





# **Land Acknowledgement**

The Doctors of BC acknowledges the traditional territories of the First Nations across British Columbia in which we live and work. We honour the ongoing historical connection between these communities and the land. Our acknowledgment is an expression of cultural humility – that we are privileged to use and share this land – and involves recognizing our duty and desire to provide culturally safe care to First Nations, Inuit, and Métis communities in BC.

The Specialist Services Committee (SSC) formed in 2006 to help Doctors of BC, the BC government and health authorities collaborate on the delivery of specialist services and support improvement of the specialist care system in BC.

# The Launch

Supporting initiatives that benefit patients, providers, and the health care system is core to the work of the Specialist Service Committee. Surgical care is no exception. In May 2019, SSC launched the Surgical Patient Optimization Collaborative (SPOC) to implement evidence-based prehabilitation practices in surgical sites across BC.

The methodology was based on the Institute for Healthcare Improvement [IHI] Breakthrough Series Collaborative, a structured, time-limited program in health care that brings together multiple organizations to improve a particular aspect of care. It involves shared learning, collaborative efforts, and the implementation of proven improvement strategies to achieve breakthrough results in health care quality and safety.<sup>1</sup>

In BC, positive results had previously been seen with Enhanced Recovery After Surgery (ERAS) protocols that focused on the *intraoperative* and *postoperative* care.<sup>2</sup> There were, however, additional gains to be made by improving patients' health prior to surgery. Other jurisdictions had highlighted the positive impact of **surgical prehabilitation**. In Canada and internationally, sites have shown that surgical prehabilitation enhances patient outcomes and overall health care efficiency.<sup>3, 4, 5, 6</sup> By preparing patients physically and mentally before surgery, it reduces complications, shortens hospital stays, and accelerates recovery. It improves patients' overall health, making them better equipped to withstand the stress of surgery. Prehabilitation also empowers patients, involving them in their care, leading to increased satisfaction and adherence. From a system

perspective, it optimizes resource utilization, decreases surgical wait times, and ultimately lowers health care costs. In essence, surgical prehabilitation is a proactive, patient-centered approach that not only benefits individuals but also contributes to the overall effectiveness of surgical care.

SPOC first launched in 14 sites across the province, all in pursuit of a common aim to use prehabilitation to optimize patients' health before surgery.

The second iteration (SPOC 2.0) brought 13 additional sites into the Collaborative. It was launched in April 2022 and concluded in June 2023.



Health care providers have worked together to build a surgical prehabilitation system that has supported thousands of patients across the province as they prepare for surgery. A total of 27 sites, representing all regional health authorities across BC, have been part of the collaborative. A wide variety of surgical specialties have adopted prehabilitation, with orthopedics, general surgery, urology, and gynecology making up the majority. Other specialties include thoracic, spine, and plastics.<sup>7</sup>

Overall, the two Collaboratives mark four years of learning, implementing, and demonstrating the benefits of prehabilitation to surgical patients, providers, and the health care system within the BC surgical landscape.

Prehabilitation is a multidisciplinary approach to decrease presurgical risk factors and improve a patient's health in the time leading up to surgery. It means helping patients get as healthy as possible prior to surgery by addressing modifiable risk factors that can affect outcomes. The clinical components (modifiable risk factors) identified for SPOC included:





# The Journey<sup>8</sup>

How does a health system come together to change surgical pathways? The transformation was the result of a constellation of factors: evidence-based research, clinical expertise, change management and quality improvement methodologies, dedicated time for clinicians, and perhaps most importantly, phenomenal teamwork and collaboration.

It involved over 300 individuals from across the province to plan and implement SPOC in their local sites. This list includes family physicians, surgeons, internal medicine, geriatricians, anesthesiologists, physical therapists, nurse navigators, Pre-Admission Clinic (PAC) nurses, patient partners, project managers, and hospital leaders.

