

Primary Care Management Pathway **Chronic Diarrhea**

Background

Primary care management pathways are being developed by specialist and primary care groups to support the management of common, non-urgent conditions for which long wait times to specialty care currently exist. The pathways will help identify patients with high-risk features and facilitate early referral to specialists as needed.

Diarrhea is one of the more common conditions that lead to a GI referral and is estimated to affect 5-7% of the Western population. It can be associated with increased frequency, urgency and sometimes episodes of fecal incontinence as well. This can have a significant impact on the quality of life for the patient.

Defining condition and/or other important definitions

Chronic diarrhea is defined as 3 or more loose/watery stools per day that have persisted for at least 4 weeks. The Bristol stool consistency is typically between a 5-7.

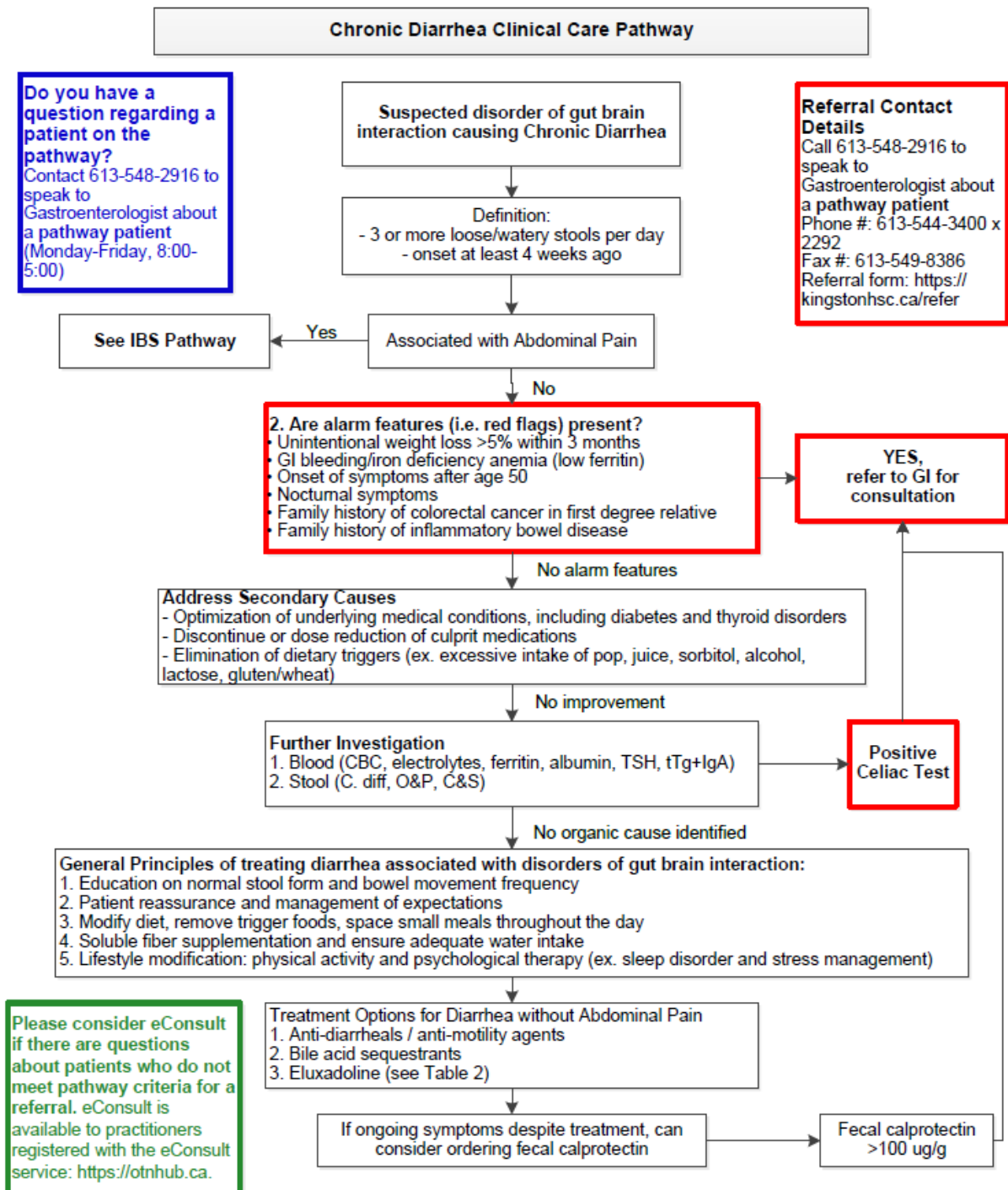
There can be an overlap in symptoms between those with chronic diarrhea and diarrhea-predominant IBS (IBS-D). The underlying cause of the chronic diarrhea may be similar to that seen with IBS, for example an underlying motility disruption. However, IBS-D tends to have a component of visceral hypersensitivity which can lead to abdominal pain, which is a feature typically not present with chronic diarrhea.

