Targeting Incomplete Bowel Preparations for Inpatient Colonoscopies

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Presentation PDF

DEFINE OPPORTUNITY

Background, Problem and Aim Statement

Background: The University of Alberta Hospital (UAH) is a well-established medical center in Alberta, and has two inpatient wards specific for Gastroenterology inpatients (5C3 and 5C4). Often, patients admitted require an urgent colonoscopy for diagnosis and treatment of a variety of gastrointestinal (GI) diseases. The bowel preparation for a colonoscopy involves drinking a laxative, most commonly 4L Colyte at the UAH, prior to the procedure, to clean out the colon. However, the poor quality of inpatient bowel preps compared to outpatient is an issue faced by many centres around the world and is well described in the literature. Factors including the poor taste, large volume of the prep and medical comorbidities are contributory to the issue (1). In turn, poor bowel preps result in less visibility during colonoscopy and thus, poorer health outcomes, repeat procedures, higher health care costs, and diminished patient experience (1).

Problem Statement: The number of incomplete or poor bowel preps for inpatients on wards 5C3 and 5C4 at the UAH is a concern. Incomplete bowel preparation may delay treatment decisions, negatively impact colonoscopy schedule, decrease pathology detection, increase length of stay, increase repeat procedures, increase cost, and decrease patient experience.

Baseline data:

- Records from the endoscopy unit show that, from April 2017 to January 2018, 26/439 = 6% colonoscopies were incomplete due to poor inpatient bowel preps.
- However, because it is common for GI physicians to push through a poor prep (i.e. finish the colonoscopy procedure despite poor visualization) rather than abandon it, it is thought that the true rate of poor inpatient bowel preparations is higher than 6%. This was supported by a qualitative physician survey (see "Build Understanding").

Aim Statement: By September 2018:

Process Measures:

- 80% of the bowel prep orders use the standardized order label (reduce physician/resident bowel prep order variability)
- 100% of appropriate patients are provided standard bowel prep education at bedside
- 60% of residents and 85% of registered nurses attend bowel prep education in-service

Outcome Measures:

- 30% reduction in the number of poor preparation or incomplete colonoscopies on Unit 5C3 and 5C4

BUILD UNDERSTANDING

Process Assessment: To understand the current process, a brief literature review, a Gemba walk, chart audit, surveys, and various quality improvement tools were completed to identify improvement opportunities.

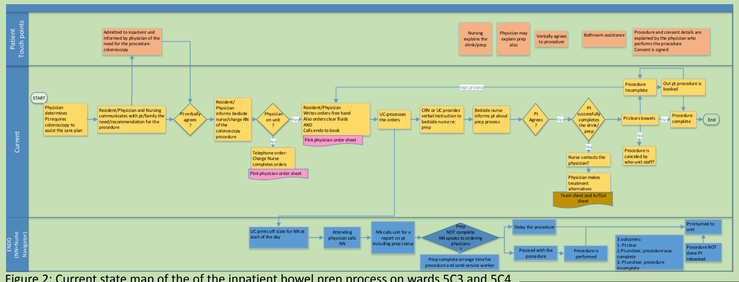


Figure 2: Current state map of the of the inpatient bowel prep process on wards 5C3 and 5C4

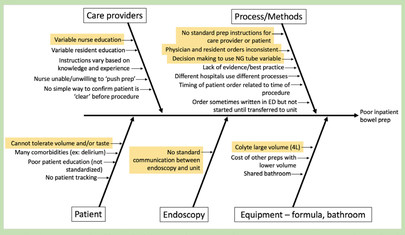


Figure 3: Cause and effect fishbone diagram demonstrating issues identified in the bowel prep process by the project team. Key issues are highlighted yellow.

Chart audit performed (Nov, 2 2017-Feb. 3, 2018) 127 charts: 35% of colonoscopies mentioned poor prep during the procedure, 23% did not comment on prep and 10% were repeated

Issues found:

- No standard order; order variable and difficult to read
- No standard patient and care provider teaching and tracking tool
- Frequent encouragement/re-educating patients
- Not always enough time between order and colonoscopy to finish prep
- Communication disconnects between the unit and endoscopy in ensuring patient is clear and rescheduling his/her colonoscopy
- Even if the prep is poor, physician will often push through the procedure

Resident Survey (Internal Medicine R1-R3 on GI rotation; n=20):

- 45% used a split 2L PO QHS, 2L PO QAM prep while 55% used a 4L PO QHS prep
- 25% received 5-10 pages/calls from the ward regarding complicated or incomplete prep, or misunderstandings regarding prep
- 80% spent less than 10 min to consent/educate patients on colonoscopy
- 85% thought that a standardized bowel prep order sticker would be helpful

Qualitative GI Physician Survey (n=19/27=70%):

- When asked to estimate the number of poor bowel preps from the last 50 inpatient colonoscopies performed, GI physicians stated up to 80% were poorly prepped (median = 20%)
- 84% of surveyed physicians stated that they pushed through at least 50% of these poor preps

MANAGE CHANGE

Collaboration & Communication Strategies:

- Project team included the unit manager (UM) of the endoscopy unit, UMs of 5C3 and 5C4, an Internal Medicine resident (R2), a GI physician, a medical student and a quality consultant
- UMs championed and supported the interventions through direct ward communication at morning meetings, verbal staff reminders, posting job aides on the ward, and socializing the importance of this project (see figure 4)
- The project team physician and resident facilitated teaching internal medicine residents about the interventions at the beginning of their GI training blocks
- Further insight to the inpatient bowel prep process was collected via surveys, from the patient, nursing, resident, and physician perspectives (see figure 5)

