Constipation Pathway

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Objectives of Pathway

- To standardize the diagnosis of constipation in the acute care setting
- To standardize the evaluation of constipation in the acute care setting
- To outline the evidenced-based treatment of constipation in the acute care setting

Why is Pathway Necessary?

- Common diagnosis with wide variation in workup and treatment
- Imaging is often obtained, but not necessary for diagnosis of constipation, which is a clinical diagnosis according to the Rome criteria. A clinical pathway can help decrease low-value care.
- A clinical pathway can also help determine disposition given the varied patient population that is diagnosed with constipation in the emergency department.

Background

- Constipation in the child and adolescent is a common chief complaint and has a standard diagnosis per the Rome IV criteria[1].
- Large variation noted in diagnoses, evaluation, and treatment in both ED and inpatient settings.
- Expert panel convened to standardize diagnosis, evaluation, treatment, and disposition of patients with constipation evaluated and treated at Connecticut Children's.

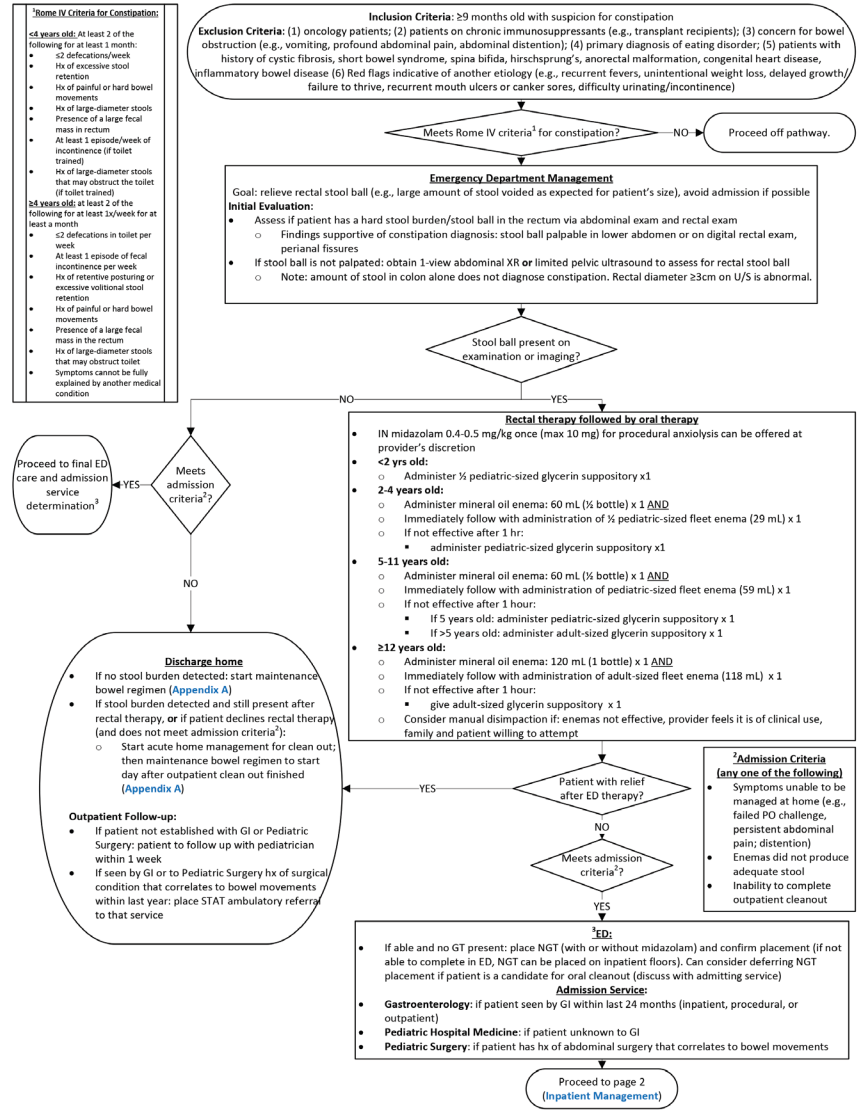
This is the Constipation Clinical Pathway.

We will be reviewing each component in the following slides.

Care is divided into Emergency Department (ED) and Inpatient pages

CLINICAL PATHWAY:
Constipation
Emergency Department Care

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.



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LAST UPDATED: 05.01.25

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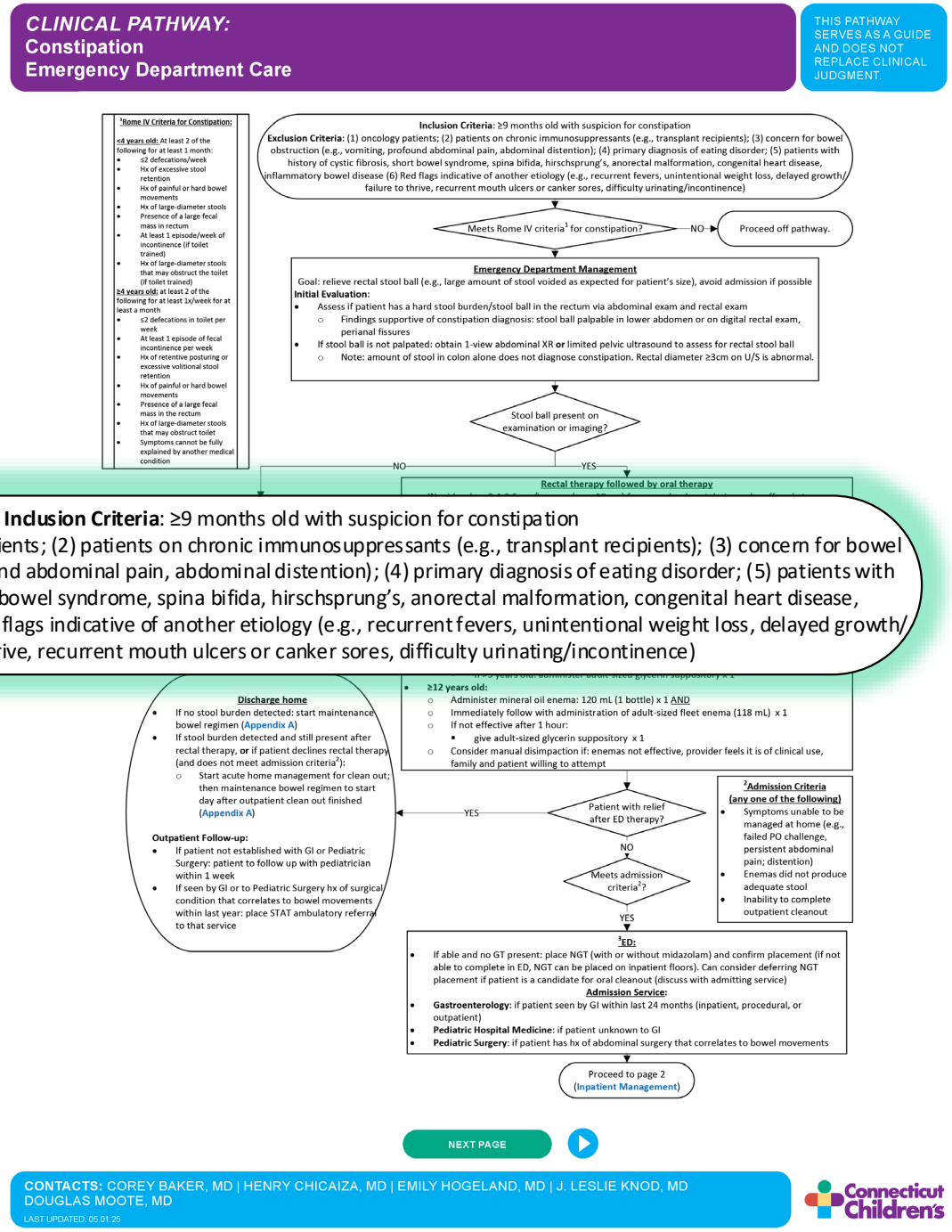
- Any infant ≥ 9 months of age may be managed with this clinical pathway
- Exclusion criteria for this pathway are based on expert consensus of this pathway's multidisciplinary group of authors



