ENTERAL NUTRITION (EN) IN SURGICAL INTENSIVE CARE UNIT (SICU) AFTER IMPLEMENTATION OF PERI-PROCEDURAL FASTING PROTOCOL

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Introduction

- Malnutrition is a risk factor for increased morbidity and mortality.
- In the SICU, ***less than half*** of patients reach their targeted goal energy intake.
- Delivery of EN to ICU patients is interrupted for diagnostic and therapeutic procedures.

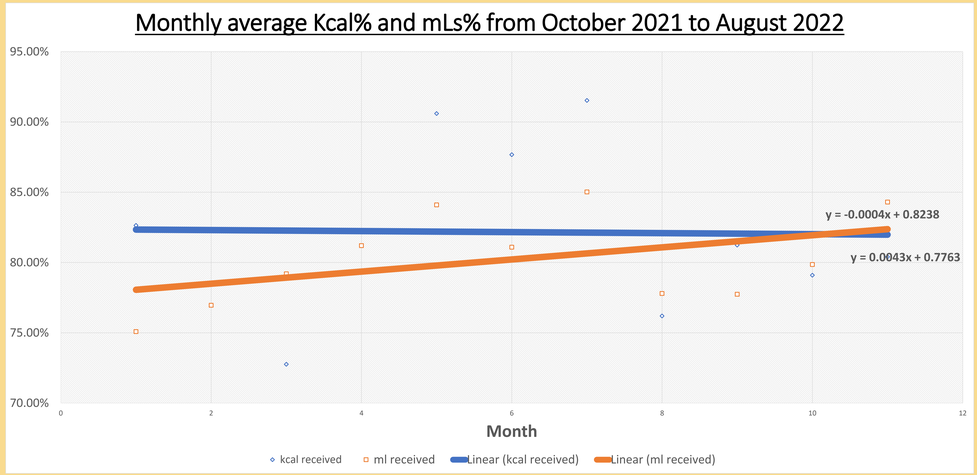
Hypothesis

- Standardizing a peri-procedural fasting protocol in the SICU will mitigate interruptions in hourly feeding goals

Objectives

- **Primary:**
  - Implement a peri-procedural fasting protocol to improve daily caloric intake.
- **Secondary:**
  - Daily caloric intake on procedural day
  - Number of patients with hold tube feeding orders placed
  - Number of patients with NPO at midnight orders placed only
  - Number of patients with neither NPO nor hold tube feeding orders placed

Results



Results

Post-protocol First Month vs Last Month

	First Month	Last Month	p-value
%Kcals	82.64±24.64	80.4±21.95	0.8162
%mls	75.09±17.73	84.27±10.56	0.1528

Adherence to protocol (%)	Inappropriate NPO order placed (%)
69±22	20.4±14.9

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Methods

- SICU patients on enteral nutrition
  - Oct 2021 - Aug 2022
  - Sample size: 139 patients
- Retrospective review of Electronic Health Record (EHR)
- Implementation of peri-procedural fasting protocol by the bedside provider.
- Daily caloric intake (%Kcal received of daily goal)
- Data from 1st month compared to data from the 11th month using a 2-sided 2 sample t test.

Enteral Nutrition Surgical Intensive Care Unit Peri-Procedural Protocol		Hold EN Time
Unprotected Airway	Patients with uncuffed tracheostomy tubes or non-ventilated ICU patients: • For all procedures involving general anesthesia, sedation with monitored anesthesia care, regional blocks or epidural analgesia, stop enteral nutrition 6 hours prior to planned procedure. • Resume enteral nutrition upon completion of procedure unless otherwise directed by surgeon.	6 hours
Protected Airway	Patients with a cuffed endotracheal or tracheostomy tube in place: • Stop enteral nutrition 2 hours prior to planned anesthesia if gastric access. • Resume enteral nutrition upon completion of procedure unless otherwise directed by surgeon. • Enteral nutrition can continue without interruption if the patient has direct small bowel access and the planned procedure does not specifically involve the GI tract.	2 hours (if gastric access)
Special Situations	Open tracheostomy or cases requiring prone positioning: • Stop enteral nutrition 6 hours prior to planned anesthesia. • Resume enteral nutrition upon completion of procedure unless otherwise directed.	6 hours
ICU Procedures	Elective bedside ICU procedures: (with surgeon-administered moderate or deep conscious sedation) • Stop enteral nutrition 2 hours prior to planned anesthesia. • Resume enteral nutrition upon completion of procedure unless otherwise directed.	2 hours
Insulin Therapy	To prevent complications of hypoglycemia, consider holding intensive insulin therapy when enteral nutrition is held for operative procedures. Frequent point-of-care glucose testing may be required in the operating suit for poorly controlled patients. Communication between the Surgical Critical Care team and anesthesia is vital.	

Conclusion

- Implementation of a peri-procedural fasting protocol improves overall volume of enteral nutrition intake
- Additional improvement may have been hindered by inappropriate NPO orders included in standard order-sets created by the EHR.
- Future study is warranted to address barriers created by the EHR standard order-sets.