

Chapter 1

Shouldice Hospital from Interviews and Observations: The Well Managed Organization¹

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We would also like to pay our respects to two thought leaders in the field of hernia surgery who during our interviews and encounters shared their deep knowledge of the evolution of hernia surgery at Shouldice. The first is Dr. Bendavid, who passed away, in September 2019. Finally, we were sad to hear that Dr. E.B. Shouldice passed away in April 2022. He was a humanistic clinical leader, a talented and caring surgeon, and a role model for all of us.

Abstract

This paper describes our observations, findings, and understanding of Shouldice Hospital, an 89-bed hospital with five operating rooms, specializing in the surgical repair of abdominal wall hernias and recurrent hernias. For more than 75 years, the hospital has been offering not only efficient and low-cost services for patients and payers but also high-quality hernia repair with a lifetime guarantee, outstanding patient experience and caregiver satisfaction. Our purpose is to explain a mystery: accounting for the success of Shouldice as a modern, well-managed health care organization able to achieve the quadruple performance problem.

The research focused on three broad questions (1) What are the important features of Shouldice Hospital as a care program and delivery system? (2) How does Shouldice create value for patients, caregivers, and the organization? (3) If Shouldice does outperform other outpatient, ambulatory surgery centers, and traditional hospitals, what are the key lessons that other health care organizations can learn?

The study design was a multi-method descriptive and explanatory case study with core qualitative components—care process observations and interviews with key informants. We identified three broad streams in the literature (1) the evolutionary history of hernia surgery; (2) studies comparing the Shouldice methods with other techniques; and (3) the literature on focused factories and well-managed organizations. Each stream is discussed and drawn together in this research study.

Several key findings and lessons are highlighted in this case study. First, a focused health care program that wants to offer the best surgical outcomes and best patient experience at the lowest

prices must be supported by efficient care processes that reduce unproductive work. When the workflow is structured efficiently, caregivers and staff spend most of their time on patient care activities; reducing unproductive work creates a strong people proposition for employees. Shouldice has found a way to reduce the cost of administrative overhead and middle management, by combining standardization with enough autonomy and team interdependence to allow for the customization of patient services.

We also found that the clinical service line at Shouldice was supported by a patient-centered, self-directed, and team-based culture. Being patient-centered, they learned that one way to improve value in health care is by understanding each patient as an individual and creating a true partnership between the patients and the caregivers. Shouldice employees do not need to be managed; they manage themselves. Finally, the leadership and the caregivers take time to explain the rationale behind important clinical, non-clinical, and staff decisions, which creates a perception of fairness in the workplace. When employees perceive fairness in the workplace they feel a sense of pride, they become more connected and attached to the patients and other employees, and more loyal to Shouldice.

These are powerful lessons in the repositioning of the primary clinical activities and the role of management in the formulation of care practices into a care process. The science of medicine and management aims to create simultaneously value for patients, value for caregivers and staff, and value for the health care organization, which has been called the quadruple performance problem. Shouldice story is about a well-managed health care organization, and, in many ways, it is an exemplar case of how the new science of medicine and management works in practice.

Keywords

Shouldice Hospital; Management Practices; Focused Factories; Focused Clinics; Hyper-Specialized Physicians; Value Innovation; Value-Based Health Care; Well-Managed Organization; Science of Medicine and Management; Clinical Leadership; Hernia Surgery; Health Care Management; Quality and Efficiency; Effective and Efficient Organizations

Key Learning Points

- Working as a focused clinic, Shouldice not only cares deeply about their patients, but they also partner with their patients, and they set clinical targets and establish performance standards that are well-defined, measured, and clearly understood
- The care program and surgical workflow have been scientifically studied with performance standards and protocols that achieve excellent end results.
- A health care organization's culture is the de facto competitive strategy, enabling a collective purpose, and a strong identity as a working team that can partner with patients.
- Health care organizations need a strong people proposition that offers employees challenging goals, continuous learning, and an opportunity to achieve while doing productive work.
- Fair process leadership builds implementation into their strategic thinking; consequently, there is a system of accountability, with no extra layers of management.

Introduction: The Well-Managed Health Care Organization

In November 2016, Dr. Michael Alexander, chief of staff and chief medical officer for Shouldice Hospital, performed his 30,000th hernia surgery. His picture was posted on social media and there were multiple responses. Following is a sample post:

Almost two years after my surgery, I am so grateful to Dr. Alexander, both for his exceptional surgical skill that ended my mesh nightmare, and for his kind and thorough treatment of me afterward, answering so many questions and allaying my fears about healing (which had not gone so well on my prior two mesh surgeries). I cannot recommend Shouldice highly enough. Shouldice offers a lifetime guarantee for their nonmesh surgical procedure and a success rate of 99% [1].

Dr. Alexander is an example of a hyperspecialized physician. Shouldice Hospital, a focused clinic founded in 1945, specializes in the surgical repair of abdominal wall hernias and recurrent hernias². Shouldice has performed 415,000 hernia surgeries and consistently produced excellent outcomes for more than 75 years.

Shouldice Hospital in Ontario, Canada is an 89-bed hospital with five operating theaters. The hospital offers not only efficient and low-cost services for patients and payers, but also high-quality hernia repair with a lifetime guarantee³ and outstanding patient and caregiver satisfaction.

Dr. Edward Earl Shouldice started Shouldice Hospital in Canada in 1945, at a time when a traditional hernia surgery meant weeks in the hospital, a painful patient experience, poor

² When an organ, tissue, or intestine finds a weakness in the abdominal wall and pushes through a tear in the muscle or tissue covering this area, it is diagnosed as a hernia. Often it is obvious to the patient because there is a noticeable bulge of soft tissue. Hernia rupture can become a serious health issue, such as causing an intestinal obstruction. Hernias can occur in the abdomen, belly button, upper thigh, and miscellaneous areas, and they most commonly occur in males. It is estimated that seventy-five percent occur in the inner groin, called inguinal hernias.

³ Although Shouldice fixes hernia failures from other non-Shouldice surgeons five days a week, they estimate that they redo only 50 of their own surgical failures each year.

outcomes, and months of slow recuperation. He did not try to compete with the general hospitals that performed herniorrhaphy, but instead created a unique surgery and care program, organizational culture and operating strategy that emphasized:

- superior surgical technical outcomes
- low risk, with respect to patient safety
- high volumes and strict standardization
- low prices/costs
- austerity and simplicity
- surgical and patient productivity with less time in pain
- convenient access with healthy amenities
- homelike and fun ambiance
- memorable and supportive relationships with surgeons, nurses, staff, and patients
- environmentally friendly location

Within a few decades, Shouldice Hospital redefined acute health care services for primary and recurrent abdominal wall hernias. Unlike traditional hospitals offering hundreds of service lines and continuous expansions, Shouldice focused on a *single service line*: primary and recurrent inguinal hernias (85%) and other groin and ventral wall hernia procedures. Shouldice's strategic formulation and execution of services achieved cost efficiency with a stable revenue stream, a strong value proposition for patients, and a strong employee proposition for caregivers and nonclinical staff.

Patient value, as it is used here, means:

Offering the highest quality to patients at a lower price, and at a reasonable cost to the organization.

Quality of care has both objective components, e.g., outcomes and end results, as well as subjective and emotional components, e.g., patient experience and patient satisfaction. Quality is best understood as a multidimensional construct, operationalized by five variables (1) technical

outcomes; (2) overall patient experience and satisfaction; (3) decision-making efficiency; (4) relationships with caregivers and staff; and (5) convenience and amenities [2].

Regarding costs, laparoscopic and mesh repairs have substantially higher variable costs for supplies and materials than pure tissue repairs [3]. The variable operating room costs per non-mesh primary hernia surgery at Shouldice until 2020 were less than \$30⁴. Today, owing to Covid19 (PPEs, IV costs and new regulations) they are less than \$130. In fact, the price for the entire Shouldice hospital and surgical service (surgeon, nursing, food, laundry and linen) with a three-day to four-day stay is less than the price of a laparoscopic outpatient procedure in the US and Canada⁵. The Shouldice price is about \$2,950 versus an average outpatient price of \$7,750 USD in the US. Historically, the cost of a Shouldice hernia surgery to the provincial health system in Canada is also significantly less than that funded through public hospitals and outpatient centers⁶. For example, in Ontario, the average general hospital's surgical cost per comparable hernia surgery case was \$1,639, compared to \$1,072 for Shouldice, which excludes the surgeon's fees, the semi-private room and out-of-province fees. The average payment to hospitals and surgeons in Toronto for a comparable hernia procedure may be approximately \$4,000 versus \$2,950 for Shouldice⁷.