Constipation diagnosis is made clinically by the Rome IV Criteria[1]

[1]Rome IV Criteria for Constipation:

<4 years old: At least 2 of the following for at least 1 month:

- ≤2 defecations/week
- Hx of excessive stool retention
- Hx of painful or hard bowel movements
- Hx of large-diameter stools
- Presence of a large fecal mass in rectum
- At least 1 episode/week of incontinence (if toilet trained)
- Hx of large-diameter stools that may obstruct the toilet (if toilet trained)

≥4 years old: at least 2 of the following for at least 1x/week for at least a month

- ≤2 defecations in toilet per week
- At least 1 episode of fecal incontinence per week
- Hx of retentive posturing or excessive volitional stool retention
- Hx of painful or hard bowel movements
- Presence of a large fecal mass in the rectum
- Hx of large-diameter stools that may obstruct toilet
- Symptoms cannot be fully explained by another medical condition

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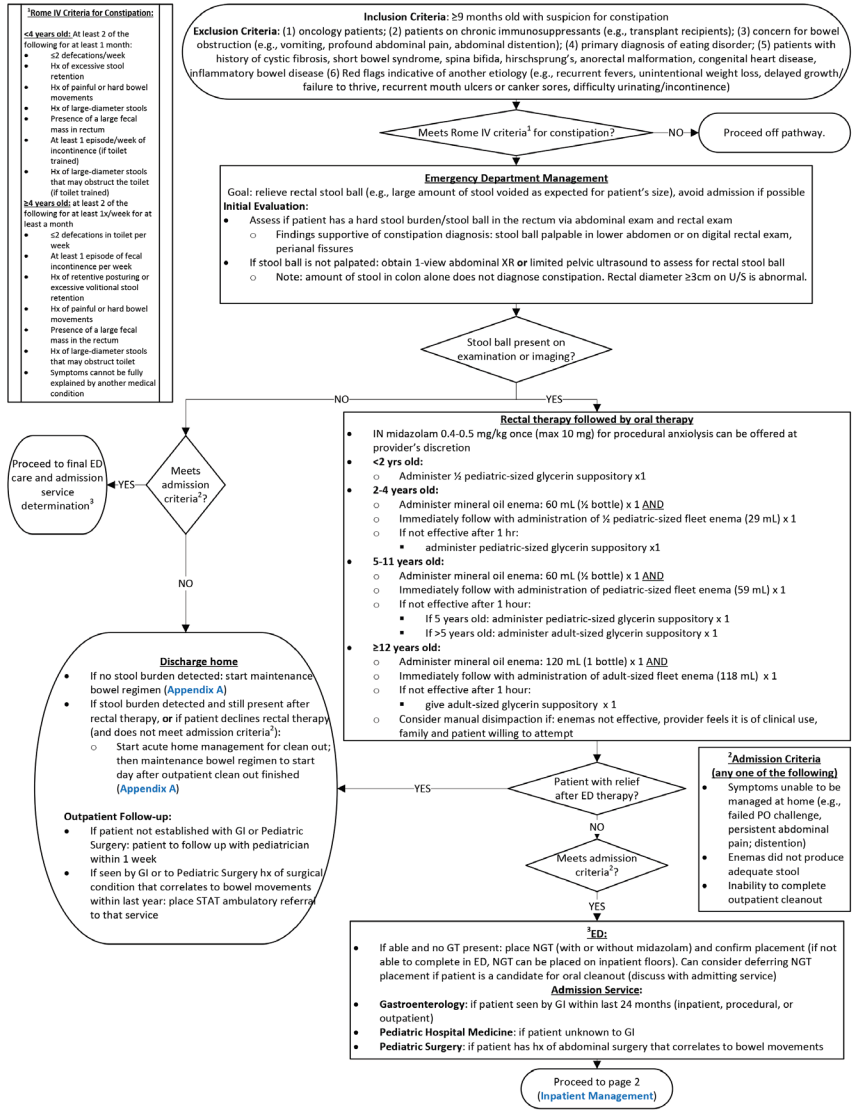

