Thank you for agreeing to participate in the CAHO Implementation of an Enhanced Recovery after Surgery ARTIC Project. This project was developed by various members of the University of Toronto affiliated hospitals and is led by Drs. Robin McLeod, Mary-Anne Aarts, Allan Okrainec (Surgery), Naveed Siddiqui (Anaesthesia), Marg McKenzie (Nursing), Leslie Gotlib (Knowledge Translation) and the Project Manager, Emily Pearsall. This program aims to implement an Enhanced Recovery after Surgery (ERAS) guideline to optimize outcomes following colorectal surgery. ERAS refers to multimodal programs which include a number of interventions supported by Level I evidence which, when implemented together, decrease perioperative stress, postoperative pain and gut dysfunction and lead to decreased postoperative complications, accelerated recovery and shortened length of stay.

This project builds on the work of the Best Practice in General Surgery (BPIGS). The Best Practice in General Surgery is a University of Toronto Division of General Surgery initiative aimed to standardize care based on best evidence across the University of Toronto affiliated hospitals. The BPIGS group has developed and implemented several clinical practice guidelines: the most recent being an Enhanced Recovery after Surgery (ERAS) guideline.

The purpose of this information package is to provide you information to assist in successful implementation of this program.

We look forward to working with you in implementation an ERAS program!

Dr. Robin McLeod on behalf of the ERAS Steering Committee
Mary-Anne Aarts, Allan Okrainec, Naveed Siddiqui, Lesley Gotlib, Marg McKenzie, Emily Pearsall

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The following hospitals are participating in the ERAS Project:

- Hamilton Health Sciences Centre
- Health Sciences North
- Kingston General Hospital
- London Health Sciences Centre
- Mount Sinai Hospital
- North York General Hospital
- St. Joseph’s Healthcare Hamilton
- St. Michael’s Hospital
- Sunnybrook Health Science Centre
- The Ottawa Hospital
- Thunder Bay Regional Health Science Centre
- University Health Network-Toronto Western Hospital
- University Health Network -Toronto General Hospital
Council of Academic Hospitals of Ontario

The Council of Academic Hospitals of Ontario (CAHO) is the non-profit association of Ontario’s 24 academic hospitals and their research institutes. CAHO provides a focal point for strategic initiatives on behalf of these academic hospitals.

As research intensive hospitals, CAHO member hospitals are fully affiliated with a university medical or health sciences faculty. Our hospitals provide the most complex and urgent care, teach the next generation of health care providers, and foster health care innovation through research and discovery.

Across the province, CAHO hospitals are inventing the future of health care by developing new standards of patient care, evolving models of health care education, and conducting world-class health research.

Adopting Research to Improve Care (ARTIC) Program

CAHO launched the Adopting Research to Improve Care (ARTIC) program in 2010 with the objective of moving research evidence into practice from one hospital across the CAHO community in order to drive quality improvement and benefit the health care system as a whole. The goal is to learn from this experience in order to help build a systematic and sustainable implementation pathway for evidence adoption across the province.

CAHO is committed to continuing our journey of learning through the ARTIC Program. CAHO believes the development of this knowledge should not be experienced by our community alone. Working with the Ministry of Health and Long-Term Care (MOHLTC), Health Quality Ontario (HQO) and world-renowned experts in knowledge translation, we aspire to build a sustainable pathway for implementing evidence that can improve quality patient care and Ontario’s health care system.

Collectively, the CAHO community, in partnership with the Ministry of Health and Long Term Care has funded six ARTIC Projects.

HandyAudit™ ARTIC Project: is an innovative auditing tool that measures hand hygiene compliance in a more effective and efficient way.

Canadian C-Spin Rule ARTIC Project: Through the use of a clinical decision tool for ED nurses this project aims to reduce ED wait times and increase patient satisfaction by quickly identifying patients who do not require immobilization.

CAHO Antimicrobial Stewardship Program in ICU Project: aims to optimize the use of antimicrobials in intensive care units.

Mobilization of the Vulnerable Elderly in Ontario ARTIC Project: uses an interprofessional approach that focuses on early and consistent mobilization of older patients through their hospital stay.

Transitional Discharge Model ARTIC Project: supports the successful transition from hospital to the community for people diagnosed with a mental illness.

Enhanced Recovery After Surgery Guideline ARTIC Project: uses an innovative knowledge translation strategy to implement a range of interventions for patients undergoing colorectal surgery.

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What is the purpose of this project?

