



**Fecal Management Algorithm**

Goal: Formed stool every 1 -2 days

Assess and document the patient's stool frequency and character *using the Bristol stool chart*  
Discuss in shift handoff and daily in multidisciplinary rounds

**Diarrhea**

- Report to the provider
  - Evaluate the cause of the diarrhea to determine appropriate interventions **(See Appendix I)**
- NOTE: Treatments for diarrhea may take up to 72 hours to demonstrate because gastrointestinal transit time is 24-72 hours. Please allow at least 24-48 hours after an intervention before assessing effectiveness.

For fecal containment: Refer to the policy entitled Managing Fecal Incontinence-Fecal Management System (FMS)

**Constipation**

Report to the provider if the patient has not had a BM for 3 days (capture BMs in the OR)

- Once able to receive oral or enteral medications start a bowel regimen **(See Appendix 2)**

### Defining diarrhea:

No universally accepted definition of diarrhea exists, but generally, diarrhea is an increase in frequency, volume, and liquidity of stool from baseline. Specific definitions include

- Stool volume of >500 mL
- 3 or more unformed stools more than baseline per day for more than 2 consecutive days
- Ostomy output greater than 1 Liter

### Potential clinical implications

- Skin breakdown
- Increased risk of urinary tract and femoral line infection
- Altered absorption of medications and nutrition
- Dehydration
- Electrolyte abnormalities
- Acid-base disturbances
- Interrupted rehabilitative therapy sessions

### Please allow at least 24-48 hours after an intervention before assessing effectiveness.

Treatments for diarrhea may take up to 72 hours to demonstrate effect because gastrointestinal transit time is 24-72 hours.

### **Step 1: Prevention of diarrhea**

1. Take relevant history
  - Baseline bowel habits including frequency and characteristics of bowel movements
  - Time of last stool
  - Regular use of laxative or anti-diarrheal medications
  - Past medical/surgical history:
    - Known bowel disorder (irritable bowel disease, Crohn's disease, ulcerative colitis, food allergies)
    - Pancreatitis or pancreatic insufficiency
    - Bowel resections, ostomy formation
2. Avoid constipation

- Aggressive treatment may result in developing diarrhea, and begin a cycle of altered bowel function
3. When possible, limit interventions which may cause diarrhea (e.g. high volume water flushes into the small bowel)

**Step 2: If diarrhea present, evaluate cause(s) and develop individualized treatment plan**

1. Evaluate medications and clinical status (Table 1)
  - Make clinically appropriate changes and monitor (Table 2)
2. In collaboration with Clinical Nutrition, evaluate nutrition regimen (Table 3)
3. If no improvement in stool output, consider anti-diarrheal agents
  - Diphenoxylate and atropine (Lomotil)
    - Dose: 5 mg PO/NG four times daily
      - Maximum daily dose: 20 mg
    - Onset of action: 45-60 minutes
    - Adverse reactions: Confusion, dizziness, drowsiness, nausea, vomiting
  - Loperamide (Imodium A-D)
    - 4 mg PO/NG four times daily
      - Maximum daily dose: 16 mg
    - Onset of action: 1 hour
    - Adverse reactions: Dizziness, constipation

**Treatment algorithm for management of diarrhea in hospitalized adults**

**Evaluate medications and clinical status for possible interventions**

**Medications**  
 Prokinetics and laxatives  
 High-osmolality or sorbitol containing  
 Antibiotics  
 Oral anti-hyperglycemic agents  
 SSRIs/NSAIDs/Proton pump inhibitors

**Clinical Considerations**  
 Non-occlusive bowel ischemia  
 Inflammatory or exudative causes  
 Secretory causes (e.g. C. difficile)  
 Malabsorption  
 Osmotic causes