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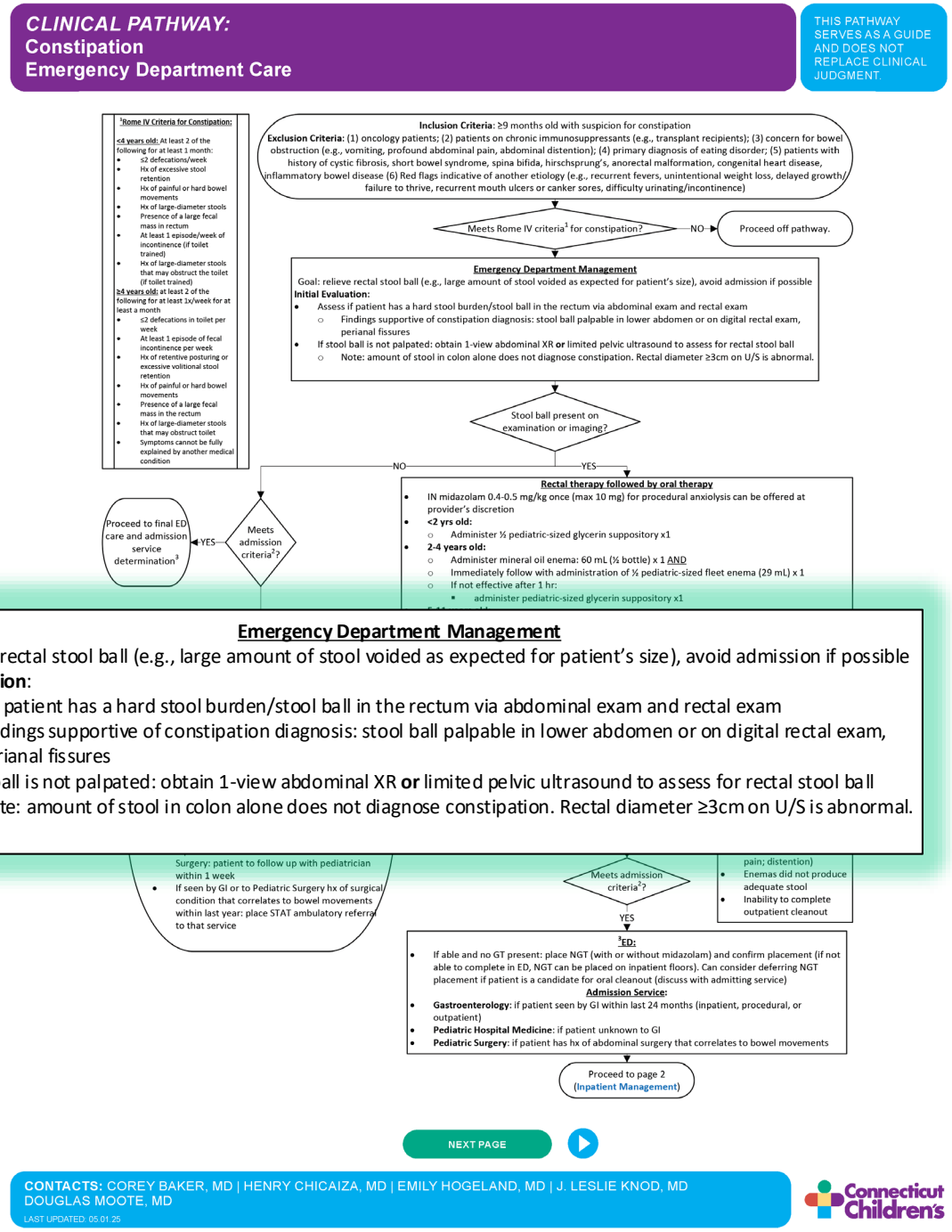
- Goal of initial ED work up is to determine if there is a rectal stool ball and to relieve it if found.
- As noted, diagnosis should be based on history and PE, with imaging deferred unless PE does not demonstrate rectal stool on abdominal or digital rectal exams.
- If imaging is indicated, AXR or limited pelvic ultrasound are options.



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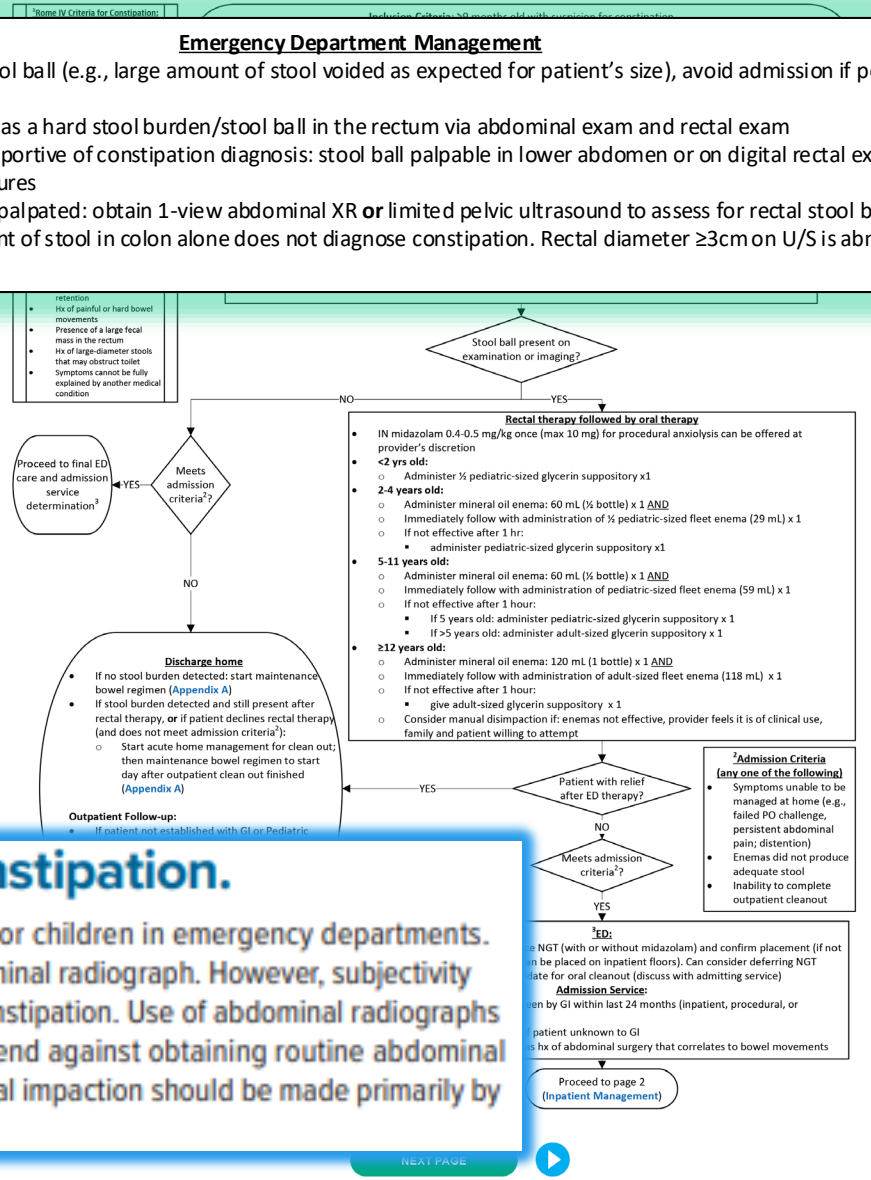
Of note, constipation is CANNOT be diagnosed by imaging alone and requires correlation with patient history[3]

Emergency Department Management

Goal: relieve rectal stool ball (e.g., large amount of stool voided as expected for patient's size), avoid admission if possible

Initial Evaluation:

- Assess if patient has a hard stool burden/stool ball in the rectum via abdominal exam and rectal exam
  - Findings supportive of constipation diagnosis: stool ball palpable in lower abdomen or on digital rectal exam, perianal fissures
- If stool ball is not palpated: obtain 1-view abdominal XR **or** limited pelvic ultrasound to assess for rectal stool ball
  - Note: amount of stool in colon alone does not diagnose constipation. Rectal diameter ≥3cm on U/S is abnormal.