The purpose of this project is to implement an ERAS guideline using a multifaceted knowledge translation (KT) strategy to improve outcomes following colorectal surgery. This KT strategy will be tailored to each individual site. Overall, the strategy will include: development of communities of practice, physician, anaesthesia and nurse champions, education, standardized pre-and post-operative orders, and audit and feedback at the participating academic teaching hospitals in Ontario. This project aims to a) increase patient outcomes, b) increase quality of life and patient satisfaction, and c) increase interdisciplinary communication and collaboration.

What is Enhanced Recovery after Surgery (ERAS)?

The terms Enhanced Recovery after Surgery and Fast Track Surgery, which are used interchangeably, refer to multimodal programs which include a number of interventions supported by Level I evidence which, when implemented together, decrease perioperative stress, postoperative pain, gut dysfunction and infection, and promote early mobilization. When fully implemented, they have been shown to decrease postoperative complications, accelerate recovery and lead to early discharge.

The interventions included in the ERAS guidelines are:

- Preoperative Information and Counseling
- Reduced Fasting Duration
- Mechanical Bowel Preparation
- Surgical Site Infection Prevention
- Thromboprophylaxis
- Intraoperative Fluid Management
- Avoidance of Prophylactic Abdominal Drains
- Avoidance of Prophylactic Nasogastric Tubes
- Early Mobilization
- Postoperative Fluid Management
- Early Enteral Feeding
- Use of Chewing Gum to Reduce Postoperative Ileus
- Multimodal pain control including: TEA, lidocaine infusion, NSAIDs, Tylenol and gabapentin

Why is this important?

There are approximately 14,000 colon resections performed in Ontario each year with an average hospital stay of seven days. There is increasing evidence that unless pre-, intra- as well as post-operative care is based on best evidence, optimal outcomes cannot be achieved.

Care of these surgical patients involves a number of health care professionals and occurs over a continuum. The care of these patients starts in the surgeon’s office and continues in the preadmission unit, operating room, post anaesthetic care unit, surgery ward and finally in their home following discharge. The perioperative multidisciplinary team (surgeons, anaesthetists, nurses, physiotherapists and dieticians) must work collaboratively to ensure that care is coordinated as the patient transitions through the multiple points of care.

Internationally, ERAS programs have shown to be quite effective in increasing quality of care and patient outcomes.
How does ERAS align with provincial initiatives?

This project aligns with the Excellent Care for All Strategy and other Ministry of Health and Long Term Care (MOHLTC) priorities emphasizing high quality care and efficient use of resources. Hospital funding reform initiatives will link funding to quality and efficiency through Patient-Based Funding. Significant proportions of this funding will be allocated through payment for Quality Based Procedures (QBP). The Ministry has proposed a number of QBPs, and in order to implement this funding program, the development of best practice clinical pathways, evidence based guidelines, a QBP scorecard and engagement of clinical experts is required.

Gastrointestinal surgery has been identified as a QBP with a goal of reducing complications and mortality and optimizing length of stay with a targeted implementation date of 2014-15. This proposal is timely as the ERAS program is based on an evidence-based guideline and will provide implementation strategies and tools to hospitals which can be used to implement similar programs at their own hospitals to ensure optimal, sustainable care of patients having gastrointestinal surgery.

What is the evidence?

Over the past decade, there has been a paradigm shift in the perioperative care of patients who undergo elective colorectal surgery. The traditional components of care, including use of oral bowel preparations, prolonged preoperative fasting, use of nasogastric tubes and intra-abdominal drains, postoperative bowel rest, prolonged immobilization and pain management with narcotics have been challenged by increasing evidence that less trauma and emphasis on earlier return to normal function enhance recovery.

ERAS programs include a bundle of interventions that attempt to decrease perioperative stress, pain and gut dysfunction and thereby accelerate recovery, reduce morbidity and shorten hospital stay. In addition, patients report less pain and fatigue with ERAS protocols and the shortened length of stay does not appear to have an adverse effect on quality of life and patient satisfaction.

A number of groups have developed ERAS guidelines, standardized protocols and evaluated variable ERAS programs in randomized controlled trials. There is no one standardized protocol but most include similar interventions including preoperative (counselling, exercise programs, omission of oral bowel preparation, carbohydrate loading, shortened pre-operative fasting), intraoperative (fluid restriction or goal directed fluid management, maintenance of normothermia, SSI and venous thromboembolic (VTE) prophylaxis, use of epidurals) and postoperative (multi-modal pain management, intravenous fluid restriction, early oral intake, gum chewing, no nasogastric tubes, early ambulation) interventions that have been shown individually to improve outcome following surgery.

