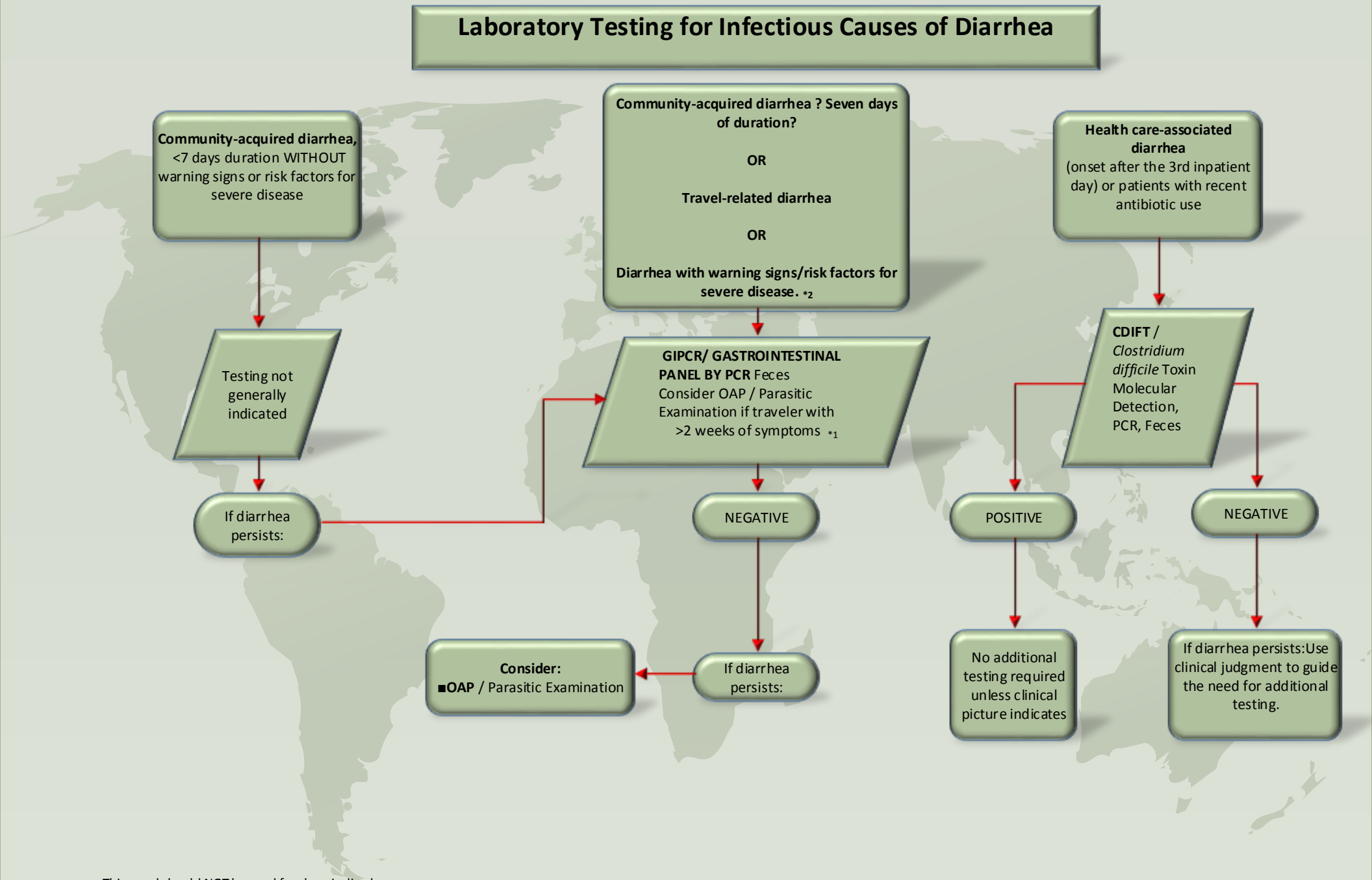
Laboratory Testing for Infectious Causes of Diarrhea



1 This panel should NOT be used for chronic diarrhea.
2 Warning signs and risk factors for severe disease include fever, bloody diarrhea, dysentery, severe abdominal pain, dehydration, hospitalization, and immunocompromised state.