⁴ Throughout this paper monetary references with a dollar sign (\$) will be in Canadian dollars and cents. Otherwise, it will be noted as \$ US dollars.

⁵ That would include the round-trip airfare from major cities in the US to Toronto, Canada.

⁶ In Canada hernia surgery is covered under provincial health care plans, as required under the Canada Health Act. There are no co-pays or deductibles, so prices to patients are not relevant. Physicians are paid on a fee-for-service basis by the Ontario Health Insurance Plan (OHIP) and the hospitals are paid a global budget rate.

⁷ One of the authors called a Toronto ambulatory care center and received a quote in writing that a laparoscopic hernia procedure was estimated to cost between \$6,500 and \$9,000.

Shouldice Hospital redefined hospital patient experience with its rave reviews from former patients. For many decades, Shouldice brought a sample of patient cohorts back together for an annual reunion, because patients had expressed a need to see the friends they had made and the surgeons and caregivers they had encountered during their in-patient stay at the hospital⁸.

The Shouldice hernia repair almost never uses general anesthesia; in well over 95% of primary inguinal cases, operations are performed under local infiltration and a light sedative [3, 4]⁹.

Avoiding general anesthesia significantly reduces the risk of harm to patients. Moreover, Shouldice surgeons are carefully selected and trained based on their prior experience over a 2–4 month period before they are allowed to operate. Where a typical general surgeon may perform 50 hernia repairs a year, each Shouldice surgeon performs on average more than 600 per year. Additionally, the surgery is not done on an outpatient basis. Each patient stays in the hospital for a minimum of three to four days.

What makes some of the clinical work challenging and rewarding for Shouldice surgeons is repairing hernias that other surgeons have been unable to repair permanently. Throughout the day, surgeons operate on patients with a hernia recurrence. These patients may have already had one or two hernia procedures, but the hernia returned because it was not properly repaired.

Performing a procedure over old scar tissue is tricky work for any surgeon. Nevertheless, these

⁸ In 1947 Dr. E.E. Shouldice was asked by a few patients to organize a “soiree” for himself and his patients. The patients wanted 2 things (1) to renew friendships with other patients; and (2) to stay close with the hospital. This became an annual event and Shouldice patients were encouraged to come back every year to have their hernias checked by surgeons who were in attendance as well. It was a huge event in the ballroom at the Royal York Hotel. During our visit in 2016, the managing director told us, “A few years ago, we stopped the patient reunion. It had to end—it just got too big. The demand was four thousand people every year and growing. We could not accommodate the demand, and it turned into a negative.”

⁹ General anesthesia is used for large ventral and recurrent hernias.

are the cases that motivate Shouldice surgeons because they provide clinical evidence of the superiority of the Shouldice technique with its specialized incision, suturing, and early ambulation procedures. Shouldice surgeons can guarantee their patients that they are the most experienced hernia surgeons in the world.

Shouldice offers not only a hernia repair technique but also a well-designed service proposition that has clinical value for patients. The care process includes a stay in a pleasant and relaxed environment, continuity of relationships, low prices and high quality. The physician-patient interaction differs from most surgical encounters. When patients are admitted to this hospital, the first person they see is their surgeon who confirms their diagnosis, explains the procedure, and tells them what to expect.

Once selected for Shouldice, patients are educated to become partners and coproducers in every aspect of the care process, which builds both trust and self-confidence. For example, they are encouraged to walk into the operating room. They are awake and can talk with the surgeons during the surgery, and they are invited to get off the operating table and walk, with the help of the surgeon and assistant surgeon, to a waiting wheelchair where they are taken to their room. the postoperative room¹⁰. Early ambulation is part of self-confidence building and the recovery process, with patients being fully ambulatory after 4 hours.

Recovery is completely programmed, but more like at a resort or on a cruise than in the military. Each day it starts with getting patients out of bed, taking their medications, walking down a flight of stairs to eat breakfast in the dining hall, and going to exercise classes with rest periods

¹⁰ General anesthesia patients recover in the PACU.

in between. The patients' day continues with a nice lunch in the dining room followed by more exercise and interactive recreation. Later in the day patients have dinner, more recreational activity, snacks, and then lights out [5]. To encourage mobility and interaction, there are no televisions or telephones in the rooms. Meals must be eaten in a dining room after the first day post-op, and patients must take themselves to the toilets. The facility has stairs with low risers, putting greens, exercise cycles, walking paths, and other activities aimed at fostering a speedy recovery. Upon discharge, patients are invited to return for annual hernia checks and to join the Shouldice patient network.

Patients, providers, and staff are fully engaged, understand their roles and responsibilities, and share a supportive and caring attitude and mindset. Through mutual interaction, learning and understanding, they are committed to the mission and goals of the clinical care process and adopt a Shouldice identity. The nurses know that their job is not to perform menial tasks, but to educate patients, help them to exercise, and relieve physicians of simple, nonclinical tasks.

These are powerful lessons in the repositioning of the primary clinical activities and the role of management in the formulation of care practices into a care process. The science of medicine and management aims to create value for patients and value for caregivers, staff, and the health care organization--what has been called the quadruple performance problem (see **Fig. 1.1**). The Shouldice story is about a well-managed health care organization, and in many ways, it is an exemplar case of the new science of medicine and management. **[INSERT Fig. 1.1]**



Fig. 1.1 The New Quadruple Performance Problem. Health care organizations are being asked to achieve (1) excellent technical outcomes, (2) outstanding patient experiences, (3) team well-being, and (4) cost-efficient care. For most health care organizations achieving even two out of four is a very difficult management task.

In this chapter, we present the case of Shouldice Hospital, a complex health care organization that for decades has created value for patients, caregivers, staff and the organization. Our purpose is to account as for the success of Shouldice as a modern well-managed health care organization, especially compared with the apparent satisfactory or malperformance of many general hospitals in recent years. The case study will illustrate how the new science of medicine and management works in practice.

All three authors shared an interest in understanding Shouldice as a health care organization. For decades, the hospital outperformed other hospitals and outpatient facilities doing hernia suture procedures. Thus, the authors decided to do a literature review and organize a visit to Shouldice in 2016, with follow-up interviews and worked together to write this chapter.

Two of the coauthors were highly experienced hernia surgeons. The third author was a professor of health care management¹¹. One of the hernia surgeons was recruited, trained, and gainfully employed as a Shouldice staff surgeon for nearly 2 years. As an insider performing Shouldice surgeries, he was able to render very detailed explanations about the repair technique as well as his own journey to Shouldice, his learning curve, and personal development at the clinic. He could talk in detail about the care process, the management practices, the Shouldice culture, the people at the clinic and the administrators.

The other hernia surgeon was in private practice working in a US hospital and had performed several thousand hernia procedures. He spent 2.5 days visiting the clinic. During that time, he toured the facility, conducted many formal and informal research interviews, and keenly observed several surgeries using non-participant observation. The professor later visited a second time and spent 2 days at the clinic, conducted many formal and informal interviews, and toured the facility. More interviews were conducted in the Summer of 2022. In the next section, we will discuss what we learned from the literature and from our interviews and observations.

¹¹ The research for this chapter began in the late 1980s when the health care management professor and lead author started a longitudinal study of Shouldice hospital. He conducted follow up interviews in the 1990s and more research in the early 2000s. Over several years he combed the literature on Shouldice, conducted on-site and off-site interviews with key Shouldice informants, and analyzed and taught about Shouldice as a health care organization.

Literature Review

We began with a literature review. First, we looked at dozens of studies on the history of hernia surgery, clinical studies of different surgical methods, and comparative studies of performance. Second, we collected dozens of documents concerning Shouldice Hospital—clinical studies, management case studies, reports, newspaper and magazine articles.

We identified three broad streams in the literature (1) the evolutionary history of hernia surgery; (2) studies comparing the Shouldice methods with other techniques; and (3) the literature on focused factories and well-managed organizations. (Each stream will be discussed and drawn together in this chapter.)

The First Stream: The Evolution of Hernia Surgery & The Search for an Optimal Hernia Repair

This clinical literature stream documents how the science and practice of hernia repair evolved and progressed [see 6]¹². With a better understanding of anatomy and physiology, new hernia repair techniques were introduced.

The first remarkable advance was reported by Edoardo Bassini in 1884, when he described a surgical technique that could fix 90% of hernias without recurrence. Bassini cut into the groin,

¹² According to Hori and Yasukawa, 2021 [6], Hernia was first described in 1552 BC in Egypt and the diagnosis comes from the Latin word for prolapse. There is a lifetime risk of 17% for men and boys, and only 3% for women and girls. Females have a 4 times higher risk for femoral hernias.

pushed the intestine back through the hole and sewed together the torn tissue [6, 7]. In the years following Bassini, there were many smaller, open surgical advances, and up until the 1950s hernia repairs were closed using suture.