Figure 4: Staff from units 5C3/4 gathered for QI intervention education and to enjoy a homemade Bristol Stool Chart cake

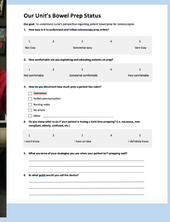


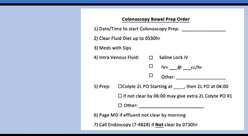
Figure 5: Survey used to collect nursing insight to opportunities for change in the bowel prep process

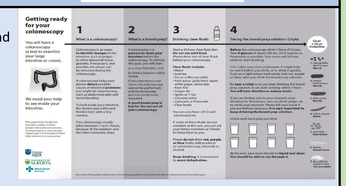
ACT TO IMPROVE

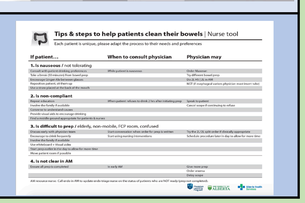
Improvement Selection and Implementation Plan (May 14-Aug 31, 2018)

Table 1: Gaps identified contributing to poor inpatient bowel prep and interventions implemented to bridge these gaps

Gap	Intervention Implemented
Order variability Timing of order - Requires 12 hours to complete prep - Critical so that patients are not hungry and do not get weakened by the clear fluid diet Patient goes for colonoscopy even if bowels not clear	Standard bowel prep order label - Label placed on the physician order sheet - Ensures clear fluid diet - Ensures timing of prep and when to call endoscopy if not clear
Nursing instruction to patients variable Patient doesn't understand prep process and the need for bowels to be clear No way for patient or nursing to track how much prep patient has taken	Patient/Family education job aide (placemat) - Facilitates standardized education conversation between nurse and patient/family - Provides information on the colonoscopy procedure, bowel prep, and meaning of a successful bowel prep - Contains a self-tracking section
Patient cannot tolerate prep (volume, taste, medical condition) Nursing unsure what to do when patient cannot consume drink	Nursing guide (tip sheet) - Provides strategies for nursing to consider when patients are having difficulty taking the prep







PDSA Results

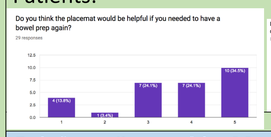
Process Measures:

- 69% of the bowel prep orders used the standardized order label – note that a few of these order labels were modified by the ordering resident/physician
- 80% of patients were provided standard bowel prep education and placemat at bedside
- 100% of residents and registered nurses attended bowel prep education in-service

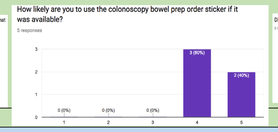
Outcome Measure:

- Of 44 colonoscopies audited, 25% were not clear at time of colonoscopy, and 11% had no comment on prep
- 22% reduction in the number of incomplete or poorly prep colonoscopies on Unit 5C3 and 5C4
- **Impact**

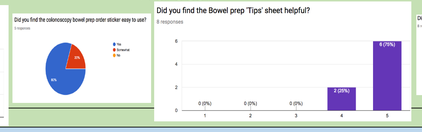
Patients:



Residents:



Nurses:



SUSTAIN RESULTS

Reinforce Ownership, Measurement, & Continuous Improvement:

In order to sustain and spread the efforts to reduce the number of incomplete inpatient bowel preps, we plan to:

1. Hold quarterly meetings and continue auditing on test units (5C3/5C4) to ensure change interventions have sustained
2. Upload the created materials to the EMR, Connect Care
3. Share the improved bowel prep process with other units. Further spread will be done by unit/program quality councils and at the Edmonton Zone Medicine Quality Council - Strategic Clinical Improvement Committee.

It is anticipated that the reduction of incomplete inpatient bowel preps will be even more pronounced when adopted by other units because the test unit (GI unit), was the most familiar with the bowel prep process at baseline

SHARE LEARNING

Lessons Learned:

- Process change requires thorough communication, inclusion of all key stakeholders, and frontline QI champions to initiate and pave the way for sustainable change
- Tracking poor preparations in Endoscopy unit on the procedure sheet will be essential moving forward for Divisional Director and Operation reports to ensure accurate numbers
- The GI units know the bowel prep process, which impacts baseline, process and outcome data
- Standardized order for inpatient bowel prep was requested in the ED after PDSA, demonstrating unintentional spread and potential for widespread adoption.
- Learnt barriers of lack of use of the label, including lack of access of the sticker in ED and with written orders being it easier to write it out then find a label. With the adaptation of Connect Care, we predict that the use of standardized orders will be easier to implement.
- The educational tools created were easy to use and were well received from Patients and the nursing staff. Using the tools on units not familiar with the bowel prep process will be beneficial

Why this QI matters

To Patients
Improving patient education, involvement, support and outcomes

To Albertans
Increasing integrated care

To the healthcare system
Improving outcomes and reducing healthcare costs

1. Hendry PO, Jenkins JT, Diament RH. The impact of poor bowel preparation on colonoscopy: a prospective single centre study of 10 571 colonoscopies. Colorectal Disease. 2007; 9(8):745-748

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