Implementation of a Clinical Pathway to Guide Pre-Operative Oral Hydration Among Surgical Patients

A. Jordan Filion, RD, Gerry Hubble, RN, Kelly Fedoruk, MD, Claude Laflamme, MD, Avery Nathens, MD, 
Ellie Lee, BA, Dan Napier, BSc, Sharon Gordon, RN, Wendy Di Trani, RN, Catherine Convery, MHA, & Katelynn Maniatis, RD
Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

Introduction & Background

• Although the literature strongly supports oral consumption of clear fluids up until 2 hours pre-operatively, surgical inpatients are routinely ordered to fast from midnight on the day of anticipated surgery until after returning from the operating room (OR).
• Patients booked as less urgent cases (i.e., C cases) are particularly vulnerable to fasting for prolonged periods.
• Chart reviews from 20 neurosurgery, orthopedic surgery and trauma patients who went to the OR as a C case in 2018 showed that patients, on average, spent 69% of their pre-operative time on the unit fasting (NPO).
• A pre-operative hydration pathway (PHP) and corresponding medical directive were created to standardize pre-operative hydration practices and improve patient comfort.

Objectives

• Aim: Implement a clinical pathway and corresponding medical directive to reduce pre-operative fasting time among C case neurosurgery, orthopedic surgery and trauma patients admitted to two inpatient units at Sunnybrook.
• Measurable Goals:
  1. Have 80% of patients on the PHP consume clear fluids within 4 hours pre-operatively
  2. Reduce median pre-operative NPO time by 20%

Innovation

Operating Room Huddles

• Held throughout the day to review the OR schedule and decide which patients can receive clear fluids

Hydration Icons

• A green or red icon is entered in the electronic OR tracking system for each C case, based on the hydration decision made at the huddle

Medical Directive: PHP

• Allows nurses to implement the PHP and act on icon information in the electronic OR tracking system

Outcome Measures

• As shown in Figure 1, median hours elapsed between last drink and surgery decreased from 13.6 hours at baseline to 4.8 hours 4 weeks post-implementation & 4.9 hours 16 weeks post-implementation.
• As shown in Figure 2, median pre-operative time spent NPO on the two piloting units was 60 hours.
  • For the 20 baseline cases, the median percentage of pre-operative time patients spent NPO was 79%.
  • 4 weeks post-implementation, the median percentage of pre-operative time patients spent NPO decreased to 40%.
  • This later increased to 53% at 16 weeks post-implementation.
• At baseline, 5% of patients were consuming clear fluids within 4 hours pre-operatively.
  • This figure increased to 35% at 4 weeks post-implementation & 36% at 16 weeks post-implementation.

Process Measures

• At 4 weeks post-implementation, 35 patients (80% of eligible patients) had been initiated on the PHP.
  • 17 of these patients (49%) remained on the PHP up until time of surgery.
  • 18 of these patients (51%) were discontinued from the PHP prior to surgery due to being upgraded to a more urgent case or removed from the operating list.
• At 16 weeks post-implementation, 42 patients had been initiated on the PHP and remained on it until time of surgery.

Balancing Measures

As of 16 weeks post-implementation, there have been:

• 0 reported aspiration events among patients who were initiated on the PHP.
• 0 surgery cancellations among patients who were initiated on the PHP.

Project Impact & Plan for Sustainability

• A diverse group of over 20 stakeholders representing surgery, anesthesia, nursing, clinical nutrition, quality & patient safety, and information technology was formed to guide the project.
• Although we did not meet our target for oral hydration within 4 hours of surgery, PHP implementation was associated with a 30% increase in the number of patients consuming oral hydration within 4 hours pre-operatively, and an 8.8 hour decrease in median hours elapsed between last drink & surgery after 4 weeks. Both effects were sustained after 16 weeks.
• Patient care managers, advanced practice nurses and team leaders of the two piloting units will continue to monitor implementation of the PHP and support staff education.

Next Steps

• Now that sustainability of this initiative has been achieved on the two piloting units, the team is working on spreading this initiative to other patient care units within Sunnybrook:
  • Burn Centre
  • Orthopedic, Neurosurgery & Trauma Intensive Care Unit
  • Women & Babies Program

References


Acknowledgements

• Sunnybrook Practice Based Research and Innovation
• Sunnybrook Department of Quality & Patient Safety
• Dr. Barbara Haas, Dr. Richard Jenkinson, Dr. Todd Mainprize, Malu Sadeghi, Darrel Sparkes, Michelle Wong, Aaron Wataanumik, Garie Hart, Mirzadia Lamb, Wendy Chomski, Carlota Ramos, Villy Todosev, and C5, D5 & OR staff
• TAHSNp & CQuIPS facilitators & colleagues

For more information on this project, contact Jordan Filion at jordan.filion@sunnybrook.ca or visit https://sunnybrook.ca/media/item.asp?f=1877

Poster Track: Person-Centred Care