A second clinical breakthrough was the surgical technique introduced by Dr. E.E. Shouldice in 1945. The procedure is an open transinguinal pure tissue repair dissecting the entire groin area to identify weak areas and secondary hernias. The tension-free repair is performed with a laminated closure and under local anesthesia.

Shouldice hypothesized that a surgeon's knowledge of anatomy coupled with large volumes of cases would lead to a mastery that could prevent recurrences. As the transinguinal technique evolved, follow-up studies of hundreds of thousands of Shouldice patients over the better part of a century support the assertion that the end result was a durable, lifetime repair [4, 8].

A third notable event happened in 1958, when a new technique using a polypropylene mesh prosthesis was introduced. By the 1990s Dr. Irving L. Lichtenstein announced the discovery of a "tension-free" repair technique using mesh that was done under local anesthesia so that it could be performed on an outpatient basis with outstanding end results. Since then, the technique has continued to evolve with mixed results.

Although the medical community is still searching for the most optimal hernia treatment, 90% of all hernia procedures in the US today use one of the newer mesh techniques, such as Lichtenstein, Stoppa, laparoscopic, Kugel, mesh-plug or robot assisted [8, 9]. Given the large number of techniques, reaching a consensus on which mesh technique is optimal has created an

ongoing and vigorous debate. Some studies report no difference in end results, and other studies report that one or another is superior [see 9, 10, 11].

The literature on the evolution of hernia surgery falls into two categories. First, there are hernia studies that focus on clinical breakthroughs in safety and reliability, anatomical discoveries, technological advances, and controversies among surgeons [6]. The second category comprises comparative studies of alternative repair methods, comparing open versus minimally invasive surgery for elements such as recurrence rates, technical difficulty, quick recovery after convalescence, chronic pain, costs, and efficiency [3, 12, 13, 14, 15, 16, 17, 18].

Discovering an optimal surgical repair technique is complicated. Each technique has to be evaluated on dimensions such as (1) low risk of complications, (2) replicable outcomes, (3) efficient and low cost, (4) operative time, (5) recovery, and more¹³. These performance attributes would require multivariate analysis controlling for confounding variables and nonclinical factors, such as the practice setting, a surgeon's ability (e.g., knowledge of anatomy, skills and experience, etc.), trust relationships with members of the surgical team, and other variables [19]. This brings us to the challenges faced in the second literature stream.

The Second Stream: Comparing Shouldice with Other Techniques

Over many decades, when comparing the efficacy of the Shouldice repair methodology and technique with other suture repairs, Shouldice had the lowest (1) cost, (2) recurrence rate, and (3) rate of complications. However, replicating results produced by highly trained focused centers

¹³ When considering issues of social justice, access, and equity, an important consideration is whether a surgical technique is affordable and scalable to lower resource countries.

like Shouldice versus general settings using the Shouldice repair methodology created mixed results.

In 2009, European hernia guidelines stated that the Shouldice hernia repair is the best nonmesh repair [20]. This is important since, in 2018, the HerniaSurge consensus recommended mesh repair as the new gold standard. However, since some patients refuse mesh, a surgical alternative is needed.

In 2012, a Cochrane review that compared all prior randomized clinical trials (RCTs) of Shouldice versus open mesh and nonmesh methods found that Shouldice had lower recurrence rates, less chronic pain, and lower rates of hematoma formation, albeit slightly higher infection rates, longer time in the operating room, and longer lengths of stay [21].

Surgical trials are challenging, however, because the results may only reflect the comparative focus of the techniques being studied and not the overall effectiveness of the implementation of the technique. For example, Shouldice hospital is an expert center with highly trained surgeons who have mastered the technique. Other centers may not have surgeons with equivalent skills. Consequently, some RCTs will be of lower quality, and likely lead to ambivalent results. An example of this occurred in 2002 when the *British Journal of Surgery* reported on a randomized trial of two surgical approaches i.e., the newer Lichtenstein mesh technique versus the Shouldice technique. Although there were no significant differences in postoperative complications, pain, and recovery, the researchers concluded that the Lichtenstein repair was easier to learn, took less time (the Shouldice technique took 7 minutes longer to perform), and there was a slight difference in recurrence rates [13]. But again, this randomized trial may not tell the whole story.

For that RCT, five surgeons were taught both techniques in a typical surgical training program, and surgery was performed under regional or general anesthesia in an ambulatory setting. The clinical objective was a quick repair, less time in the operating room, and same-day outpatient discharge. From a health care management perspective, the clinical trial not only missed what the Shouldice technique is about, the study completely missed critical aspects of the Shouldice methodology, i.e., pre-operative patient conditioning, immediate and early ambulation with an in-patient postoperative stay. Moreover, Shouldice surgeons are not trained in 8 hours, and they are not considered qualified until they perform 300 cases. Further, after experiencing 300 cases, surgeons perform another 700 cases to become clinically efficient.

Our review of both literature streams surfaced important findings. First, new hernia techniques and better data do not necessarily invalidate what was already known--new knowledge is added and integrated into the growing science of hernia repair. When several surgical techniques offered excellent results, evidence-based studies do not arrive at ultimate truth, but often generate ongoing controversy, while still aiming for truth.

Second, discovering the best way to perform a hernia repair has been a frustrating odyssey, owing to the lack of standardized work, difficulty controlling for surgical variations, and lack of clear definitions of outcomes such as pain. Different physicians in the same practice settings using the same hernia repair technique can make hundreds of small decisions that modify the guidelines for a given surgical technique [12, 17]. Without standardized work, there can be no improvement in how the surgery was done [22]. Finally, a major challenge of standardizing hernia repairs is getting every general surgeon to agree on an approach. The hernia repair literature exemplifies all the complexities of surgery with respect to (1) patient safety, risk

factors, technical outcomes and recurrences; (2) surgical infections; (3) cost efficiency; (4) learning curves; and (5) physician practice styles.

The Third Stream: Focused Factories and Well-Managed Organizations

Shouldice hospital has been labeled a “focused factory” [23, 24] or focused clinic [25]. In 1974, Wickham Skinner introduced the term “focused factory” to define an organization that would outperform a traditional factory manufacturing hundreds of products. Wickham Skinner described a focused factory as an organization concentrating on a “limited, concise, manageable set of products, technologies, volumes, and markets” [26, 27, 28]. In 1996, Skinner further described the ideas behind focused factories [27]:

A factory is focused if its entire set of manufacturing policies, i.e., its structure, is direct toward one manufacturing task. This has nothing to do with size; it has everything to do with the design of the system. Focus is a state of mind and focusing is the management process of designing a coherent structure to accomplish a strategic task.... [27, p.72]

Although specialty hospitals have long been part of the landscape of delivery systems, a new breed of super specialty-hospital and hyper-focused physician is emerging globally. These organizations are like Skinner’s notion of focused factories. Since we are not dealing with the manufacture of products, however, perhaps a better term is a *focused clinic*.

The concept of a *focused clinic*, as it is used here, is defined as:

A health care organization whose preadmission, investigation, therapeutic, postoperative, and follow-up activities are clearly targeted to meet the unmet and holistic needs of a well-defined patient population segment. Focused clinics deliver a narrow range of services to not only meet a patient’s medical needs but also patient’s psychological,

social and economic needs, and the caregivers' and staffs' psychological, social and economic needs as well, without any tradeoffs.

One hypothesis emerging from the literature is that focused clinics are capable of managing and achieving the elusive quadruple performance problem by creating value for (1) patients (2) caregivers and staff and (3) for the health care organization.

Although this third stream of prior work ignores clinical aspects such as the surgical technique or materials, it makes the connection between management practices and performance. Using anecdotal descriptions, case studies, and performance studies, this stream of literature compares general health care organizations with those that focus [see 24, 29, 30, 31, 32, 33, 34, 35].

Some of these studies compare specialty, subspecialty, or physician-owned hospitals to general hospitals. They hypothesize that with focus comes standardization, fewer variations in quality, such as medical errors, and substantially better quality of care. They find that performance improves when the volume of a given diagnosis or procedure increases, along with the experience curve of professionals. So, physicians, clinics, and hospitals hyper-focused on a few specific diagnoses and procedures may outperform general hospitals that offer a wider scope of medical services.

This third stream of work makes two contributions. First, it identifies the importance of the area of specialization, the importance of work standardization and the importance of volume-outcome effects on performance. Second, it identifies a core set of managerial practices that result in productive efficiency, financial stability, talent retention and operational longevity [23, 36, 37, 38].

