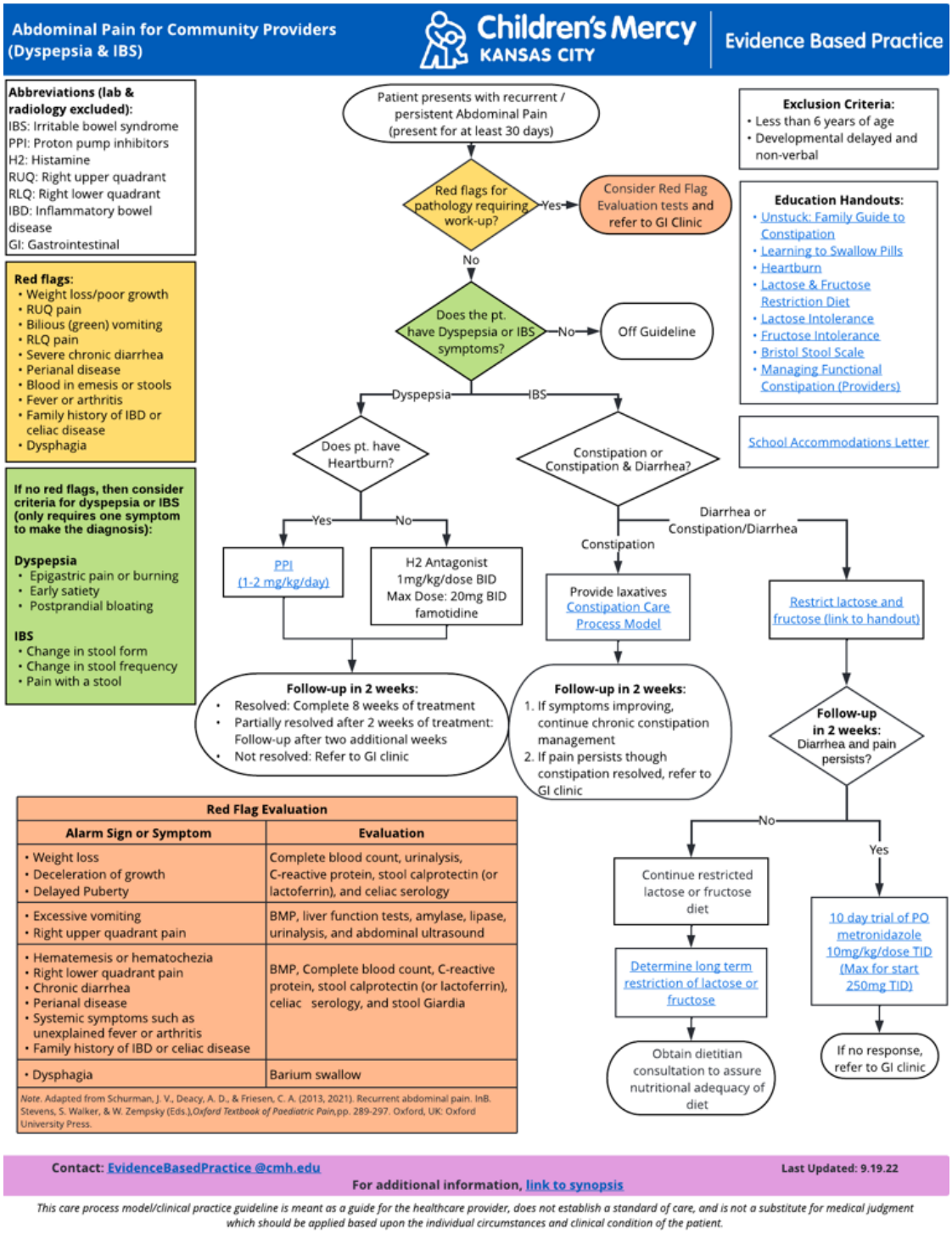
Abdominal Pain for Community Provider
Care Process Model Synopsis



**This care process model does not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. It is impossible to anticipate all possible situations that may exist and to prepare care process models for each. Accordingly, this care process model should guide care with the understanding that departures from them may be required at times.*

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Objective of Care Process Model

To provide care standards for community providers for the treatment and diagnosis for patients presenting with abdominal pain.

Background/Epidemiology

Chronic abdominal pain in childhood constitutes a significant time-consuming clinical problem in healthcare, and it carries a considerable burden for patients and their families(Di Lorenzo et al., 2005). The prevalence rates of chronic abdominal pain for children range widely from 0.3-19% (Korterink et al., 2015) and can account for up to 5% of pediatric primary care visits (Gieteling et al., 2011).

Target Users

- Physicians (Ambulatory, Urgent Care, Emergency Department, Community Physicians, Fellows, Resident Physicians)
- Nurse Practitioners

Target Population

CPM Inclusion Criteria

- Patients presenting with recurrent or persistent abdominal pain present for at least 30 days

CPM Exclusion Criteria

- Patients <6 years of age
- Patients with developmental delay or non-verbal

Additional Questions Posed by the CPM Committee

No clinical questions were posed for this review.

