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# Use of surgical pathways to improve patient recovery following surgery on the stomach /intestines

**Submission date**
18/05/2022

**Recruitment status**
No longer recruiting

**Registration date**
16/06/2022

**Overall study status**
Completed

**Last Edited**
29/09/2026

**Condition category**
Surgery

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

## Plain English summary of protocol

Background and study aims
Enhanced Recovery After Surgery (ERAS) is a program designed to reduce dysfunction after surgery and enable the recovery of the patient as soon as possible. Patients are eligible for inclusion in this study if they are undergoing major colorectal surgery, which traditionally includes a prolonged rehabilitation period after surgery. The aim of this study is to establish an ERAS protocol for patients undergoing colorectal surgery based on previously standardized evidence-based enhanced recovery programs (ERPs). The objective is to monitor the impact of ERAS protocol on death rates, length of stay and complications after surgery. It is expected that the implementation of an ERAS protocol will reduce the cost of colorectal surgery, improve quality of life, reduce patient length of stay and improve patient outcomes.

Who can participate?
Patients undergoing major colorectal surgery

What does the study involve?
Participants will be asked to follow a care pathway for colorectal surgery. The pathway from pre-surgery to recovery is specifically designed to help patients heal more quickly, eat and move sooner, and optimally control pain. Studies show that this program helps patients feel better and recover more quickly. Participants are asked to follow the guidelines described within the ERAS handbook. This includes stopping smoking 4 weeks before surgery, eating optimally, getting some exercise, early return to diet after surgery, and getting out of bed and moving (with help) as soon as possible after surgery.
The Surgery care team in Huntsville (Huntsville District Memorial Hospital site of Muskoka Algonquin Healthcare) will review the Enhanced Recovery steps with participants before their surgery, during their hospital stay, and before they go home. The main steps involved in this care pathway are pre-admission counselling, fluid and carbohydrate loading and early mobilization. Participants will answer a questionnaire which will include questions regarding patient outcomes and complications after surgery. Data will be collected for 15-30 days after the surgery. Participating in this study involves providing feedback and allowing data to be included in the study. Names and any personally identifying information will not be included with the study

data. For research purposes, participants will be assigned a random identification. When publishing the results of this study participants name and information will be grouped with other participants to ensure identification is not possible.

What are the possible benefits and risks of participating?
The only risk involved in participating in this study would be inadvertent sharing of data, but patient names will not be linked to study data so this risk is minimal. The benefit of participating is in showing other similar sized institutions that this program is effective and manageable in a small rural facility.

Where is the study run from?
Muskoka Algonquin Healthcare (Canada)

When is the study starting and how long is it expected to run for?
January 2015 to November 2017

Who is funding the study?
Northern Ontario Academic Medical Association (Canada)

Who is the main contact?
Dr Hector Roldan, hector.roldan@mahc.ca

# Contact information

### Type(s)
Principal investigator

### Contact name
Dr Hector Roldan

### Contact details
100 Frank Miller Drive
Huntsville
Canada
P1H1H7
+1 (0)705 380 0874
hectorroldan@cogeco.ca

### Type(s)
Scientific

### Contact name
Dr Lisa Allen

### ORCID ID
https://orcid.org/0000-0001-9191-5430

### Contact details
1331 Paquette St
Sudbury
Canada

P3A5R7
+1 (0)7056622901
lisa.allen@mahc.ca

# Additional identifiers

# Study information

### Scientific Title
Enhanced Recovery After Surgery reduced length of stay after colorectal surgery in a small rural hospital in Ontario

### Study objectives
To determine if Enhanced Recovery After Surgery (ERAS) procedures can be implemented in a small rural hospital having a positive effect on patient outcomes.