Our chapter analyzing Shouldice Hospital brings the three literature streams together within an organizational case study of one focused hernia clinic. More specifically, we will take the reader inside Shouldice to analyze how they achieve operational excellence as a focused clinic. First, we will briefly explain the methodology used for the case.

Research Methodology

As we began our study, there were three questions we set out to answer. First, what are the important features of Shouldice Hospital as a care program and delivery system? Second, how does Shouldice create value for patients, caregivers, and the organization? And third, if Shouldice does outperform other outpatient, ambulatory surgery centers and traditional hospitals, what are key lessons that other health care organizations can learn? What underlies these questions is a singular mystery: What accounts for the decades of success of Shouldice as a modern complex health care organization?

The study design was a multi-source, multi-method descriptive and explanatory case study with core qualitative components—using archival data analysis, observation, and interviews with key informants. Prior to the site visit, some archival data was collected and analyzed. Next, we made several site visits to Shouldice to conduct an unstructured observational study of the facility. Two of the authors observed the surgery and all the key processes of the care program. One author was a participant observer working as a surgeon at Shouldice, and the other two were nonparticipant observers who conducted joint and separate individual interviews.

In addition to the observational study, dozens of structured and unstructured interviews with key informants were conducted. Both structured and open-ended questions were asked. The informants included patients, nurses, surgeons, senior executives, and nonclinical staff. To understand the patient and staff experience, meals were taken with patients and staff. Anecdotal data were observed and recorded. Interviews with Dr. E. B. Shouldice¹⁴, and Mr. John Hughes, the Managing Director, and some surgeons were recorded with their permission and transcribed. Interviews with the chief medical officer, surgeons, nurses, financial and other administrative staff, and patients were informal. Handwritten notes were taken.

To analyze the layout and operations, listening tours and rounds were taken. A considerable amount of that interview data was recorded, transcribed, and later analyzed. Finally, more archival data were collected along with additional literature published from 2016-2022 to generate grounded hypotheses and to retest earlier findings based on interviews and observations. All of the facts and data presented were validated with follow-up interviews conducted Summer of 2022.

Next, we will describe our observations, findings and understanding of Shouldice. We will start with the market for hernia repairs, the historical background and evolution of the care program, and finally the key features of the frontstage and backstage of the care program.

The Current Hernia Repair Landscape: How Attractive Is This Service Line?

¹⁴ The late Dr. E.E. Shouldice is the father of Dr. E.B. Shouldice, who also passed away in April 2022.

There may be no better example of a highly competitive surgical market than the market for hernia repair. According to Michael Porter, five supply-side competitive forces determine the attractiveness, intensity, and profitability of an industry [39]. These forces are (1) rivalry among competitors offering the service; (2) the power of buyers; (3) the power of suppliers; (4) the potential threat of new entrants; and (5) the threat of substitutes. Using that analytic framework, we can determine the attractiveness of hernia repair as a service line (more competitive means less attractive).

Regarding the competitive rivalry, general surgeons perform most hernia surgeries, and there are many general surgeons, except in rural areas. Hernias compose 14 to 15% of general surgeons' workload [40]. In the US there are more than 25,000 active general surgeons who do hernia repairs [41]. In Canada, there are more than 2,200, and 699 in Ontario, alone¹⁵. On average, general surgeons in the US and Canada perform about 50 inguinal hernias each year. They are a basic and dependable source of their surgical work. Since most of these surgeons (90%) use mesh, the product has become more standardized.

With respect to supplier power, there are many hernia repair device competitors (mesh, fixators, and other consumables) ranging from large global companies to small startups). Globally, the hernia device market is estimated to be \$3.5 billion USD [43]. The hernia repair device market is a powerful supplier force because it is dominated by a few mesh large suppliers with name brands. When supplies are controlled by a few large global organizations, and they are more concentrated than the thousands of hospitals and general surgeons purchasing those products,

¹⁵ Each year 270 or more general surgeons apply for residency in Canada [42].

they exercise influence [39]. Since 90% of hernia repairs use mesh, the concentration of suppliers can add substantially to the cost of hernia repair.

The buyer groups include government health authorities, managed care organizations, insurance companies, and self-insured employers. All of them exercise some power in so far as they control patient volumes and set or negotiate prices. In the US there are large powerful payors like Medicare who have an average fixed price for an ambulatory surgery center of \$2,039 and \$3,700 for a hospital ambulatory surgical center [44].

In Ontario, Canada, the provincial health authority dictates a global budget for hospitals and owing to a recent mandate that required hospitals to primarily serve Ontario patients, medical tourism in Ontario was substantially reduced. Porter tells us that powerful buyers can be curbed only if the service can be delivered at a low cost [39].

The potential threat of new entrants is ever present in the market for hernia repair. There are, however, three features of the market for hernia repair that reduce the threat of new entrants. First, strong brand identification can create a barrier to entry. This can happen when patients can choose where to get a hernia repair and if they remain loyal to a delivery system. Second, since it takes time to build a strong reputation, hernia centers that specialize and build a reputation for obtaining superior surgical outcomes owing to well-trained surgeons can counteract and dominate newer entrants to the market. Third, some hernia techniques such as robotic or laparoscopic surgery, require large financial resources that will limit small or independent entrants.

There are several substitutes in the market for hernia repair. One substitute is called “watchful waiting” -- that is, when a physician recommends waiting, patients can put off hernia surgery for many years. Another is avoiding a repair and wearing a comfort truss to support the weak areas of the abdomen. The other substitute is the characterization of emergent surgical solutions, e.g., open surgery versus laparoscopic versus robotic, and mesh versus natural tissue repairs. There will always be the potential threat of a newer, quicker, easier, lower-cost alternative to an open repair.

Porter’s supply-side model helps us to understand how the five forces play out and shape strategy. Knowledge of these forces enables organizations to find positions where the forces are the weakest, and that requires making a choice between two generic strategies: either a low-cost service strategy; or one that can offer unique benefits—i.e., a differentiation strategy.

In a price-conscious and regulated industry, the price-performance tradeoffs create a competitive drive to search for innovative surgical technologies. The evolution of hernia surgery illustrates how technology-driven entrepreneurial solutions can backfire, however. For example, the introduction of the “innovative” plug and patch hernia repair became widely accepted in some countries because it offered a shorter operative time, lower cost owing to fewer minutes in the operating room, and it was durable. Plug and patch repairs, as it turned out, were a disruptive and problematic substitute. Over time, they became associated with serious complications such as chronic groin pain and even plug migration into a patient’s bladder [45].

Value combines innovation with productive efficiency and excellent outcomes. Consequently, the solution is always to perform a hernia repair with excellent technical outcomes and a lower-

cost alternative in the long term. In health care, the Porter model does not work because there can be no trade-off between price and quality outcomes. Patients, payors, and providers want high quality, low prices, and some degree of confidence that a surgical solution works in the long run.

Shouldice Hospital followed a different logic from Porter's, one that was both patient and employee-centered. They anchored their service culture and operating strategy on value--aligning a surgical innovation with excellent outcomes and low prices, supported by productive efficiency.

Shouldice discovered a metaphoric "Blue Ocean" [see 36, 37] from the clinical insights of founder Dr. E.E. Shouldice, who pioneered a pure-tissue surgical technique¹⁶. He then set a goal of offering a permanent hernia repair with a lifetime guarantee (any recurrences would be corrected free of charge), organized a collaborative team of focused surgeons running successive experiments, and after successful trials over a decade, selected variants of best practices along with a formulation of a well-managed care program. This will be illustrated by our study of Shouldice, presented next.

Shouldice Hospital: Analysis From Interviews and Observations

History: The Early Years of Shouldice

¹⁶ A Blue Ocean discovers a new, sustainable untapped market space that brings prices and costs down and, at the same time, bringing quality up, offering a leap in value for patients, caregivers, and for the organization.

In the 1930s the outcomes for inguinal hernias were poor. Dr. E.E. Shouldice began a quest to improve not only the surgical technique but also the patient experience across the entire care episode--from preoperative to postoperative care. He continuously searched for the best way to permanently repair a groin hernia, using fewer clinical resources, and creating positive patient and caregiver experiences.

His quest began when he was a senior medical officer in Canada during World War II. He had observed that otherwise healthy recruits were being rejected if a hernia was detected. To help those recruits pass their physicals, Dr. E.E. Shouldice developed an innovative technique for a hernia repair that was coupled with immediate ambulation on the day of surgery.

He continued to challenge traditional surgical assumptions, learning the benefits of local versus general anesthesia, the importance of the suture and ligature material to reduce wound infections, and the importance of the surgical technique to detect secondary hernias for a complete and lasting repair [4].

