

Background

- Narcotic-related adverse events account for 33-51% of pediatric adverse drug effects in hospitalized children.¹
- A known side effect of opioids is constipation. In the acute setting, incidence of constipation can range from 15-90% in pediatric patients.²
- Constipation can cause:¹⁻⁵
 - Abdominal pain
 - Nausea
 - Cramping
 - Decreased appetite
 - Urinary dysfunction causing an increased risk of UTI
- When pediatric patients have an issue with constipation, it may have a psychosocial impact making them afraid to stool in the future. When they hold in their stool, it makes the problem worse and can making passing stool more painful.⁴

Purpose and Objectives

Purpose:

- Assess the need to implement a bowel agent protocol at CoxHealth when pediatric patients are started on opioid pain medication.

Primary Objective:

- Determine how often laxatives were prescribed with opioids in pediatric patients and compare the outcomes to patients without laxatives prescribed.

Secondary Objectives:

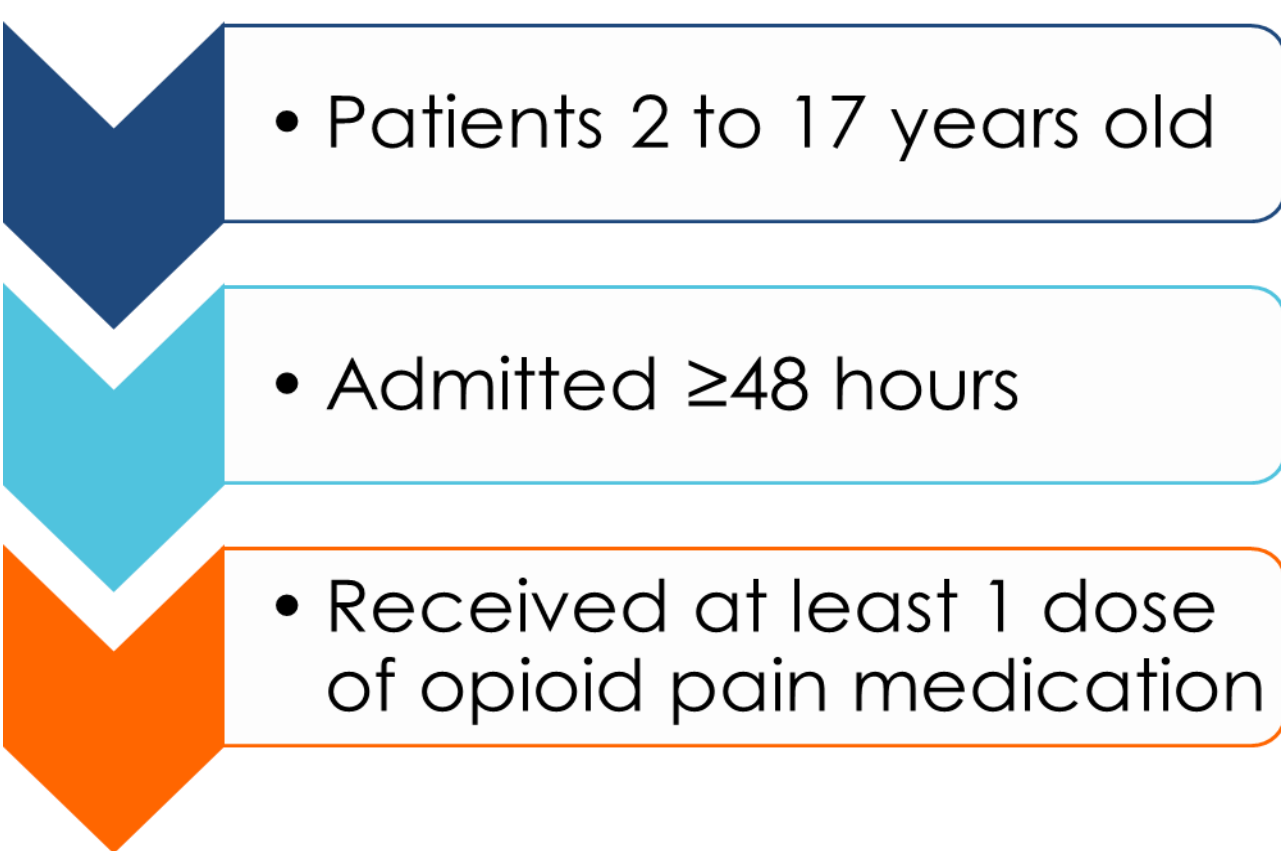
- Assess appropriateness of laxative dosing.
- Determine differences in prescribing patterns in the medical and surgical teams.

