Urgent Care Evaluation of Diarrhea

Urgent message: Diarrheal illness presents with varying degrees of severity and a broad range of etiologies. The urgent care center provider's ability to gather key information from the medical history and physical examination, determine when laboratory testing is beneficial, and recognize indications for treatment is essential for the effective and efficient treatment of this common symptom.

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Introduction

Diarrheal illness is a common presenting complaint to all urgent care centers. In the United States, an estimated 179 million to 375 million cases of acute diarrheal illness occur each year (0.6–1.4 bouts per person per year), accounting for more than 900,000 hospitalizations and 6000 deaths annually.[1,2] Although most episodes are self-limited, understanding critical components of the medical history and physical examination and following a systematic approach to diarrheal illness is crucial for proper treatment.

Diarrhea has traditionally been defined by weight (200–250 g) of unformed stool (i.e., it takes the shape of the container it is in) per day, but it is more practically defined as the passage of three or more unformed stools per day.[1,3] Diarrhea is further classified by duration of illness. Acute diarrheal illness is defined as lasting fewer than 14 days; persistent illness, as lasting 14 to 29 days; and chronic illness, as lasting more than 30 days.[2]

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Presentation of Cases

Case 1

A 4-year-old boy presents with diarrhea. His mother

reports that he has had 3 days of four or five loose, nonbloody stools. She reports that he also has had fatigue and decreased appetite. His vital signs are within normal limits for his age, and his abdomen is soft and nontender, with increased bowel sounds. He has no significant past medical history, has no history of recent travel or antibiotics, and attends day care three times a week.

Case 2

A 45-year-old woman presents with diarrhea. She reports 2 days of multiple loose stools with associated bright red blood over the preceding 12 hours. She has associated muscle aches, nausea but no vomiting, and abdominal cramping. She has a history of hypertension and no recent changes in medications. She reports that she has not recently traveled or taken antibiotics. Her temperature is 101.9°F (38.8°C), and the remainder of her vital signs are within normal limits. She is in no acute distress, her abdomen is soft and nontender, and findings from her stool sample are positive for occult blood.

Case 3

A 56-year-old man presents with diarrhea. He reports 5 days of eight to 10 large-volume, nonbloody, loose stools per day. He describes a sensation of bloating and abdominal cramping. He has a history of diabetes mellitus and was recently discharged from a hospital after admission for cellulitis of his left foot. His vital signs are within normal limits, and his abdomen is mildly tender throughout.

Case 4

A 26-year-old man presents with diarrhea. He reports 3 days of loose, foul-smelling stool with associated abdominal cramping. He reports that he has not had nausea or vomiting. He recently returned from a hiking trip through the Shenandoah Valley and is unaware of whether his fellow travelers have been ill. Findings on his physical examination are unremarkable.

Initial Assessment

Initial assessment should focus on signs of instability and indications for transfer to an acute-care facility. As always, vital signs are indeed *vital*. Tachycardia, hypotension, or tachypnea alone, in conjunction with each other or with associated fever, are considered overt signs of clinical instability or systemic illness, and the patient would likely benefit from rapid intervention and acute-care treatment. The general appearance of the patient can provide further evidence of instability. Lethargy, lack of verbal or pain response, cachexia, mottled or ashen skin, acute distress from pain, and writhing can all indicate the need for acute-care treatment. As always, extra caution is warranted with the very young (neonates and infants) and the elderly.

Differential Diagnosis

The differential diagnosis for diarrheal illness is broad, but it can be simplified by categorizing to infectious and noninfectious disease, and then subcategorizing infectious into dysenteric and nondysenteric etiologies.

Infectious, Nondysenteric Diarrhea

In general, nondysenteric infectious diarrhea is acute, is self-limiting, and requires no testing or empiric treatment.[2] Most infectious diarrheal illness is due to viral infections, most commonly with *Norovirus* and *Rotavirus*.[1] These are typically acute and self-limiting. Food poisoning also falls into this category and is typically caused by foods contaminated with bacteria (such as *Staphylococcus aureus*, *Bacillus cereus*, and *Clostridium perfringens*) that emit a preformed enterotoxin. Food poisoning typically has an acute onset (1–6 hours after ingestion) and is self-limiting, requiring only supportive care.[4]

Special considerations for nondysenteric infectious diarrhea include the following:

- **Traveler's diarrhea:** Traveler's diarrhea is contracted from contaminated food or water and caused by a variety of noninvasive *Escherichia coli* species. As the disease's name suggests, a recent travel history with nondysenteric diarrhea should increase the clinician's suspicion for the condition.[5] Stool analysis is not necessary, and the disease course is self-limited. However, empiric treatment with ciprofloxacin (500 mg twice a day for 3–5 days) has been shown to decrease the duration of symptoms.
- **Botulism:** Caused by *Clostridium botulinum*, botulism is uncommon but can be life-threatening. It is contracted by the consumption of contaminated food products, most commonly home-canned fruits and vegetables. In addition to diarrhea, botulism produces a descending paralysis (a top-to-bottom paralysis). Symptoms may include weakness, dry mouth, diplopia, dysphagia, progressive cranial nerve palsies, and respiratory failure. Treatment includes hospitalization and supportive care, including intubation and ventilation in severe cases.
- **Scombroid:** Scromboid is caused by the consumption of contaminated fish such as tuna, mackerel,

and mahi-mahi. This produces a histamine-like reaction and, in addition to diarrhea, may present with diffuse flushing of the face, neck, and upper trunk; palpitations; nausea and vomiting; and rarely, bronchospasm. This can be confused with an allergic or anaphylactic reaction. Treatment is with antihistamines.

- **Giardiasis:** Giardiasis is the most common parasitic infection in the United States and is contracted through the consumption of contaminated food or water, typically with a history of recent hiking, backpacking, or other travel. In addition to diarrhea, patients may experience bloating, abdominal cramps, excessive flatus, and weight loss from malabsorption. Stool analysis is indicated, and treatment with metronidazole is needed.[1]

Infectious, Dysenteric Diarrhea

Dysentery is defined by the presence of visibly bloody stool, but it also includes fever and tenesmus and is a sign of invasive or inflammatory illness.[2] Acute, bloody diarrhea is most often infectious in etiology. Most common pathogens include *Salmonella*, *Shigella*, *Campylobacter*, and Shiga toxin–producing *E. coli*. Most presentations warrant stool analysis and empiric treatment with antibiotics (ciprofloxacin, 500 mg twice a day for 3–7 days).[1]

Special considerations for dysenteric infectious diarrhea include the following:

- **Enterohemorrhagic *E. coli* (EHEC O157:H7):** Classically contracted through the consumption of undercooked meats, EHEC causes abdominal pain, vomiting, and grossly bloody diarrhea, but often no fever. Empiric antibiotics are not recommended, because this may increase the risk of complications such as hemolytic-uremic syndrome (HUS).[1]
- ***C. difficile*:** *C. difficile* is a common enteric bacterium and does not always cause acute inflammation or colitis. *C. difficile* colitis is caused by the production of toxin A and/or toxin B; these strains of bacteria typically develop in the setting of recent antibiotic use (clindamycin, penicillin, cephalosporin) or hospitalization for more than 3 days.[6] Patients may present with fever, abdominal pain, diarrhea, and, in rare cases, vomiting. This may lead to significant illness, especially in the elderly. Stool analysis for *C. difficile* toxin A and/or toxin B and discontinuation of offending agents are essential. The treatment of choice is metronidazole or oral vancomycin.[1,6]
- **Amebic dysentery:** Amebic dysentery is caused by *Entamoeba histolytica* and is contracted from contaminated food or water, most commonly in developing countries. Amebic dysentery is difficult to distinguish from the bacterial form. For patients with a history of travel to developing countries, those who are immunocompromised, and those with persistent or chronic dysentery that has not responded to conventional treatment, stool analysis for ova and parasites should be considered.[1]

Noninfectious Diarrhea

In the acute phase, noninfectious diarrhea can be hard to distinguish from infectious diarrhea. A thorough medical history and physical examination are essential for accurate diagnosis and treatment. For patients presenting with an isolated chief symptom of diarrhea, the most common noninfectious etiology is drug-induced or iatrogenic. Many commonly prescribed and over-the-counter medications affect the gastrointestinal tract. These include—but are in no way limited to—antibiotics, laxatives, antacids, antihypertensives, antiepileptics, antidepressants, diuretics, nonsteroidal anti-inflammatory drugs, cholinergics, and cholesterol-lowering medications. Evaluating suspected noninfectious diarrhea in the context of associated symptoms can help in making a diagnosis.