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Five Things Physicians and Patients Should Question

4 Do not obtain abdominal radiographs for suspected constipation.

Functional constipation and nonspecific, generalized abdominal pain are common presenting complaints for children in emergency departments. Constipation is a clinical diagnosis and does not require testing, yet many of these children receive an abdominal radiograph. However, subjectivity and lack of standardization result in poor sensitivity and specificity of abdominal radiographs to diagnose constipation. Use of abdominal radiographs to diagnose constipation has been associated with increased diagnostic error. Clinical guidelines recommend against obtaining routine abdominal radiographs in patients with clinical diagnosis of functional constipation. The diagnosis of constipation or fecal impaction should be made primarily by history and physical examination, augmented by a digital rectal examination when indicated.

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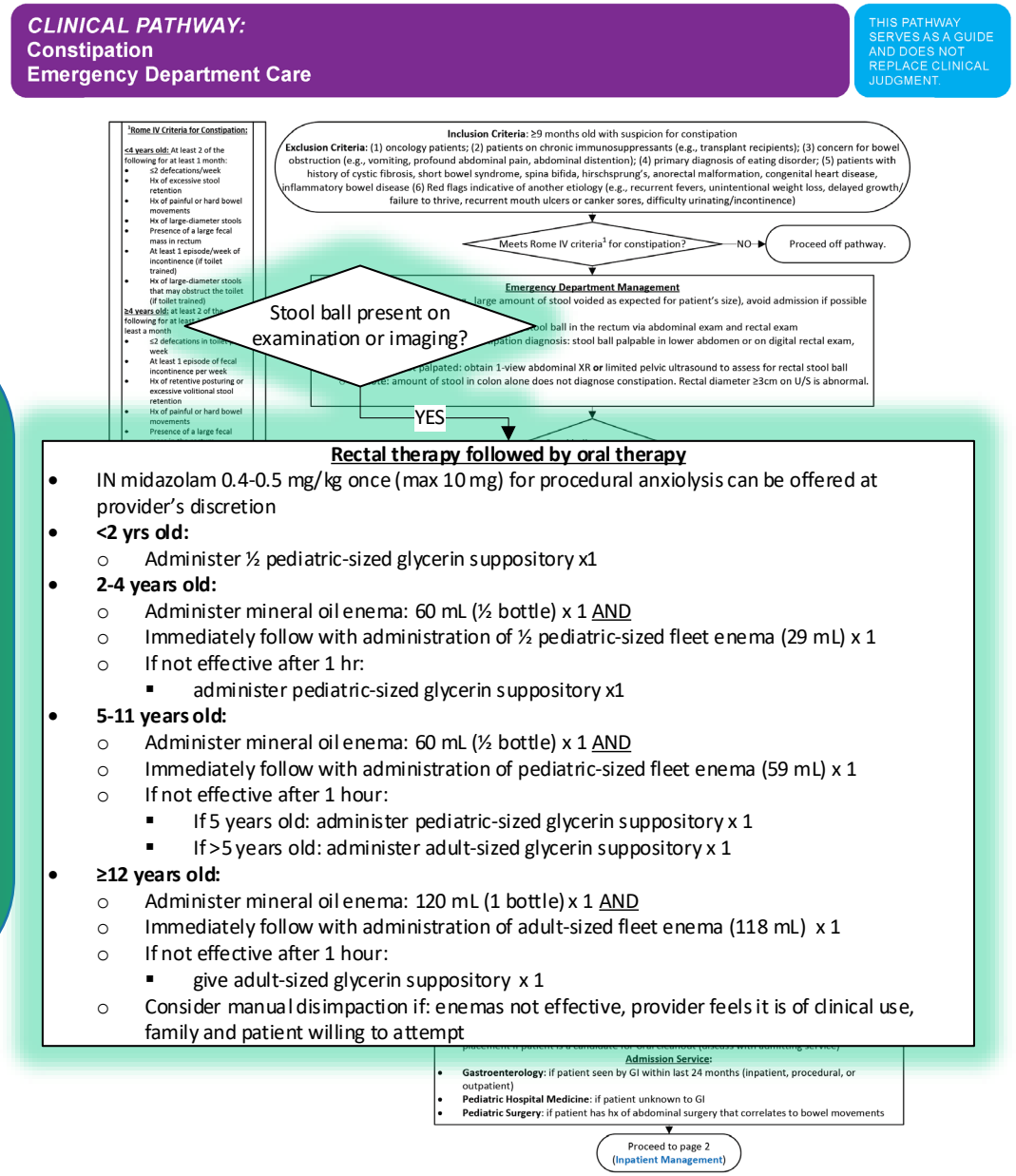
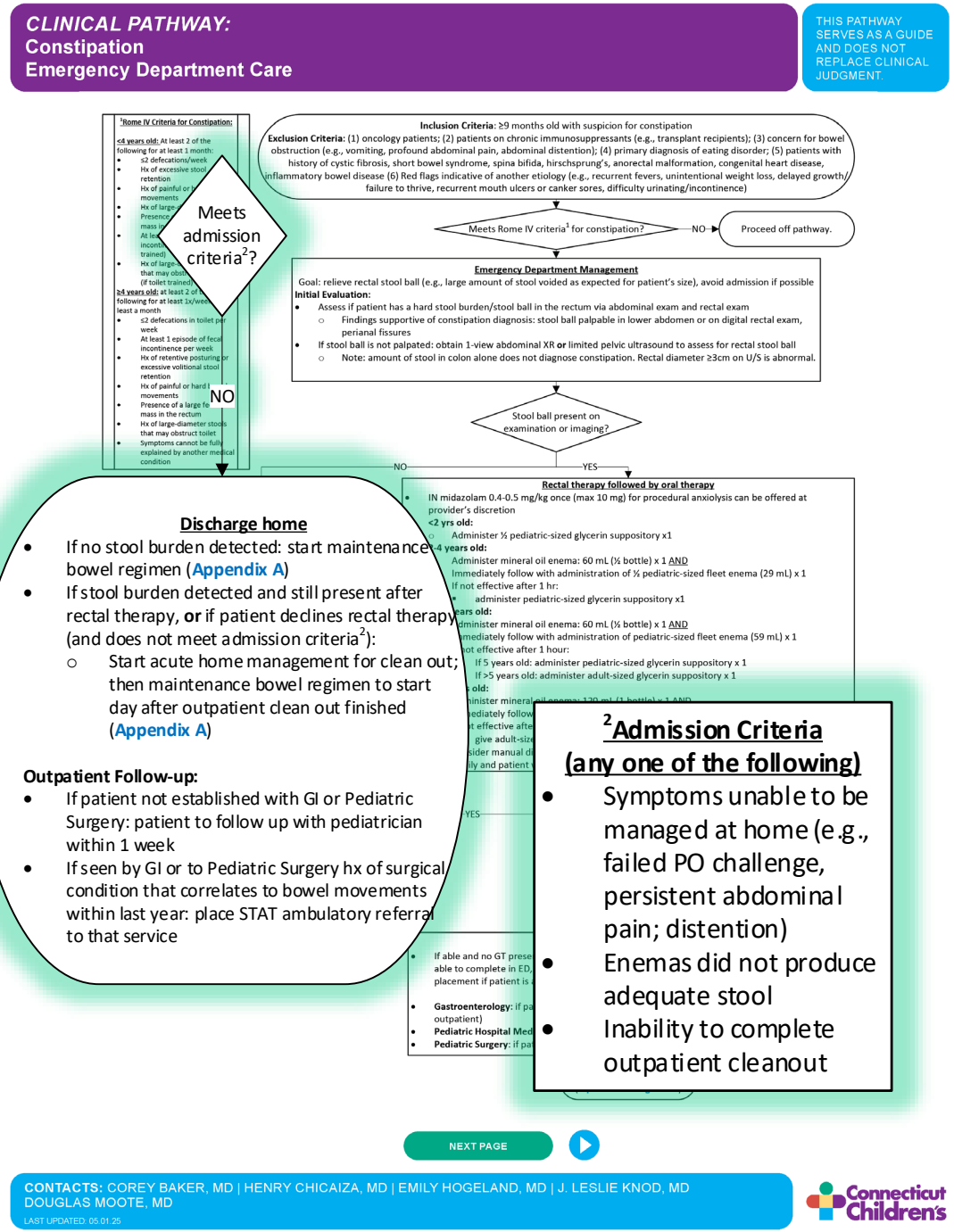
- If stool ball present, follow the pathway regarding administration of rectal therapy followed by oral therapy
- Intranasal midazolam may be offered as procedural anxiolysis