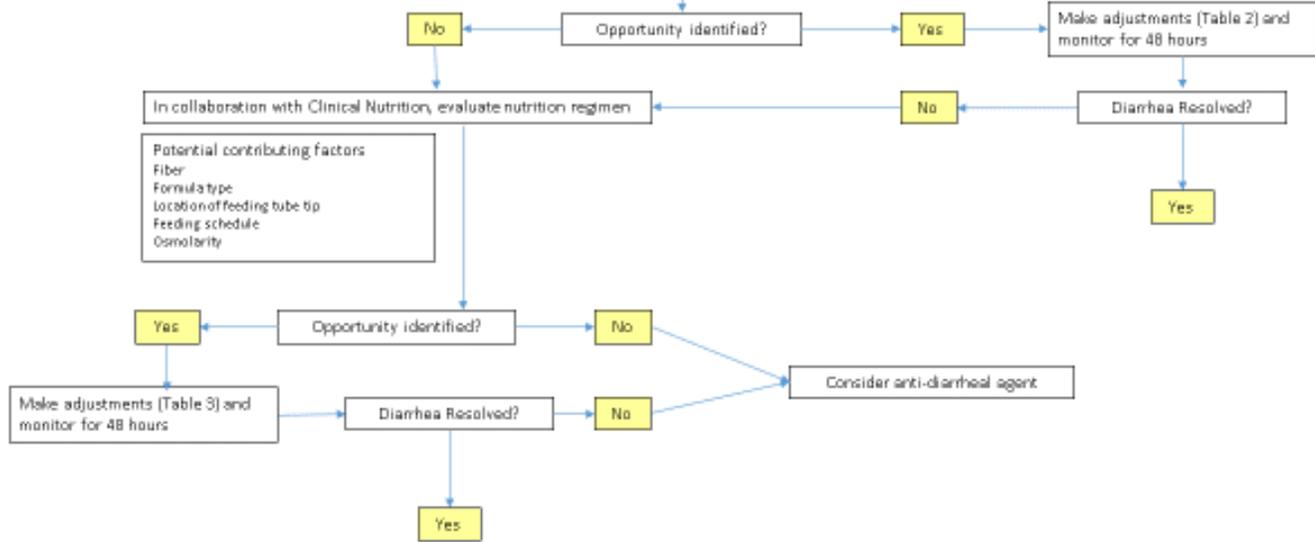


Table 1. Medication and Clinical Considerations for Evaluating Causes of Diarrhea

Medications	Clinical Considerations
<ul style="list-style-type: none"> <li>• Pro-kinetics and laxatives</li> <li>• Antibiotics, especially               <ul style="list-style-type: none"> <li>○ Combination therapy</li> <li>○ Enzyme inhibitors</li> </ul> </li> <li>• High-osmolality or sorbitol containing               <ul style="list-style-type: none"> <li>○ See Supplement 1</li> </ul> </li> <li>• Oral anti-hyperglycemic agents</li> <li>• SSRIs</li> <li>• NSAIDs</li> <li>• Proton-pump inhibitors</li> </ul>	<ul style="list-style-type: none"> <li>• Non-occlusive bowel ischemia</li> <li>• Inflammatory or exudative               <ul style="list-style-type: none"> <li>a. Radiation enteritis</li> <li>b. Critical illness</li> </ul> </li> <li>• Secretory               <ul style="list-style-type: none"> <li>a. Infectious causes ( e.g. <i>Clostridium difficile</i>, <i>Escherichia coli</i>)</li> <li>b. Bile acid malabsorption                   <ul style="list-style-type: none"> <li>i. Often as a result of terminal ileum resection</li> </ul> </li> </ul> </li> <li>• Malabsorption               <ul style="list-style-type: none"> <li>a. Pancreatic insufficiency</li> <li>b. Short bowel syndrome</li> <li>c. Surgically altered GI anatomy (e.g. Roux-en-Y gastric bypass)</li> <li>d. Bowel wall edema</li> <li>e. Deconditioning from prolonged fasting or history of alcohol abuse</li> </ul> </li> <li>• Osmotic               <ul style="list-style-type: none"> <li>a. Medications</li> <li>b. Presence of undigested macronutrients in the colon</li> </ul> </li> </ul>