- **Abdominal pain:** Acute or focal abdominal pain as the presenting or associated symptom, along with diarrhea, is very concerning regarding intra-abdominal pathology and work-up. The clinician should consider appendicitis, intestinal obstruction, pancreatitis, cholecystitis, diverticulitis, pyelonephritis, pelvic inflammatory disease, hepatitis, volvulus, inflammatory bowel disease (IBD), and mesenteric ischemia according to the patient's age, sex, medical history, and findings on physical examination, because each of those diseases may present with diarrhea.
- **Toxidromes:** Many acute and chronic intoxications, as well as withdrawals, may present with or have associated diarrhea.

History of Present Illness

The differential diagnosis for diarrheal illness is broad, so obtaining a thorough history of the present illness is the most critical component in the treatment of diarrheal illness. As you interview the patient, consider the following[2]:

- Diarrheal illness category and duration:
  - Diarrhea is defined as >3 unformed stools per day.

- Categorize it as acute (<14 days), persistent (14–29 days), or chronic (>30 days). Acute and persistent illness are more frequently infectious, whereas diet and systemic disease states should be considered in chronic illness.

- Stool characteristics:
  - Acute bloody stool is suggestive of infectious diarrhea.
  - Chronic bloody stool can indicate a systemic illness such as IBD.
- Exposures:
  - **Living arrangements:** Viral illnesses are particularly common in closed populations such as those for cruise ships, nursing homes, dormitories, and hospitals.
  - **Food exposure:** Just as viral diarrhea occurs in closed populations, food-borne illnesses often occur in groups. Produce is the most common source, and contaminated leafy green vegetables are the most common food type involved. Noroviruses are the most common food-borne pathogens. Poultry is associated with the highest proportion of deaths, most commonly from infection with *Salmonella* or *Listeria*.[4] A recent history of eating raw oysters should prompt consideration and special culture for *Vibrio cholerae*. Ingestion of undercooked beef should prompt testing for Shiga toxin–producing *E. coli*.[4] In addition to food-borne illness, a causal relationship between certain foods and the onset of diarrhea could suggest lactose intolerance or celiac sprue.
  - **Foreign travel:** Foreign travel increases the likelihood of traveler's diarrhea and should increase suspicion for bacterial or parasitic pathogens.
  - **Domestic travel:** Recent hiking or camping places the patient at risk of giardiasis, particularly if water-purification procedures were not strictly followed, as does well-water consumption in rural environments.
  - **Antibiotics or hospitalizations:** Recent antibiotic use or hospitalization places the patient at increased risk of infection with *C. difficile*, as does use of proton-pump inhibitors.[6,7]
- Associated symptoms:
  - **Inflammatory or dysenteric symptoms:** These include fever, bloody stool, and tenesmus and are often indicative of infectious diarrhea, warranting testing and empiric treatment.
  - **Nausea or vomiting:** When vomiting is the predominant finding, viral gastroenteritis or food poisoning with a preformed toxin should be considered, though there are many other etiologies with this constellation of symptoms.
  - **Abdominal pain:** Associated abdominal pain may suggest diverticulitis, small bowel obstruction, infectious gastroenteritis, or IBD.
  - **Seizures:** Seizures have classically been associated with shigellosis but can also indicate an electrolyte imbalance such as hyponatremia.
  - **Heat intolerance:** Heat intolerance can suggest hyperthyroidism or thyrotoxicosis.
  - **Situational:** Situational diarrhea, especially triggered by stress or emotion, can suggest irritable bowel syndrome, though this is typically a diagnosis of exclusion.
- Medical history:
  - **Immune state:** Malignancy, chemotherapy, sickle cell disease, previous organ transplantation, and human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) are only a few of the disease states or conditions that lower a host's immunity. If the patient is immunocompromised, the differential diagnosis is broadened to include protozoal infections, *Mycobacterium avium* complex, and intestinal cytomegalovirus infections.[8]
  - **Medications:** A review of the patient's current medications may reveal an inciting agent. Antibiotics are a common cause of diarrhea.
- Surgical history—abdominal surgery:
  - Previous abdominal surgeries increase the risk of adhesions and small bowel obstruction.
  - Though typically presenting with abdominal pain and constipation, patients may have associated small-volume, unformed stool that passes the site of obstruction.
  - Family history: IBD often has a genetic predisposition.
- Social history—sexual practices:
  - Men who have sex with men might have proctitis or colitis with sexually transmitted pathogens.
  - *Entamoeba* has been detected in higher numbers in men who have sex with men than in other populations.

