



Project Proposal:

Perioperative Care

**Surgical Optimization Project (SOP) – A Team Based**

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## Approach to Perioperative Care

Project Timeframe: September 2018 – March 2020

**Aim:** Within the next two years, the project aims to reduce surgical site infections and improve patient and provider satisfaction by optimizing perioperative care for patients with suboptimal glycemic control scheduled to undergo elective surgery at Penticton Regional Hospital (PRH).

Perioperative medicine is defined as the practice of patient-centred, multidisciplinary, and integrated medical care of patients from the moment of contemplation of surgery until full recovery<sup>1</sup>. This project will focus on the co-design of an optimized pathway for patients at risk and involve collaboration and integration of care between surgeons, anesthesiologists, internal medicine, family medicine, nursing, dieticians and patients.

Studies indicate that suboptimal perioperative glycemic control is associated with an increased number of post-surgery complications such as surgical site infections (SSI's), morbidity, and mortality<sup>2</sup>. Hyperglycemia (blood sugar levels greater than 10 mmol/L) can develop in patients with or without diabetes, the result of physiological stress caused by the impending surgery or being un-diagnosed. Late identification can result in delays or cancellations in surgery.

The overall goal of SOP would be to integrate specialized hospital care, specialized community service programs and family physician teams by developing standardized protocols to guide the patient along a pathway from their family physician's office through acute care and back to community.

Moving the evaluation of risk earlier in the pathway offers opportunities for improvements in pre-operative control. An optimized interdisciplinary pathway, would start and finish with the patients' family practitioner and more effectively utilize existing resources such as referrals to Internal Medicine, the Diabetes Clinic and Education Program and the Pre-Surgery Screening Clinic in the wait time between referral and day of surgery.

A patient centred model of care that results in team-based collaborative decision-making and improved patient resilience to the physiological stress of surgery will result in better patient outcomes, better patient and provider experience

and system cost savings.

### ALIGNMENT

The Surgical Optimization Project (SOP) will create an integrated surgical care system by optimizing access, service and care, all key priorities for the Ministry of Health, Doctors of BC, Shared Care Committee and Penticton Regional Hospital (PRH).

**Patient Medical Homes (PMH)/Primary Care Networks (PCN).** SOP hinges on improving the interdisciplinary collaboration and planning around care. Existing resources will be more efficiently leveraged by coordinating specialized hospital care, specialized community service programs and family physician teams. An optimized integrated care pathway would provide patients, families and caregivers with care that is coherent, connected and consistent with the patient's needs.

### Specialized Community Services Program (SCSP) – Surgical Services Program (SSP)

Optimization and standardization of the glycemic pathway will compliment and inform a number of surgical services initiatives: integration and coordination across services; interdisciplinary team-based care; pre and post-surgical support and self-management.

**Penticton Regional Hospital (PRH):** SOP compliments other surgical initiatives already underway or planned:

- ERAS- Enhance Recovery After Surgery.
- NSQIP -National Surgical Quality Improvement Program.
- IH Physician Quality Improvement. Dr. Michelle Scheepers is working on an inpatient based initiative looking at glycemic control in surgery using a one-page checklist to track blood sugars on day of surgery and two days after surgery<sup>3</sup>.
- Surgical Services Program (SSP) – PRH is one of six sites chosen for the development of a specialized program.

Careful consideration will be taken to leverage resources and efforts from all surgical initiatives to prevent duplication of improvement efforts and therefore optimize patient outcomes.

### TARGET PATIENT POPULATION

SOP will target all\* patients scheduled for same day admission elective surgery at PRH and identified as having suboptimal glycemic control. Patients with hemoglobin A1C of greater than 7% (exact target range to be determined) are at greater risk of developing perioperative hyperglycemia.

When looking at previous studies<sup>4</sup> and recent data collection on colorectal patients at PRH by Physician Lead Dr. Scheepers<sup>3</sup> it was determined that using only select surgery types would likely result in a very small sample size.

By focusing on all\* elective surgeries at PRH there will be greater opportunity to increase awareness and uptake of upstream pre-surgery optimization due to the likelihood of a larger number of GP's having patients undergoing surgery with identified

\* Except Transurethral Resection of the Prostate (TURP)

1. Grocott MP, Mythen MG. Perioperative medicine: the value proposition for anesthesia? a UK perspective on delivering value for anesthesiology. *Anesthesiol Clin.* 2015;33617-28

2. Kwon, S et al. 2013. Importance of Perioperative Glycemic Control on General Surgery. *Ann Surg.*; 257(1):8-14

3. Scheepers, M 2017. *Glycemic Control in Surgery. IH Physician Improvement – Small Project Application. Study: April -June 2018.*

suboptimal glycemic control. This will create more opportunities for pre-optimization, data collection and confirmation of enhanced post-operative recovery.