To bring it all together, the SSC utilized the Institute for Healthcare Improvement's Breakthrough Series Collaborative model to coordinate and support teams from across the province. The Collaborative model is built on the idea that sites can implement change more rapidly and effectively if they build upon successes and challenges from others working toward the same goal.<sup>9</sup>

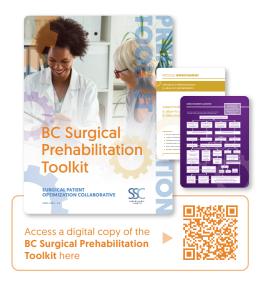
Several components are fundamental to the Collaborative model and were instrumental in achieving success across BC:

**BC SURGICAL PREHABILITATION TOOLKIT<sup>10</sup>:** The Toolkit contains a series of evidence-based drivers that are central to implementing surgical prehabilitation:

- Methods to promote and encourage patients to engage in actions that support their health (patient activation)
- Evidence-based clinical tools and processes to screen and prehabilitate patients prior to surgery
- Improvement methods to assist sites in developing new processes for embedding prehabilitation into the surgical pathway
- Concepts known to influence the human aspects of change so improvements can be spread and sustained

The Toolkit was developed by experts across the province, ensuring the ideas were relevant for the BC health system.

**LEARNING SESSIONS:** Individuals from participating sites came together for in-person learning sessions and virtual webinars. Topics focused on clinical evidence for each component, tools and resources to support prehabilitation, quality improvement methods, and success stories from different sites. Ratings of sessions were consistently high, with participants indicating that their understanding of surgical prehabilitation and their own role in it, as well as their understanding of system change, improved during the sessions. SPOC team members commented repeatedly that learning from what other sites had done, and being able to share tools and ideas, was incredibly valuable.



The biggest value of the Collaborative was working with colleagues from all over BC. Learning about challenges that others experience, and hearing the solutions that worked for other sites was powerful.

CLINICAL NURSE SPECIALIST

Without funding for specific roles, I feel very certain that health authorities/hospitals would not have been able to implement SPOC, as essentially they would have been asked to do more with existing funds. This funding allowed the needed human resource development for this program to start.

SSC PHYSICIAN MEMBER

[The physician funding] created time in their calendar to work on SPOC without trying to squeeze it in at the end of the day, or doing the work off the side of their desk when they had a few spare minutes.

SPOC CO-CHAIR

**SUPPORT:** In the Collaborative model, the time between learning sessions (known as an action period) is focused time for site to test and implement process change. In SPOC, processes for screening and prehabilitation were complex, involving multiple steps, providers, and care coordination. The SSC staff provided guidance in a variety of forms during action periods. They conducted site visits to help problem solve challenges; they engaged in one-to-one coaching sessions with various members of the team to discuss quality improvement methods and new ideas to try; and they facilitated knowledge exchange so sites could adapt tools and resources from one another. Team members cite the support they received from the collaborative structure and the SSC as instrumental to achieving positive results.

The funding for physicians, clinicians, project manager, and quality improvement activities also made the work possible. A flexible funding model was utilized to provide participating sites the opportunity to determine the supports needed for their own sites.

Many sites used the funds to hire nurse navigators who would connect with patients shortly after the decision to operate and maintain this connection throughout the prehabilitation process. Some sites hired project managers or quality improvement specialists to support the work.

Physicians participating in SPOC were compensated for their non-clinical time. The time physicians spent in local planning sessions and engaging with colleagues was important for system design.

**DATA:** Understanding the importance of data to facilitate improvement, the SSC built a data collection tool for sites to input data on the number of patients screened, results of screening, prehabilitation services offered, patients' clinical improvement prior to surgery, and surgical outcomes. Teams reviewed their data regularly to help guide decisions, adjust workflows, and build further engagement with providers.

Monthly data submissions from the sites provided a basis for coaching conversations where SSC staff and the teams could discuss their successes and opportunities for further improvement.

At a Collaborative-wide level, the data collection tool allowed for standardized data collection across sites, which has helped demonstrate the collective impact on patients as well as the full potential for system-wide benefits. The fact that the sites had to collect data was very important. We needed the numbers to solidify our hunches about improvement and to know whether what we were doing was really helping patients.