Table 2. Interventions for Medications and Clinical Status Causes of Diarrhea

POTENTIAL CONTRIBUTING FACTOR	INTERVENTION
PROKINETICS AND LAXATIVES HIGH-OSMOLARITY OR SORBITOL CONTAINING MEDICATIONS	<ul style="list-style-type: none"> <li>• Consider reducing or discontinuing medication(s)</li> <li>• Consider changing to non-solution format if available</li> </ul>
NON-OCCLUSIVE BOWEL ISCHEMIA	<ul style="list-style-type: none"> <li>• Hold enteral nutrition, utilize parenteral nutrition support</li> <li>• Trial peptide-based enteral nutrition formula</li> </ul>
SECRETORY OR MALABSORPTIVE DIARRHEA RELATED TO INTESTINAL RESECTION	<ul style="list-style-type: none"> <li>• Intestinal adaptation may take up to 1-year following resection</li> <li>• Evaluate enteral nutrition regimen (Step 3)</li> </ul>
PANCREATIC INSUFFICIENCY	<ul style="list-style-type: none"> <li>• Ensure patient is receiving pancreatic enzymes</li> <li>• Consider Peptide-base enteral nutrition formula</li> <li>• Evaluate patient for bolus feeding with pancreatic enzymes given 15-30 minutes prior to bolus</li> </ul>

Table 3. Considerations Regarding the Nutrition Regimen for Evaluating Causes of Diarrhea

POTENTIAL CONTRIBUTING FACTOR	INTERVENTION
<b>FIBER</b>	<ul style="list-style-type: none"> <li>• Inadequate or excessive daily fiber intake can result in GI distress, including diarrhea.               <ul style="list-style-type: none"> <li>• Optimize total daily fiber administration to 15-25 g/day</li> <li>• In persistent diarrhea, consider 10-20 g soluble fiber divided into 2-4 doses daily</li> <li>• Daily fiber intake &gt;45 g may be excessive</li> </ul> </li> <li>• Reduce or eliminate FODMAPs</li> </ul>
<b>OSMOLARITY</b>	<ul style="list-style-type: none"> <li>• Oral intake               <ul style="list-style-type: none"> <li>○ Consider “No high sugar foods” restriction</li> </ul> </li> <li>• Enteral nutrition               <ul style="list-style-type: none"> <li>○ High osmolality EN formulas may contribute to osmotic diarrhea, particularly if feeding is post-pyloric</li> <li>○ Change to a lower osmolality or isotonic formula                   <ul style="list-style-type: none"> <li>▪ Osmolality and concentration are positively correlated. As concentration increases, so does osmolality. Reducing osmolality often requires reducing the formula concentration.</li> <li>▪ Change the location of feeding to gastric if a concentrated formula is required</li> </ul> </li> </ul> </li> </ul>
<b>POLYMERIC VS PEPTIDE BASED ENTERAL NUTRITION FORMULA</b>	<ul style="list-style-type: none"> <li>• Changing from polymeric to peptide-based formulations may improve diarrhea, especially if suspected cause is malabsorption</li> </ul>
<b>LOCATION OF FEEDING TUBE TIP</b>	<ul style="list-style-type: none"> <li>• If no contraindication, consider changing to gastric feeding</li> </ul>
<b>FEEDING SCHEDULE</b>	<ul style="list-style-type: none"> <li>• Adjusting feeding schedule may reduce frequency of stool</li> <li>• Feeding schedules include:               <ul style="list-style-type: none"> <li>○ Continuous: hourly rate for 22-24 hours daily</li> <li>○ Cyclic: infuses at an hourly rate for &lt;22 hours</li> <li>○ Intermittent or bolus: a specified volume infuses over 30 minutes to 2 hours periodically throughout the day</li> </ul> </li> </ul>