### Ethics approval required
Old ethics approval format

### Ethics approval(s)
Approved 10/04/2015, Laurentian University Research Ethics Board (935 Ramsey Lake Road, Sudbury, ON, Canada; +1 (0)705 675 1151; ethics@laurentian.ca), ref: 2015-02-02

### Primary study design
Observational

### Study design
Prospective observational single-centre study

### Study type(s)
Other

### Health condition(s) or problem(s) studied
Implementation of ERAS for colorectal surgery

### Interventions
ERAS preoperative procedures that focus on patient engagement and optimal preparation for their surgical procedure in four key areas; breathing (smoking cessation), movement (exercise), nutrition and expectations (clear surgery date). Intraoperatively the patient is maintained at the ideal anaesthesia depth, have active warming, and have goal-directed fluid therapy throughout the procedure, particularly for high-risk patients. They are risk-stratified for nausea and vomiting and are given pre-emptive medication accordingly. Postoperatively pain is managed with multi-modal therapy, minimizing opioid use – recognizing that narcotic use is a rate-limiting step in patients regaining bowel function, which directly influences length of stay and can result in further complications. Nasal gastric tubes, bladder catheters, drains and IV fluids are used sparingly and removed as soon as possible. Enteral feeding and early mobility are introduced as soon as feasible after surgery.

All eligible patients were included in this study as ERAS was implemented as standard of care.

### Intervention Type
Behavioural

### Primary outcome(s)
Length of stay for surgery (nights in hospital) collected from patient chart

### Key secondary outcome(s)
1. Total number of ileus compared to retrospective data: yes or no (present or not) based on surgeon assessment and notes up to 30 days post-operative
2. Total number of wound infections compared to retrospective data: yes or no noted in the patient chart by the nurse caring for the patient up to 30 days post-operative
3. Total number of dehiscence compared to retrospective data: yes/no noted in chart up to 30 days post-operative
4. Total number of deep vein thrombosis compared to retrospective data: yes/no noted in chart up to 30 days post-operative
5. Total number of patients with anastomotic leak compared to retrospective data: yes/no noted in chart up to 30 days post-operative
6. Total number of patients who develop pneumonia compared to retrospective data measured using patient charts up to 30 days post-operative
7. Total number of patients reporting/demonstrating nausea/vomiting compared to retrospective data noted in patient chart until discharge
8. Total number of patients experiencing urinary retention compared to retrospective data: yes /no noted in the patient chart until discharge
9. Total number of patients experiencing wound infection - yes/no noted in chart up to 30 days post-operative
10. Total number of patients experiencing readmission: yes/no noted in chart up to 30 days post-operative
11. Pain assessed using a visual analog scale at baseline (within 3 hours of surgery) and on each day in hospital am and pm until discharge

### Completion date
27/11/2017

## Eligibility

### Key inclusion criteria
All patients undergoing gastrointestinal surgery for cancer, fistula, lesion repair, diverticulitis, polyp repair, prolapse

### Participant type(s)
Patient

### Healthy volunteers allowed
No

### Age group
Adult

### Sex
All

**Total final enrolment**
47

**Key exclusion criteria**
Significant complications postoperatively as noted by the physician

**Date of first enrolment**
01/05/2015

**Date of final enrolment**
16/11/2017

# Locations

**Countries of recruitment**
Canada

**Study participating centre**
**Muskoka Algonquin Healthcare**
100 Frank Miller Drive
Huntsville
Canada
P1H1H7

# Sponsor information

**Organisation**
Muskoka Algonquin Healthcare

# Funder(s)

**Funder type**
Other

**Funder Name**
Northern Ontario Academic Medical Association

# Results and Publications

**Individual participant data (IPD) sharing plan**

Data is presently stored deidentified on our hospital hard drive in a file specific for this study. Permission to access that file is granted to Lisa Allen (Research Coordinator) and the principal investigator (Hector Roldan, hector.roldan@mahc.ca), who would be the contact for data sharing requests. The information stored in the research file includes research ID and outcomes noted in addition to the procedure they had completed. The researchers did not store other demographics or potentially identifying information. They would share data for those interested in assessing larger data sets and would need ethics approval and assurance that small data cells would be presented as grouped to prevent inadvertent reidentification. Patient consent for inclusion in the study and data access was collected from each participant. The ethics submission indicates that data will be stored in this matter indefinitely, or as long as it can be maintained. Participants are assigned a research ID when they sign their consent form. All data used for this study is then attributed to that research ID.

## IPD sharing plan summary

Available on request

## Study outputs

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Results article | | 01/10/2023 | 29/09/2026 | Yes | No |
| Preprint results | | 25/03/2022 | 31/05/2023 | No | No |