**PHYSICIAN** 

Data collection at the site-level was critical in supporting quality improvement efforts. Sites need to be [collecting data] to identify gaps between their current care processes and ideal processes.

SPOC CO-CHAIR

As a family physician, I felt I had a place in the design of the surgical pathway that I never had before.

PHYSICIAN

Having other specialties on the team such as geriatric medicine and internal medicine was essential to our success, as they helped us to create processes to address many chronic conditions before surgery.

**CLINICAL NURSE SPECIALIST** 

It really helped to work across disciplines. Bringing together physicians, nurses, operational leaders, and allied health helped us move forward. Working alongside others interested in system change is very inspiring.

**NURSE NAVIGATOR** 

MULTIDISCIPLINARY TEAMWORK: SPOC sites emphasize the importance of new connections and strong teamwork. Care teams made connections with colleagues and programs that they had not worked with previously. For example, family physicians worked directly with surgeons and anesthesiologists on the prehabilitation pathway. Surgeon offices and the PAC collaborated to design screening and referral pathways. Allied health professionals were brought into the design of the pathway to assist with pre-surgical optimization. These connections provided opportunities to see new possibilities and new perspectives.

Team members also highlight that patient stories and feedback were invaluable in helping them understand the impact of their work and engaging clinicians.

We needed to know from patients that [prehabilitation] made a difference and that it was worth the effort. Hearing how they appreciated the support was also important. It isn't clear how patients will react to something unless you ask them, and that data is very valuable.

**PHYSICIAN** 



Changing the mindset from a 'waiting period' to a 'preparation period' gave patients the opportunity to improve aspects of their own health prior to surgery.

PHYSICIAN

# The Impact

### **Patients and Families**

### **Screening and Support**

SPOC provides an opportunity to utilize the time before surgery to connect with patients and begin prehabilitation. Firstly, screening is done using validated screening tools for each clinical component, which determine the need for support in that specific area.



Surgical patients have been screened

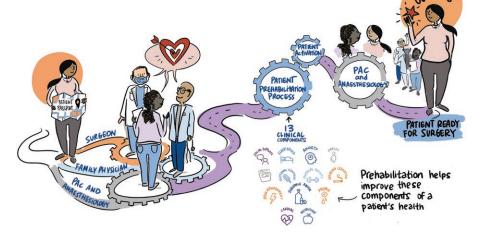
The Toolkit identifies resources available to anyone, at no cost to the patient, in order to optimize the patient's health. Teams were encouraged to utilize existing resources available within their health authority and community to reduce the need for creating new support systems.

As a starting point, the system requires consistent processes to screen patients for risk factors. Since May 2019, more than 15,000 surgical patients have been screened for one or more risk factors that could improve their health prior to surgery.<sup>11</sup>

This means patients with unknown cardiac risks or anemia may be identified and improve their condition prior to surgery. It means patients who smoke or experience significant pain can explore various support options to improve and self-manage themselves before surgery. For all patients, it means being given tools to decrease anxiety and having conversations to ensure social supports are in place. These are just some examples of the 14 clinical components with evidence-based screening tools that the care team could use to screen and identify patient risks.

# PATIENT SURGICAL PREHABILITATION JOURNEY

Aim: To improve patients' surgical outcome by optimizing their mental and physical health before surgery.



### Interventions

Interventions for prehabilitation include providing treatment, education, self-management tools, and other supports so patients can improve their health. These evidence-based interventions are known to improve risk factors prior to surgery and ultimately improve surgical outcomes.

88% (or nearly 12,000) of patients who required prehabilitation received an intervention for at least one of the risk factors identified for them.

Interventions could include appointments with clinicians to address factors like diet and exercise, it could mean a review of medication management, or it could mean activating patients to engage in lifestyle modifications. For many of these supports, patients were connected to community resources (for example, a physical therapist or a diabetes clinic) that may not have been utilized previously. Once connected, these community clinicians could then follow the patient throughout post-surgical recovery as needed.



It can only be an improvement

– patients are reducing the
amount they smoke, getting
tested for sleep apnea and
getting their blood sugars
checked more regularly.