Diagnosis of Acute Infectious Diarrhea using Multiplex PCR
Etiology and Treatment Recommendations

Bacteria

Pathogen	Presentation	Source and Seasonality	Treatment indications	Treatment (if indicated) adult dosing
Campylobacter	Fever, abdominal cramps, and diarrhea within 6-48 hours, fecal leukocytes present	Poultry, unpasteurized milk and dairy products. Peak season; spring, summer	Antimicrobial therapy is usually not indicated. Antibiotics are recommended for severe illness (high fever, bloody, severe, or worsening diarrhea) or risk factors for complications (elderly, pregnant women, immunocompromised).	Azithromycin 500 mg daily x 3 days, fluoroquinolone x 3 days. Immunocompromised patients may require prolonged therapy (7-14 days)
Clostridium difficile	More than 3 watery, loose, or unformed stools per day, leukocytosis, elevated creatinine, fecal leukocytes variable	Risk factors are recent antibiotic use and use of stomach acid-reducing drugs	Asymptomatic carriage; no treatment is indicated. Mild disease; stop the inciting antibiotic and give probiotic. Mild to moderate disease; metronidazole. Moderate to severe disease after metronidazole failure; vancomycin. Recurrent disease; consider fecal microbiota transplant.	Metronidazole 500 mg TID x 10-14 days Vancomycin 125 mg QID x 10-14 days
Plesiomonas shigelloides	Severe abdominal cramps, and diarrhea within 6-48 hours, fecal leukocytes present	Contaminated water, shellfish, international travel	Antimicrobial therapy is usually not indicated. Antibiotics are recommended for severe illness (high fever, bloody, severe, or worsening diarrhea) or risk factors for complications (elderly, pregnant women, immunocompromised).	Fluoroquinolone x 3 days, Azithromycin 500 mg daily x 3 days, TMP/SMX DS BID x 3 days
Salmonella	Fever, abdominal cramps, and diarrhea within 6-48 hours, fecal leukocytes present	Poultry, eggs, dairy products, produce, exposure to reptiles. Peak season; summer, fall	Antibiotics have no effect on the length of illness and may prolong carriage of the organism in the stool. Antibiotics may be considered for severe illness (>8 stools/day, high fever, hospitalized) or risk for complications (age <1 or > 50, immunocompromised)	Fluoroquinolone x 7 days, azithromycin 500 mg daily x 7 days, TMP/SMX DS BID x 7 days. Immunocompromised patients require 14 days of therapy if relapsing
Yersinia enterocolitica	Fever and abdominal cramps within 1-11 days, with or without diarrhea, fecal leukocytes present	Unpasteurized milk, undercooked pork, chitterlings. Peak season; winter	Most patients recover without antimicrobial therapy. Unclear if antibiotics shorten the duration of illness.	For immunocompromised patients, doxycycline 100 mg IV BID + tobramycin or gentamicin 5 mg/kg/day (TMP/SMX, FQs
Vibrio parahaemolyticus, Vibrio vulnificans	Fever, abdominal cramps, and diarrhea within 6-48 hours, fecal leukocytes present	Shellfish	Antimicrobial therapy is usually not indicated. Antibiotics are recommended for severe illness (high fever, bloody, severe, or worsening diarrhea) or risk factors for complications (elderly, pregnant women, immunocompromised).	Azithromycin 1 g x 1 dose, doxycycline 300 mg x 1 dose
Vibrio cholerae	Abdominal cramps and large volume watery diarrhea within 16-72 hours, fecal leukocytes absent	Shellfish, travel to Haiti or other areas where cholera is endemic	Oral rehydration. Antibiotic treatment is indicated.	Azithromycin 1 g x 1 dose, doxycycline 300 mg x 1 dose, fluoroquinolone 500 mg x 1 dose

