

CASE STUDY

for health care providers worldwide

How LHSC Shifted Surgery Volumes to Ontario's First High-Efficiency ASC

Maintaining clinical quality and engagement while reducing costs during a site-of-care shift

Published – April 2022 • 15-min read





Table of contents

Overview pg. 3

Approach pg. 4

Strategy 1: Test operational aspects of proposed shift within
existing site of care pg. 5

Strategy 2: Audition clinicians to ensure they can deliver equally
high-quality care within the limits of the new setting. pg. 8

Strategy 3: Foster a culture of “innovation authority” to enable
continuous improvement of new model of care. pg. 11

Results pg. 13

Supporting artifacts pg. 15

Related content pg. 19

Overview

The challenge

London Health Sciences Centre (LHSC), like many Ontario teaching hospitals, faced significant demographic, capacity, and financial pressures over the last decade. These pressures resulted in multi-month wait times for elective surgery, as well as for specialist surgical consults.

The organization

LHSC is a multi-site, public health system located in Ontario, Canada. It has a combined capacity of 1,000 beds across all facilities.

The approach

LHSC adapted a 10,000-square foot space into its new ambulatory surgical center (ASC). The ASC, called the Surgi-Centre, delivers select, low-acuity ambulatory surgical procedures on a strictly outpatient basis. It opened in March 2020, consisting of 2 ORs and 10 pre/postsurgical beds, with capacity to treat 8 to 15 surgical patients per day.

The result

LHSC's Surgi-Centre is the first ASC of its kind in Ontario, Canada. It has demonstrated 56% lower case costs based on human resources, disposables, and anesthesia costs for low-complexity procedures on low-risk patients at LHSC, while simultaneously expanding surgical capacity.

Approach

How LHSC took a deliberative approach to transitioning care from hospital to ASC

Creating the Surgi-Centre allowed LHSC to shift low-intensity, low-resource surgical procedures from its main acute site to an ambulatory surgical center. LHSC accomplished this shift, maintained a high level of clinical quality and engagement among staff, and reduced surgical operating costs to the system.

The three strategies

LHSC's site-of-care-shift from traditional, acute hospital to an ambulatory surgical center was achieved through a unique approach: ensuring quality by real-world testing the "shift concept" within existing sites of care, preparing physicians and clinical staff to operate in a new care setting through an audition-like process, and boosting staff engagement through an "entrepreneur-oriented" approach to operational feedback.

01 Test operational aspects of proposed shift within existing site of care

02 Audition clinicians to ensure they can deliver equally high-quality care within the limits of the new setting

03 Foster a culture of "innovation authority" to enable continuous improvement of new model of care

01 Test operational aspects of proposed shift within existing site of care

Ambulatory surgical centers (ASCs) are almost nonexistent within the Canadian health care landscape. So, informed by literature research and visits to ASCs in the United States, LHSC opted for a slow-testing and buy-in process to demonstrate the viability of the Surgi-Centre model. The benefit of the proposed model was that it would enable higher throughput of low-acuity surgical procedures with lower resource utilization than inpatient care. This increased volume of cases, coupled with standardized procedures and fewer preferential tools at the surgeon's disposal, caused some anxiety among clinical stakeholders who worried that quality would be compromised. LHSC employed "real-world testing" to secure buy-in from surgeons and surgical staff, verify that clinical quality could be maintained, and ensure that select surgical procedures could be performed safely at lower cost.

Surgi-Centre pilot program uses real-world conditions to mimic proposed site-of-care shift changes

LHSC's shift of low-acuity surgical procedures to the Surgi-Centre took place over a multiyear period where the idea was developed and then, crucially, tested. Spearheaded by a working group composed of the medical director of the ASC, service line leaders, perioperative director, surgical specialists, and patients, LHSC implemented its orthopedic trauma pilot program to investigate which surgical procedures corresponded to the standard of low-resource-intensity, high-throughput care. Starting in 2016, on assigned days over a four-year period, an underutilized OR within the main hospital was modified to pilot a new ambulatory model of care that LHSC envisioned.