If the re-designed pathway is effective, it is intended to adapt and spread the integrated pathway to optimize other perioperative protocols to support all surgical care at PRH.

## COLLABORATING PARTNERS

This proposal was developed with a working group (list of names on first page of proposal), which has representation from:

- Specialists from most of the major surgery groups.
- Family physicians.
- Interior Health administration, nursing and allied health professionals from acute and community.
- NSQIP team members.
- SOS Patient Medical Home/Primary Care Network leadership members.

## PROJECT OVERSIGHT + ENDORSEMENT

South Okanagan Similkameen (SOS) Shared Care projects are guided by the SOS Shared Care Steering Committee, and project work is directed by the project working group. The Steering Committee endorsed this proposal on June 21<sup>st</sup>.

The Division of Family Practice Board is responsible for project funds and ensuring strategic alignment and endorsed the proposal on June 27<sup>th</sup>. The SOS Collaborative Steering Committee (CSC) endorsed the proposal July 10<sup>th</sup>.

## CURRENT PATIENT EXPERIENCE.

Once referred to surgery, a patient in the South Okanagan Similkameen can wait weeks or months between a decision to operate and the day of surgery. In these intervening days, there is currently a fragmented care pathway and patients are referred to pre-surgical assessment/care on an ad-hoc basis.

Patients with diagnosed hyperglycemia can be referred to the Integrated Health Clinic or Diabetes Clinic as a strategy for managing care prior to surgery but referral appears to be inconsistent and often not integrated with overall care by the family physician or surgeon.

Often patients not previously diagnosed with hyperglycemia will not be assessed until close to the date of surgery. Depending on overall health, patients may not visit their family physician after their appointment with the surgeon and there appear to be no protocols for referrals and timing of visits to Internal Medicine or the Pre-Surgery Screening Clinic where glycemic control would be assessed.

Evidence suggests that attendance at points of care where glycemic control would be assessed can occur weeks before surgery but often happens too close to the surgery date to address health conditions, change behavior and optimize glycemic levels. This is especially true for patients with no prior diagnosis or those at risk of developing hyperglycemia during the surgical process.

## BASELINE DATA

Studies show that hyperglycemia is associated with an increased risk of surgical site infections (SSI's), morbidity, and mortality and therefore higher health care costs in both diabetic and non-diabetic patients and for all types of surgery. There is evidence to suggest that the greatest risk of infection is in patients with no history of diabetes but who can experience periodic hyperglycemia. The risk of infection increases

Because of the increased likelihood of multiple comorbidities, these patients carry higher perioperative risks of complication and mortality and require more complex discharge planning and longer post-operative rehabilitation. A clearer pathway and improved pre-habilitation could significantly reduce the risk of complications and the need for lengthy post-operative care for this patient population.

In addition, an increasing number of surgeries are now day surgeries. Studies show that effective preoperative preparation is essential for day surgery success and along with protocol-driven coordination of discharge and follow up<sup>7</sup>.

The anticipated population growth in the South Okanagan Similkameen, and the increasing percentage of patients over the age of 65 (31% compared to the provincial average of 18%)<sup>8</sup> suggests that perioperative optimization is critical to future planning to ensure positive outcomes from the surgical pathway.

#### **CURRENT PROVIDER EXPERIENCE**

Community family physicians and IH resources are not currently organized in a collaborative way so as to provide patient-centered team-based care.

Once the patient has been referred for surgery there is generally no communication with any of the perioperative physicians, no transfer of knowledge on a needs assessment, no clear pathway for a referral process or little to any guidance on post-operative care.

Anesthesiologists are often frustrated by the fact that there is limited time available between meeting the patient at the pre-surgical screening clinic and the scheduled surgery. This leaves little time to address any health conditions or suggest behavior changes that could help surgical outcomes.

At PRH Internal Medicine currently receives a number of phone calls regarding hyperglycemia that could be prevented if glycemic control could be optimized well in advance of day of surgery. Currently there is no data to confirm Internal Medicine is being used consistently.

Last minute surgical postponements or cancellations waste valuable OR time and are

frustrating for patients and the surgical team.