Six randomized controlled trials including 511 patients have compared outcome in patients in ERAS programs vs conventional surgical care. A meta-analysis performed by our group which included four trials of these trials showed that ERAS programs resulted in fewer complications (RR 0.61, 95% CI 0.42-0.88). Pooling of hospital length of stay was not possible but all trials showed a decrease in length of stay ranging from a mean of 0.6 to 4 days. Thus, ERAS programs result in improved patient outcomes as well as shortened length of stay and fewer hospital resources.
What are the Potential Barriers to Implementing ERAS?

Despite the strong evidence supporting ERAS programs, there are multiple barriers that may preclude implementation of an ERAS program and a systematic approach is required in order to ensure adoption and adherence of the program. Through this project, the project team will assist in identifying and addressing these potential barriers with you.

The most commonly cited barriers to adoption of ERAS are:

- Cultural, medical and organizational factors
- Time and personnel restrictions
- Limited hospital resources
- Resistance from members of the perioperative team
- Frequent changes in care givers, especially resident surgical staff
- Variable anaesthetist allocation have also been identified as barriers
- Patient preferences

In order to gain a local perspective on potential barriers to adoption, we conducted semi-structured interviews with nurses, anaesthetists and surgeons. Based on our interviews, the following may be the most important barriers to address:

- Physician preferences and a culture that supports traditional care of surgical patients
- Poor communication among disciplines
- Lack of manpower
- Lack of hospital resources and buy in
- Patient factors

In Knowledge Translation (KT), it is well known that to develop effective implementation strategies, barriers to implementation must be known in advance. Thus, the implementation strategies developed for this project are a direct reflection on the known local barriers and were created to mitigate them.
Structure of the ERAS program at your hospital

Based on the known barriers to adoption of an ERAS program, we have developed a tailored KT plan to successfully implement ERAS. The following strategies are necessary to ensure successful implementation.

1. Development of Communities of Practice

Communities of practice have been described as “groups of people who share a concern, a set of problems or a passion for a topic and who deepen their knowledge and expertise in this area by interacting on an ongoing basis.” They tend to include individuals with different knowledge sets and opinions who work together to set priorities and implement change. They encourage a systems viewpoint, integrate different perspectives and promote individual competence as well as team learning and building. The concept has been used effectively in business and recently in medicine to develop a systems approach to provision of care.

Your community of practice will involve everyone who is responsible for the care of elective colorectal surgical patients. This may include: general surgeons, ward nurses, anaesthesia, residents, pre-admission staff, physiotherapists, nutritionists, discharge planners, patient safety professionals and others. These groups will meet on a regular basis to discuss progress, share best practice and develop new strategies to address barriers to implementation.

2. Champions

Champions and/or Opinion Leaders are people within your organization who will lead or ‘champion’ this initiative. They will be well-known and well-respected individuals who will assist members of their division in implementation. You will have a Surgeon Champion, Anaesthesia Champion, and Nurse Champion at your site. Please see role descriptions on page 9.

3. Audit Practice and Provide Feedback

Audit and feedback is a widely used strategy to improve health care practice. It is defined as “any summary of clinical performance of health care over a specified period of time given in a written, electronic or verbal format.” Audit and feedback will be an important part of our proposed KT strategy. Through the CAHO ARTIC Program, we will provide funds to support a 0.5FTE Site Coordinator who will collect relevant data on all patients having colorectal surgery at your hospital. The data will be managed by the Applied Health Research Centre (AHRC) at the Li Ka Shing Knowledge Institute. Reports on your hospital’s performance will be provided to your hospital at approximately four monthly intervals. As well, anonymized data from all other hospitals will be provided. This will allow you to assess your performance and measure your performance against other hospitals. As well, your team will be able to make changes in areas where there are gaps in care.

4. Standardized Preoperative and Postoperative Orders

The use of order sets that include guideline recommendations is another tool for improving compliance with guideline recommendations. This has been particularly effective in ensuring the appropriate use of VTE prophylaxis where compliance has been shown to increase from low levels to nearly 100% compliance. As well, standardized pre- and post-operative orders have been shown to be effective in improving compliance with various perioperative interventions. Each hospital will be responsible for changing and/or developing standardized orders to reflect the ERAS recommendations.
### Implementation Timeline