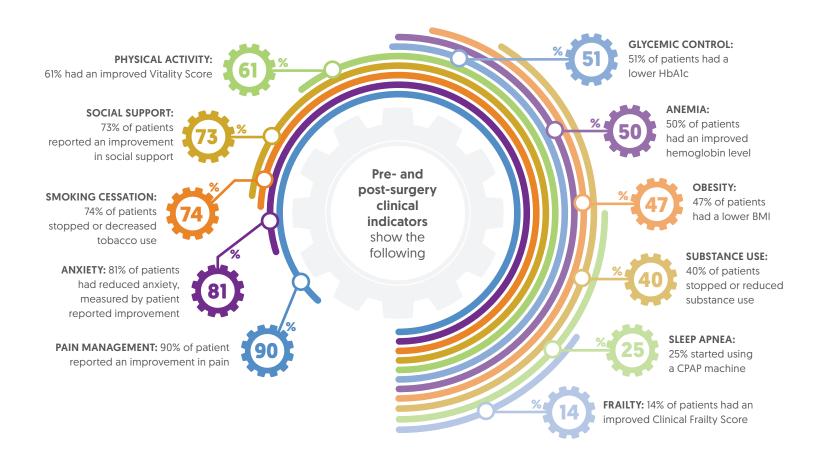
**SPOC TEAM MEMBER** 

### **Clinical Improvement**

Receiving an intervention in a clinical area is meant to improve health and functional capacity prior to surgery. For example, in patients with anemia, the goal is to increase their hemoglobin levels prior to surgery. For patients who smoke, the goal is to stop or decrease the amount of tobacco use. Similar indicators of clinical improvement were identified for each clinical component.

Data show that for most components, at least half of patients showed a clinical improvement. Interventions for anxiety, pain management, smoking cessation, and social support appear to be the most successful. Throughout SPOC, clinicians were optimistic that patient activation and empowerment could have long-term benefits on their patient's health and lifestyle.





I was up and about and able to be discharged the next day after surgery...my rehab and recovery after 6 weeks was remarkable. The muscle groups the SPOC team had me focus on beforehand, along with addressing sleep apnea issues, all made a difference in my recovery time. I've spoken with other people who didn't have the advantage of a prehabilitation program who have said their recovery was slower and longer and that they wished they had access to this kind of pre-surgery support.

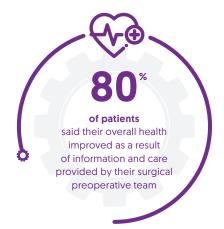
**PATIENT** 

### The Experience for Patients and Families

The overall experience from the perspective of patients and families is just as important as clinical improvement. Did they feel better prepared for surgery? Did they feel supported throughout the process? Was the prehabilitation work worth the effort? As part of Collaborative data collection, sites routinely collected Patient Reported Experience Measures (PREMS) and Patient Reported Outcome Measures (PROMS).

Resoundingly, patients and families said the experience was positive.





Prehabilitation has benefited patients by providing an awareness of how important being healthy is for recovery and has helped them understand their role in influencing their own health outcomes. They are more knowledgeable about their health status and what resources and supports are available for them. They are more engaged, empowered, and willing to discuss options and concerns they have about prehabilitation (e.g. quitting smoking and increasing exercise).

Patients and families show less anxiety because they are better connected to the care team and have more support while they are waiting for surgery. They have a timeline in place; they know where they are in the pre-surgical journey, and they are not concerned about being lost in the system.

I really felt [the whole team] were vested in identifying and encouraging me to make the necessary lifestyle adjustments to ensure the best surgical results. Because of SPOC I knew so much more beforehand about what steps I should take to prepare for my surgery and what I could do to improve my post surgical outcomes.

**PATIENT** 

Connecting with the patients in advance was a very positive experience. Patients were so appreciative of being called and to be given more information. They were very receptive to the opportunity to improve their health prior to surgery and it felt good to be part of that.

**NURSE NAVIGATOR** 

### **Care Team**

New processes are more likely to take hold if clinicians can see them working smoothly. Clinicians participating in SPOC have given many examples of where surgical prehabilitation has demonstrated this.