Diarrheagenic *E. coli/Shigella*

Pathogen	Presentation	Source and Seasonality	Treatment indications	Treatment (if indicated) adult dosing
Enteroaggregative *E. coli* (EAEC)	Abdominal cramps and watery diarrhea within 16-72 hours, can be prolonged, fecal leukocytes present	International travel, infantile diarrhea in developing countries	Limited data in EAEC and EPEC. Many patients recover without antimicrobial therapy. Antibiotics shorten the duration of illness in ETEC and are generally indicated for moderate to severe diarrhea (>4 stools/day, fever, or blood or pus in stool)	Fluoroquinolone x 3 days, rifaximin 200 mg TID x 3 days, azithromycin 1 g x 1 dose or 500 mg daily x 3 days
Enteropathogenic *E. coli* (EPEC)				
Enterotoxigenic *E. coli* (ETEC) lt/st				
Shiga-like toxin-producing *E. coli* (STEC, includes *E. coli* O157/H7) stx1/stx2	Bloody diarrhea with minimal fever within 3-8 days	Unpasteurized milk, fresh produce, ground beef, petting zoos	Avoid antibiotics and antimotility agents. Antibiotics may increase the risk for hemolytic-uremic syndrome.	Supportive care only
Shigella/Enteroinvasive *E. coli* (EIEC)	Fever, abdominal cramps, and diarrhea within 6-48 hours, fecal leukocytes present	Egg salad, lettuce, day care	Treatment is recommended if detected.	TMP-SMX 160-800 mg BID x 3 days, Fluoroquinolone x 3 days. Immunocompromised patients with Shigella require 7-10 days of therapy
Parasites				
Cryptosporidium	Prolonged watery diarrhea, fecal leukocytes negative or variable	Contaminated water (recreational and drinking), unpasteurized apple cider	Most patients recover without antimicrobial therapy but antibiotics may decrease the duration of illness. Immunocompromised patients often develop prolonged symptoms and respond poorly to therapy.	May use antimotility agents and/or nitazoxanide 500mg BID x 3 days for prolonged or severe illness. ID consult recommended for immunocompromised patients
Cyclospora cayetanensis		Imported fresh produce	Treatment indicated if symptomatic	TMP/SMX DS BID x 7-10 days. ID consult recommended for immunocompromised patients
Entamoeba histolytica		Returning travelers	Treatment recommended if detected.	Metronidazole 500 mg TID x 7-10 days, nitazoxanide 500 mg PO BID x 3 days followed by paromomycin 25 mg/kg/day in 3 divided doses x 7 days
Giardia lamblia		Contaminated recreational water, daycare, international travelers	Treatment indicated if symptomatic.	Nitazoxanide 500 mg PO BID x 3 days, metronidazole 500 mg TID x 5-7 days

Viruses

Pathogen	Presentation	Source and Seasonality	Treatment indications	Treatment (if indicated) adult dosing
Adenovirus F 40/41	Vomiting and non-bloody diarrhea within 10-51 hours, fecal leukocytes negative	Children <2 yrs, day care	No therapy available. Supportive care.	Antibiotics not indicated
Astrovirus		Children <1 yr, day care		
Norovirus GI/GII		Salads, shellfish, cruise ships, epidemic foodborne disease Peak season – winter		
Rotavirus A		Infants Peak season – winter		
Sapovirus		Children		

Pediatric Dosing Recommendations

Agent	Recommended Dosing
Azithromycin	10 mg/kg daily
Ciprofloxacin*	20-30 mg/kg/day in 2 divided doses (max 1.5 g/day)
Doxycycline*	≥ 8 years: 2-4 mg/kg/day divided every 12-24 hours (max 200 mg/day)
Levofloxacin*	< 5 years: 8-10 mg/kg/dose twice daily. ≥ 5 years: 10 mg/kg/dose once daily (max 750 mg/day)
Metronidazole	Giardiasis: 15 mg/kg/day in divided doses every 8 hours (max 250 mg/dose) *C. difficile* : 30 mg/kg/day in divided doses every 6 hours (max 2000 mg/day)
Nitazoxanide	1-3 years: 100 mg every 12 hours. 4-11 years: 200 mg every 12 hours. ≥ 12 years: 500 mg every 12 hours
Paromomycin	25-35 mg/kg/day divided every 8 hours
Rifaximin	3-11 years: 100 mg four times daily (limited data). ≥ 12 years: 200 mg three times daily
TMP/SMX	≥ 2 months: 8-10 mg/kg/day (TMP component) in divided doses every 12 hours
Vancomycin (oral)	40 mg/kg/day PO divided every 6-8 hours

*Fluoroquinolones and doxycycline are not routinely used as first line therapy in pediatrics