1. TEST OPERATIONAL ASPECTS OF PROPOSED SHIFT WITHIN EXISTING SITE OF CARE

Among the pilots LHSC conducted were what surgical procedures could be safely transitioned from general anesthesia to regional anesthesia. The organization also conducted a risk assessment of which low-acuity procedures could be transitioned to an ASC model while maintaining high quality of care while simultaneously increasing surgical throughput.

Additionally, on the OR pilot days, surgeons gradually pared down the surgical tool suite of 80 tools to just 20. The goal was to understand if limiting surgical tools impacted quality, as reducing and standardizing what tools the Surgi-Centre was equipped with offered LHSC a substantial cost-saving opportunity. Within the resource-scarce pilot environment, surgeons were able to maintain quality and even do so with smaller teams because of the ability to “self-serve” with a pared-down toolset and predictable low patient acuity. So, when the Surgi-Centre opened, surgeons were comfortable with the new environment because they had already worked in a similar situation and had seen this model work.

‘High-throughput’ model requires definition of who qualifies as a low-acuity patient

LHSC’s real-world tests demonstrated the viability of a low-resource, high-throughput Surgi-Centre model. The organization then developed a new system of stratifying surgical patients by complexity.

Surgical patients at LHSC are now stratified into different tiers based on patient complexity and their treatment’s resource intensity. Tier 1 refers to low-complexity patients requiring surgical procedures that are low in resource intensity, while Tier 3 refers to the highest-complexity patients requiring the most resource-intense surgical treatment. Most patients fall in Tier 1 and Tier 2A.



1. TEST OPERATIONAL ASPECTS OF PROPOSED SHIFT WITHIN EXISTING SITE OF CARE

The Surgi-Centre’s two ORs are set up each day to cater exclusively to one tier of patient—ideally, even to one type of procedure. Such standardization extends to staffing: tier 1 procedures do not have a scrub nurse, while all procedures in tiers 2 and 3 are performed with a staffing complement of no more than 2.5 nurse FTEs.

	Tier 1	Tier 2A	Tier 2B	Tier 3
Share of Surgi-Centre staff	20%	40%	40%	0%
Location	Entirely in Surgi-Centre if patient and surgeon meet audition requirements	Cases divided between ASC and hospital by capacity and if patient and surgeon meet audition requirements	Cases divided between ASC and hospital by capacity and if patient and surgeon meet audition requirements	Cases divided between ASC and hospital by capacity and if surgeon meets audition requirements
Example of patients/cases	Distal extremities, foot procedures, carpal tunnel	Knee/hip arthroscopy, hernias, fusions, ACL repairs	Intra-abdominal procedures (gall bladder, AV fistula, etc.)	Total hip replacement

Note: See pages 15 and 16 for the full list of procedures performed at the Surgi-Centre.

Stratifying patients into tiers enables block scheduling of common procedures that dramatically boosts throughput while simultaneously minimizing cost and reducing variability.

The scale of this change—and its successful implementation—would not have been possible had LHSC not taken a slow, deliberate approach at “real-world testing” the operational aspects of their proposed shift. LHSC engaged and consulted with clinicians throughout the development of the Surgi-Centre. This engagement allowed clinicians on the front line to determine what procedures could be safely performed at the ASC.

02 Audition clinicians to ensure they can deliver equally high-quality care within the limits of the new setting

Just as it was vital to test the clinical quality concerns before shifting care to the Surgi-Centre, it was equally vital to test clinicians before shifting their practice to a new site of care. So, just as LHSC tested the pared-down and standardized infrastructure that they intended to use at the Surgi-Centre before formally opening it, they also tested the people who would be delivering that care.

A new work philosophy for surgeons looking to operate at the Surgi-Centre

Traditionally, a surgeon in an OR is given a wide degree of autonomy in running the OR, with support staff in practice adapting to the preferences/styles of the surgeon. However, leaders at LHSC understood that to enable high-throughput, lower-cost care within the Surgi-Centre model, surgeons would have to accept an increased amount of standardization in the way they worked. This necessitated a mind shift among surgeons who wanted to work in the Surgi-Centre.

