AHRQ Safety Program for Telemedicine: Improving Antibiotic Use

Acute Diarrhea – Clinician Guide

When to refer for in-person management[1-2]

- Bloody stools, high fevers, confusion, or severe abdominal pain
  - Evaluation for bacterial causes that may require antibiotic treatment or for alternative diagnoses (e.g., ischemic colitis)
- Intractable vomiting, dizziness, significant lethargy, confusion
  - Evaluation for severe dehydration
- Diarrhea for >7 days without any improvement
  - Evaluation for bacterial or parasitic causes that may require anti-infective treatment or alternative diagnoses (e.g., inflammatory bowel disease)
- Pregnant or severe immune compromise
  - Evaluation for unusual organisms (e.g., Listeria)

Acute diarrhea is defined as 3 or more loose or watery stools in a 24-hour period lasting less than or equal to 14 days.

Cause	Notes
Viral gastroenteritis (e.g., Norovirus, Rotavirus, Adenovirus)[1-3]	• Most common cause of acute diarrhea • Abrupt onset of watery diarrhea, nausea/vomiting, abdominal cramps, low-grade fever • Often linked to household or community outbreaks • Stool testing generally not needed • Self-limited, typically resolves within a week • No antibiotics indicated
Bacterial gastroenteritis (e.g., Salmonella, Shigella, Campylobacter, *E. coli* O157:H7)[1-3]	• Consider in patients with high fever, bloody stools, severe abdominal pain, or outbreak exposure • Consider referral for stool culture or multiplex PCR • Treatment is supportive for most cases; antibiotics may worsen outcomes of people with diarrhea caused by *E. coli* O157:H7
Parasitic infections (*Giardia lamblia*, Cryptosporidium, *Entamoeba histolytica*)[1-3]	• Often causes persistent diarrhea (>14 days) • Typically associated with travel to endemic areas or exposure to untreated water; addition risk factors more specific for Giardia include camping, daycare exposures, men who have sex with men • Consider referral for stool ova/parasite testing or multiplex PCR • Treat confirmed cases with appropriate antiparasitic agents • If concerns for Giardia (e.g., greasy, foul-smelling stools for over two weeks), reasonable to prescribe metronidazole 500 mg by mouth twice a day for 5-7 days, even in absence of diagnostic testing

Antibiotic-associated diarrhea (including *Clostridioides difficile*)[1-3]	• Non-*C. difficile* antibiotic-associated diarrhea typically occurs while receiving antibiotics and improves after stopping antibiotics
	• *C. difficile*-associated diarrhea may occur while receiving antibiotics; can occur up to ~3 months after stopping antibiotics
	  ○ Consider testing if no improvement after stopping antibiotics, if symptoms persist for more than 3 days, or if symptoms are severe (see below)
	  ○ *C. difficile* targeted antibiotics not recommended without confirmation of diagnosis

Non-infectious causes (e.g., inflammatory bowel disease, celiac disease, lactose intolerance)[1-3]	• Consider in prolonged or recurrent symptoms without infectious etiology • Typically require in-person evaluation • Antibiotic therapy not suggested

Supportive care and followup[1-2,4]

- Goal is to produce urine at least every 8 hours (consider water, broth, oral rehydration solutions (e.g., Pedialyte®)
    - Young children: 1-2 cups of fluid after each loose stool
    - Older children 2-4 cups of fluid after each loose stool
    - Adults: 8-12 cups of fluids a day
- Limit sugary drinks, caffeine, greasy foods; can exacerbate diarrhea
- Consider small, bland meals (e.g., BRAT diet = bananas, rice (plain, white), applesauce, toast (plain, usually white bread)
- Over-the-counter medications typically not necessary unless patient prefers
    - Loperamide (Imodium®)
        - Reduces duration of diarrhea by ~1 day compared to placebo
        - Avoid if febrile or severe disease as can prolong symptoms
        - Avoid in children as can cause central nervous system toxicities
    - Bismuth salicylate (Pepto-Bismol®)
        - May be less effective than loperamide
        - Can be used if febrile or severe disease
        - Avoid in children ≤12 years as it may increase the risk of Reye's syndrome (active ingredient related to aspirin)
- Probiotics are frequently used to treat acute diarrhea, but a 2020 Cochrane review suggests that probiotics may not have much of an impact on acute infectious diarrhea, and suggested that large-scale, high-quality studies are needed.[5]
- If any criteria listed under "When to refer for in-person management" are met, refer patient for an in-person visit; refer to emergency department if severe symptoms or severe dehydration

References

1. Shane AL, Mody RK, Crump JA, et al. 2017 Infectious Diseases Society of America clinical practice guidelines for the diagnosis and management of infectious diarrhea. Clin Infect Dis. 2017 Nov 29;65(12):e45-e80. PMID: 29053792.

2. Guerrant RL, Van Gilder T, Steiner TS, et al. Practice guidelines for the management of infectious diarrhea. Clin Infect Dis. 2001;32(3):331–51. PMID: 11170940.

3. Riddle MS, Connor BA, Beeching NJ, et al. Guidelines for the prevention and treatment of travelers' diarrhea: A graded expert panel report. J Travel Med. 2017 Apr 1;24(suppl_1):S57-S74. PMID: 28521004.

4. Freedman SB, Willan AR, Boutis K, et al. Effect of dilute apple juice and preferred fluids vs electrolyte maintenance solution on treatment failure among children with mild gastroenteritis. JAMA. 2016;315(18):1966–74. PMID: 27131100.

5. Collinson S, Deans A, Padua-Zamora A, Gregorio GV, Li C, Dans LF, Allen SJ. Probiotics for treating acute infectious diarrhea. Cochrane Database of Systematic Reviews. 2020;12(12):CD003048. PMID: 33295643.