Methods

- Chart reviews performed via electronic medical records (EMR) for patients admitted between October 1, 2012 and October 1, 2015.
- Extracted relevant information including:



Inclusion Criteria:



Exclusion Criteria:

- Cystic fibrosis, Hirschsprung disease, cerebral palsy, diabetes mellitus, celiac disease, impacted stool on admission, intestinal obstruction, lead poisoning, hypothyroidism

Results

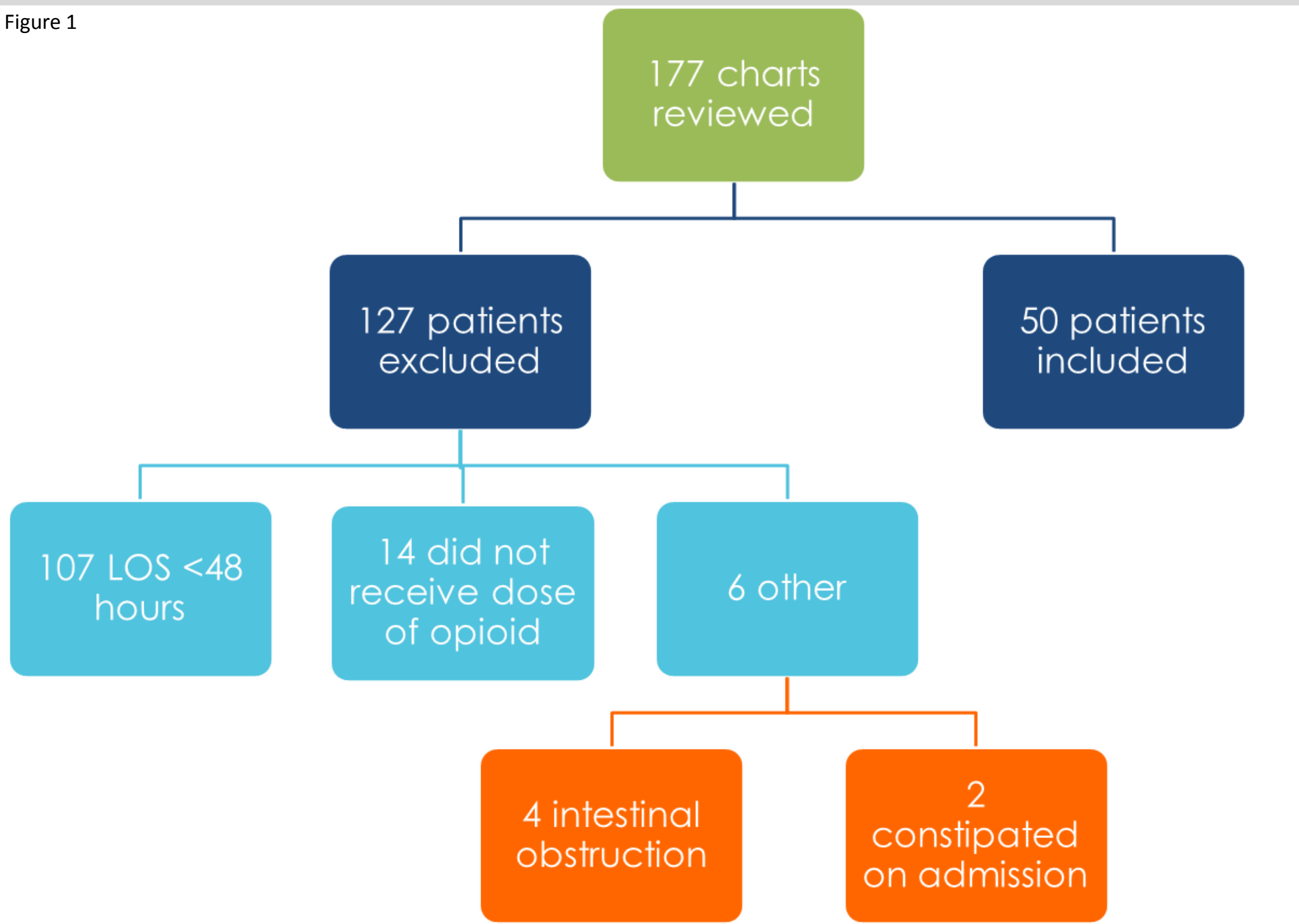


Table 1	Laxative Group (n = 19)	Non-Laxative Group (n = 31)
Age (average)	13	12
Gender	M (70%)	M (63%)
Admission Type		
Surgical	15 (79%)	21 (68%)
Medical	4 (21%)	10 (32%)