- If patient does NOT meet admission criteria, either with or without stool ball burden, may be discharged home to continue treatment there
- Appendix A outlines outpatient clean-out and maintenance therapies (see next slide)
- Patient should follow up outpatient with his/her pediatrician or specialist if related condition managed by that specialty



- Appendix A includes both acute and maintenance home management strategies

Acute Home Management:

*Preferred medication is polyethylene glycol, alternative is magnesium citrate:

Medication	Weight/Age Based Dosage	Dose & Frequency
Polyethylene glycol • 17 g per 1 cap packet mixed in 6 – 8 ounces of fluid	≥ 9 months	2 g/kg once daily (Max 238 g once per day)
Magnesium Citrate • 1.745 g/30 mL	≥ 6 years	4-6 mL/kg per day (Max 300 mL once per day)

- Cleanout is completed if stool is water in consistency AND yellow or clear in color OR after three days of daily cleanout
- After cleanout is completed, initiate maintenance therapy the following day

Maintenance Home Management:

*Preferred osmotic agent is polyethylene glycol, alterative is lactulose:

Medication		Weight/Age Based	Dose & Frequency	Expected Onset of BM
Polyethylene glycol • 17 g per 1 cap packet mixed in 6 – 8 ounces of fluid		9 months to 18 years of age	0.4 – 0.8 g/kg per day (Max 17 g per day)	24 – 96 hours
		≥ 18 years of age	17 g per day	
Lactulose • 10 mg/15 mL solution		9 months to 18 years of age	1 mL/kg once or twice per day (Max 60 mL daily total)	24 – 48 hours
		≥ 18 years of age	15 – 30 mL once or twice daily (Max 60 mL total per day)	

- Continue maintenance therapy until follow up visit with provider for constipation