The chronic diarrhea clinical care pathway facilitates identification of people with chronic diarrhea who are more likely to have an underlying organic pathology for their symptoms that would require endoscopic evaluation and investigation.

Patient information

It is possible that your patient and/or their family member may express a desire for additional information about the primary care management pathway and their role or experience throughout the process of being on a pathway. Additional information for patient education has been provided in "Appendix B – Patient Information".

Primary Care Management Pathway – Clinical Flow Diagram Chronic Diarrhea



Appendix A – Expanded Detail

Suspected Chronic Diarrhea

A diagnosis of chronic diarrhea as well as its potential etiology can often be obtained by eliciting a detailed history. Chronic diarrhea causes can be subdivided into:

1. Functional causes

- a. Chronic diarrhea that is not associated with abdominal pain, is not associated with inflammation or alteration to the GI tract. It is a different entity from irritable bowel syndrome (IBS) and post-infectious IBS.

2. Organic causes

- a. Includes inflammatory bowel disease (IBD), celiac disease, microscopic colitis, bile acid diarrhea, medication-induced diarrhea.

Are we confident the symptoms represent diarrhea? Could this actually be fecal incontinence or overflow?

1. Fecal incontinence

- a. Sometimes reported as diarrhea by patients due to embarrassment around the condition
- b. Some patients with fecal incontinence may also have loose stools but the main issue is anal sphincter tone.
- c. This can be assessed by a careful history and assessment of anal squeeze on digital exam.
- d. If incontinence is frequent, especially in the **absence of urgency or loose stools**, they should be evaluated for incontinence but not necessarily diarrhea.

2. Overflow

- a. Patients with a history of constipation may present with diarrhea that is secondary to fecal impaction or overflow. This should always be considered in a patient with a constipation history who now presents with new loose, watery stools.
- b. An abdominal x-ray assessed for fecal loading may be helpful.

Diarrhea can also be subdivided into one or a combination of the following processes:

1. Watery diarrhea

a. Osmotic diarrhea

- i. Caused by ingestion of poorly absorbed ions or sugars which inhibits the regular absorption of water and electrolytes in the colon. This causes higher water content in the stool.
- ii. If the substance is removed (not ingested) the diarrhea resolves.
- iii. Some laxatives (ie lactulose, magnesium citrate) and foods (lactose, sorbitol, fructose) are not well absorbed and can cause this type of diarrhea.
- iv. Stool volume and diarrhea should improve with fasting.

- b. Secretory diarrhea
 - i. Due to disruption of epithelial electrolyte transport.
 - ii. Diarrhea does not improve with fasting.
 - iii. Common causes include medications (ie PPIs, antibiotics), poorly absorbed bile acids or fatty acids in the colon, microscopic colitis.
 - iv. Less common causes include neuroendocrine tumors, IBD, disordered regulation (ie diabetic neuropathy), or idiopathic.

2. Inflammatory diarrhea

- a. Typically associated with blood, mucus and pus cells in the stool and is typically immune-mediated.
- b. Can be seen with inflammatory bowel disease (IBD) and less common chronic infections such as TB and amoebiasis.
- c. Mucus in the stool is quite common and can be normal. By itself it does not mean that there is inflammation present. The key difference is the **presence of blood which is a red flag and should be referred for evaluation.**

Additional History

- **Medications**
 - There are a number of medications that are associated with causing diarrhea. Reviewing medication history and if there have been any medication or dose changes that coincide with symptom onset may be helpful.
- **Travel history and/or acute gastroenteritis**
 - IBS symptoms associated with a prior short-lived gastroenteritis is common and can lead to longer-term altered bowel habit (post-infectious IBS). This may be associated with pain (see IBS pathway).
- **Personal or family history of immune-mediated disease**
 - Thyroid disease, IBD, celiac disease, etc.
- **Diet**
 - A diet review can help to identify easily avoidable triggers for diarrhea (ie excess caffeine, dairy products, aspartame, gluten/wheat, etc.)

