Enhanced Recovery after Colorectal Surgery at York Hospital

York Teaching Hospital NHS Foundation Trust

Matthew Farrant, Foundation Trainee, & James Walkington, Consultant Anaesthetist YGH

Perioperative Medicine Service – York Teaching Hospital

Introduction

Enhanced recovery after surgery (ERAS) is a multimodal, multidisciplinary approach involving surgeons, anaesthetists, specialist nurses and a coordinator spearheading the programme providing protocolised, evidence-based care. This has led to improvements in post-surgical complications, reduced hospital stays and opened up the potential for cost savings following PQUIP's top 5 improvement opportunities. Initiation of the pathway starts prior to surgery with well-informed patients, comprehensive blood tests and CPET (cardiopulmonary exercise testing) for those patients over 55.

We report on the impact of ERAS at York hospital in patients undergoing lower gastrointestinal surgery, the implications throughout their surgical journey and the impacts as a result from January 2018 to February 2019.

Aims & Objectives

To assess the impacts of ERAS in colorectal patients 13 months after initiating PQIP's 5 improvement opportunities.

To evaluate the impacts of ERAS on patient outcome starting with Day 1 post-op using DrEaMing (drinking/eating/mobilising).

To look for further improvements that can help further our development of high-quality enhanced recovery for future colorectal patients

PQIP Perioperative Quality Improvement Programme

Pre-operative

Comprehensive pre-assessment by nurse and anaesthetist to cover pre-op incentive spirometry testing, encourage prior carbohydrate loading and CPET testing. Frailty, cognitive and post-operative pulmonary complication scoring systems are employed.

Pre-operative considerations:

- Anaemia if <13g/dl

Associated with higher mortality in non-cardiac surgery, morbidity and length of stay. Anaemic patients are quickly identified and given IV iron to mitigate associated risks.

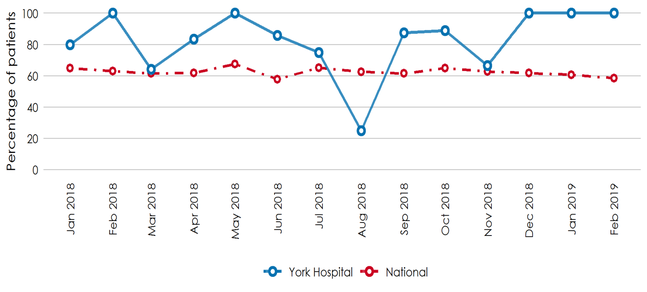
- HbA1c

Should be measured prior to surgery. If 8.5mmol/L then ideally surgery should be postponed, or if urgent, a diabetic nurse specialist will review and optimise diabetic medication.

- Patients should be risk assessed.

SORT (surgical outcome risk tool) a product of the 2011 NCEPOD report Knowing the Risk[1] gives a validated indication of mortality at 30 days post-op and guides level of care for recovery – nurse enhanced unit through to intensive care.

Figure 1: Patients enrolled on an ERAS pathway by month of surgery



Intra-operative

For the intraoperative and immediate recovery, numerous factors underpin good practice in enhancing patient recovery.

- Antibiotic prophylaxis

NICE recommendations suggest all patients should receive prophylaxis 60 minutes prior to knife-to-skin. Of the cohort of patients at York, 100% received antibiotic prophylaxis in a timely manner.

- Temperature management

Anaesthetists are given temperature data from the patient on arrival to theatre and those identified as hypothermic (<36˚) prior can be pre-warmed for theatre. Intra-operatively temperature can be managed through standardised warming devices and fluid warmers with 66% patients classed as euthermic on arrival to PACU (post-anaesthetic care unit).

Figure 2: APGAR scoring[2] of risk during surgery used at York intra-operatively. Scores less than 4, pre-empt anaesthetists to upgrade level of care irrespective of CPET risk scoring.

	0	1	2	3	4
Estimated blood loss (ml)	>1000	601-1000	101-600	<100	
Lowest MAP	<40	40-54	55-69	>70	
Lowest HR	>85	76-85	66-75	56-65	<55

Post-operative

All patients in their post-op period are provided with goal-directed therapy to aid recovery with extra considerations/observations of those patients identified as higher risk for specific complications. A significant aspect of this is DrEaMing at Day 1 post-op with 92% of patients drinking free-fluids.

Key Goals by Day at York Hospital

- Day 1

Maintain haemodynamic stability and satisfactory pain control.
Oral intake of nourishing fluids and light diet with mobilisation around the bedside.

- Day 2

Continuation of the above with increasing independent mobilisation.

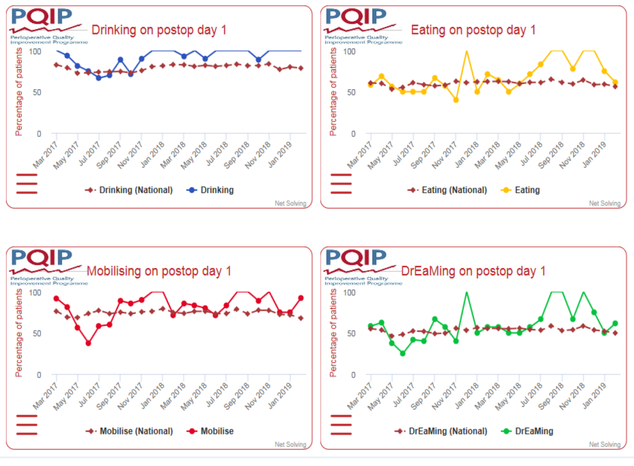
- Day 3

Transition from epidural to alternative analgesia.
Oral intake increasing and mobilising for longer, fully independent.

- Day 4 / 5

Comfortable on oral analgesics and mobilising at pre-operative levels.
Adequate oral intake to meet nutritional requirements.
Wound healing with no evidence of infection and bowels fully functioning.
Physically, psychologically and socially fit for discharge

Figure 3: Percentage of patients DrEaMing at Day 1 post-op in comparison to the national average.



Conclusions

- A total of 87% of the 109 patients assessed underwent the ERAS programme, and over time this is becoming the norm for all colorectal patients.
- Many patients get pre-carbohydrate loading at 86% prior to surgery and peri-operatively 95% of hypothermic patients received warming devices to improve temperature management.
- Improvements for ERAS include earlier identification and treatment of anaemia, 100% of hypothermic patients to be warmed, and for wider promotion of DrEaMing at Day 1 post-op.

RCoA Royal College of Anaesthetists

Acknowledgements and References

This study received ethics committee approval through PQIP.

1. Protopapa, K.L. et al., (2014) Development and validation of the Surgical Outcome Risk Tool (SORT). BJS. V101, (13), pp1774-1783
2. Gawande, A.A., et al., (2007) An APGAR score for surgery. Journal of the American College of Surgeons. V:204, (2), p201-208