Nurses in the Pre-Admission Clinics have described a shift in their roles. Prior to SPOC, they would make a phone call a week or two prior to surgery and may identify health concerns that could not be addressed in time (potentially leading to a cancellation) or would rush to try and coordinate an anesthesiologist appointment. With SPOC, the nurses are making calls at least four weeks prior to surgery. Baseline bloodwork and screening are done after the call. This proactive process ensures there is enough time before surgery to address concerns and support patients to improve their health.

From a family physician perspective, there is gratitude that their patients are receiving support from multiple angles and are provided additional tools and resources to improve their health. One family physician states that they "may have been talking with the patient for years about quitting smoking or eating differently. But in this pre-surgical wait time, when others on the care team are giving the same message along with me, the patient may be more ready to accept it and more motivated to change." Post-surgery, family physicians noted that if patients are able to optimize their health prior to surgery it makes the recovery phase much smoother.

Surgeons' offices have indicated they are fielding fewer calls about surgical dates because patients are more connected to other clinicians and thus are more aware of where they are in their journey. Surgeons feel more confident about the continuity of care for patients. They know the patient has follow-ups after the decision to operate and they appreciate that the patient is receiving in-depth screening.



These findings illustrate important benefits voiced by many providers. "We have also made an impact on decreasing burnout, retaining staff, and joy in work. When asked about their involvement in SPOC, most physicians say that it provided some joy in work and they speak about how positive it was to work with like-minded physicians who are interested in improving surgical care." SPOC Co-Chair

Numerous clinicians commented on how inspiring and meaningful it was to work with their colleagues, including multiple care providers from different parts of the system, to achieve a common purpose. Quoting one physician, "We saw that people care and could make a system change in a hospital, in a city, and even across the province. It is much bigger than what we could achieve individually. It was such a fantastic way for clinicians to contribute to medicine in a bigger way."

Physician [offices] are being offloaded the responsibility of handling [patient] questions that are now being answered in group sessions...and staff are now seeing less anxious and better-informed patients.

PROJECT MANAGER

This program has enabled physicians to feel empowered to improve the health and outcomes for their patients.

SSC PHYSICIAN MEMBER



### **Health System**

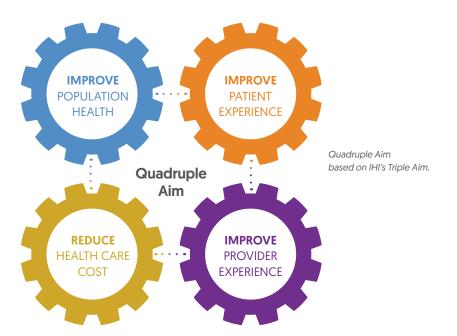
In addition to the immediate benefits, broader system benefits are emerging. SPOC sites have noted:

- Patients are connected to resources and supports that they were previously unaware of. These connections can extend beyond the presurgical period and have long-term health impacts. When patients have more touchpoints with community providers, they may engage in more primary and preventative care.
- In some sites, patients who do not have a family physician will be followed by one from the SPOC care team, improving access to primary care and support.
- Patients have less need to book a second appointment with their surgeon because their questions are addressed through other avenues.
- Patients have a better understanding of post-surgical medications and recovery and are already connected to clinicians for follow-up care.
- There is improved communication and efficiencies between disciplines involved in surgical care.
- There are fewer surgical cancellations as patients are better prepared for surgery.

SPOC sites are optimistic about the cost savings for the system. Although there were resource investments in developing prehabilitation processes (such as new nurse navigators, additional patient appointments with allied health professionals, physical space requirements for appointments) these expenses

are offset by savings from reduced surgical cancellations, complications, readmissions, and length of stay. As one site representative noted "One day less in acute care at our site will cover all costs acquired in the pre-surgical optimization period."

To quantify potential efficiencies, an economic evaluation looked at the cost of prehabilitation along with outcomes of patients who had received prehabilitation. The study estimated that widespread prehabilitation in BC would result in reduced costs for surgical care, largely due to the reduction in length of stay demonstrated for SPOC patients.<sup>13</sup>



Anecdotally I can tell you that patients are better prepared and going home sooner. I see this every day on the wards.