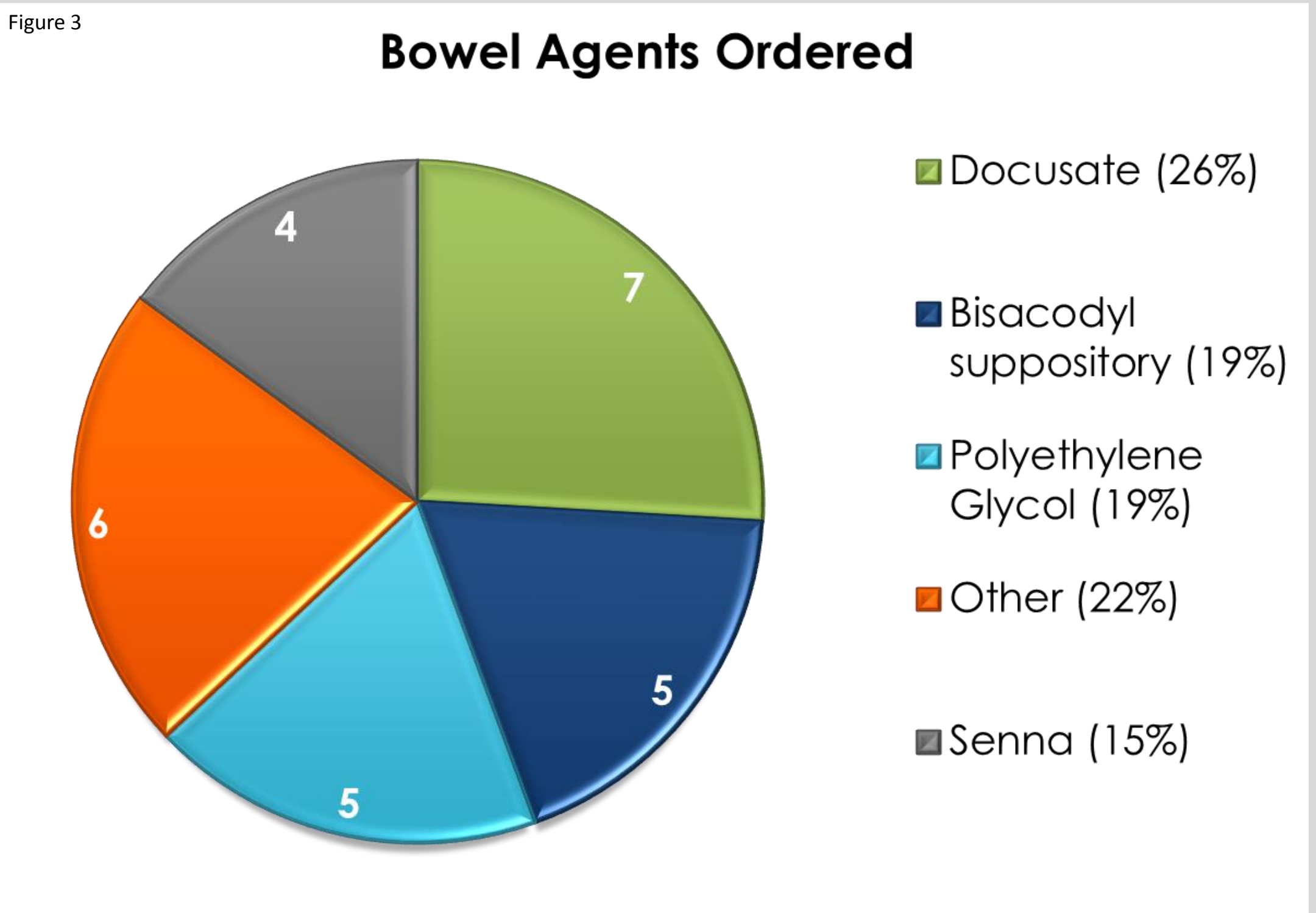
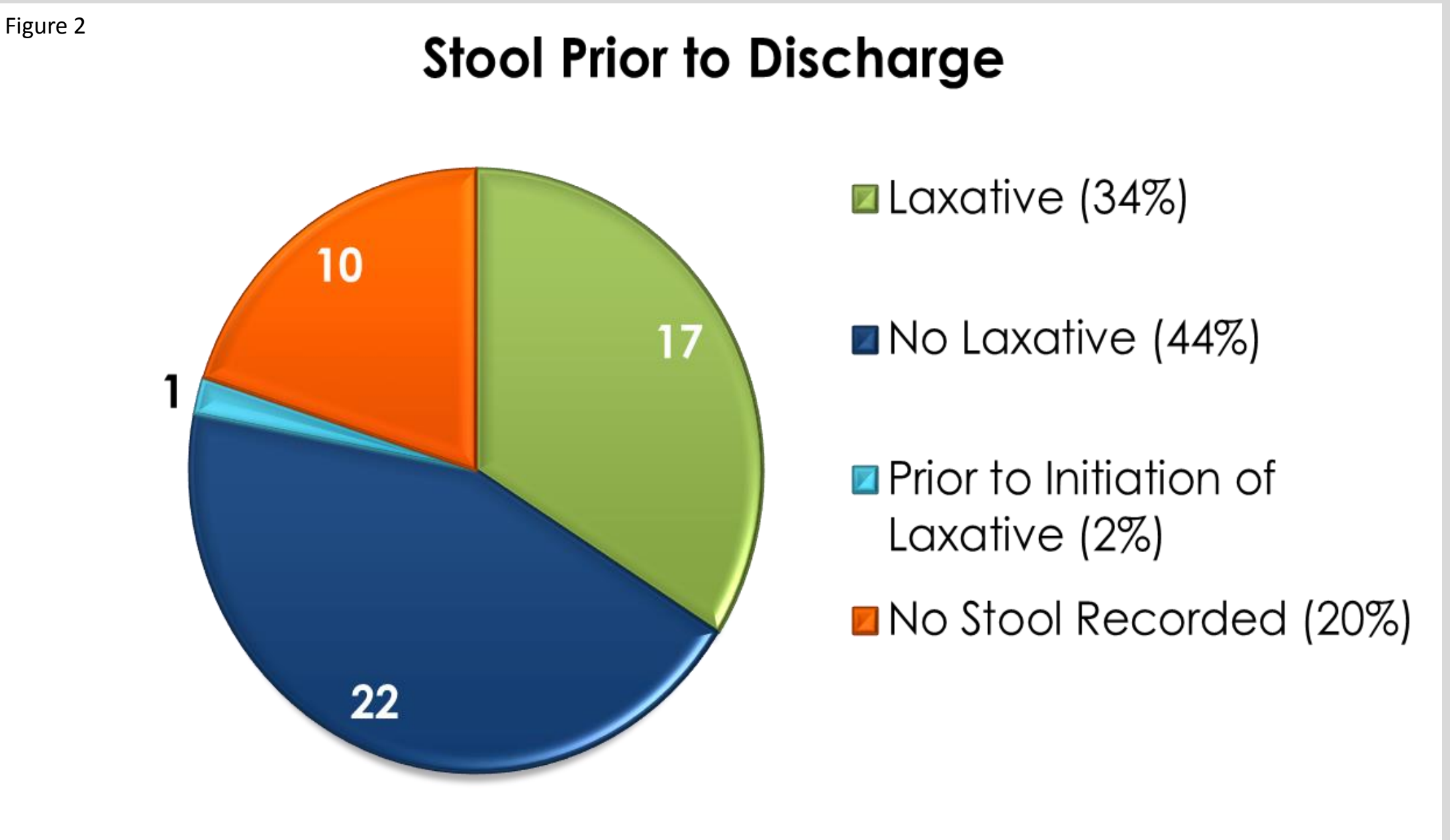