Interested surgeons first had to meet with the ASC's medical director and the ASC's clinical manager for an interview where they reviewed a new employment contract for onboarding surgeons. This contract outlined the different expectations regarding behavior and the ASC's unique team environment: everything from greater self-service, to working with a smaller team, to accepting nurses who circulate between ORs for Tier 1 procedures, to working with a standardized set of surgical tools. Only after having these initial conversations and reviewing the contract do surgeons get the chance to formally "audition" to work in the Surgi-Centre.

2. AUDITION CLINICIANS TO ENSURE THEY CAN DELIVER EQUALLY HIGH-QUALITY CARE WITHIN THE LIMITS OF THE NEW SETTING

An 'audition' process to work at the Surgi-Centre

Prior to the audition, a surgeon will receive detailed information about ASC operating procedures. The audition itself takes place as a two-day pilot where that surgeon's hospital OR day is reduced to 50% to 75% of normal volumes, while the number of "easy throughput" surgical procedures is gradually increased. This artificial pressure is designed to test whether a surgeon is capable of operating in an environment with an increased level of standardization and high throughput, where a Surgi-Centre OR can safely see more procedures per day as opposed to a traditional hospital OR. A debrief at the end of the two-day pilot serves as the final decision on whether a surgeon is fit to operate at the Surgi-Centre.

Give clinicians the opportunity to become specialists in their preferred delivery model

LHSC leaders emphasized that not everyone succeeds during their audition. Some surgeons who value autonomy or aren't interested in fast-paced, low-complexity caseloads might not even choose to apply. Others don't feel comfortable working in an environment with increased standardization, while some need more resources or a larger team around them to feel comfortable while operating.

These different preferences combine to set up each surgeon to become specialist within their preferred site of care. The Surgi-Centre's standardization of patients into tiers ensures that all surgeons are operating in an environment that is more predictable than the typical hospital OR, which in turns enables them to better hone their skills as high-volume procedurist. Conversely, those who wish to remain in the main hospital are better suited to practice high-complexity cases.



2. AUDITION CLINICIANS TO ENSURE THEY CAN DELIVER EQUALLY HIGH-QUALITY CARE WITHIN THE LIMITS OF THE NEW SETTING



In a hospital, we have one surgeon doing transplants next to another OR where they're doing a simple foot surgery. It's like running the 100-meter dash alongside someone doing the steeplechase. **By standardizing care in the Surgi-Centre, the surgeons now have a very efficient process with more throughput. Plus, taking those cases out of the hospital means the hospital ORs have narrower scopes and are less chaotic.** Each 'level' of surgeon now works in an environment that matches the acuity of the patient."

Cathy Vandersluis, Executive Vice President, Chief Clinical Officer (Interim)
London Health Sciences Centre

03 Foster a culture of ‘innovation authority’ to enable continuous improvement of new model of care

Ensuring that clinical quality could be sustained at the Surgi-Centre didn't end with the successful completion of the pilot program. A core part of how the Surgi-Centre continues to maintain high standards of clinical quality while lowering cost and enabling high throughput is by providing each staff member an equal opportunity to positively impact the way the Surgi-Centre is run.

This “innovation authority” is effectively devolved to the entirety of the Surgi-Centre staff through an end-of-day team huddle. This daily huddle includes all staff present in the Surgi-Centre each day: clinical leaders, nurses, surgeons, support workers, and environmental service staff.

The huddles are a carry-over from the pilot program. Each day that the orthopedic trauma pilot performed surgery in its designated OR, the entire OR team debriefed the full day's experiences using a standard debrief format. The basic message communicated through these huddles was that LHSC viewed each worker as critical to its mission of ensuring that the proposed site-of-care shift could maintain the same quality of care seen in the hospital OR. Indeed, by embedding the daily huddles into the operational framework of the Surgi-Centre, LHSC ensured that the site-of-care-shift was both empowering from an engagement standpoint and transformative from an operational standpoint.