SPOC TEAM MEMBER

I am excited to share that since the SPOC project finished, we have been able to expand. Today, all [prehabilitation] services are available for all elective surgery patients. About 10–20% of surgical patients require specialized health optimization and we are able to provide it to all that need it.

CLINICIAN

# **Further Exploration**

SPOC built a strong foundation for prehabilitation across the surgical landscape in BC, with great opportunities still ahead.

Sites that have implemented prehabilitation continue to expand their efforts and use their success with SPOC as a launchpad for further initiatives. Sites credit the work of SPOC for helping them achieve large-scale and sustainable changes such as complete PAC redesign and fully integrating prehabilitation processes into PACs for all surgeries. Sites continue to expand the work, adding on more clinical components and more surgical specialities. Given SPOC's initial results, along with the evidence base on the prehabilitation for cancer surgeries, expanding prehabilitation for more cancer surgeries across the province could have substantial benefits.

The connections between colleagues and different services will continue to benefit patients over the long-term. Raising awareness of community supports for patients and providers alike was consistently named as a benefit of SPOC. Maintaining these connections will improve care coordination for many British Columbians.

Valuable connections have been made between surgical teams and Indigenous leaders to begin to understand and improve ways to support surgical patients in culturally safe ways. Many sites have also begun to explore barriers to care, to determine how inequities can be addressed and how to embed supports available in local communities.

Commitment and support from senior health care leaders is essential for sites who want to begin or expand further on prehabilitation care. Ensuring resources for necessary staff to support the prehabilitation processes will be crucial. Endorsement on the benefits of surgical prehabilitation in the Ministry of Health's Surgical Renewal Progress Report<sup>14</sup> will provide an impetus for larger system adoption. A new digital screening tool supported by the Ministry of Health will certainly facilitate improvement in the screening and referral processes.

Greater system-wide benefits are indeed possible. As described by one physician: "Overall this program has started to actually improve overall health and prevent complications at an upstream point, as opposed to always simply treating the poor outcome. The program has started to engage patients and families as partners in their health, and restored trust in their health care system in general."

The future of surgical prehabilitation is promising and transformative. It will continue to evolve, becoming more deeply integrated into routine care. Advancements in technology will facilitate the development of personalized prehabilitation plans, utilizing wearables and telemedicine for remote monitoring. Prehabilitation programs will extend beyond surgery to address broader health and well-being. Evidence-based protocols will expand to cover a wider range of procedures and conditions. Collaboration between health care providers, patients, and researchers will fuel innovation. Ultimately, the future of surgical prehabilitation holds the potential to enhance patient outcomes, reduce costs, and promote a proactive, holistic approach to health care that places well-being and quality of life at the forefront.

I am very proud about what we were able to accomplish during the project time and very thankful for benefits that our patients continuously receive as a result of the work supported by the Doctors of BC and SSC.

SPOC has proven to providers involved in peri-operative care that there is a better way to care for patients in the preoperative setting.

SPOC CO-CHAIR

# Participating SPOC Sites

We thank all the clinical teams and patients who participated in SPOC. The information and experiences shared from these sites were critical in the development and implementation of prehabilitation care for British Columbians.

### **Northern Health**

### COHORT 1

- Prince RupertRegional Hospital
- University Hospital of Northern BC

### COHORT 2

- GR BakerMemorial Hospital
- Kitimat General Hospital



### **Vancouver Coastal Health**

### **COHORT 1**

- CHANGEPain Clinic (Vancouver)
- Vancouver General Hospital
- St. Paul's Hospital