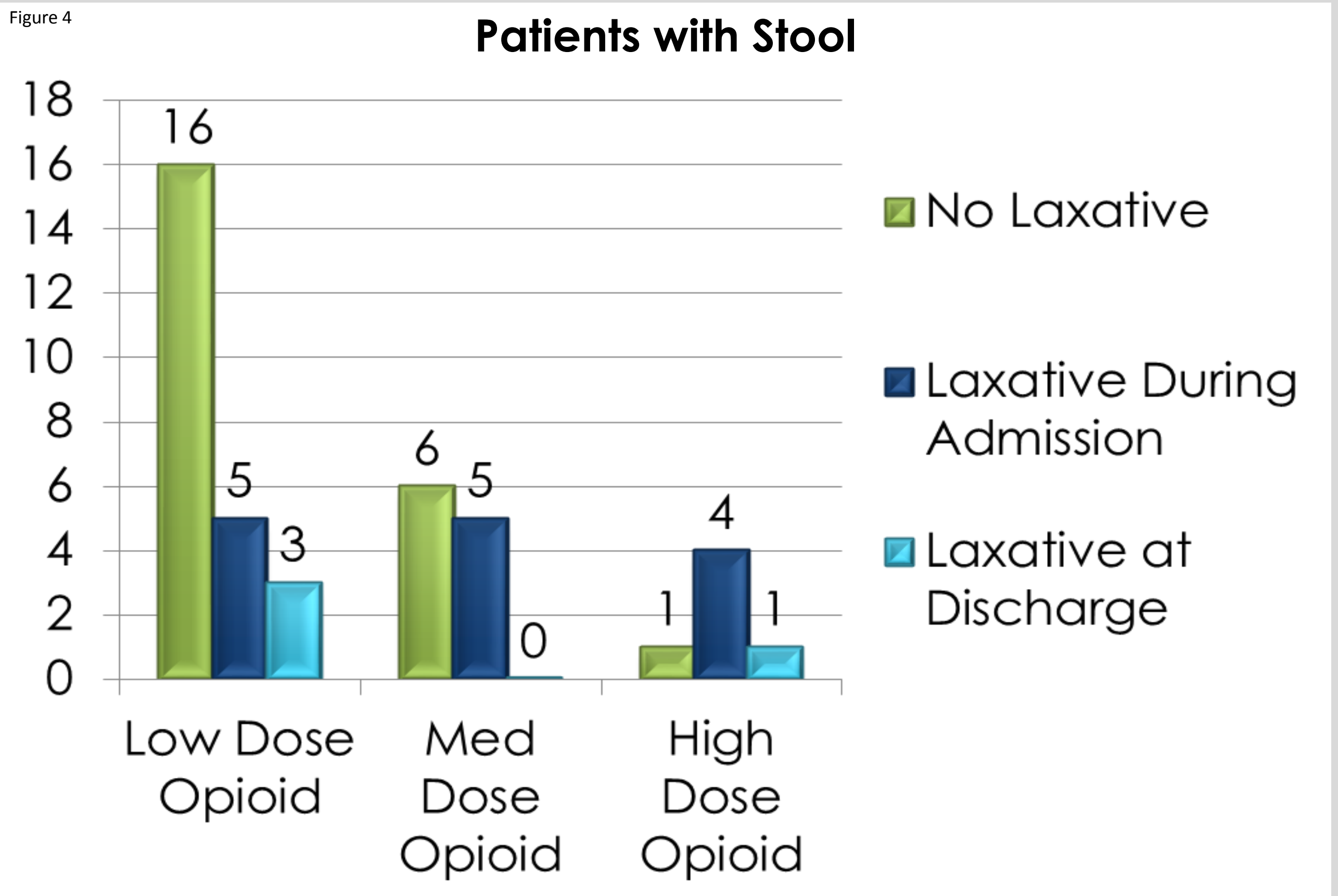