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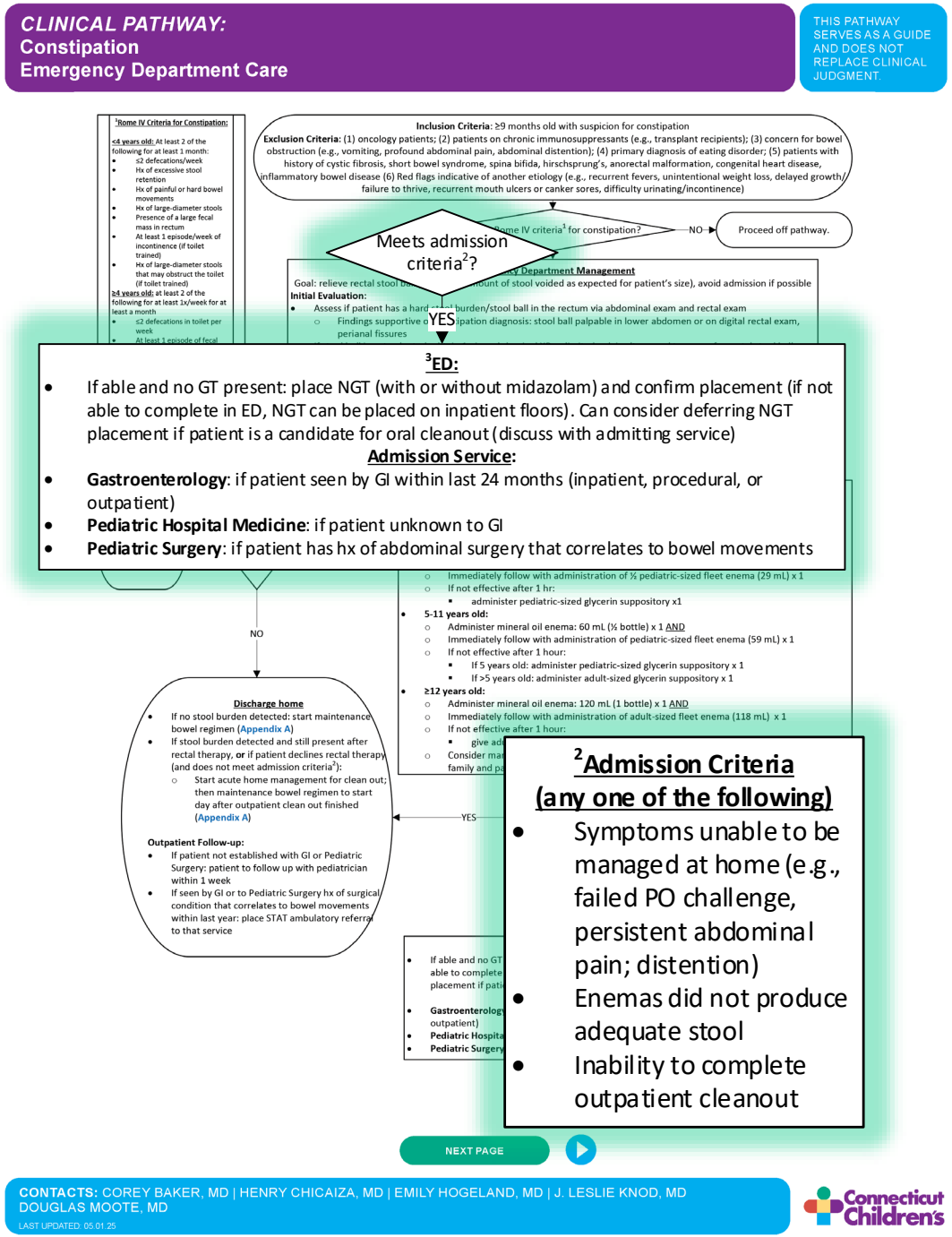
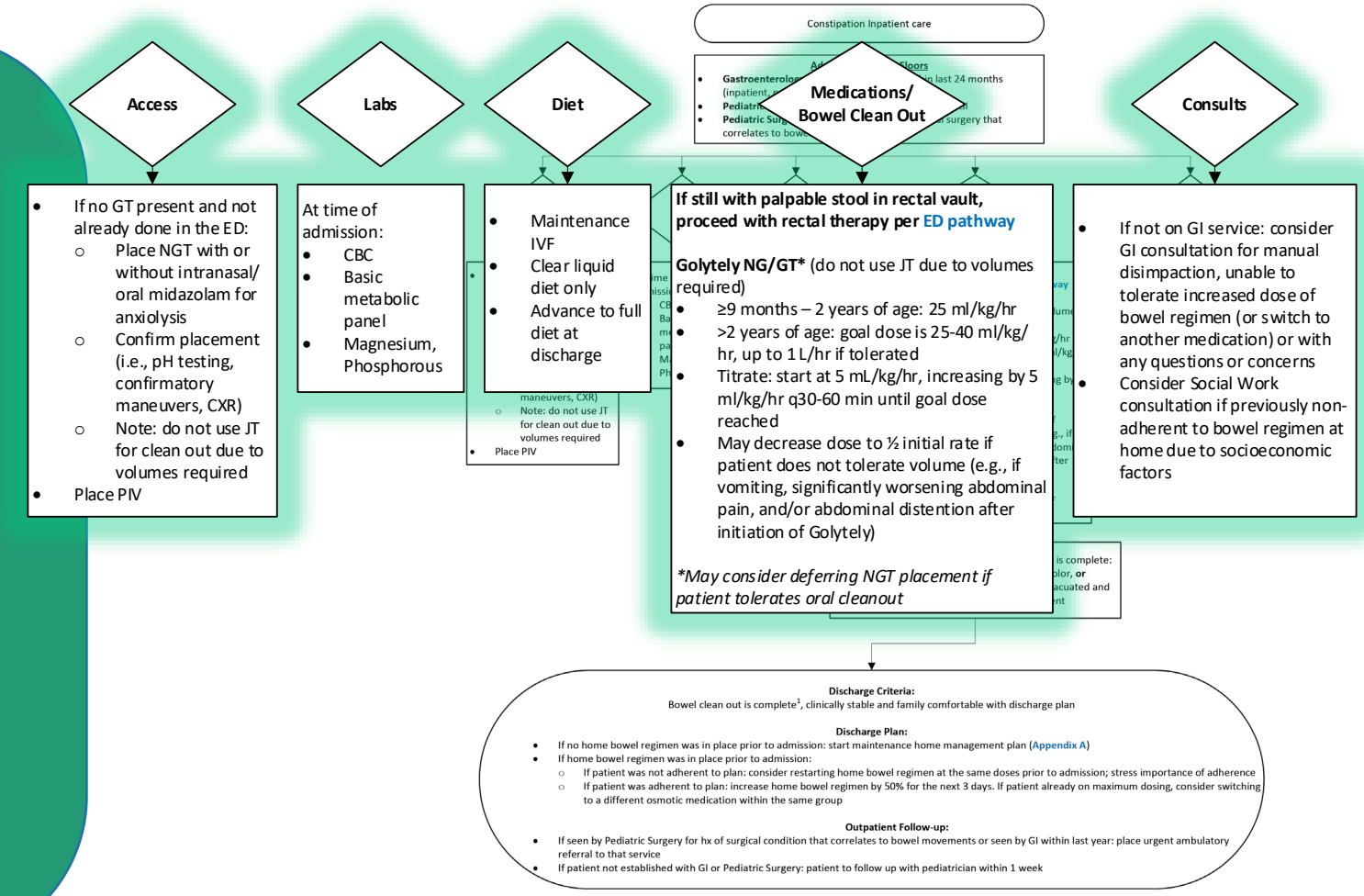
- If patient meets admission criteria, consider placement of NG tube for assistance with cleanout if patient unable to do so orally
- Please see clinical pathway to determine the most appropriate admission service



- Inpatient care is outlined on page 2 of the clinical pathway
- The mainstay of inpatient therapy is golytely, most often administered via NG tube
- Fecal disimpaction may ultimately be necessary, but should be discussed in consultation with GI