The results in relation to the costs were significant--Dr. E.E. Shouldice's patients had no major complications and shorter lengths of stay in the hospital, returning home 3 to 4 days after the surgery. The goal was not merely tissue repair but identifying weak areas and preventing recurrences and readmissions¹⁷.

¹⁷ The deep dissection enables the surgeon to identify occult (or hidden) hernias often present but difficult to discover by physical exam or advanced medical imaging technology.

He also wanted to build a hospital culture where each patient was treated as an individual. To do that, the care program had to be integrated and well-coordinated. That would require strong cross-functional relationships among caregivers and staff. The Shouldice care process begins with preadmission preparation and patient conditioning, local anesthesia, comprehensive inguinal dissection and 4-layered reconstruction, and finally innovative postoperative principles. Next, we will talk about how this system evolved from successive approximations.

The Care Program: A Vision That Reconstructed the Boundaries for Hernia Surgery

By definition, a care program consists of the coordinated delivery of all services provided to a group of patients with similar pathology and care patterns, such as abdominal wall hernias.

Activity Centers offer clinical (medical, nursing, or other caregiver services) or nonclinical (administrative or technical support) services to a care program. They are the key steps and operational processes to ensure patient flow and a good result. Underlying a hernia repair care program are hypotheses, assumptions, and assertions based on a testable theory of the service.

Dr. E.E. Shouldice's theory challenged how general hospitals operated and performed hernia repairs in the 1950s¹⁸. Abdominal wall hernias comprise a group of patients with similar pathology and similar care patterns. With a focus on abdominal wall hernias and high volumes, the care process would aspire to be both efficient, effective, and continuously improving.

Although each hernia patient is unique, if Dr. E.E. Shouldice could standardize the repair

¹⁸ History reminds us that hospitals in the 1870s was the place people went to die. By the 1950s hospitals had become such complex organizations that they required clinical leadership and competent management.

procedure, poor outcomes and other surgical problems could be identified, analyzed, and resolved [4].

In most hospitals, getting surgeons to agree on a standardized approach can be difficult. Nevertheless, without a standard or protocol, there is no baseline for improvement. Long before Toyota Production Systems were invented, Dr. Shouldice understood that if every surgeon used their own tacit knowledge (e.g., unique hernia dissection and repair technique), surgical improvements might never be recognized or quickly transferred to other surgeons. Dr. E.E. Shouldice shifted the focus of the hernia surgeon from the surgical technique to the scientific study of patient flow through a more holistic lens that planned out the operating strategy and the entire total care process as a health system.

While Dr. E.E. Shouldice understood that standardizing protocols could have a very positive impact on patient safety and technical outcomes, he also understood that surgeons value their autonomy, and the freedom to adopt a surgical technique and develop their own practice style. To preserve physician autonomy, the protocols would be developed by Shouldice surgeons because they were in the best position to document advances based on data organized and sorted from the medical records with careful long-term follow-up of end results of patients.

Standards would not be forced on surgeons, rather Dr. E.E. Shouldice would develop a collaborative, team approach that was data driven and evidence based, where many surgeons employed by Shouldice could contribute new knowledge¹⁹. Once standards were in place, they

¹⁹ According to Bendavid [46, 47] building on more than 100 years of evolution, by the 1950s Shouldice surgeons had incorporated all the steps of the Bassini repair that had been developed in 1886.

could evaluate clinical performance, set up controlled experiments and identify the best results in practice. Being data driven and evidenced based, they could codify and update changes to the hernia repair protocol. Every Shouldice surgeon could contribute new ideas, and by showing the evidence, help the team advance the surgical technique.

In the following quotation, Dr. E.B. Shouldice, the son of Dr. E.E. Shouldice²⁰, illustrates how the protocols evolved to become the Shouldice methodology and technique [4]:

“E.A. Ryan joined the group in 1950 and introduced excision of the cremasterics to better view the canal floor. It was also at this time that splitting of the canal floor (posterior wall) was initiated, creating better exposure for finding secondary hernias and weaknesses. This enabled a further improvement, the transversalis fascia repair, starting at the pubic bone where direct hernia recurrences most commonly present. These maneuvers were incorporated into the technique by 1953 and the repair became standardized.” [4, p. 1165]

Other surgeons who joined the Shouldice staff collectively contributed incremental advances, such as splitting the posterior wall to identify secondary hernias and weak areas. Weaknesses and secondary hernias were hypothesized to be the reason for a so-called hernia recurrence, and the Shouldice methodology was developed to reduce and eventually eliminate recurrences. By the early 1950s, there was growing evidence that the repair method and technique was effective and efficient.

²⁰ Following the death of Dr. E.E. Shouldice in 1965, his son, Dr. E.B. Shouldice took charge of the hospital. For nearly 57 years Dr. E.B. Shouldice led the hospital and in April 2022, Dr. E.B. Shouldice passed away. Today Shouldice is led by the Managing Director, Mr. John Hughes, and Dr. Shouldice’s three children, who sit on the Board of Shouldice.

Anesthesia and Conscious Sedation

Another innovation was the use of local anesthesia for hernia surgery, in fact Dr. E. E. Shouldice was the first surgeon to use conscious local anesthesia on thousands of patients [48]. There are four reasons why this practice improves technical outcomes, decision-making efficiency, and patient experience.

First, general anesthesia is more difficult for older patients, who experience urinary retention, deep vein thrombosis, along with pulmonary and cardiac complications [46, 47]. A second benefit of conscious sedation via local anesthesia is that it allows the surgeon to communicate with the patient²¹. During the surgery patients are asked to strain or push to help the surgeons locate hidden or occult herniated tissue. These hernias cannot be detected by physical examination or ultrasound. Because the patient is a co-producer²², surgeons can optimize patient involvement and improve surgical outcomes and productive efficiency.

Third, the literature has found that there is less postoperative coughing when no inhalation agents are used. If older patients have cardiac or pulmonary comorbidities, local anesthesia is safer (a comment made by Dr. E.B. Shouldice to the authors).

Finally, Dr. Shouldice read the medical evidence and postulate about early ambulation by Leithauser following every surgery [12]. He embraced the idea and upon completion of each

²¹ Since 2016, this practice has been reduced. Shouldice surgeons started to perform the procedures with local anesthetic and IV sedation, moving away from the oral sedative that takes longer to metabolize and lowering fall rates postoperatively.

²² Co-production is about fairness and justice. It implies that the patient is an equal partner with the most responsible caregivers in a reciprocal, two-way relationship. Coproduction means the patient, as a partner, is treated with dignity and respect. Both will be honest and truthful when they share information, and the physicians will explain the rationale for any clinical decisions.

surgery asked the patient to sit up from the operating table, rise, and walk out of the operating room with the help of two surgeons. Immediate ambulation was made possible because of local anesthesia²³.

Post-Operative Care: Immediate and Continuous Ambulation

Immediate ambulation, including light exercise on the day of the surgery, is fundamental to the care process. According to Bendavid, postoperative mobilization was nothing short of a medical heresy:

“...the patient walked away from the operating table, bed rest was minimal, and all activities were to be resumed as soon as possible without restriction. Only the patient’s discomfort was a limiting factor...” [12, p.1888].

While immediate ambulation has physiological benefits (in terms of respiratory and circulation), there is an equally strong emotional and psychological benefit that builds confidence in oneself and in the surgery. When the patient sits up and gets off the table, it sends a message that they are not sick—they are well. They can resume physical activity. Light exercise and activity are resumed over the next two days, as patients are encouraged to walk around the campus, and use the putting green or game room.

In the 1950s, the hospital admitted sick patients with known or unknown medical problems and after investigation and therapy discharges a patient who is cured or much better only after a very

²³ This was practiced safely until 2021, but new guidelines stopped this practice. Now, patients are put in their wheelchairs from the operating table, and ambulation is encouraged after four hours. This innovative practice is done in many outpatient facilities.

long length of stay. Today, many acute hospitals and outpatient clinics admit a sick patient and discharge a patient with different problems such as anxiety about when they will feel better and get their life back. They bring that anxiety home, or they are discharged to a post-operative rehabilitation clinic or skilled nursing facility.

There are two parts to a care program. One part is more functional (the price, the sacrifices, and opportunity costs in relation to the benefits such as the technical outcomes), and the other is more emotional (such as the amenities, the overall experience, the trust and confidence in the caregivers, support for pre-post-surgical anxiety). The care program at Shouldice offered excellence in both parts. Dr. E.E. Shouldice always insisted that they would discharge a patient two to three days after the surgery: feeling better, believing they are cured, experiencing great service and new friends, and seeing a minimal surgical scar.