Alarm Features

If any of the following alarm features are present, patient should be referred for consultation/endoscopy. Any alarm features present should be noted on the referral in order to assist with triage.

- Unintentional weight loss (>5% in 3 months)
- GI bleeding/iron deficiency anemia
- Onset of symptoms after age 50
- Nocturnal symptoms
- Family history of colorectal cancer in first degree relative
- Family history of inflammatory bowel disease

Baseline Investigations

Blood work:

CBC, electrolytes, ferritin, TSH, albumin

Celiac serology (TTG and IgA)*

- Sensitivity and specificity of 95%
- The higher the titre, the more likely a true positive result
- 2-3% of individuals may have IgA deficiency
 - Should be measured concurrently to ensure an accurate result
- Patients should be on a gluten-containing diet prior to completing the test (general recommendations are 10g per day or ~2 slices of bread for 6-8 weeks)

Stool tests

- Culture and sensitivity
- C difficile
- Ova and parasites
 - If there is relevant travel history this should be noted on the requisition

To ensure that testing costs are not a barrier to patient care, **Kingston Health Sciences Centre has developed a unique laboratory requisition to access TTG+IgA testing for patients who are on the pathway.*

The unique laboratory requisition is meant to be completed by referring primary care physicians for patients who are following the diarrhea pathway and would prefer to have this test completed at KHSC (KGH: Armstrong 1 or HDH: Jeanne Mance 5) at no cost to the patient. Patients may still prefer to have this testing completed at a community medical laboratory and pay for the associated costs.

*The requisition can be accessed and downloaded by primary care physicians at:
<https://kingstonhsc.ca/refer/gastroenterology-1>.*

Optimize Management of Secondary Causes of Diarrhea

A detailed history and physical should be performed to assess for other conditions that can contribute to or cause chronic diarrhea.

A detailed medication history should be obtained to identify potential causative agents. There are a number of medications that can cause diarrhea as a side effect (Table 1). Reduce dose or discontinue medication if possible and assess response.

Ensure optimization of underlying medical conditions that could contribute (ex. thyroid disease, diabetes).

Ask about history of cholecystectomy and whether this coincided with symptoms (bile acid diarrhea).

Review for potential dietary triggers: Excess intake of sugar containing drinks, alcohol, caffeine (ex. Coffee), artificial sweetener (sorbitol, diet pop), dairy (high lactose content in milk, ice cream), and gluten/wheat.

Table 1. Common medications that may cause diarrhea

Cardiovascular	Antiplatelets	ASA
	Antiarrhythmics	Digoxin, procainamide
	Antihypertensives	ACE inhibitors, ARBs, beta blockers
	Lipid lowering agents	Statins
Central nervous system	Antidepressants	SSRIs
	Antiparkinsonian medications	Levodopa, pramipexole, entacapone
	Others	Lithium
Endocrine	Oral hypoglycemic agents	Metformin, acarbose, GLP-1 receptor agonists
	Thyroid replacement	Levothyroxine
Gastrointestinal	Anti-secretory agents/antacids	PPIs, Mg containing antacids
	Laxatives	Any
	Other	Orlistat
Musculoskeletal	NSAIDs	ASA, ibuprofen, naproxen
	Gout therapy	Colchicine, allopurinol
Other	Antibiotics	Most
	Antineoplastic agents	Several
	Immunosuppressants	Mycophenolate, cyclosporine, tacrolimus, sirolimus
	Vitamins	Vitamin C Magnesium Potassium chloride
	Herbal supplements	

General Principles for Management

Patients with functional bowel disorders will benefit from lifestyle and dietary modifications. In patients with mild to moderate symptoms this may be all that is needed if there is not a significant impact on quality of life. Diet, exercise, stress reduction and if appropriate psychological counselling may be beneficial. Screening for underlying anxiety or mood disorders is also important as patients may have refractory symptoms if underlying mental health issues are not addressed.