3. FOSTER A CULTURE OF 'INNOVATION AUTHORITY' TO ENABLE CONTINUOUS IMPROVEMENT OF NEW MODEL OF CARE

Format of a daily huddle debrief drives staff to innovate around patients

The daily huddle debrief begins with a short summary of the number and type of surgeries performed in each of the two Surgi-Centre ORs. The format of the debrief is structured to follow the patient journey through the Surgi-Centre:

1. Registration
2. Pre-operative care
3. Block room/anesthesia
4. Operating room
5. Post-operative care and auxiliary

As each area is addressed, staff are asked to reflect on that day's operations and provide suggestions for improvement. These suggestions are captured in a debrief document that includes a final section on decision points, ensuring that suggestions are considered and acted upon in a timely fashion. The huddles conclude by sharing feedback from that day's patients, which is almost always positive. As such, the daily huddle ends with a powerful opportunity to recognize the collective work of the Surgi-Centre by providing tangible, real feedback from that day's patients.

While the structure of the huddles is relatively straightforward, the fact that they occur every day means that the Surgi-Centre is in a state of continuous innovation. In fact, this everyday approach was modeled partly off similar huddles at Honda automotive plants, where any worker could, and was encouraged to, offer improvements to the daily running of the plant at their end-of-day huddles. By creating a platform where everyone is viewed as equal in their ability to propose effective solutions and innovations, LHSC ensures that clinical quality is the shared responsibility of all Surgi-Centre workers.

Note: See pages 17 and 18 for an example of a daily huddle debrief.

Results

How we know it's working

The goal of the Surgi-Centre was to simultaneously help LHSC expand capacity, cut surgical wait times, and dramatically reduce surgical costs, while improving the patient experience.

- **Expanded capacity:** The Surgi-Centre has a forecasted surgical capacity of 2,400 per year. The model has been so successful that there is active discussion about creating additional capacity at the site.
- **Complete shift of certain surgical procedures:** Certain surgical procedures are now conducted *exclusively* at the Surgi-Centre, freeing up capacity within acute-site ORs. Examples are listed below.
 - **Orthopedic trauma:** foot and ankle
 - **Sports medicine:** Knees and shoulder arthroscopy as well as knee/shoulder ligament repair, tendon repairs
 - **General surgery:** Hernia repairs
 - **Reconstructive surgery, insured:** Breast reductions, mastopexies
 - **Reconstructive surgery, uninsured:** 360-degree body contouring, liposuction, breast augmentation

RESULTS

- **Reduced surgical costs:** During the initial proof of concept phase in 2016, the average cost per case was based on three factors: human resources, disposables and anesthesia costs. Total costs for Tier 1 procedures were 56% lower in the Surgi-Centre than in the hospital OR. Costs for Tier 2 procedures were 30-34% lower.
- **Improved patient experience:** Comparative patient surveys indicate that patient experience scores are noticeably higher for procedures conducted at the Surgi-Centre than at the hospital. ASC patients spend on average 82.5 minutes less in post-op recovery at the Surgi-Centre than they do in a hospital OR. Additionally, readmission rates for Surgi-Centre patients are quite low. Less than 1% of patients who receive a surgical procedure at the Surgi-Centre are operated on again within two weeks of their original surgery. ▼

82.5

Average number of minutes saved in post-op recovery for ASC patients at the Surgi-Centre compared to hospital OR

Supporting artifact(s)