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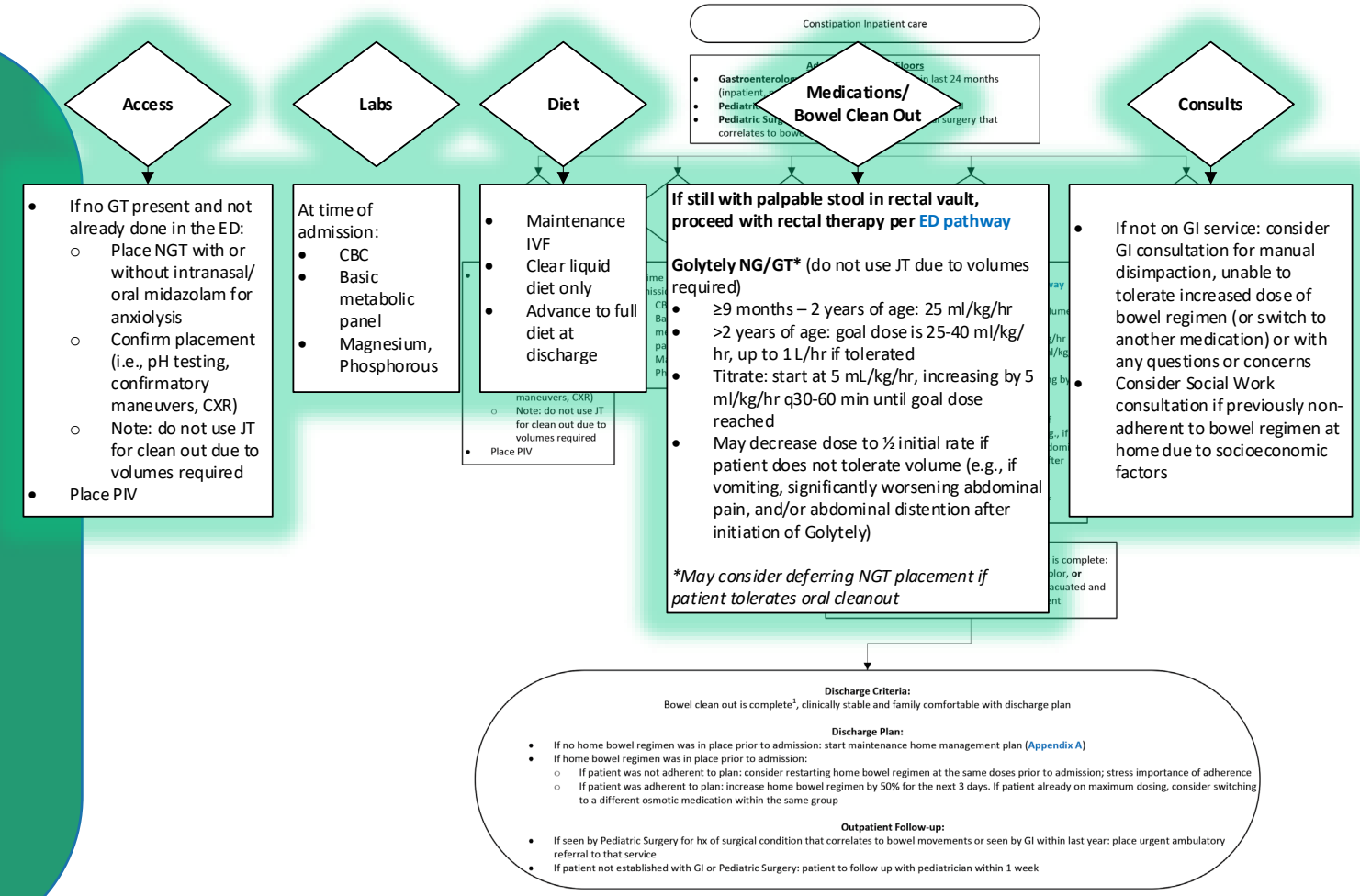
- Of note, if versed needed for anxiolysis with NGT placement, this may take place on med-surg units



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Inpatient treatment should continue until stool is loose, watery, and yellow/clear
OR
Patient with symptomatic improvement after significant bowel movement

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Inpatient Care

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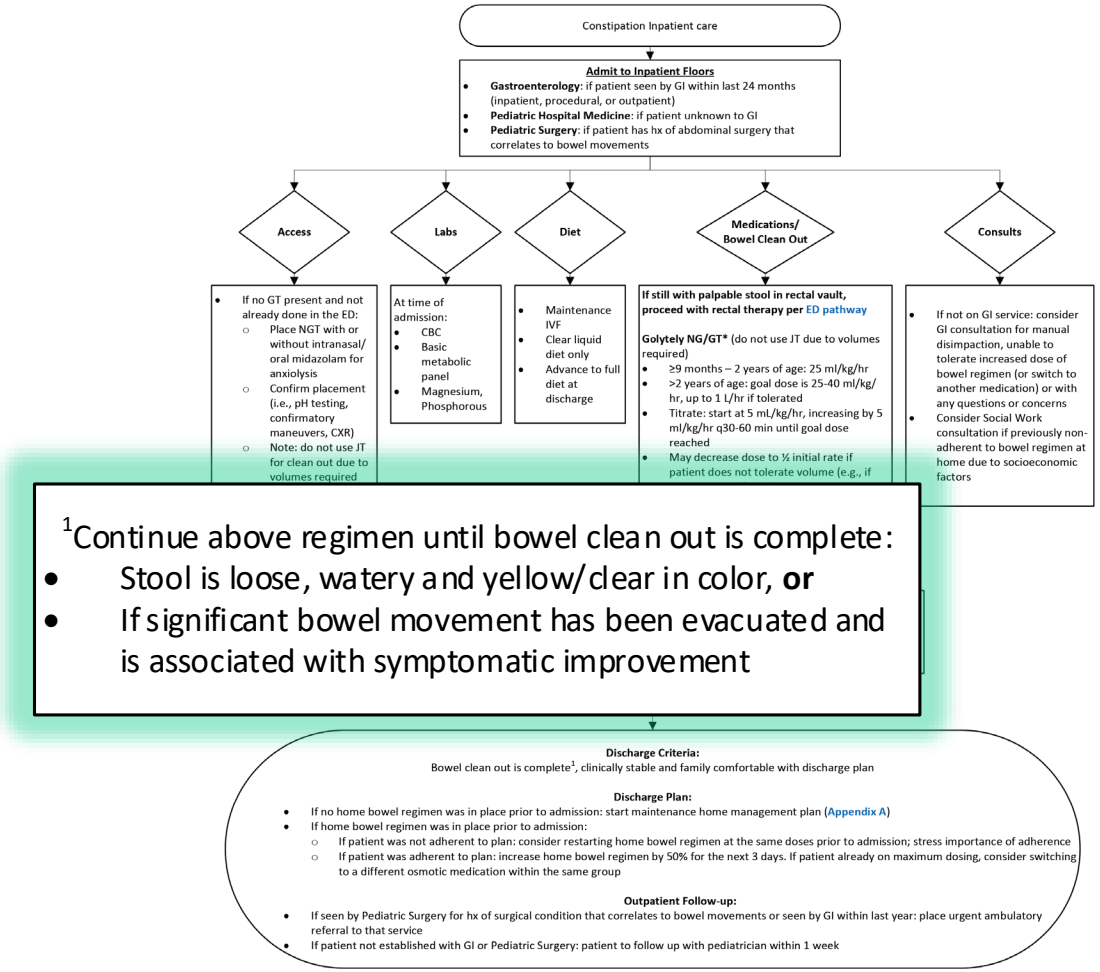