Currently it appears that there is little connection between the Integrated Health Team/Diabetes Education Program and the surgical team. Preliminary discussions suggest there is a need for more collaboration between the diabetic program, the diabetic clinic, GP's and specialists. A lack of consistency in referrals results in a lack of time for patients to get blood sugar levels under control.

#### **BACKGROUND**

The larger SOP working group has met twice over the last nine months with strong support and interest from meeting participants. Initially the project was presented to the Penticton Physician Medical Society in October 2017 for consideration. Given the need for multi-disciplinary coordination to create an integrated system of care between acute and community, in addition to the experience of SOS Division of Family Practice in developing pathways, it was decided that the project fit best as a Shared Care initiative. The group met to discuss the proposal May 31<sup>st</sup>, 2018.

The Physician Lead has consulted informally with numerous care providers who while not able to commit to the working group are willing to engage on specific parts of the pathway and maintain a strong interest in improving surgical care for their patients.

#### **WHAT ARE WE TRYING TO ACCOMPLISH?**

Develop and operationalize an effective and efficient patient pathway that integrates and coordinates care across multiple providers including but not limited to: surgeons, and anesthesiologists, internal medicine, family medicine, nursing, and dieticians in a team-based, patient-centred model.

#### **HOW WILL WE DO IT?**

- Co-design a standardized approach to determine patients at risk due to suboptimal glycemic control.
- Use the surgical wait time to the advantage of the patient by de-fragmenting care and coordinating pre-surgery preparation.

7. Quemby, D.J, Stocker, M. 2014. Day surgery development and practice: key factors for a successful pathway. *Continuing Education in Anaesthesia in Critical Care & Pain*.14(1):256-261.

8. BC Stats, 2015

- Engage family physicians in preparing patients for surgery – provide linkages, communication protocols, education, access to community resources etc.
- Engage patients in preparing themselves for surgery – provide linkages, communication protocols, education, access to community resources etc.
- Identify existing resources that can be more effectively integrated into a patient pathway.
- Identify clear roles for all care providers during all stages of the pre-and post-surgical pathway
- Standardize care by co-designing protocols to aid effective communication and referral between identified providers and existing resources.
- Co-design patient care plans for post-operative care.

#### HOW WILL WE KNOW WE KNOW A CHANGE IS AN IMPROVEMENT?

A full evaluation plan and measurement framework will be developed as part of the workplan for the project. We are expecting to see the following measurable outcomes:

- 75% of target population will present for surgery with optimized glycemic levels based on benchmark criteria.
- Reduction in the number of surgical site infections by 10%.
- Improve provider experience – 20% increase in confidence managing perioperative patients.
- Improved patient experience – 20% increase in expressed confidence in navigation of the pathway to surgery.
- Reduction in the number of re-scheduled surgeries.
- Reduction in operating room downtime due to cancelled surgeries.
- Less re-admittance due to complications.
- Reduced number of days in the hospital following complications.

#### PROJECT SCOPE

The project is to be implemented within existing resources to ensure sustainability.

Interior Health (IH) is a partner in this project with

numerous senior leaders on the working group.

While it is understood that there are no new resources expected within IH, current resources may need to be re-organized to optimize provider time and patient care on the perioperative pathway.

#### WORKPLAN

Sep to Nov 2018	Identify and engage stakeholders not represented by the working group (e.g. patient voice)
Sep to Nov 2018	Identify best practices in other communities
Sep to Nov 2018	Refine target patient population
Sep 2018 to Jan 2019	Map current patient pathway from FP through acute and back to FP
Sep 2018 to Jan 2019	Role clarification
Jan to Apr 2019	Develop new patient pathway from FP through acute and back to FP
Jan to Apr 2019	Develop behavior change strategies
Jan to Apr 2019	Develop communication tools and protocols for providers and patients
Jan to Apr 2019	Develop evaluation and measurement framework
Apr to June 2019	Trial pathway
Jul to Aug 2019	Refine pathway tools, protocols
Sep to Dec 2019	Operationalize new pathway
Dec 2019 to Mar 2020	Final report and sustainability plan – tool kit for other communities
Ongoing from Sep 2018 to Mar 2020	Measure and report on project improvements, impact, and lessons learned

#### Spread and Sustainability

Once a pathway is established for patients with poor glycemic control, the pathway could be adapted to optimize perioperative care for patients with other risk factors or chronic conditions.

The project anticipates packaging the pathway as a tool kit for use by other communities.