Non-Pharmacologic Treatments

- **Education** on the wide variation in “normal” stool form and frequency
 - If stool habit changes substantially and persists, further investigation may be needed
- **Patient reassurance** and management of expectations
 - Provide reassurance after initial diagnosis, offer points of reappraisal and reassessment to help develop therapeutic relationship
 - Reassessment recommended if significant increase in diarrhea
- **Diet**
 - Identify **trigger foods**
 - Follow systematic process of removing and assessing symptoms before permanent elimination
 - Common culprits are lactose, artificial sweeteners, caffeine, sugar-free gum, sugar sweetened foods and beverages, alcohol, gluten-wheat
 - Eating smaller meals throughout the day to reduce gastric load
 - Some patients may benefit from referral to a dietician
 - Some patients may benefit from keeping a food/symptom journal to help identify triggers
- **Fibre and Fluids**
 - Two type of fibre
 - **Insoluble fibre**
 - wheat bran, skin of fruits, raw vegetables
 - Adds bulk to the stool and contributes to daily fibre requirement but may not have health benefits of soluble fibre
 - **Soluble fibre**
 - Psyllium, oats, barley, fruits, seeds
 - Absorbs water in the intestine to form a viscous gel that thickens stool and stimulate peristalsis
 - There is a dose response relationship between fibre and fluid intake and stool output. Fibre acts as a sponge, so it is important to combine fluid and fibre. Increasing fluid intake on its own will only increase urination.
 - **Soluble fibre supplementation**
 - May provide symptom relief for patients with IBS, constipation and chronic diarrhea. The goal is **5-10g of soluble fibre/day**.
 - 1 tbsp of psyllium husk/powder = 3.0g
 - 2 tbsp ground flax seed = 1.8g
 - ½ cup kidney beans = 2.8g
 - 1 pear = 2.2g
 - Increasing fibre may cause negative side effects that can be avoided or minimized
 - **Start low and go slow** to minimize bloating, gas and abdominal pain
 - Start with a third of the recommended dose and assess tolerance
 - **Drink additional fluid** to compliment a high fibre diet. Inadequate fluid intake may result in hardened stool, constipation, bloating and abdominal pain
 - Caution with soluble fibre with patient at risk of bowel obstruction or with a narrowing of the bowel or small intestine

- **Ensure adequate fluids**
 - 2L/day for females
 - 3L/day for males
- **Physical activity**
 - 20+ minutes of physical activity/day, aiming for 150min/week is known to be an effective stress reducing strategy
- **Psychological therapy**
 - Cognitive based behavioral therapy and hypnotherapy may help with stress management and GI symptoms
 - Screening for and treating any underlying mood disorders may be important

Pharmacologic Treatment Options

Use of pharmaceutical options in patients with chronic diarrhea is generally reserved for those who have not adequately responded to lifestyle or dietary interventions or have moderate or severe symptoms that impair quality of life.

Table 2. Pharmacologic treatment options.

Loperamide (Imodium)	<p>Mechanism of action: mu (u) opioid receptor agonist, decreases GI motility</p> <p>Dose: 2-4mg up to 4 times daily, titrate based on symptoms</p> <p>Can also be used as prophylaxis for social situations in milder forms of diarrhea where more regular use is not needed (take prior to going out, travel).</p> <p>Adverse effects: Sedation, nausea, abdominal cramps</p>
Diphenoxylate-atropine (Lomotil)	<p>Mechanism of action: mu (u) opioid receptor agonist, decreases GI motility. Atropine has anticholinergic effect that also decreases GI motility.</p> <p>Dose: 2.5-5mg up to 4 times daily, titrate based on symptoms</p> <p>Adverse effects: Sedation, nausea, abdominal cramps, dry skin and mucus membranes (from atropine). Elderly may be more susceptible to anticholinergic effects.</p>
Bile acid sequestrants	<p>Mechanism of action: binds and removes bile acids in the intestine. Treatment for bile acid diarrhea but can also have constipating effect in other forms of diarrhea.</p> <p>Adverse effects: constipation, nausea</p> <p>Medications:</p>

	<p>Cholestyramine 4g po q12h. Take mixed with fluids. Pouch can be divided into small doses to start (2-4g/day) and titrated to effect.</p> <p>Colestipol (Colestid) is available in a tablet form if patients are unable to tolerate powder.</p> <p>Use gradual dose titration to find the lowest dose required to relieve symptoms. A 2-4 week titration trial is reasonable to see effects.</p> <p>Can affect absorption of other medications—patient should review with pharmacist</p>
Eluxadoline (Viberzi)	<p>Mechanism of action: Belongs to the class of medications called opioid receptor agonists/antagonists. Works in the bowel to regulate muscle activity and slow the rate that material passes through the digestive system, thus improving diarrhea.</p> <p>Dose: 100mg po bid with food</p> <p>Contraindications: Not to be used in patients with significant alcohol use (more than 3 drinks per day), history of pancreatitis, prior cholecystectomy and severe liver impairment. Not recommended in individuals over age 65 as safety profile not well studied in this population.</p>

If ongoing symptoms despite treatment, can consider ordering fecal calprotectin.**

- A stool-based test used to detect a protein released into the gastrointestinal tract from inflammatory cells (neutrophils) when present.
- Fecal calprotectin may be elevated and useful when there is a high clinical suspicion of IBD.
- Elevated levels can be seen in IBD.
- Mid-range levels can also be seen in benign conditions, such as with NSAID use, PPIs and infections. It may also be elevated in celiac disease and microscopic colitis.
- Fecal calprotectin level <100mcg/g unlikely patient has IBD.