<table>
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<tr>
<th>Phase</th>
<th>Project Team</th>
<th>Hospital Team</th>
<th>Hospital and Project Team</th>
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<tr>
<td><strong>Readiness Nov – Dec 2012</strong></td>
<td>• Conference calls with all stakeholders at all sites</td>
<td>• Nominate Champions</td>
<td>Development of Communities of Practice</td>
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<td></td>
<td>• Research Ethics approval</td>
<td>• Complete Research Ethics applications</td>
<td>• Bi-weekly conference calls with nurse champions</td>
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<td>• Contracts</td>
<td>• Search for Site Coordinator</td>
<td>• Monthly conference calls with Surgery and Anaesthesia Champions</td>
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<td></td>
<td>• Hire Site Coordinator</td>
<td>• Regular (bi-weekly) team meetings</td>
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<td><strong>Preimplementation Jan – June 2013</strong></td>
<td>• Finalize RAVE database</td>
<td>• Assemble implementation team</td>
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<td></td>
<td>• Host workshop #1 (March)</td>
<td>• Develop standardized orders</td>
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<td></td>
<td>• Site Visits by Steering Committee</td>
<td>• Locally tailor patient education materials</td>
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<td><strong>Implementation and Maintenance June 2013 – Nov 2014</strong></td>
<td>• Analyze audit data and provide quarterly reports Assess barriers and facilitators: adapt strategies as necessary</td>
<td>• Collect data</td>
<td>Development of Communities of Practice</td>
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<tr>
<td></td>
<td>• Site visits as necessary</td>
<td>• Implement guideline recommendations</td>
<td>• Bi-weekly conference calls with nurse champions</td>
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<td>• Develop and implement a communication strategy including web-based innovations</td>
<td>• Monitor implementation</td>
<td>• Monthly conference calls with Surgery and Anaesthesia Champions</td>
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<td>• Conduct patient surveys</td>
<td>• Regular (bi-weekly) team meetings</td>
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<td>• Address gaps in care</td>
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<td>• Site Visits by Steering Committee</td>
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<tr>
<td><strong>Evaluation Nov 2014 – Feb 2015</strong></td>
<td>• Workshop #2</td>
<td>• Develop strategies to sustain programs</td>
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<td>• Conduct interviews at each site</td>
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Your investment in this project

As a participating hospital, you have agreed to provide the following in-kind support to this project:

- Support for a nurse champion (0.3 FTE), surgeon champion (0.2 FTE), and anaesthesia champion (0.2 FTE)
- Resources necessary to implement changes (e.g., resources to assist patients to sit up in bed on the day of surgery and walk on subsequent days; food services to provide “Patient Controlled Diets”, implement intraoperative guided fluid management)
- Access to patient records
- Office space for the site coordinator
- Development of standardized preoperative and postoperative orders and other educational or training materials
- Development of an ERAS community of practice

A key component of the implementation strategy is to develop a cohesive perioperative team including all disciplines who are involved in the care of the patient as they transition along the surgical pathway. This will be facilitated by the identification of a nurse, surgeon and anaesthetist champion at your hospital. These individuals will facilitate implementation of the guideline by engaging all members of the team, sharing audit results and leading changes in practices at their individual centers. These individuals will meet regularly with members of the perioperative team at their hospital.

Effective implementation will thus be accomplished by:

- Creation of a community of practice, with assistance from the project team, by hosting a multidisciplinary workshop for all Champions in March. As well, the project team will visit each site to present multidisciplinary educational rounds, in services and/or teaching sessions to increase awareness and acceptance of the guideline
- Implementation of the guidelines through various KT strategies:
  - Develop strategies to address local barriers
  - Share audit results and develop and implement strategies to improve performance
- Liaise with the project team through regular communications and updates at regular intervals
More specifically, the responsibilities for each champion are as follows:

**Nurse Champion (0.3 FTE)**
- Role in the implementation of the ERAS guideline will be part of his/her job description
- Generally, this individual will be a nurse educator or manager
- Liaise with members of the Steering Committee

**Educate and train nurses (and other staff, including clinical assistants/allied health professionals)**
- Lead the implementation of key components of the guideline which are specific to nursing
- Work with nurses in all areas to ensure the recommendations are being followed
- Provide continuous education on ERAS recommendations and adapt educational and promotional materials provided by the Steering Committee

**Liaise with Champions**
- Assist in organizing multidisciplinary rounds at your hospital
- Attend multidisciplinary, multisite meetings (in-person or conference call)
- Liaise with Surgeons, Anaesthetists, Residents, Pain Service Professionals and Allied Health Professionals responsible for the care of these patients

**Work with the Site Coordinator**
- Assist the Site Coordinator in collecting data
- Assist the Site Coordinator with organizing rounds/in-services
- Assist the Site Coordinator with developing protocols/orders