### **COHORT 2**

Vancouver General Hospital

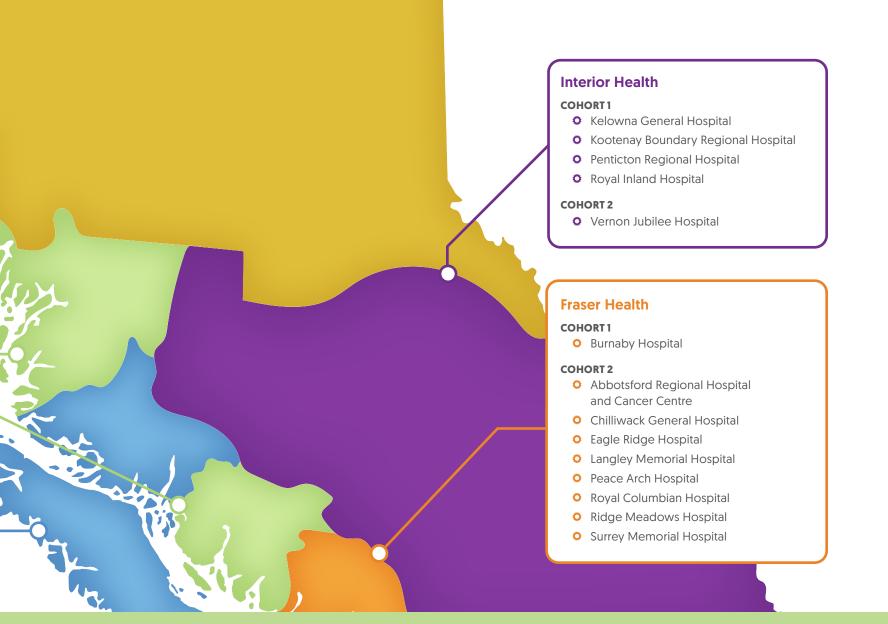
### **Island Health**

### COHORT 1

- Campbell River Hospital
- Cowichan District Hospital
- Nanaimo Regional General Hospital
- Royal Jubilee Hospital

### **COHORT 2**

- Comox Valley Hospital
- West CoastGeneral Hospital



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- <sup>2</sup> Specialist Services Committee. Enhanced recovery after surgery Collaborative. Accessed November 1, 2023. https://sscbc.ca/systemimprovement/enhanced-recovery-after-surgery-collaborative
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- <sup>6</sup> NHS South, Central and West Commissioning Support Unit. Prehab4Cancer Evaluation - Greater Manchester Cancer. Accessed November 1, 2023. https://wessexcanceralliance.nhs.uk/wp-content/ uploads/2022/01/GM\_Prehab4Cancer\_Evaluation\_Report\_Final.pdf
- <sup>7</sup> SPOC focused on adult elective surgeries.
- B Data and quotes through the remainder of the report were collected as part of SPOC 1.0 and 2.0 Evaluations.

- <sup>9</sup> Institute for Healthcare Improvement. The Breakthrough Series: IHI's Collaborative Model for achieving breakthrough improvement. IHI Innovation Series white paper. Published 2003. Accessed November 1, 2023. https://www.ihi.org/resources/Pages/IHIWhitePapers/ TheBreakthroughSeriesIHIsCollaborativeModelforAchievingBreakthroughImprovement.aspx
- <sup>10</sup> Specialist Services Committee. BC Surgical Prehabilitation Toolkit V.5. Published April 2022. Accessed November 1, 2023. https://sscbc.ca/ sites/default/files/SPOC%20Change%20Package.pdf
- Unless otherwise stated, data through the report includes sites from SPOC 1.0, SPOC 2.0 or sites provided with bridge funding between the two Collaboratives.
- Data from SPOC 2.0 monthly reports are based on a sample of patients for whom pre/post scores were available. Data for Cardiac, Nutrition, or VTE are not available.
- Findings based on reduced surgical site infections, urinary tract infections, reoperation rate and lower length of stay in a sample of seven SPOC sites when compared to outcomes from the provincial National Surgical Quality Improvement Program (NSQIP) data. Data included arthroplasty, colorectal, gynecological, and urological surgeries.
- <sup>14</sup> Government of British Columbia Ministry of Health. A commitment to surgical renewal in B.C. progress report: April August 2023. Published September 2023. Accessed November 1, 2023.
   SurgicalRenewalProgressReport\_April-Aug2023-24.pdf [gov.bc.ca]







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