Supplement 1: Osmolality of liquid medications

<b>Medication</b>	<b>Concentration</b>	<b>Osmolality</b>
Acetaminophen, solution	325 mg/10.15 mL	4035
Acyclovir, suspension	200 mg/5 mL	4205
Aluminum hydroxide gel	320 mg/5 mL	1501
Aluminum hydroxide, Magnesium hydroxide, simethicone	200 mg, 200 mg, 20 mg per 5 mL	990
Aminocaproic acid (Amicar), solution	0.25 g/mL	3405
Azithromycin suspension	200 mg/5 mL	3950
Carbamazepine suspension	100 mg/5 mL	4225
Dexamethasone intensol	1 mg/mL	10600
Digoxin solution	0.125 mg/2.5 mL	5950
Diphenhydramine HCl	12.5 mg/5 mL	3975
Docusate sodium liquid	10 mg/mL	6385
Ergocalciferol solution	400 IU/0.05 mL	16100
Escitalopram solution	5 mg/5 mL	6030
Ferrous Sulfate elixer	220 mg/5 mL	3445
Fluconazole suspension	40 mg/mL	2185
Furosemide solution	10 mg/5 mL	8275
Ibuprofen suspension	100 mg/5 mL	2350
Lactulose solution	10 g/15 mL	4180
Lamuvudine solution	10 g/15 mL	4180
Levetiracetem solution	100 mg/mL	5075
Loperamide	0.2 mg/mL	6775
Magnesium hydroxide suspension	2400 mg/30 mL	1258
Megestrol acetate	40 mg/mL	3665
Metaclopramide	5 mg/5mL	4660-5180 (SilaRX, PAI)
Multivitamin liquid		3665
Odnansetron solution	4 mg/5 mL	2935
Oxcarbazepine suspension	300 mg/5 mL	3095
Posaconazole suspension	200 mg/5 mL	3095
Potassium Chloride solution	10% (sugar free)	4225
Prednisolone solution	5 mg/5 mL	2395
Propranolol HCl solution	20 mg/5 mL	8145
Senna syrup	8.8 mg/5 mL	3920
Sodium citrate, citric acid solution	3 g/2 g per 30 mL	2565
Sucralfate suspension	1 g/10 mL	2145
Sulfamethoxazole-trimethoprim	200 mg/40 mg per 5 mL	5560
Valproic acid solution	250 mg/5 mL	5010
Voriconazole suspension	40 mg/mL	2010

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### **Definitions of Constipation**

Lack of consensus definition exists for acute constipation in hospitalized patients

#### **Definitions of constipation include:**

1. < 3 stools per week or > 48 hours without a bowel movement (BM)
2. Lumpy or hard stools (Bristol Stool Form Scale 1-2) more than 25% of the time
3. Feeling of incomplete evacuation, abdominal discomfort, bloating and distention in communicative patients
4. Excessive straining, sense of anorectal blockage during defecation, and need for manual maneuvers during defecation

#### **Rome IV Diagnostic Criteria for Opioid-Induced Constipation**

1. New or escalating symptoms of constipation when initiating, changing, or increasing opioid therapy that must include two or more of the following:
  - a. Straining during more than 25% of defecations
  - b. Lumpy or hard stools (Bristol Stool Form Scale 1-2) more than 25% of the time
  - c. Sensation of incomplete evacuation > 25% of the time
  - d. Sensation of anorectal blockage or obstruction in > 25% of defecations
  - e. Manual maneuvers to facilitate > 25% of defecations
  - f. < 3 spontaneous bowel movements per week
2. Loose stools rarely present without the use of laxatives

### **Clinical Impact of Constipation**

Possible Complications Associated with Constipation:

- Abdominal distension and discomfort
- Emesis
- Delayed gastric emptying and intolerance of oral diet or enteral feeding
- Colonic pseudo-obstruction
- Increased intraabdominal hypertension
- Intestinal ischemia and perforation
- Pulmonary aspiration

### **Step 1: Prevention of Constipation**

1. Take relevant history:
  - Normal bowel movement (BM) habits
    - Frequency and characteristic of bowel movements

- Time of last stool
  - Routine use of laxative medication
  - Known bowel disorder (irritable bowel syndrome, inflammatory bowel disease, etc.)
  - Identify potential risk factors (opioid use and other inciting medications, prolonged immobilization, etc.)
2. Consider starting bowel regimen with scheduled docusate sodium and senna, especially if risk factors present (see below) or taking laxatives prior to admission
  3. Minimize use of medications that can cause constipation (i.e., opioids)
  4. Optimize hydration, fiber intake and mobility as appropriate for patient's clinical status