Physical Examination

The physical examination should begin with a review of the patient's vital signs and general appearance. As

previously mentioned, unstable vital signs, altered mental status, and acute distress from pain are all indications for rapid intervention and transfer to an acute-care setting. Though a complete examination is recommended, here we focus on critical elements most likely to guide treatment:

- **Volume status:** Important factors indicating moderate to severe volume depletion include tachycardia, hypotension, altered mental status, decreased skin turgor, dry or tacky mucous membranes, sunken eyes (or fontanelles, as appropriate), and postural hypotension.
- **Abdominal examination:** Important factors include the presence or absence of surgical scars, tenderness to palpation, distention, masses, and peritoneal signs. Peritonitis warrants transfer to an acute-care setting. Focal or severe abdominal pain may suggest acute appendicitis, intestinal obstruction, intussusception, pancreatitis, cholecystitis, diverticulitis, hepatitis, volvulus, IBD, or toxic megacolon, depending on the age of the patient, location of pain, and clinical context. Abdominal pain out of proportion to the findings on physical examination may indicate mesenteric ischemia.
- **Rectal examination:** Rectal examination is especially critical in the elderly and in patients presenting with bloody stool. Important factors include inspection for hemorrhoids and fissures. Anal fissures, especially outside the typical 6 o'clock and 12 o'clock positions, should raise suspicion for IBD. Digital rectal examination should be performed to evaluate for gross and occult blood. In the elderly, fecal impaction may result in diarrhea as liquid stool passes around the site of impaction.
- **Additional findings:** Thyroid enlargement, masses, oral ulcers, erythema nodosum, and episcleritis can suggest an autoimmune source of diarrhea such as hyperthyroidism, thyrotoxicosis, adrenal insufficiency, carcinoid syndrome, hypoparathyroidism, and IBD.

Diagnostic Work-Up

Findings on the medical history and physical examination should guide testing and treatment. Because most diarrheal illnesses are self-limited or viral, microbiologic testing is usually unnecessary in the urgent care setting.[9] In the absence of clinical signs of severe dehydration, instability, or focal physical examination findings (i.e., right lower quadrant abdominal pain or thyroid enlargement), serum studies are usually not indicated. Most diagnostic tests recommended in the work-up of diarrheal illness are rarely immediately helpful in the urgent care setting, but they can be helpful for follow-up treatment. Patients presenting with fever, bloody or purulent stool, tenesmus, or diarrheal illness lasting more than 7 days should be considered for stool analyses, including fecal leukocytes or lactoferrin, stool bacterial culture, ova and parasites, and *C. difficile* toxin assay.[9,10]

Fecal leukocytes and lactoferrin are markers of inflammatory diarrhea. The presence of leukocytes serves as a fairly specific marker of inflammation, indicating the need for empiric treatment and/or stool culture; the absence of lactoferrin serves as a fairly sensitive marker for the absence of inflammation or the presence of invasive pathogens.[9] Neither is perfect, so again, findings on the medical history and physical examination should be considered prior to testing and treatment. Stool cultures will not produce results quickly enough to guide treatment in the outpatient setting, but if they are ordered for follow-up encounters, they should target the most common pathogens (*Salmonella*, *Shigella*, *Campylobacter*, and, especially if there are bloody stools, Shiga toxin–producing *E. coli*) and uncommon pathogens as indicated by the medical history (hospitalization, being immunocompromised, travel, consumption of problematic foods, etc).[8]

Treatment and Disposition

Supportive Care

In all cases, initial therapy should include hydration. Oral hydration with a glucose-based electrolyte solution is preferred. In pediatric patients, oral rehydration can be accomplished by giving 50 to 100 mL/kg of a glucose–electrolyte solution over 4 hours. Intravenous hydration with normal saline or lactated Ringer's solution should be reserved for patients with contraindications to oral therapy (e.g., altered mental status, established need for parenteral nutrition or feeding tube), in those who cannot tolerate oral hydration because of persistent vomiting, or in those with severe dehydration.