****To ensure that testing costs are not a barrier to patient care, *Kingston Health Sciences Centre has developed a unique laboratory requisition* to access fecal calprotectin testing for patients who are on the pathway.**

The unique laboratory requisition is meant to be completed by referring primary care physicians for patients who are following the diarrhea pathway and would prefer to have this test completed at KHSC (KGH: Armstrong 1 or HDH: Jeanne Mance 5) at no cost to the patient. Patients may still prefer to have this testing completed at a community medical laboratory and pay for the associated costs.

The requisition can be accessed and downloaded by primary care physicians at:
<https://kingstonhsc.ca/refer/gastroenterology-1>.

When Should I Refer my Patient to a Specialist?

1. If alarm features are present.
2. Celiac testing (tTG) is positive.
3. Fecal calprotectin >100mcg/g (this test should only be done in patients refractory to other treatments and/or high clinical suspicion for IBD)

Patients who have persistent symptoms and fail to respond to treatment strategies noted above may potentially benefit from colonoscopy. Purpose of the colonoscopy is to exclude chronic immune mediated conditions, such as inflammatory bowel disease and microscopic colitis

Note: Microscopic colitis is generally a benign condition, and many can be managed with anti-diarrheal or bile acid binding agents.

Include as much information as possible on the referral form, including identified alarm features, investigation results, treatments that have been tried, duration and patient response.

Appendix B – Patient Information

Please note: This information is intended to be given to the patient, either as a handout or in the form of a conversation with their primary care provider.

What is chronic diarrhea?

- Loose or watery stool, typically with an increase in frequency and urgency.
- There may be some associated incontinence.
- Should last for at least 4 weeks.
- It is normal to have up to 3 bowel movements per day.
- It can affect your daily activities and impact your quality of life.

What can you do to help manage your symptoms?

- Identify foods that trigger your symptoms. Keeping a food diary may be helpful.
- Choose high soluble fibre foods such as oats, flax, barley. Slowly increase the amount of fibre you eat.
- Consider use of a psyllium fibre (ie Metamucil).
- Drink plenty of water throughout the day.
- Working on stress reduction techniques, get 20 minutes of physical activity daily.

You are enrolled on the Chronic Diarrhea primary care pathway. What does this mean?

- The pathway helps to provide a map to ensure the care you are receiving is safe and helpful in managing your condition.
- Patients can be enrolled on the pathway for several months, or possibly even for years.
- Your primary care provider will take a detailed history of your diarrhea symptoms and to may ask questions about your diet and medications to help identify potential triggers.
- They may ask you to do blood work and stool tests to rule out infections and assess for celiac disease.
- If you concerning features are identified, such as bloody diarrhea, weight loss, or a significant family history then you may be referred to a specialist for assessment.

Additional resources

Canadian Digestive Health Foundation

<https://cdhf.ca/digestive-disorders/diarrhea/>

Nutrition Education Materials

<https://www.albertahealthservices.ca/nutrition/Page11115.aspx>

<https://www.albertahealthservices.ca/assets/info/nutrition/if-nfs-fibre-facts.pdf>

Appendix C – Endnotes

Al-Toma A, et al. European Society for the Study of Coeliac Disease (ESsCD) guideline for coeliac disease and other gluten-related disorders. *United European Gastroenterology Journal*. (2019) 7:583-613

Arasaradnam R et al. Guidelines for the investigation of chronic diarrhea in adults: British of Gastroenterology, 3rd edition. *Gut*. (2018) 67:1380-1399

Hammer H. Management of chronic diarrhea in primary care: the gastroenterologists advice. *Digestive Diseases*. (2021) 39:615-621

Schiller LR, Pardi DS, Sellin JH. Chronic diarrhea: diagnosis and management. *Clinical Gastroenterology and Hepatology*. (2017) 15:182-193

Chronic Diarrhea Primary Care Pathway. Alberta Health Services and Primary Care Networks. 2021.

<https://www.albertahealthservices.ca/assets/about/scn/ahs-scn-dh-pathway-chronic-diarrhea.pdf>