Supplementary Material

Supplementary Table S1 Bowel Status Chart Audit *EXCERPT*

Patient Initials:	
Age:	
Date admitted:	

Stool Quality								
Quality Start: Yesterday	Date 1 – _____	Date 2 _____	Date 3 _____	Date 4 _____	Date 5 _____	Date 6 _____	Date 7 _____	Total Score
1	Loose/ Hard	Loose/ Hard	Loose/ Hard	Loose/ Hard	Loose/ Hard	Loose/ Hard	Loose/ Hard	
2	Pasty	Pasty	Pasty	Pasty	Pasty	Pasty	Pasty	
3	Soft	Soft	Soft	Soft	Soft	Soft	Soft	
4	Semi-formed	Semi-formed	Semi-formed	Semi-formed	Semi-formed	Semi-formed	Semi-formed	
5	Formed	Formed	Formed	Formed	Formed	Formed	Formed	
								Average Quality Score
Size:	Small Medium Large	Small Medium Large	Small Medium Large	Small Medium Large	Small Medium Large	Small Medium Large	Small Medium Large	Average Frequency Score-as detailed below
Frequency Tally								Wk Freq/Score

Wk Freq	Score
0	1
1	2
2	3
3	4
4	5
5	5
6	5
7	4
8	3
9	2
10	1

For each patient in the study, we noted weekly quality and frequency scores. The Quality was an average (each day a possible score 1-5) and week translated per the table above.

Supplementary Table S2

Bowel Algorithm

Brain Injury patients ONLY, as per orders

AIM:	• To have all patients, including those with cognitive deficits, achieve **normal bowel function**, including absence of constipation, impaction, diarrhea, discomfort, and straining. • To be able to identify bowel dysfunction in early **stages** and respond with **timely interventions**.
DEFINITIONS (for protocol purposes):	
Normal bowel function	• Maintenance of usual sufficient bowel habits; including easy passage of stool (normally soft), and as frequently as is usual or baseline for the individual. In the absence of information about the patient's normal frequency, **AIM** for ***at least three bowel movements per week***.
Diarrhea	• **Liquid stool > 300ml per day OR 3 loose stools** per day is considered clinically significant.
Constipation	• The **absence of bowel movements for three consecutive days**. It also includes straining, difficulty passing stool or not having a feeling of incomplete evacuation of stools which may be difficult to ascertain in TBI patients. **If the patient has not had a bowel movement (BM) in the last 3 days, action should be taken.**
Rectal Exam	• An exam in which the Physician or Licensed Nurse will insert a gloved finger no more than 2 inches into rectum (this is an assessment and no stimulation should be performed). Feel for anything abnormal (mass of stool or impacted feces).

Assessment of Bowel Function
(To be completed by Licensed Nurse at least once every 12 hrs)

- **Inspection of the abdomen for any signs of *distension***
- **Auscultation of abdomen for presence of *bowel sounds***
- **Palpation of abdomen for *tenderness***
- **Documentation of *gastric aspirates if PEG tube present***
- **If 2 consecutive tube feedings have been held due to high residual, call physician.**

Laxative order and/or slowed feeding rate is expected intervention, pending an order.

(To be completed by Licensed Nurse or PCA)

- **Documentation of *flatus, bowel movement* (quantity and consistency)**

- **Update plan for bowel management in Bedside report/ hand-off each shift and as needed**
- **Record bowel movement & Rectal Exam results in IView**
- **If Diarrhea/Constipation/ Impaction occurs, refer to the appropriate algorithm**

Supplementary Figure 1: Constipation Algorithm
Prophylactic Management

(DAY OF ADMISSION)

- **Perform *bowel assessment*** (inspection-auscultation-palpation-percussion).
- Assess hydration status (skin turgor, I&O, mucous membranes)
- Ask patient or family members:
  - When was last BM?
  - Quality?
  - What was normal bowel pattern for the patient?
  - Does the patient experience nausea and/or vomiting?
  - Ask about prescribed pain medication usage.
- **Assess bowel history** from family and other facility's report and records
- Confirm whether the physician ordered a KUB exam on admit.
- Document the findings of your assessment and refer to the appropriate algorithm.
- **For all Brain Injury Program patients with an algorithm order, proceed to the steps below.**

DAY 1

- Review medication orders, **Colace- BID, Senna x 2 tablets** at **noon** has been prescribed
- Confirm **Dietary consult** has been ordered

DAY 2

- **Continue** prescribed bowel regimen (**bowel assessment, treatment, I&O**)

DAY 3

- **Continue** prescribed bowel regimen (**bowel assessment, treatment, I&O**)

IF NO BM

- Physician or Licensed Nurse to perform ***RECTAL EXAM**, *if not contraindicated*. If Rectal exam is contraindication, request **KUB** *See **Rectal Exam Algorithm**.

After ***Positive result*** (Bowel movement), resume **Day 1** routine of bowel medications.

Request scheduled Dulcolax Suppository if intervention beyond prophylactic program was needed.

Supplementary Figure 2: Rectal Exam

Rectal Exam <u>contraindicated</u>?
- **SBP >180mmHg**
- **Cranial Surgery within 48 hrs**

NO

- **<u>Licensed nurse</u>** to perform **Digital Rectal Exam** (non-stim, just assessing for presence of stool in rectal vault).
- See **Constipation algorithm** or if no **BM for ≥ 3 days**

YES

- **<u>Licensed nurse</u>** request physical order for **KUB** exam.
- Investigate to confirm/exclude impaction

Rectum Empty

- Continue with prescribed bowel medications
- **Add MOM x 1**

- **<u>Reassess daily</u>**
- **See Constipation Algorithm**

If rectum is empty for **≥ 1 more day**, inform Physician.

