

Outbreak Summary

TOTAL AFFECTED
9 clients, 2 guides

EVACUATED
4 clients
Ages: 41, 49, 62, 64

KEY
N = Nausea
V = Vomiting
D = Diarrhea

PATHOGEN PROFILE

Norovirus

SIGNS & SYMPTOMS

- Nausea
- Vomiting
- Abdominal cramps
- Watery diarrhea
- Fever
- Body aches
- Headache

TIMELINE & COURSE

ONSET

24–48 hours

Rapid incubation period

DURATION

1–3 days

Acute symptom window

TRANSMISSION

PRIMARY ROUTE

Fecal-Oral

CONTAGION LEVEL

Highly Contagious

Requires strict sanitation, dedicated handwashing, and surface disinfection to prevent widespread outbreak in group settings.

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Outbreak Containment Protocol

Deploy Acute Gastrointestinal Illness Protocol

ISOLATION & CARE

Patient & Guide Management

- **Quarantine** symptomatic individuals
- Designate **1 guide** to care for clients
- Help clients **rehydrate**; protect from heat
- **Consider** GI medications
- Assess need and urgency for an evacuation
- Have **1 guide** handle food and prepare meals
- **Document** all cases and details

HYGIENE & WATER

Sanitation Controls

- Enforce proper **handwashing** **(add chlorine)**
- Designate a **"sick" groover** and **hand wash** station
- Clean up protocols; dispose **contaminants** in groover
- Disinfect surfaces with **chlorine bleach** solution (200 ppm)
- Hand-sani is **NOT** effective
- Add **2–5 drops** of chlorine bleach per gallon (drinking)

Outbreak Control: Key Takeaways

- Quarantine sick individuals, gear, and guides (division of responsibility)
- Mandatory handwashing (hand sanitizer is **not** effective!)
- Carry chlorine (for handwashing, surface disinfection, water treatment)
- Water and food safety protocols

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Handwashing vs. Hand Sanitizer

Action Steps

1. Implement a human waste management decision framework appropriate to the places where you operate

2. Standardize hygiene and illness-prevention protocols, including a way to assess whether people are following them

3. Discuss and practice communication about toileting with staff, participants, and other relevant stakeholders

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Debrief of Norovirus Outbreak