Hyper-Focused Clinic and a Very High Volume of Cases

From 1945 to the present, Shouldice has been a high-volume clinic focused exclusively on the repair of abdominal wall hernias. From 1945 to 2002, Shouldice repaired 280,000 hernias [4]. From the 1980s to 2009, the weekly volume of abdominal wall hernia repairs was 150 by 10 FTE surgeons. From 2010 to 2019 (pre-Covid) the weekly average was 132 repairs a week distributed equally among 10 surgeons. Most general surgeons perform about 50 inguinal hernias each year, Shouldice Surgeons over 600 each year, more than 10xs the average hernia surgeon. By 2022, they had performed over 415,000 hernia repairs.

The next section will describe Shouldice as a health care organization and care program. To understand how value is created at Shouldice, we will characterize activities in two parts, things the patient sees and experiences, and things the patient does not know about. It is what Teboul calls the front and back-stage [49].

The Front Stage and the Key Clinical Activities

The frontstage describes how every interaction and every contact with the patient are customized and integrated. It requires customized co-production with caregivers and staff and an integrated series of seamless interactions. The goal is to produce a durable outcome and memorable experiences. As Teboul states, a service must be “right first time”:

“Because service is a performance, it can be neither owned nor accumulated but must be consumed at the moment of production.” [49, p 25]

Patients should not be passive but active participants for two reasons. First, they are an integral part of the care program, helping with diagnosis, guiding the surgeons, and adhering to the notion of ambulation and exercise. Second, their participation is vital for process improvement.

The backstage describes the organization of the care program, and how it supports service excellence and productivity with two key concepts: division of labor and standardization [49].

Backstage components include mission, senior leadership, operational processes (such as patient flow); how work is carried out; the specialized role of the caregivers and staff; the culture and formal structures such as human resources, and the facility.

There are four traditional clinical activity centers that perform (1) admission, (2) investigation, (3) therapy, (4) discharge/recovery, and follow-up. The way these activities are performed creates or nullifies patient value. The next section will not cover all the front and backstage activities but will highlight key features.

An Admission in Two Visits: Pre-Admission and Investigation

One of the critical dimensions of quality is efficient decision-making that results in finding quicker routes to health [2]. To achieve an efficient admission process requires coordination of the clinical and non-clinical activities. To be scheduled for surgery at Shouldice Hospital, a patient can expect a grand total of two visits. The first visit is a pre-admission screening, which can take anywhere from 2 to 4 hours. Here is a description of that process by Shouldice Surgeon:

“During that visit, several activities take place such as triage nurse assessment, GP assessment, a surgical consultation medical history, a dietary consultation, followed by lab tests, and a hospital admission date scheduled.”

Patients arrive at the Shouldice clinic in one of several ways: referrals by general practitioners; internet searches; or suggestions from trusted friends, colleagues at work, or family members. Patients do not need to make an appointment, nor have a referral, but can come in during the walk-in hours in the morning, where they will be evaluated by a physician. Next, we describe how walk-ins are managed.

Walk-In Patients. Walk-ins are seen between 9:30 am and 3:00 pm. They present at times from 8:30 am and are received at the front desk. The patient may be directed to see a physician (general practitioner) if time permits, who will refer them to the surgeon for further evaluation²⁴. The patient receives the benefits of co-locating two physicians so they can experience one visit. Other patients who have had a primary care referral will see the surgeon directly.

In either case, the patient fills out the intake sheet that inquires about past medical and surgical history. If they have a hernia, the location is identified along with a list of prescribed medications. The patient will ask to wait in the waiting room on the main floor and will be seen by a triage nurse who will get his/her height, weight, waist size at the belly button, blood pressure, pulse, and temperature.

The patient then is escorted from the waiting room to a seating area in the surgeon's office area in a hallway, where six offices are located. The offices may be staffed by one to five surgeons, affecting the timing that a patient may be seen, thus affecting the waiting period.

Patients who randomly walk in can spend anywhere from 30 mins to 4 hours before they see the surgeon. They will be advised of the expected time in advance. The patient will be greeted in the hallway by the surgeon and escorted into the examination room. There, a surgical evaluation is conducted, and a focused examination is conducted. The abdominal wall, groins, and genitalia are examined when evaluating a potential hernia repair at Shouldice. Patients are classified into five groups (1) no hernia present; (2) hernia present, not suitable for the surgery; (3) hernia

²⁴ At other hospitals, a hernia repair admission could require up to 7 visits. The GP visit and surgeon referral visit would require 2 or more separate visits in most hospital and hernia centers.

present and the patient is overweight; (4) hernia present and further medical information is required; and (5) hernia present, patient ready to be scheduled.

If they are diagnosed with a hernia and they are not more than 20 lbs. overweight or require further medical follow-up (i.e., by an internist to evaluate comorbidities), they are provided a surgery date for 8-14 weeks in the future²⁵. Patients who have not had a recent ECG or blood work are then taken to the lab where this is all performed. The care process is a series of carefully coordinated steps that result in 2 very productive patient visits. When compared with an average of 4 and a maximum of 6 or 7 visits that can be required for a hernia admission at some centers, 2 visits to Shouldice appears to be more efficient, with less time wasted on multiple trips (see **Fig. 1.2**).

If they are more than 20 lbs. overweight, but less than 40 lbs. overweight, they are provided with a surgery date. Those patients meet with a surgeon and then meet with the dietitian to create a nutrition program that will allow them to lose weight prior to surgery. Patients more than 40 lbs. overweight meet with the dietitian but are not scheduled for surgery till they have lost enough weight to give them a highly successful outcome. **[INSERT Fig. 1.2]**

²⁵ The length of the wait time to schedule the surgery depends on the patient's medical condition, as discussed in this section. Before Covid19, the waits ranged from 2-6 weeks. One estimate from the Managing Director (Summer 2022) is that more hospitals in Toronto have a two-year wait for hernia surgeries versus Shouldice's 8-14 weeks.

| Community Hospital | Shouldice Hospital: Walk-in Clinic |
|--|--|
| <ul style="list-style-type: none"> • Visit 1: Family doctor appointment • Visit 2: Lab tests • Visit 3: Ultrasound and or CT scan (if recommended) • Visit 4: Surgical consultation • Visit 5: Pre-admission exam & lab tests • Visit 6: Hospital/outpatient admission | <ul style="list-style-type: none"> • Visit 1 (4-8 hours): Medical questionnaire, lab tests, triage nurse assessment, GP assessment, Surgical Consultation, Dietary consultation, hospital admission date scheduled • Visit 2 (admission): Hospital admission examination by a surgeon, lab tests, hospital admission |

Fig. 1.2 Comparing Admission Process for Hernia Surgery in Ontario. Obtained from informants at Shouldice Hospital, 2016.

To further extend patient outreach, the hospital also operates “remote clinics” where surgeons, supported by administrative staff, rent space in external clinics, and examine prospective patients. These are by appointment only, are advertised in advance, and ensure patients have access to Shouldice surgeons from 100’s of miles away and are unable to travel to the hospital.

Self-Diagnosis Questionnaire. A second way patients are booked for surgery is by filling out the online medical information questionnaire (see **Fig. 1.3**). This process is reserved for patients that reside greater than 60 miles from the hospital, as the hospital strongly encourages a physical examination for the best diagnosis, to allow for extended patient out-reach (50% of patients

come from the greater Toronto area, the other 50% from greater distances) This is a self-diagnosis that is screened by the on-call surgeon the day it arrives²⁶. Patients are booked for surgery on the same selection criteria as those attending the walk-in clinic. They are asked to have and bring all the appropriate medical evaluations and workups on admission.

If appropriate, the patient can be scheduled for surgery without an initial consultation²⁷. In this self-referral scenario, occasionally patients are told by the surgeon that (1) they do not have a hernia, (2) they do not need hernia surgery now (watchful waiting), or (3) they may be medically unfit. These patients are sent home with appropriate treatment. **[INSERT Fig. 1.3]**

²⁶ Several physicians said the online application is reviewed within 24-48 hours of its submission.

²⁷ Questionnaire patients who present a complex medical history or require further investigation of their hernia will have a virtual exam is scheduled.

SECTION B • Mark with an "X" the position of each hernia you want repaired
(Hiatus, Flank and Parastomal Hernias are not repaired at Shouldice Hospital)

EPIGASTRIC Hernias are above the navel ("belly button")
 UMBILICAL Hernias are at the navel
 INGUINAL and FEMORAL Hernias are in the groin area on either side
 INCISIONAL Hernias bulge through the scar of any other type of surgical operation that has failed to hold
 OTHER Hernias are through any other muscular weakness

SECTION C • Describe ONLY the hernias you want repaired

INGUINAL and FEMORAL HERNIAS

RIGHT GROIN
 Is this your first RIGHT groin hernia? Yes No If no, number of previous RIGHT repairs?