Table 2	Total IV Morphine Equivalents Received	Number of Patients	Laxative Stool	No Laxative Stool	No Laxative No Stool	Difference p-value
	0.05-0.66 mg/kg (Low Dose)	29	8	0	16	0.28
	0.67-1.36 mg/kg (Med Dose)	13	5	0	6	0.49
	>1.37 mg/kg (High Dose)	8	5	1	1	0.46

Table 3	Total IV Morphine Equivalents Received	Number of Patients	Medical Laxative (%)	No Laxative	Surgical Laxative (%)	No Laxative	Difference p-value
	0.05-0.66 mg/kg (Low Dose)	29	1 (14%)	6	7 (32%)	15	0.63
	0.67-1.36 mg/kg (Med Dose)	13	2 (50%)	2	4 (44%)	5	1
	>1.37 mg/kg (High Dose)	8	1 (33%)	2	4 (80%)	1	0.46



Key:

- Figure 1: Patient Selection Diagram
- Table 1: Baseline Characteristics
- Figure 2: Breakdown of stooling patterns based on intervention
- Figure 3: Most commonly prescribed bowel agents
- Table 2: Comparison of outcomes in patients who received laxatives and those who did not
- Table 3: Comparison of medical and surgical laxative prescribing and outcomes
- Figure 4: Assessment of time to laxative order in those who stoolled

