



**DELIVERING QUALITY,
PATIENT CENTERED CARE
THROUGH PARTNERSHIP
AND COLLABORATION**

INSIDE:

In partnership with
**Medtronic Integrated
Health Solutions**,
Southlake significantly
increased capacity without
adding to its budget costs

**Cardiac Short Stay Unit
Case Study**

Southlake Regional Health Centre
Newmarket, Ontario

Medtronic



Southlake Regional Health Centre is a full-service hospital in Southern Ontario with a clinically advanced focus. As a regionally designated site, the Newmarket hospital is responsible for developing and providing advanced levels of care to the more than 1.5 million people who reside in its region.

Among its advanced specialty services, Southlake has established a distinguished reputation for leadership and innovation in cardiac care. Southlake provides cutting-edge cardiac surgery and innovative procedures that would typically only be found at a large teaching hospital, including interventional cardiology, electrophysiology, advanced heart failure management and echocardiography. Southlake has the fourth largest regional cardiac care program (RCCP) in Ontario.

The Challenge

Southlake's RCCP includes admission and recovery areas for interventional cardiology, located in the Cardiac Short Stay Unit (CSSU), a same day specialized recovery area for cardiac patients anticipated to have a less than 23-hour length of stay.

Due to an increase in the region's population base, as well as a rise in disease prevalence, the CSSU began to experience bottlenecks and capacity issues. The 15-bed Cardiac Short Stay Unit (CSSU) was under growing pressure as cancellations of daily in-patient and weekly out-patient procedures became increasingly challenging. Southlake needed to reschedule procedures for an average of 1.7 cardiac patients per day.

In that context, the hospital was eager to:

- Reduce procedure cancellations
- Ease pressure on capacity in the CSSU without adding beds
- Improve workflow and patient throughput

The Solution

Based on an innovative procurement process, Southlake was able to leverage a partnership with Medtronic Integrated Health Solutions (IHS) to review processes and patient access. The IHS team is made up of optimization experts who specialize in healthcare systems with such functions as improving efficiency, patient flow, workflow, and resource allocation.

A tailored solution was implemented to:

- Create a Radial Access Recovery Area to admit patients and divert them from the CSSU while they await procedures.
- Free up bed capacity in the CSSU to avert procedure cancellations.

“It’s a huge improvement for patient satisfaction and it also allows for us to ensure we are meeting our funded volume by not having to cancel cases.”

- *Jessie Boogaard, Manager of Business and Quality, Southlake Regional Cardiac Care Program.*

The Approach

IHS program optimization methodology, based on Lean Six Sigma continuous improvement principles, began with a baseline assessment, and measured the initial capability of the programs and operations of the Cardiac Short Stay Unit. IHS consultants looked at baseline data and conducted interviews with key stakeholders to highlight areas of focus. After identifying areas for improvement, IHS consultants organized a workshop to train the working group on the foundational elements behind the Lean Six Sigma methodology.

During the workshop, the group, led by IHS consultants, developed a roadmap for the future: a project charter, problem statements, high-level process maps, value stream maps, a quality improvement action plan, a communication plan, and control plan.

The IHS team mapped out the work flow in the CSSU before and after procedures, conducted a time study over a number of days to understand how long each step of the process took, and carried out retrospective data analysis to understand referral patterns, procedure lengths and efficiency metrics such as turnaround times. The team also identified that some ambulatory patients could be recovered sitting in a comfortable chair.

The following solutions were identified for implementation:

1. Improve the layout of different procedures beds at CSSU.
2. Improve triage and booking system.
3. Create a radial access recovery area (RARA) in the CSSU for patients meeting new selection criteria, leading to additional recovery capacity.

IHS also created a customized simulator to indicate the pre and post improvement results, particularly the impact on procedure volume as well as daily and weekly cancellations based on the unique workflow, efficiency metrics and patients at the CSSU. The simulator showed the current state of patient flow and procedure cancellations, as well as the potential future state of capacity with the creation of the Radial Access Recovery Area (RARA). The simulator was able to show that cancellations would significantly be reduced, and bed capacity would be increased significantly.

In addition to demonstrating the simulator to frontline staff, IHS presented the simulator and results to administrative and clinical leadership to gain support for the proposed solution, reduce perceived risk of change and facilitate implementation.

Radial Access Recovery Area (RARA) process map



The Impact

Through their commitment to collaboration and delivering top-quality patient care, Southlake was able to achieve remarkable results:

- Since these changes were implemented in April 2019 and the RARA was launched, the CSSU hasn't had to cancel a single procedure because of capacity issues.
- Bed capacity in the CSSU has been improved by more than 50 per cent, with a confidence level of 90 per cent.
- Staff morale and patient satisfaction have increased significantly as the bottleneck has cleared.
- CSSU staff have more time to follow up with patients as the unit is quieter and there is less stress and frustration that had been caused by capacity issues.
- Southlake's cardiac care program has been able to optimize its budget and become far more efficient.

"The simulator was great. The bonus of having it was that we were able to see how our lab was set up in conjunction with the recovery space and our own institutional volume, how the flow was going to look under various scenarios. It was really helpful and was able to give a good picture of the benefits that could come with the change."

- *Jessie Boogaard*

50 % +
improvement
in bed capacity

Eliminated
procedure cancellations
due to capacity issues

**Significantly
Increased**
staff morale and
patient satisfaction

CSSU Optimization: RARA solution results¹

	Before	Post improvement
Steps	Time (mins) based on two days observation	
Pre-procedure CSSU bed occupied	174	0
Procedure time CSSU bed occupied	33	0
Post-procedure CSSU bed occupied	151	151
Total CSSU occupied bed time	358 (6 hrs)	151 (2.5 hrs)

"The IHS team worked very closely with us to identify issues that were creating the challenges and come up with potential solutions. They also made sure that the plan they came up with wasn't just something written on paper, but that there was actual follow-through on what some of those opportunities were."

¹ Data on file

UC202118628 EC
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