Date of last repair (mm / yy)..... Can you reduce (push back in) your hernia? Yes No

Size of this hernia: Walnut (or less) Hen's egg Grapefruit (or more) No noticeable bulge

LEFT GROIN
 Is this your first LEFT groin hernia? Yes No If no, number of previous LEFT repairs?

Date of last repair (mm / yy)..... Can you reduce (push back in) your hernia? Yes No

Size of this hernia: Walnut (or less) Hen's egg Grapefruit (or more) No noticeable bulge

UMBILICAL, EPIGASTRIC and OTHER HERNIAS
 Is this your first UMBILICAL, EPIGASTRIC / OTHER hernia? Yes No If no, number of repairs

Date of last repair (mm / yy)..... Can you reduce (push back in) your hernia? Yes No

Size of this hernia: Walnut (or less) Hen's egg Grapefruit (or more) No noticeable bulge

INCISIONAL HERNIAS - What was the original operation for?
 Appendix? Gallbladder? Stomach? Caesarian? Hysterectomy? Colon? Other?

How many repairs have been attempted on this hernia? Date of last repair (mm / yy).....

Size of this hernia: Walnut (or less) Hen's egg Grapefruit (or more) No noticeable bulge

ADDITIONAL INFORMATION ABOUT YOUR HERNIA
 Has the hernia(s) identified above been diagnosed by a medical doctor? Yes No (self-diagnosed)

If yes, how: Physical Examination Ultrasound Other

Are you experiencing chronic pain from the hernia(s) identified above? Yes No

Are you experiencing chronic pain from a previous hernia repair? Yes No Where:

Have you experienced a wound infection in any previous surgery? Yes No

Was mesh used in your other prior hernia surgery? Yes No Which:

Fig. 1.3 Excerpt of the Medical Information Questionnaire. Patients can fill out this form to facilitate their admission.

Day One: Admission and Investigation Prior to Surgery

Once surgery has been scheduled, the patients arrive between 10:00 AM and 3:00 PM on the day prior to surgery. Patients that were not examined initially by a Shouldice surgeon come in early for examination to validate the information presented on their on-line application, and those

having been seen come in later. Prior to arriving and throughout this first day, the goal is patient orientation and education —preparing them mentally and physically for their surgery. Here are some examples of how this pre-conditioning is carried out.

Patient Preconditioning. When they first arrive, they are re-evaluated by the surgeon who will operate on them the next day, which is often different than the surgeon they met previously. Since all Shouldice trained surgeons perform the surgery in the same way, the patients are assured of identical outcomes independent of the surgeon performing their procedure. Some patients may need more lab tests.

At 4:00 pm, all patients attend a 30-minute orientation with nurses. At that time, all incoming patients hear more details about their surgery and their upcoming 3–4-night hospital stay. Once done they are often brought to the semi-private room where the patients from the day before are often recovering.

It is a critical part of the patient experience to room with someone in a different phase of care so that postop patients can reassure the incoming patients. At Shouldice they believe that patient relationships offer emotional support. For some, lifelong bonds can be formed in these 3-4 days. These bonds and connections to the hospital have been integral in the word-of-mouth referral of the organization.

At 5:30, there is dinner. After dinner the patients can participate with other patients on the guitar or piano or play shuffleboard, and at 9 PM return to the dining hall for memorable events like the

evening snack (tea and cookies). See **Fig. 1.4** for an example of the schedule. **[INSERT Fig. 1.4]**

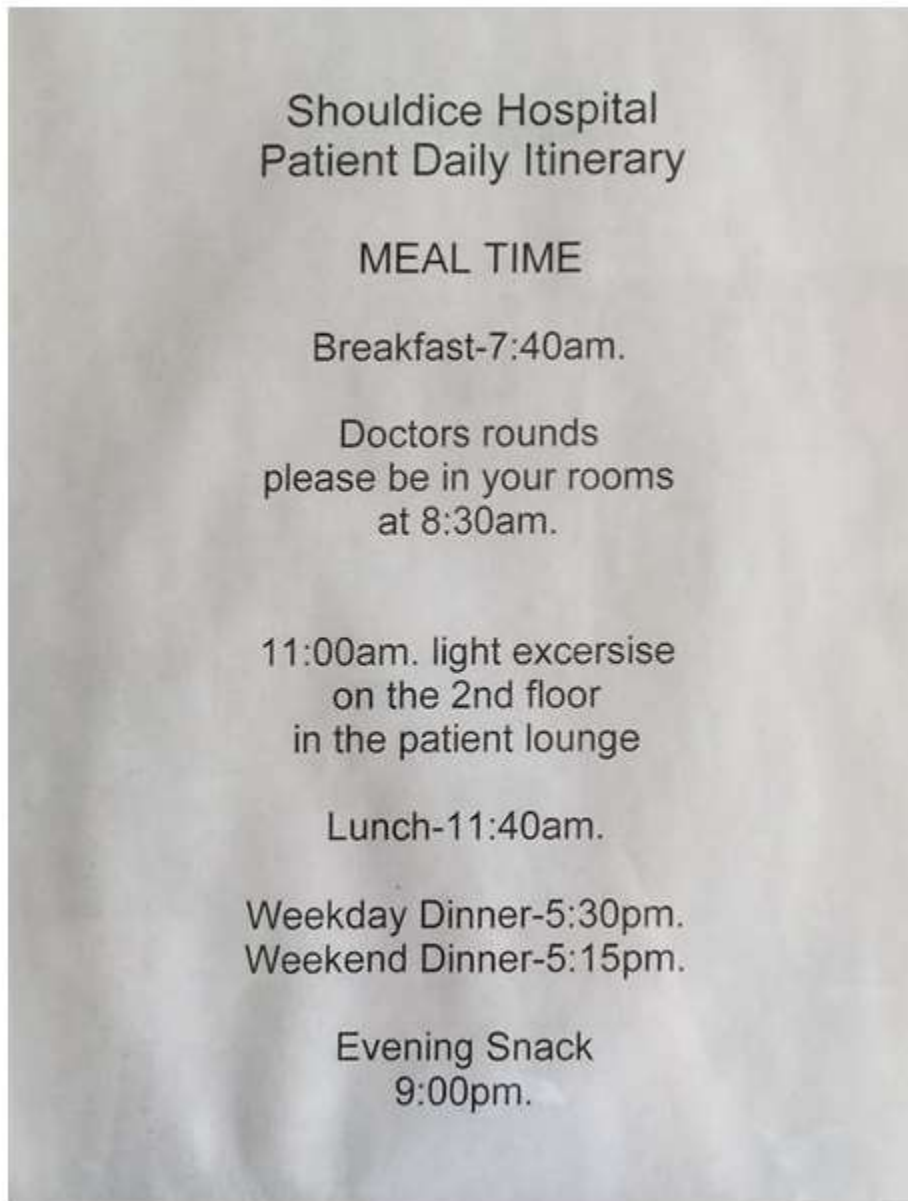


Fig. 1.4 Example of Shouldice Daily Itinerary. The daily schedule is posted throughout the hospital, to guide patients.

Day Two: Surgery and Therapy

On the day of surgery, the first patients of the day are escorted to the pre-op waiting room while those remaining wait comfortably in their room or patient lounges until approximately 20 minutes before their scheduled surgery. Few patients require oral sedatives prior to going to the OR as they have been through their orientation and have had the chance to review their upcoming surgical experience with their roommate or others in the lounges who have had surgery – this reduces most of the anxiety.

Patients are always escorted to the Operating Room (OR) by the surgeon and assistant surgeon. In the OR, moderate conscious sedation and local anesthetic are administered as required and there is a great deal of interaction with the patient because they are awake. There are always comforting conversations with the patients, both with their surgeons, but also with the highly trained scrub and circulating nurses.

Once in the OR the patients are situated on the bed and are monitored by the OR circulating nurse. The circulating nurse preps the skin and drapes the surgical site with the surgical nurse tech, while the surgeon and assistant scrub up their hands.

To manage the patient's expectations during the surgery, the nurse and the surgeons are in continual communication with the patient, making the patient comfortable as well as offering information. As one surgeon said:

“...we ask them to let us know if you have any pain. Throughout the procedure we give the patient information about what to expect: ‘there may be some pulling and that is

normal. Or we explain what is coming next ‘we are going to give you some medications, you feel some burning.’”

After the surgery is completed, the patient is invited to sit up and link arms with the surgeon and assistant, together they place the patient in the waiting wheelchair and are discharged to their room. General anesthesia patients spend up to 1 hour in the recovery room.

Up to 85% of the patients are reported to take only acetaminophen or ibuprofen after surgery.