Antiemetics are indicated for the vomiting patient and can prevent the need for intravenous hydration. Commonly used medications that are safe for both adults and children include ondansetron (Zofran), promethazine (Phenergan), and metoclopramide (Reglan).

Antidiarrheal agents should be used with caution, because they have been implicated with prolonged fever in shigellosis, toxic megacolon in *C. difficile* infection and IBD, and HUS in EHEC infection. Thus, antidiarrheal agents should be avoided in patients with bloody

diarrhea or suspected inflammatory diarrhea, as well as in children. Loperamide is the agent of choice in adults and may reduce the duration of diarrhea by 1 day. Bismuth subsalicylate is an appropriate second-line option.

Empiric Antibiotic Therapy

Because definitive diagnostic studies are not readily available in the acute-care setting, they have limited utility, so empiric antibiotic therapy should be considered in the appropriate clinical scenario. However, the majority of infectious causes of diarrhea are viral or noninvasive bacteria, and illness tends to be self-limited and to require only supportive therapy. Initiation of empiric antibiotic treatment is recommended in patients with a suspected invasive bacterial process and severe diarrhea and systemic symptoms. Ciprofloxacin (500 mg orally for 3 or 4 days) is the medication of choice, with azithromycin as a secondary option or for children and pregnant women. Antibiotic therapy is considered a contraindication if there is suspicion of EHEC infection, because it has been implicated in increasing the incidence of HUS. Further indications for empiric therapy include the following:

- Traveler's diarrhea:
  - **Cause:** Noninvasive *E. coli* species, *Campylobacter*, *Salmonella*, and *Shigella*, with *Cryptosporidium* and *Giardia* in persistent cases
  - **Source:** Contaminated food and water
  - **Presentation:** Diarrhea with or without abdominal cramps, nausea or vomiting, or fever, with recent travel to endemic areas such as Africa, Central America and South America, and Mexico
  - **Empiric treatment:** Bismuth subsalicylate reduces the rate of diarrhea; ciprofloxacin has been shown to decrease the length of illness.
- *C. difficile* infection:
  - **Cause:** *C. difficile* toxin A and/or toxin B
  - **Source:** Recent antibiotic use (clindamycin, penicillin, cephalosporin) or hospitalization for more than 3 days
  - **Presentation:** Fever, abdominal pain, diarrhea, and, rarely, vomiting, which may cause significant illness especially in the elderly. Suspect it if the patient has been hospitalized for more than 3 days and/or has taken antibiotics in the preceding 2 weeks.
  - **Work-up:** Stool analysis for *C. difficile* toxin A and/or toxin B
  - **Empiric treatment:** Discontinue associated antibiotics, metronidazole, or oral vancomycin.
- Giardiasis:
  - **Cause:** *Giardia*
  - **Source**: Contaminated water
  - **Presentation:** Abdominal pain, persistent diarrhea, weight loss, and, rarely, vomiting. Suspect it if there is a history of hiking, camping, or drinking poorly purified water.
  - **Work-up:** Stool analysis for ova and parasites. Direct immunofluorescence staining can improve the sensitivity for detecting *Giardia* and *Cryptosporidium*. Multiple samples may have to be collected to be sufficient to yield a positive result.
  - **Empiric treatment:** Metronidazole

Systematic Approach

To assist with decision-making, the clinical approach to diarrheal illness can be categorized as follows:

- Acute diarrhea without dysentery
- Acute diarrhea with dysentery
- Nosocomial diarrhea
- Immunocompromise
- Persistent or chronic diarrhea

Acute Illness Without Dysentery

- Essential features:
  - Symptoms for less than 7 days
  - An appearance of being well, plus either no abdominal pain or mild abdominal pain that is generally cramping and nonfocal
  - Absence of fever, bloody stools, or tenesmus
- Differential diagnosis and common pathogens:
  - Infectious causes include *Norovirus*, *Rotavirus*, and food poisoning with a preformed toxin.
  - There are many noninfectious causes. Consider medication-induced diarrhea, medication withdrawal, gastrointestinal bleeding, adrenal insufficiency, thyroid storm, toxicologic exposures, and mesenteric ischemia.
- Work-up:
  - In general, neither blood work or stool analysis is required.
  - Consider serum chemistries if there is moderate to severe dehydration.
  - Consider stool analysis for *Giardia* or *Cryptosporidium*.
  - Consider testing for sexually transmitted infections for men who have sex with men.
- Treatment and disposition:
  - Give supportive care only, because the disease is typically self-limited.