Rectum Full

1 Enemeez
(lubricate tip with KY Jelly)

Wait 30 minutes

No result:
Give 1 **Fleets Enema**

Wait 15 minutes

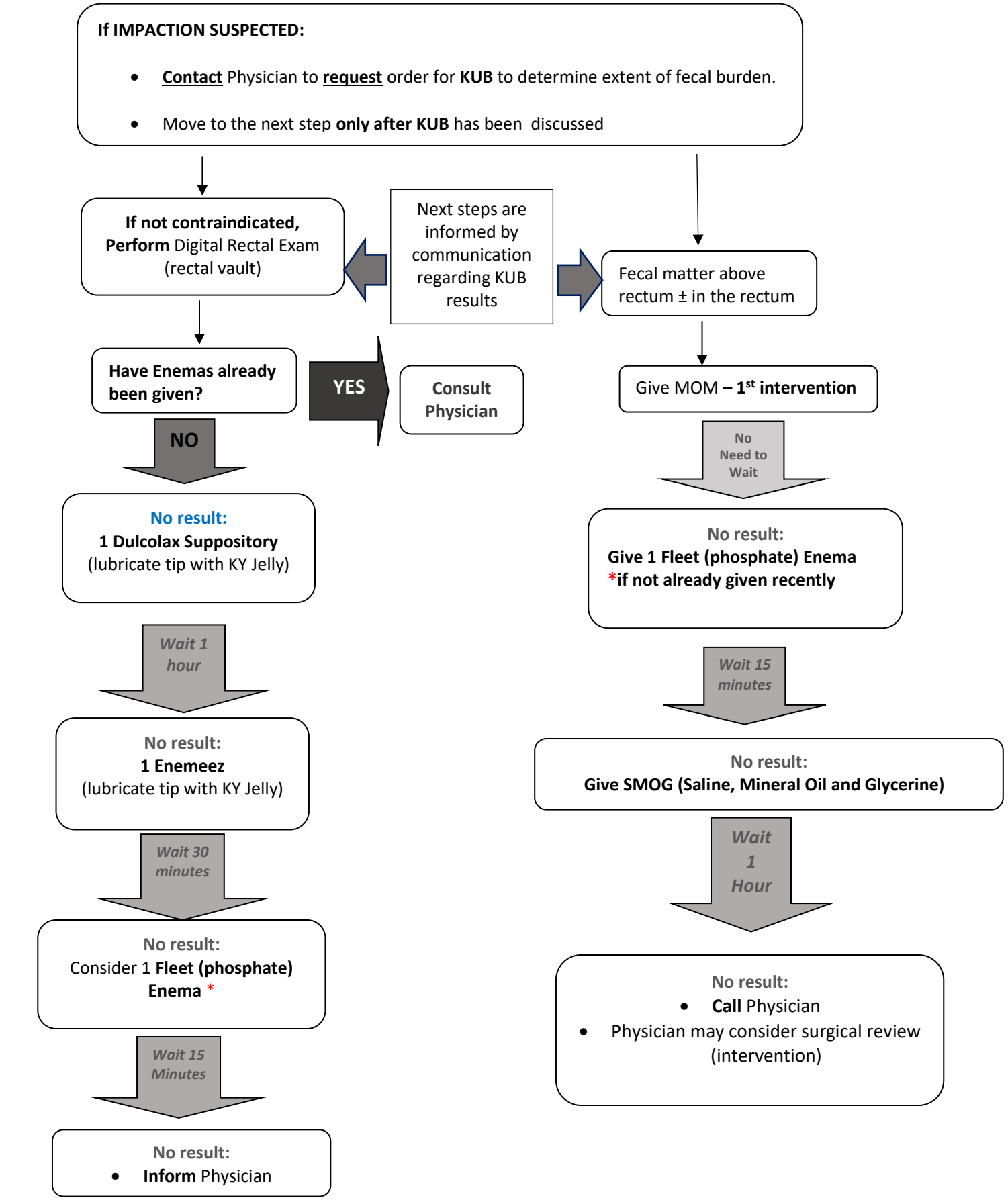
No result:
- Inform Physician
- Consider further investigations. See **Impaction Algorithm**

<u>Notes</u>

- For rectal exam, **do not** insert finger more than **<u>2 inches</u>** into the rectum and **do not stimulate.**
- Medications should be given after **"6pm and before 9pm."**
- **Make sure to document BM after medications given.**

CAUTION: DO NOT USE *<u>Repeated</u>* or *<u>Frequent</u>* <u>Fleet enemas</u> (i.e. Sodium phosphate preparations)
- These agents cause large fluid and electrolyte shifts, particularly of sodium, potassium, calcium and phosphate
  - Concern for dialysis patients. Arrhythmias, collapse, and fatalities have occurred

Supplementary Figure 3: Impaction Algorithm



***CAUTION: DO NOT USE *Repeated* or *Frequent* Fleet enemas (i.e. Sodium phosphate preparations)**

- These agents cause large fluid and electrolyte shifts, particularly of sodium, potassium, calcium and phosphate
- Concern for dialysis patients. Arrhythmias, collapse, and fatalities have occurred

Supplementary Figure 4: Diarrhea