Children's Mercy Practice Recommendations and Reasoning

A. Criteria for initiation of Abdominal Pain algorithm
    - Patient ≥6 years of age presents with recurrent/persistent abdominal pain present for at least 30 days
    - Dysphagia

B. Red Flag symptoms indicating need for Red Flag Evaluation tests and referral to Gastrointestinal (GI) Clinic:

Alarm Sign or Symptom	Evaluation
• Weight loss • Deceleration of growth • Delayed puberty	• CBC • CRP • Stool calprotectin (or lactoferrin) • Celiac serology
• Excessive vomiting • RUQ pain	• BMP • Liver function tests • Amylase • Lipase • Urinalysis • Abdominal ultrasound
• Hematemesis or hematochezia • RLQ pain • Chronic diarrhea • Perianal disease • Systemic symptoms such as unexplained fever or arthritis • Family history of IBD or celiac disease	• BMP • CBC • CRP • Stool calprotectin (or lactoferrin) • Celiac serology • Stool Giardia
• Dysphagia	• Barium swallow

C. Management of Dyspepsia

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- Dyspepsia may be diagnosed if patient does not meet Red Flag criteria and has any of the following symptoms:
    - Epigastric pain or burning
    - Early satiety
    - Postprandial bloating
  - If patient is experiencing heartburn, PPI (1-2 mg/kg/day) is recommended
  - If patient is not experiencing heartburn, H2 Antagonist 1 mg/kg/dose BID with max dose 20 mg BID famotidine is recommended
  - Follow-up in 2 weeks recommended:
    - If resolved complete 8 weeks of treatment
    - If partially resolved follow up after 2 additional weeks
    - If not resolved at follow-up refer to GI Clinic recommended

D. Management of Constipation
- Provide Laxatives (refer to Constipation CPM)
- Follow-up in 2 weeks
    - If symptoms are improving, continue chronic constipation management
    - If constipation has resolved but pain persists, refer to GI clinic recommended

E. Management of Constipation/Diarrhea
- Restrict lactose and fructose (Appendix A)
- Follow-up in 2 weeks
    - If pain has resolved, continue diet and obtain dietician consultation to assure nutritional adequacy of diet
    - If pain has not resolved, 10 day trial of PO metronidazole 10 mg/kg/dose x TID (max for start 250 mg TID) recommended
        - If no resolution, referral to GI Clinic recommended

Measures
- ED visits
- Admissions
- GI visits
- Primary Care visits

Potential Cost Implications

The following potential improvements may reduce costs and resource utilization for healthcare facilities and reduce healthcare costs and non-monetary costs (e.g., missed school/work, loss of wages, stress) for patients and families.
- Decreased risk of overdiagnosis
- Decreased risk of overtreatment (i.e., treatment for meningitis when treatment for urinary tract infection is more appropriate)
- Decreased frequency of admission
- Decreased unwarranted variation in care

Potential Organizational Barriers and Facilitators

Potential Barriers
- Variability of acceptable level of risk among providers
- Challenges with follow-up faced by some families

Potential Facilitators
- Collaborative engagement across care continuum settings during CPM development
- High rate of use of CPM

Care Process Preparation

This care process was prepared by the Evidence Based Practice Department (EBP) in collaboration with content

experts at Children's Mercy Kansas City. Development of this care process supports the Division of Quality and Safety Excellence's initiative to promote care standardization that is evidenced by measured outcomes. If a conflict of interest is identified the conflict will be disclosed next to the committee member's name.

Implementation & Follow-Up

Once approved, the CPM was presented to appropriate care teams and implemented. Care measurements will be assessed and shared with appropriate care teams to determine if changes need to occur. This CPM is scheduled for revision November 2024.

Abdominal Pain CPM Committee Members and Representation

- Craig Friesen, MD | Gastroenterology | Committee Chair
- Doug Blowey, MD | Integrated Care Solutions | Committee Member
- Jennifer Schurman, PhD, ABPP, BCB | Gastroenterology | Committee Member
- Natasha Burgert, MD | Committee Provider | Committee Member
- Tina Khaleghi, MD | Community Provider | Committee Member
- Luke Harris, MBA | Integrated Care Solutions | Committee Member
- Michelle Ingles | Integrated Care Solutions | Committee Member

EBP Committee Members

- Jarrod Dusin, MS, RD, LD, CPHQ | Evidence Based Practice
- Todd Glenski, MD, MSHA, FASA | Anesthesiology, Evidence Based Practice

Additional Review & Feedback

- The CPM was presented to each division or department represented on the CPM committee as well as other appropriate stakeholders. Feedback was incorporated into the final product.

Care Process Model Development Funding

The development of this guideline was underwritten by the EBP and Gastroenterology Department and Integrated Care Solutions.

Approval Obtained

Department/Unit	Date Approved
Gastroenterology	October 2022

Version History

Date	Comments
October 2022	Version One

Disclaimer

When evidence is lacking or inconclusive, options in care are provided in the guideline and the power plans that accompany the guideline.

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References

Di Lorenzo C, Colletti RB, Lehmann HP, Boyle JT, Gerson WT, Hyams JS, et al. Chronic abdominal pain in children: a clinical report of the American Academy of Pediatrics and the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition. J Pediatr Gastroenterol Nutr. 2005;40:245-8.

Gieteling MJ, Lisman-van Leeuwen Y, van der Wouden JC, Schellevis FG, Berger MY. Childhood nonspecific abdominal pain in family practice: incidence, associated factors, and management. Ann Fam Med. 2011;9:337-43.

Korterink, J. J., Diederen, K., Benninga, M. A., & Tabbers, M. M. (2015). Epidemiology of pediatric functional abdominal pain disorders: a meta-analysis. *PloS one*, *10*(5), e0126982.

Appendix A (Handouts)

Unstuck: Family Guide to Constipation
Learning to Swallow Pills
Heartburn
Lactose & Fructose Restriction Diet
Lactose Intolerance
Fructose Intolerance
Bristol Stool Scale
Managing Functional Constipation (Providers)
School Accommodation Letter