## **Step 2: If Constipation Present, Determine Cause(s) of Constipation**

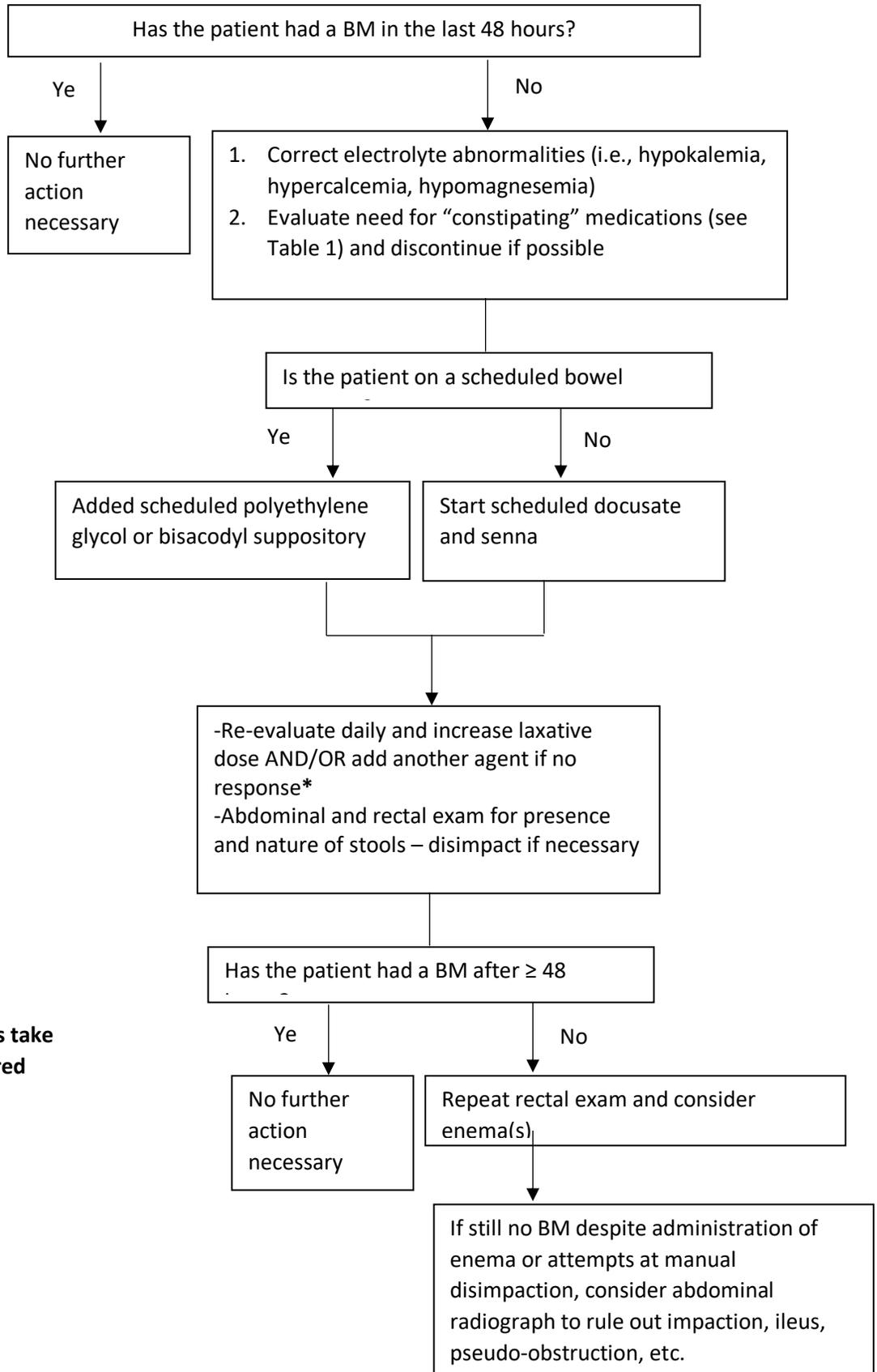
A number of factors can contribute to acute and chronic constipation in hospitalized patients. It is important to recognize potential medications and/or conditions, which may contribute to development and/or exacerbation of constipation.