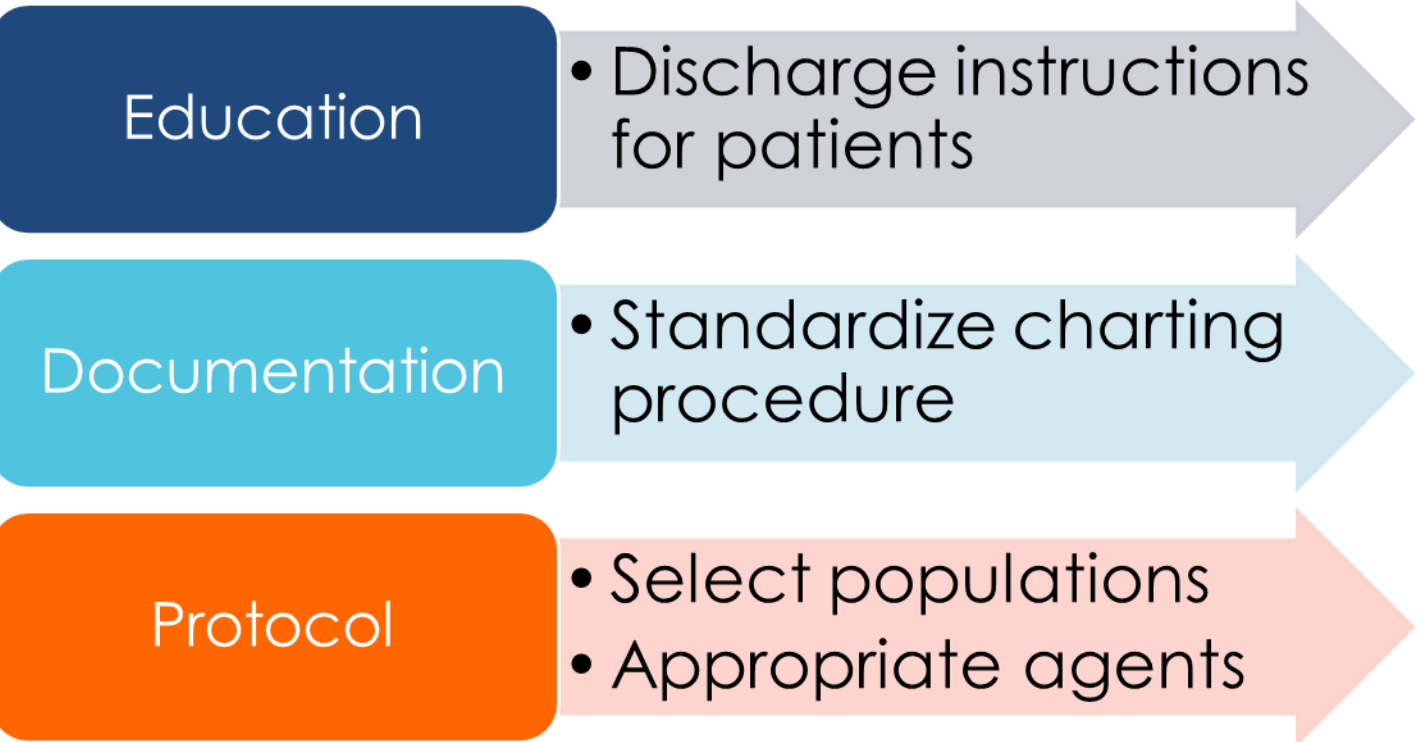
Discussion

Limitations

- Small population
- Retrospective design- There was no outpatient follow-up in this study. Some patients received prescriptions to continue oral opioids at discharge, but there was no way of assessing bowel function once they left the hospital.
- Length of stay- The average length of stay for the study was five days. However, many patients were only admitted for two or three days. Full effect of opioids on bowel function may not have been seen in this time frame.
- Opioid doses- Patients were included if they received at least one dose of opioid pain medication. This may not have been enough to cause an alteration in bowel function.
- Documentation- There were several places within patient charts where nurses documented bowel movements. Also, enemas are currently not recorded like other medications within the CoxHealth system. Administration of enemas to facilitate bowel movements could not be assessed.

Conclusion

- No statistical difference between patients with laxative ordered and those without in terms of stooling before discharge.
- All laxatives ordered were dosed appropriately.
- No statistical difference between prescribing patterns of medical and surgical teams.
- Future Directions:



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Author Disclosures

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