"The majority of infectious causes of diarrhea are viral or noninvasive bacteria, and illness tends to be self-limited and to require only supportive therapy. [However, initiation] of empiric antibiotic treatment is recommended in patients with a suspected invasive bacterial process and severe diarrhea and systemic symptoms."

- Consider empiric therapy with ciprofloxacin (trimethoprim-sulfamethoxazole in children) if there is concern for traveler's diarrhea.
- Consider empiric therapy with metronidazole if there is concern for giardiasis.
- Consider empiric therapy with ceftriaxone, azithromycin, and metronidazole if there is concern for sexually transmitted infectious colitis.
- Discharge if the patient appears well, has normal vital signs, has no underlying disease, tolerates oral intake, and has a healthy social situation at home.

Acute Illness with Dysentery

- Essential features:
  - Symptoms for fewer than 7 days
  - Associated fever, bloody stools, or tenesmus
- Differential diagnosis and common pathogens:
  - Infectious causes include *Campylobacter*, *Salmonella*, *Shigella*, EHEC, and Shiga toxin–producing *E. coli*.
  - Noninfectious causes include gastrointestinal bleeding, toxicologic exposures, and mesenteric ischemia. Cephalosporin use can produce red stools with negative findings on stool guaiac tests that can be mistaken for dysentery.
- Work-up:
  - Obtain a stool culture for the listed common pathogens.
  - Consider a stool leukocyte count and/or lactoferrin test.
  - Consider serum chemistries if there is moderate to severe dehydration.
  - Consider stool analysis for *Giardia* or *Cryptosporidium*.
  - Consider testing for sexually transmitted infections for men who have sex with men.
- Treatment and disposition:
  - Provide supportive care.
  - Provide empiric therapy with ciprofloxacin (trimethoprim-sulfamethoxazole in children) except if there is suspicion of EHEC infection (bloody stool without fever), because this may increase the risk of complications such as HUS.
  - Consider empiric therapy with metronidazole if there is concern for amebic dysentery.

- Consider empiric therapy with ceftriaxone, azithromycin, and metronidazole if there is concern for sexually transmitted infectious colitis.
- Hospital admission is necessary for extremes of age (elderly and infants), unstable vital signs, and severe illness.
- Discharge patients who appear well, have normal vital signs, have no underlying disease, tolerate oral intake, and have a healthy social situation at home.

Nosocomial Diarrhea

- Essential features:
  - Recent hospitalization for more than 3 days
  - *Or* recent antibiotic use
- Differential diagnosis and common pathogens:
  - Infectious causes include *C. difficile*, *Norovirus*, *Rotavirus*, *Campylobacter*, *Salmonella*, and *Shigella*.
  - Drug-induced diarrhea should also be considered.
- Work-up:
  - Obtain a stool analysis for *C. difficile* toxins.
  - Consider a stool leukocyte count and/or a lactoferrin test.
  - Consider serum chemistries if there is moderate to severe dehydration, plus additional serum studies as indicated.
- Treatment and disposition:
  - Provide supportive care; antidiarrheal agents are contraindicated.
  - Discontinue offending agents.
  - Provide empiric therapy with metronidazole or oral vancomycin if there is a high suspicion for *C. difficile* infection.
  - Consider empiric therapy with metronidazole if there is concern for giardiasis.
  - Hospital admission is necessary for the elderly, when there are unstable vital signs, and in severe illness.
  - Discharge if the patient appears well, has normal vital signs, has no underlying disease, tolerates oral intake, and has a healthy social situation at home.

Immunocompromise

- Essential features—any underlying medical condition or therapy that compromises the patient's immune status:
  - Malignancy
  - Chemotherapy
  - Sickle cell disease
  - Previous organ transplantation