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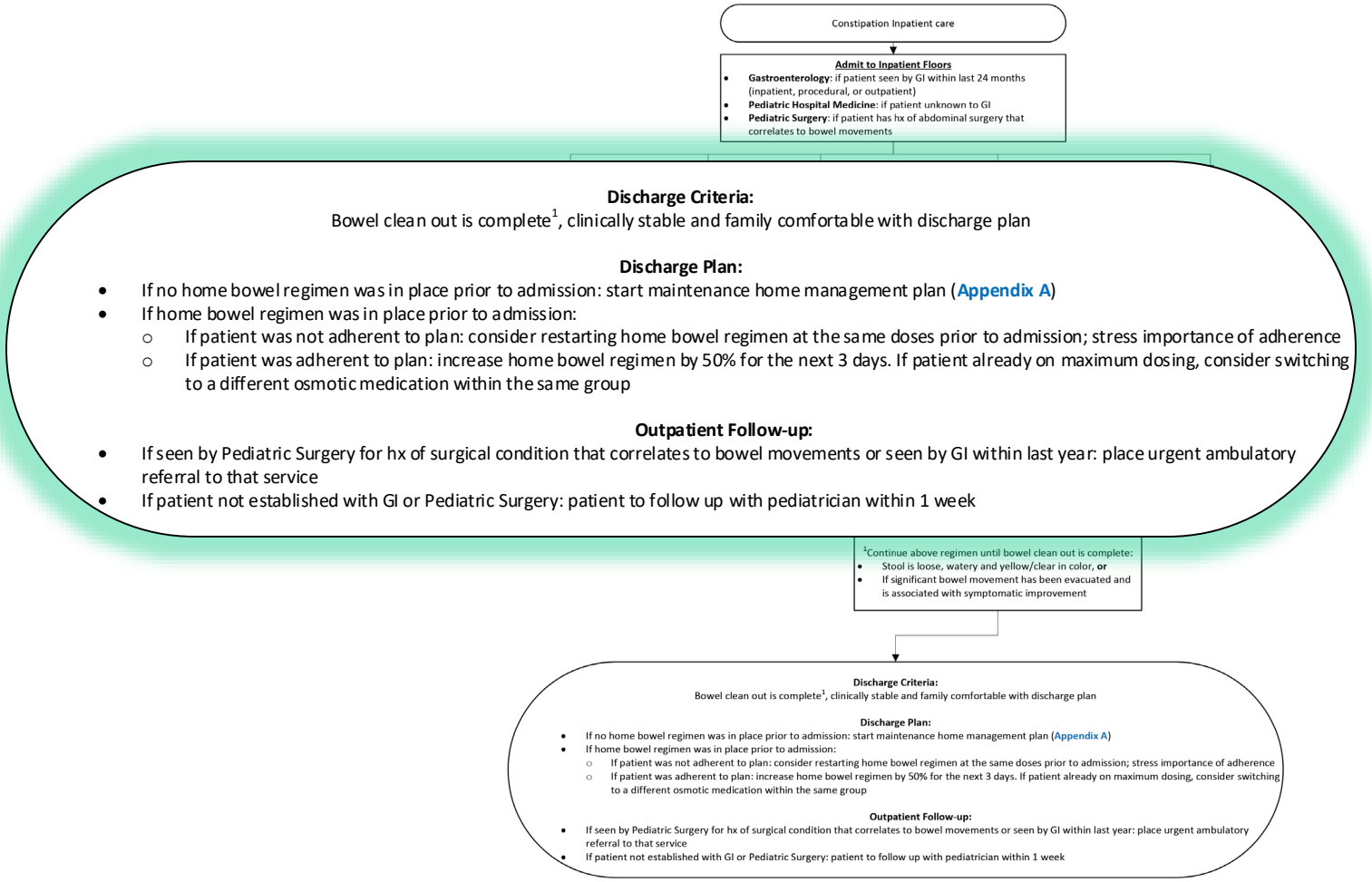
Discharge criteria and discharge instructions are clearly outlined in the clinical pathway discharge oval as well as Appendix A



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Use of Order Sets

- There are both ED and inpatient order sets
  - The ED order set includes orders for imaging (if indicated), rectal therapy, midazolam, and NG placement
  - The inpatient order set includes IVFs, labs, Golytely, Zofran, Tylenol

Review of Key Points

- Diagnosis of functional constipation is generally clinical and based on Rome IV criteria
- ED evaluation is based on history and physical exam, with imaging deferred unless diagnosis is unclear
- ED therapy is generally directed at rectal therapy via enemas and/or suppository
- Outpatient rescue and maintenance therapy are defined by expert consensus and outlined in Appendix A
- Admission service is determined by criteria on pathway
- Inpatient therapy mainstay is NG golytely with option for fecal disimpaction in consultation with GI

Quality Metrics

- Percentage of patients with pathway order set
- Percentage of patients with an abdominal x-ray
- Percentage of patients with a pelvic ultrasound
- Percentage of patients with Gastroenterology consult (ED/inpatient)
- Percentage of patients with Pediatric Surgery consult (ED/inpatient)
- Percentage of patients receiving mineral oil enema
- Percentage of patients with intraoperative bowel disimpaction
- Percentage of patients requiring hospital admission
- Average LOS (ED/inpatient)
- Returns to ED with constipation within 6 months
- Readmissions with constipation within 6 months

Pathway Contacts

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- Emily Hogeland, MD
  - Hospital Medicine
- J. Leslie Knod, MD
  - Pediatric Surgery
- Henry Chicaiza, MD
  - Emergency Medicine
- Douglas Moote, MD
  - Radiology

References

1. Hyams JS, Di Lorenzo C, Saps M, Shulman RJ, Staiano A, van Tilburg M. Functional Disorders: Children and Adolescents. *Gastroenterology*. 2016 Feb 15:S0016-5085(16)00181-5. doi: 10.1053/j.gastro.2016.02.015. Epub ahead of print. PMID: 27144632.
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Thank You!

About Connecticut Children's Pathways Program

Clinical pathways guide the management of patients to optimize consistent use of evidence-based practice. Clinical pathways have been shown to improve guideline adherence and quality outcomes, while decreasing length of stay and cost. Here at Connecticut Children's, our Clinical Pathways Program aims to deliver evidence-based, high value care to the greatest number of children in a diversity of patient settings. These pathways serve as a guide for providers and do not replace clinical judgment.