**Surgeon Champion (0.2 FTE)**
- Liaise with members of the Steering Committee
- Oversee the Site Coordinator
- Support REB Application

**Educate and train surgeons and surgical residents**
- Lead the implementation of key components of the guideline which are specific to surgeons
- Provide continuous education on ERAS recommendations

**Liaise with Champions**
- Work with all members of the perioperative team to ensure the recommendations are being followed
- Liaise with Anaesthetists, Residents, Pain Service Professionals and Allied Health Professionals responsible for the care of these patients

**Work with the Site Coordinator**
- Assist in organizing multidisciplinary rounds
- Attend multidisciplinary, multisite meetings (in-person or conference call)

**Anaesthesia Champion (0.2 FTE)**
- Liaise with members of the Steering Committee

**Educate and train anaesthesiologists and anaesthesia residents**
- Lead the implementation of key components of the guideline which are specific to anaesthesia
- Work with other anaesthetists and anaesthesia residents to ensure the recommendations are being followed
- Provide continuous education on ERAS recommendations

**Liaise with Champions**
- Liaise with Surgeons, Residents, Pain Service Professionals, Nurses and Allied Health Professionals responsible for the care of these patients

**Work with the Site Coordinator**
- Assist in organizing multidisciplinary rounds at your hospital
- Attend multidisciplinary, multisite meetings (in-person or conference call)
Expectations

Pre-implementation: What we need from you

We will work with you to determine your readiness for implementation of the ERAS program. Once we have a better understanding of your level of readiness, we will work together to decide an implementation start date. Over the next few months, we will work closely to ensure that the following pre-implementation requisites are met:

• Nomination of hospital champions (nursing, surgery and anesthesia)
• Hire a 0.5 FTE Site Coordinator
• Attend a multidisciplinary workshops with champions from all institutions to discuss implementation strategies lessons learned, review evaluation and progress
• Host a multidisciplinary educational meeting at your hospital to ensure there is agreement from all members of the perioperative team regarding guideline recommendations (with presentations by Champions)
• Understand where gaps in the transition of care occur at your hospital
• Develop and/or disseminate patient education materials, other educational materials, contingency plans, standardized order sets and tailored implementation plans
• Pilot the data forms at your hospital

What you can expect from us

Our central team will oversee the project at all participating hospitals. Our central team consists of surgeons, anaesthetist, nurse and knowledge translation experts as well as a Project Manager. We will be available to assist you in every stage of the project. More specifically, we will:

• Submit and receive approval from the Research Ethics Board (REB)
• Analyze data and provide quarterly audit reports
• Develop educational and promotional materials
• Provide implementation tools (PowerPoint slides, summaries, care plans etc.)
• Host a start up workshop and workshops at yearly intervals thereafter

• Host regular conference calls and meetings with the Champions and Site Coordinator
• Regularly communicate and share best practices
• Make site visits at start up to assist with educating your staff and implementing the guideline
• Assist with the hiring of a Site Coordinator

Moving Forward – what will we accomplish together?

• Develop collaborations among the academic hospitals in Ontario
• Develop communities of practice and strengthen communication amongst members of the perioperative team
• Share best practices among the communities of practices at the individual hospitals
• Implement initiatives which will lead to improved outcomes in surgical patients and will be sustainable when the CAHO ERAS ARTIC Project terminates
• Involve our patients and their families and caregivers in their surgical care
• Communicate our progress to stakeholders and other hospitals
• Increase our understanding of barriers and facilitators to the implementation of ERAS program and evaluate our knowledge translation activities so they can be applied to other initiatives and other hospitals
Anticipated outcomes of this project

If implemented successfully, this ERAS program is expected to:

1. Improve Patient Care and Reduced Hospital Stay
   - ERAS programs have been shown to decrease postoperative complications by 50%
   - The average length of stay with traditional postoperative care is approximately 7-10 days; adoption of ERAS programs have resulted in a decrease in the average length of stay by two or more days
   - Patients who are part of an ERAS program experience an accelerated functional recovery and as a result, require less nursing care in hospital and in the home setting post discharge

2. Increase Communication and Collaboration among Perioperative Team Members
   - Development and strengthening of surgical teams (communities of practice)
   - Change in culture with increased communication, collaboration and cohesiveness which will be sustainable and useful in addressing other quality issues and improving patient safety
   - Engagement of the entire multidisciplinary team will ensure that patients will receive coordinated transitions in their surgical care