HIV or AIDS

- Differential diagnosis and common pathogens:
  - Infectious causes include protozoal infections, *Mycobacterium avium* complex, fungal infections, and intestinal cytomegalovirus, in addition to those already described.
  - Noninfectious causes include drug-induced diarrhea, malignancy, increased intestinal transit, and graft-versus-host disease
- Work-up:
  - Conduct a stool analysis for common pathogens.
  - Consider stool a leukocyte count and/or a lactoferrin test.
  - Consider serum chemistries if there is moderate to severe dehydration, plus additional serum studies as indicated, including a CD4 count.
- Treatment and disposition:
  - Provide supportive care. Antidiarrheal agents are contraindicated in the presence of dysentery.
  - Discontinue offending agents.
  - Highly active antiretroviral therapy (known as HAART) is the most important treatment in the setting of HIV or AIDS.
  - Findings on stool studies should guide therapy, given the broad range of potential offending agents.
  - Consider empiric therapy with metronidazole if there is concern for giardiasis.
  - Maintain a low threshold for hospital admission, especially for the elderly, when there are unstable vital signs, or in severe illness.

Persistent or Chronic Diarrhea

- Essential features: Symptoms for more than 7 days with or without dysentery
- Common pathogens:
  - Infectious causes include *Giardia*, *Cryptosporidium*, *Entamoeba*, *Campylobacter*, *Salmonella*, and noninvasive *E. coli* strains.
  - Noninfectious causes include drug-induced or iatrogenic diarrhea, postinfection irritable bowel syndrome, and IBD.
- Work-up:
  - Do a stool analysis for common pathogens.
  - Do a stool leukocyte count and/or lactoferrin test.
  - Consider serum chemistries if there is moderate to severe dehydration, plus additional serum studies as indicated.
- Treatment and disposition:
  - Provide supportive care. Antidiarrheal agents are

contraindicated in the presence of dysentery or when there is a high suspicion of IBD.
- Discontinue offending agents.
- Findings on stool studies should guide therapy, given the broad range of potential offending agents.
- Hospital admission is necessary for the elderly, when there are unstable vital signs, and in severe illness.
- Discharge if the patient appears well, has normal vital signs, has no underlying disease, tolerates oral intake, and has a healthy social situation at home.

Discussion of Cases

Case 1

Case 1 involves a well-appearing child with diarrheal illness. Our initial assessment did not indicate the need for emergency transfer to an acute-care setting. This patient would fall into the category of acute diarrhea without dysentery. This child most likely has a viral illness that will resolve without intervention. The primary risk factor is his exposure to other children at day care. Instructions to his mother regarding oral hydration and follow-up are appropriate. Serum or stool studies are not indicated.

Case 2

Case 2 can be categorized as acute diarrhea with dysentery. Though febrile, the patient did not seem to be in extremis, and emergency transfer was not indicated. Stool studies should be considered for this patient, though they will not help in the urgent care treatment of her condition. The medical history did not lead the provider to a causal pathogen, so more information should be elicited. Given the presence of fever and bloody stool, giving empiric antibiotics against the most common pathogens is recommended; ciprofloxacin is the antibiotic of choice. Providing clear instructions for hydration requirements and follow-up is essential to ensure appropriate therapy and resolution of the condition.

Case 3

Case 3 involves a patient with several days of diarrhea after hospitalization and antibiotic use. There is no indication for emergency transfer for acute care. When the clinician applies the algorithm discussed here, this raises concern for nosocomial diarrhea. In addition to common viral and bacterial sources of diarrhea, *C. difficile* infection and drug-induced diarrhea should be high on the differential diagnosis. Discontinuation of the current antibiotic regimen is indicated, along with ordering stool studies including *C. difficile* toxins. Empiric therapy with metronidazole is indicated; oral vancomycin is an empiric alternative. Ensuring the availability of appropriate resources for follow-up is essential to ensure appropriate therapy and symptom resolution.

"Applying the diagnostic strategies outlined here allows the urgent care provider to rapidly identify critical illness that merits transfer...."

Case 4

Case 4 gives historical clues that are concerning for a protozoal source of infectious diarrhea. These clues include hiking and likely exposure to contaminated water. Stool analysis for ova and parasites and direct immunofluorescence staining, if available, are indicated. Metronidazole should be prescribed, and follow-up should be arranged to ensure resolution, with repeat stool analysis done as needed.

Conclusion

Applying the diagnostic strategies outlined here allows the urgent care provider to rapidly identify critical illness that merits transfer of the patient to an acute-care setting, narrow the differential diagnosis for diarrheal illness, avoid unnecessary testing, and provide appropriate therapy to limit disease duration and progression. It is through algorithms such as these that urgent care centers provide the efficient and rewarding medical care for which they are known. ■

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