### **Conditions or Factors Potentially Contributing to or Causing Constipation:**

- Surgery
- Electrolyte disturbances (hypokalemia, hypercalcemia, hypomagnesemia)
- Insufficient fluid administration
- Inappropriate use of diuretics
- Medications
- Underlying dysmotility
- Sepsis
- Immobility
- Spinal cord injury
- Neuromuscular diseases

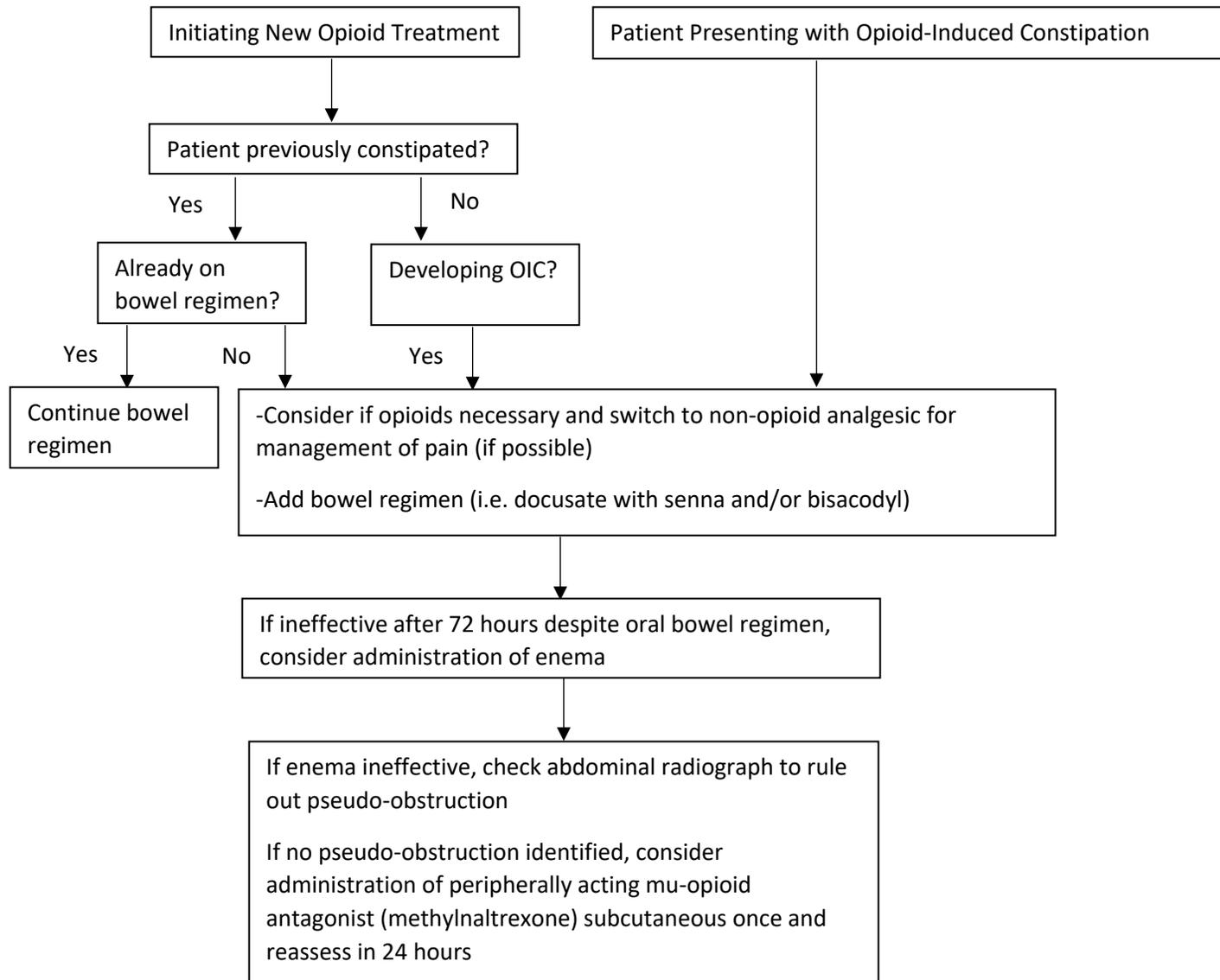
<b>Table 1. Medications Associated with Constipation</b>
<b>Anticholinergics</b> Antidepressants (includes tricyclic antidepressants) Antipsychotics Antiparkinsonian agents Antihistamines (diphenhydramine) <b>Cation-containing agents</b> Aluminum (antacids, sucralfate) Bismuth Calcium (antacids, supplements) Iron supplements <b>Opioids</b> <b>Antihypertensives (i.e., clonidine)</b> <b>Calcium-channel blockers</b> <b>Nonsteroidal Anti-inflammatory Agents</b> <b>Diuretics (furosemide)</b>