ASC Primary Procedure List

April 1st to Nov 30th, 2021

- Forefoot osteotomy
- Fat graft
- Ankle hardware removal
- Soft tissue excision
- Toe arthrodesis
- Posterior liposuction
- Foot hardware removal
- Rhytidectomy
- Knee arthroscopy patellofemoral ligament reconstruction
- Brachioplasty
- Knee arthrotomy
- Foot neuroma excision
- Knee arthroscopy
- Minor excision
- Knee arthroscopy ACL reconstruction
- Hernia ventral repair
- Foot tendon transfer
- Toenail excision
- Calcaneus osteotomy
- Extremity scar revision
- Knee osteochondroma excision
- Shoulder arthrotomy
- Foot osteotomy
- Knee arthroscopy high tibial osteotomy
- Knee arthroscopy osteotomy
- Shoulder rotator cuff repair arthroscopic
- Shoulder arthroscopy
- Extremity excision
- ANCHORAGE PLATE SYSTEM
- Hernia umbilical repair
- Toe ORIF
- Hernia inguinal repair
- Femur osteotomy distal
- Tibia hardware removal
- Knee arthroscopy distal open femoral osteotomy
- Knee hardware removal
- Achilles tendon lengthening
- Hip arthroscopy
- Knee ligament reconstruction
- Ankle arthroscopy anterior
- Knee arthroscopy bilateral
- Shoulder stabilization arthroscopic
- Knee arthroscopy debridement
- Knee arthroscopy ACL revision
- Knee arthroscopy hardware removal
- Patella ORIF
- Ankle ligament reconstruction
- Panniculectomy abdominal
- Elbow hardware removal
- Breast capsulotomy with implant exchange
- Shoulder decompression arthroscopic
- Breast reduction mammoplasty bilateral
- Knee manipulation
- Abdomen liposuction
- Extremity exostosis excision
- Ankle arthrodesis
- Shoulder mini open arthroscopic
- Tendon repair
- Achilles tendon repair
- Foot ganglion excision
- Ankle arthroscopy hindfoot
- Radius ORIF
- Forefoot osteotomy bilateral
- Foot arthrodesis
- Minor procedure



SUPPORTING ARTIFACTS

ASC Primary Procedure List Continued**April 1st to Nov 30th, 2021**

- Toe amputation
- Clavicle ORIF
- Abdomen liposuction with 360 contour
- Wrist ORIF
- Abdominoplasty
- Knee arthroscopy osteochondral fixation
- Extremity irrigation and debridement
- Breast reduction mammoplasty
- Ankle ORIF
- Knee tendon repair
- Breast augmentation mammoplasty
- Knee arthroscopy PCL reconstruction
- Leg fasciotomy bilateral
- Foot ORIF
- Mastectomy
- Wrist hardware removal
- Shoulder manipulation
- Foot tendon repair
- Ankle arthrotomy
- Extremity hardware removal
- Mastopexy
- Shoulder hardware removal
- Chin liposuction
- Femur hardware removal
- Labiaplasty majora
- Knee cyst excision
- Foreign body removal
- Breast capsulotomy
- Knee multiligament reconstruction
- Septorhinoplasty
- Foot reconstruction
- Ankle arthroscopy

SUPPORTING ARTIFACTS

Daily Debrief at the ASC: September 2020

Hi everyone – It was a record-breaking day at the Surgi-Centre today! Dr. David Sanders and the excellent team completed **six** Tier 1, foot and ankle procedures. Surgery started at 9:00am and all were complete before 3:00pm. This was the first day for using the second, OR room (#19).

All patients rated their experience as exceptional. Comments included:

Did Wells:

1. Staff were excellent (5+ similar comments)
2. Process was very smooth from start to finish (4 similar comments)
3. “Everyone introduced themselves and were totally caring. Each procedure was explained clearly and this minimized my anxiety.”

Areas of focus:

1. Provide a blanket warmer (2)
2. Day-of-surgery instruction sheet should say whether or not to take your medications that day

Staff satisfaction continues to be very high as well.

Did Wells:

1. Patient and workflow were very smooth
2. First day using OR 19 for all procedures and was functional
3. Having flexible staff is an asset in these early days

SUPPORTING ARTIFACTS**Daily Debrief at the ASC: September 2020 (cont.)****Areas of focus:**


1. COVID-19 testing:
 - a. Some results unavailable by day of surgery.
 - b. Some patients advised the medical secretary they hadn't been contacted by Pre-Admit. Pre-Admit confirmed attempts are being made with every patient but they can be difficult to reach. Turnaround of testing results is 5-7 days for patients outside of London.
2. Ensure OR 19 (and 20) is fully stocked (i.e. tubing, unlabeled syringes).
3. Door between waiting area and surgical area requires automatic opening and locking, i.e. identified during JHS walkthrough and when exiting discharged patient.
4. Ensure all meds are accessible to nurses including those that weren't identified to be issued. Pharmacy is aware and following up.
5. The team is reminded of masking policy and need to declutter some shelving areas per JHS walkthrough.
6. Confirm O2 outlet is turned off at the end of each day in OR and Pre/Post.


