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# Surgical Prehabilitation: By the patients, For the patients

Initiative Type

Model of Care

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Deliver

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## Summary

This multidisciplinary rehabilitation program prepares patients for major surgery, ensuring they are as mentally and physically healthy as possible to receive their care, mentally and physically. The Prince Charles Hospital's pre-surgical prehabilitation program is an effective and pragmatic strategy towards high value patient-centred surgical care. It delivers better patient outcomes and can result in

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cost savings following major abdominal and cardiothoracic surgery. Consumers were directly involved in planning their own prehabilitation program. The project commenced with a questionnaire survey of surgical patients asking them about their preferences and recommendations for a surgical prehabilitation program. Our program was a patient-focussed project aimed at 'what matters to the patients' and Metro North Hospital and Health Service (MNHHS) value of 'putting people first' by directly asking them about their needs and preferences for a prehabilitation program. Partnering with patients and using shared decision-making involving people with prior cancer experience, it was ensured the care provided to these patients were addressing patient-centred targets and empowering patients to take ownership of their own health. It also encouraged the clinical care team to appreciate patients' values.

## Key dates

Jul 2019

Jul 2020

## Implementation sites

Metro North Hospital and Health Service

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## Aim

This multidisciplinary rehabilitation program aims to prepare patients for major surgery, ensuring they are as healthy as possible to receive their care, mentally and physically.

The overarching goal was to implement an alternate model of care to improve these patients' fitness and holistically optimise them before their surgery, physically, nutritionally and emotionally. We also intended to make it a program that is co-designed by the patients to maximise both clinical outcomes and patient satisfaction.

## Benefits

Post-operative pulmonary complications (PPCs) are one of the most common complications following abdominal surgery, leading to poor outcomes and increase in morbidity, mortality, and healthcare costs. Preventing PPCs is therefore important and leads to improved patient outcomes. This is particularly beneficial in high-risk patients such as the elderly, frail or malnourished, and in those undergoing cancer surgeries. The increasingly ageing population worldwide and the growing number of high-risk and frail surgical patients makes prehabilitation a very important consideration currently and into the future.

Prehabilitation has been reported to result in a 37% reduction in overall morbidity and 60% reduction in PPCs following major abdominal surgery, 30-day readmissions and health care costs. Since our program was patient-centred, patient feedbacks were of utmost importance to us. With their feedback, we learnt that our participants valued the holistic approach of the program and credited the availability of support which reduced their apprehensions around surgery. They felt that being physically and emotionally prepared made a big difference, with many identifying that the program not only helped them with their physical recovery and mental health perspective. Our prehabilitation also expanded treatment options for high-risk surgical patients. One cancer patient felt significant reduction in his knee pain with the preoperative exercises that at the end of the program he was considering delaying his knee replacement while another patient demonstrated such significant functional gains that major cardiac surgery was considered no longer urgently necessary.

## Background

Cancer is one of the national health priority areas. Around 120 patients undergo bowel cancer surgery at The Prince Charles Hospital every year. Many of these patients are old, have advanced cardiorespiratory issues and they further deteriorate due to chemotherapy and radiotherapy. Hence these patients are often physically deconditioned, malnourished and experience high levels of emotional distress before their surgery.

Currently, 30% of cancer patients develop pulmonary complications leading to prolonged intensive

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care stay and poor quality of life for a prolonged period after major abdominal surgery. Some of these complications are preventable through improving their fitness before their surgery. However, in the current model of care, there is no physical or emotional preparation of these patients for their major surgery other than medical optimisation

## **Solutions Implemented**

To optimise patients' physiological and psychological reserve prior to surgery, we formed a multidisciplinary surgical prehabilitation team comprised of physiotherapists, dietitians, social workers along with anaesthetists, nurses and surgeons. Our program commenced as a 12-month Metro North HHS SEED-funded project to recruit patients scheduled for elective colorectal cancer surgery. Suitable patients were referred by the surgeons to be included in this program. After an initial counselling, assessment and planning session, an individualised program was drafted comprising tailored home or hospital-based exercise sessions, personalised nutritional care and psychological counselling based on patient's choices.

## **Evaluation and Results**

The program was evaluated by assessing changes in physical outcome measures and feasibility in terms of cost effectiveness, ability to execute in the limited time before the surgery, availability of personnel, patient adherence to the program and patient reported experience measures (PREM). Clinical outcome measures such as length of hospital stay, intensive care unit admission and mortality were recorded.

Objective measures such as the short physical performance battery (SPPB), timed up and go test (TUG) and gait speed were recorded prior to commencement and repeated at the conclusion of the program. Patients' compliance was recorded with an exercise diary or fitness trackers. We observed that all physical scores significantly improved following the program. None of the participants missed any of the gym sessions and were highly compliant with the daily home exercise program. There were no surgical delays, no unplanned ICU admissions, postoperative pulmonary complication, or mortality among the prehabilitation participants.

Our PREM survey demonstrated that all participants found prehabilitation helpful, and the majority (93%) felt their needs and preferences were met, rating the program highly. Our overall expenses were found to be considerably less than the available funding; this was indicative of the cost-effectiveness of the program.

## **Lessons Learnt**

We learnt that with excellent team coordination, an effective, cost-saving and outcome-improving

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perioperative intervention can be delivered with complete patient satisfaction, without interruption to the surgical care. With COVID interruptions, patients could not visit the hospital for their prehabilitation sessions. However, the flexible nature of our program enabled us to continue both survey and prehabilitation service even during periods of COVID lockdown by utilising relevant telehealth technologies.

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