**Step 3: Suggested Approach to Managing Non-Opioid Induced Constipation and Opioid-Induced Constipation in Hospitalized Patients**



**\* Please note that some agents take up to 72 hours to achieve desired**

### Suggested Approach for Managing the Patient Initiated on Opioid Treatment and Patients Presenting with Opioid-Induced Constipation



### Pharmacologic Agents Used to Treat Constipation

**\*\*\*NOTE: Agents may take up to 72 hours to work\*\*\***

Pharmacologic Class	Generic (Brand Name)	Dose and Mode of Administration	Onset of Action	Common Adverse Effects	Considerations
Bulk-Forming Agent	Psyllium (Metamucil) 58.12%	1 packet PO/NG once or twice daily	24-72 hours	Bloating, abdominal pain, flatulence	If patient has enteral access, should NOT be administered via small-bore feeding tube as it can clog tube; should flush with plenty of water following enteral administration
Osmotic Agents	Polyethylene glycol 3350 (Miralax)	1 packet PO/NG once or twice daily	24-72 hours	Bloating, nausea, diarrhea, flatulence	Consider as add-on therapy to docusate and senna if no bowel movement > 48 hours
	Lactulose (Kristalose)	10 g PO/NG once or twice daily	24-72 hours	Cramping, flatulence, dehydration	Not considered a first-line agent
Stool Softener	Docusate sodium (Colace)	100-200 mg PO/NG twice daily	12-72 hours	Abdominal cramping	May be used first-line with senna as a bowel regimen
Stimulants	Senna (Senokot)	8.6-17.2 mg PO/NG once or twice daily	6-24 hours	Abdominal cramping, nausea, dehydration	May be used first-line with docusate as a bowel regimen
	Bisacodyl (Dulcolax)	10 mg PO once daily OR 10 mg rectally once daily	6-12 hours (oral)  1-6 hours (suppository)	Abdominal cramping, nausea	Consider as add-on therapy to docusate and senna if no bowel movement > 48 hours  Oral tablet is enteric-coated so cannot be crushed
Saline Laxatives	Magnesium hydroxide (Milk of Magnesia)	30 mL PO/NG once or twice daily	30 minutes – 6 hours	Abdominal cramping	Not considered a first-line agent
Enema	Sodium phosphate (Fleet)	133 mL rectally once	10 minutes – 1 hour	Bloating, abdominal cramping, abdominal pain	Preferred in patients unable to receive or have failed oral bowel regimen
	Soap suds	150 mL rectally once	10 minutes – 1 hour	Abdominal pain, may result in proctitis or colitis	Preferred in patients unable to receive or have failed oral bowel regimen
	Mineral oil (Fleet)	133 mL rectally once	15 minutes	Abdominal cramping	Preferred in patients unable to receive or have failed oral bowel regimen
Other	Glycerin	3 g (or 1 suppository) rectally once	30 minutes	Rectal irritation	Pediatric suppository only available
Agents for Acute Bowel Evacuation	Polyethylene glycol-electrolyte preparations (Golytely)	240 mL (8 oz.) PO every 10 minutes until 4L are consumed  NG administration: 20-30 mL/min until 4L administered	1-2 hours	Vomiting, anal irritation, abdominal distension	Not recommended for routine treatment of constipation; for acute evacuation of bowel  Caution in administering to patients at risk for aspiration

	Magnesium citrate	150-300 mL PO/NG once daily	30 minutes – 6 hours	Abdominal cramping, diarrhea, flatulence, nausea, vomiting	Not recommended for routine treatment of constipation; for acute evacuation of bowel
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