Decision:


1. Medical secretaries will be asked to advise patients to get COVID-19 tested prior to surgery. Pre-Admit will continue with current practices of ensuring patients get tested prior to surgery but this will provide more time for results to arrive prior to surgery.


Related content

Advisory Board resources

 WEBINAR RECORDING
Global insights on shifting the site of care
[Watch now](#)

 READY-TO-USE SLIDES
Site-of-Care Shift Library
[Read now](#)

 CASE STUDY
Creating an equitable virtual urgent care service
[Read now](#)

 PODCAST
Episode 110: Site-of-care shift is a global (and accelerating) trend
[Listen now](#)



Project director

Alex Polyak

polyakal@advisory.com
781-727-7307

Research team

Paul Trigonoplos
Miles Cottier
Isis Monteiro

Name	Name
Title	Title
<i>Institution</i>	<i>Institution</i>

Name	Name
Title	Title
<i>Institution</i>	<i>Institution</i>

LEGAL CAVEAT

Advisory Board has made efforts to verify the accuracy of the information it provides to members. This report relies on data obtained from many sources, however, and Advisory Board cannot guarantee the accuracy of the information provided or any analysis based thereon. In addition, Advisory Board is not in the business of giving legal, medical, accounting, or other professional advice, and its reports should not be construed as professional advice. In particular, members should not rely on any legal commentary in this report as a basis for action, or assume that any tactics described herein would be permitted by applicable law or appropriate for a given member's situation. Members are advised to consult with appropriate professionals concerning legal, medical, tax, or accounting issues, before implementing any of these tactics. Neither Advisory Board nor its officers, directors, trustees, employees, and agents shall be liable for any claims, liabilities, or expenses relating to (a) any errors or omissions in this report, whether caused by Advisory Board or any of its employees or agents, or sources or other third parties, (b) any recommendation or graded ranking by Advisory Board, or (c) failure of member and its employees and agents to abide by the terms set forth herein.

Advisory Board and the "A" logo are registered trademarks of The Advisory Board Company in the United States and other countries. Members are not permitted to use these trademarks, or any other trademark, product name, service name, trade name, and logo of Advisory Board without prior written consent of Advisory Board. All other trademarks, product names, service names, trade names, and logos used within these pages are the property of their respective holders. Use of other company trademarks, product names, service names, trade names, and logos or images of the same does not necessarily constitute (a) an endorsement by such company of Advisory Board and its products and services, or (b) an endorsement of the company or its products or services by Advisory Board. Advisory Board is not affiliated with any such company.

IMPORTANT: Please read the following.

Advisory Board has prepared this report for the exclusive use of its members. Each member acknowledges and agrees that this report and the information contained herein (collectively, the "Report") are confidential and proprietary to Advisory Board. By accepting delivery of this Report, each member agrees to abide by the terms as stated herein, including the following:

1. Advisory Board owns all right, title, and interest in and to this Report. Except as stated herein, no right, license, permission, or interest of any kind in this Report is intended to be given, transferred to, or acquired by a member. Each member is authorized to use this Report only to the extent expressly authorized herein.
2. Each member shall not sell, license, republish, or post online or otherwise this Report, in part or in whole. Each member shall not disseminate or permit the use of, and shall take reasonable precautions to prevent such dissemination or use of, this Report by (a) any of its employees and agents (except as stated below), or (b) any third party.
3. Each member may make this Report available solely to those of its employees and agents who (a) are registered for the workshop or membership program of which this Report is a part, (b) require access to this Report in order to learn from the information described herein, and (c) agree not to disclose this Report to other employees or agents or any third party. Each member shall use, and shall ensure that its employees and agents use, this Report for its internal use only. Each member may make a limited number of copies, solely as adequate for use by its employees and agents in accordance with the terms herein.
4. Each member shall not remove from this Report any confidential markings, copyright notices, and/or other similar indicia herein.
5. Each member is responsible for any breach of its obligations as stated herein by any of its employees or agents.
6. If a member is unwilling to abide by any of the foregoing obligations, then such member shall promptly return this Report and all copies thereof to Advisory Board.



655 New York Avenue NW, Washington DC 20001
202-266-5600 | [advisory.com](https://www.advisory.com)