One Shouldice surgeon said:

“I noticed in my hernia practice and in fellowships in US hospitals, nearly every patient needed a script for narcotics. At Shouldice with a local anesthetic, the Shouldice repair, and the 3-night hospital stay, all they require after the surgery are anti-inflammatories (Tylenol, Ibuprofen or Motrin). The same is true when they go home.” (Shouldice surgeon)

Patients are received by the floor nurses who check vital signs and monitor their post-operative recovery to ensure ambulation after 4 hours. The surgeon also sees the patients to make sure they are recovering well from the surgery and to answer any questions.

Days Three and Four: Post-Surgery Recovery, Follow-up, and Discharge

Again, **Fig. 1.4** is an example of the daily itinerary at Shouldice, illustrating how patient expectations are managed. On day three, patients are instructed to walk down to the dining room for each of the 3 meals of the day plus a 9:00 PM snack. An additional exercise class is also expected during the day and patients are expected to socialize with incoming patients as well as fellow post-op patients.

Patients continue to take acetaminophen or ibuprofen as needed. Many are well enough on the second post-surgical day so they can be discharged after their surgical clips are removed²⁸. The rest are discharged on the 3rd post-surgical day. So, patients stay four nights at Shouldice, however, the per diem charge for these 4 post-operative nights in the semi-private room is much less than the cost of a hotel, \$305 each day and it includes all the meals²⁹. The quality of the food at Shouldice is not hospital food, it is like dining at a very good restaurant³⁰.

Patient Echoes and Frontstage Voices: The Patient Value Proposition

There is enormous literature on mental health and personal anxiety associated with being ill. While the administrative staff is concerned with the overall patient satisfaction, individual patients understand their own experience—based on their perception of the process and how caregivers and staff responded to their needs and their medical condition. Patients not only expect a good technical outcome, but the care process also matters as well.

²⁸ Interviews with two patients on postoperative day 1 revealed that that they only had mild and modest pain when moving, which they were able to do, although at a slow pace. Each one stated that they felt very comfortable going home on the second postoperative day and were planning on returning to a desk job a week after surgery. Both patients were delighted by their choice in Shouldice hospital and team-based care.

²⁹ The Ministry pays the per diem when patients stay in a ward. Most Canadians have insurance that covers the semi-private room per diem of \$305. Those without insurance pay the per diem rate out-of-pocket.

³⁰ Two of the Shouldice chefs are certified “Red Seal” Chefs, which means they have advanced culinary skills recognized nationally in Canada. Shouldice patients who go on social media often praise the quality of the dining hall.

Over many decades, 98% of Shouldice patients rated their satisfaction with the overall quality of care a 5 and 2% rated it a 4 [see 5]³¹. Here we present excerpts of patients' observations about Shouldice transcribed from video recordings from their website³²:

“Whatever they did was good. The next day [after the surgery] I had no problem anymore. Staying at Shouldice after the operation was like being on a cruise ship, you're protected. A holiday!” (Older male from Canada)

“My first hernia operation [at Shouldice] was a perfect success—no discomfort, I do not have a scar...Staying a few extra days is important. There is always stress and strain at home, you have kids jumping or a dog coming after you...I was very impressed with the staff. They are the highest points of the operation, and the surgery rarely needs to be redone.” (Young Male from Canada)

“When I looked into hernia repair in the United States it was in and out...Having to stay here for four days I felt I would be cared for. I researched it and I was hesitating. My sister said there was a place that specializes in hernia, so I contacted them, and I was booked—It is an accommodating experience. When I called them, they called me back, and they always responded to me. Why did I wait so long—It has been great. I feel I am part of a big family and not shuffled out the door.” (Young female from the United States)

“The success ratio for this hospital is amazing...I do believe after surgery you should have enough rest. Staying in the hospital for a few days and having the staff monitor me 24-7 gives me comfort... The staff is professional. Everything flowed the way I was expecting. The staff is friendly, and the food is great. The room is quiet and clean. I absolutely recommend Shouldice.” (Young Male from the United States)

“I had a mesh repair three years ago that failed. So, I did some research on-line and came across Shouldice. I have a family member who is a surgeon. He heard of Shouldice as world-renowned. Getting his vote of confidence, as an American Surgeon, sold me... For me to go to Canada from California, one of my bigger [concerns] was time and cost of

³¹ Patient satisfaction is rated on a scale from 1=low to 5=high

³² These are not unproblematic, as they are anecdotal information and not scientific. We interviewed a few patients informally and heard only extremely positive comments confirming a more than satisfactory experience. Since we were unable to interview patients in private or interview patients a few months after discharge, we may not have obtained accurate information. We reviewed on-line social media comments and posts (Facebook, Twitter, RateMD) and found it confirmed our impressions. RateMD, a social media cite ranked Shouldice Physicians #1 out of 500. There were, however, some patient complaints about a rusty bathroom sink, a large noticeable scar, 20-year-old furniture, being rejected as a patient owing to co-morbidities, and the like. But far and away most posts extremely positive comments.

travel plus the surgery cost; it was an easy flight, and they have transportation and hotels set up, it was stress-free.” (Younger male from the United States)

If this is an accurate sample of patient experiences, it suggests that Shouldice leaders have succeeded in organizing and creating a care program with a strong patient-centered culture. They have recruited the right people and supported their effort. The next section will describe the backstage at Shouldice and how it supports the frontstage.

The Back Stage at Shouldice

Designing a care program is infused with questions. How do you organize a care program that aims to deliver the world’s best surgical outcomes? How do you market and sell patient experience? Can excellent service quality also carry a low-price tag?

Logically, the front stage is supported and operationalized by the backstage. However, the solutions to the problems of the frontstage are different than backstage. There are tensions between: 1) customization and standardization; 2) physician autonomy and service excellence; 3) co-production and no-patient participation; and 4) integration versus specialization. The backstage requires strategic choices, good management practices, and flawless execution. A service vision resolves any frontstage-backstage dichotomies.

Heskett [23] has identified four elements of a strategic service vision³³:

³³ Heskett [23] says that a service vision will achieve a superior position by employing three integrating elements: 1) positioning; 2) leveraging value over cost, and 3) integrating the operating strategy with the delivery system. We will use those elements in the discussion section.

- targeting both an external and internal segment of the market,
- creating a well-defined service concept that produces results for that segment,
- developing a focused operating strategy by customizing a standard service, managing supply and demand, involving the customer in the service, and controlling quality and costs,
- designing a service delivery system with clear roles and responsibilities, motivating job design, facility layout that supports productivity and optimal service flow, and a customer-centered culture.

We use those four elements to describe Shouldice. First, we will describe the external and internal segments.

Targeted Patient Segments

Patient safety and outstanding technical outcomes are central to the mission, and this is not a full-service general hospital with technical backup. So, patient selection criteria are quite strict.

About one-third of the patients who want a Shouldice repair are overweight and require a dietician consult and a diet prior to undergoing the repair. Morbidly obese patients require more anesthesia and longer operative time, making them more appropriate patients for a full-service hospital and mesh repairs.

There is one full-time dietician who can see between 5,000 and 10,000 patients each year. The dietician puts the overweight patients on a structured weight loss program. Estimates suggest between 200-300 hernia patients are on an active weight loss program. Many patients will write a comment about how the Shouldice weight loss program helped them to return to a healthier lifestyle and there was no charge for the dietician visit.

Complicated or high-risk patients may not be suitable for open surgery with conscious sedation. For example, patients who are not suitable for this procedure include patients with morbidities or conditions such as malignant hyperthermia, mechanical heart valves, pulmonary embolism, myasthenia gravis, low hemoglobin, ascites, or deep vein thrombosis.

Other hernia patients who are over 70 or who have co-morbidities such as AAA, CVA, liver or kidney disease, diabetes, and cardiac problems, are required to submit a medical report prior to admission. Shouldice has an internist who is brought in to assess all co-morbidities.

Most patients at Shouldice are considered at lower risk for surgery (ASA 1 or ASA 2), and less than 10% of the patients are at higher risk (ASA 3)³⁴. Since this is not a full-service hospital, complicated or high-risk patients with diseases that pose a constant threat to life cannot be taken care of there. Critics argue that Shouldice is “cream skimming: taking the easy cases and leaving the hard cases for community hospitals. Nothing could be further from the truth.

One study of the distribution of hernia cases found that ASA 1 & 2 comprise 72% of hernia cases, and ASA 3, 28%, and ASA 4, only 5% [51]. That means that Shouldice is taking from 75%-85% of the distribution of hernia cases. **Figure 1.5** shows a normal distribution of hernia cases, and Shouldice will take most hernia cases well past the average and towards the more complex cases. **[INSERT Fig. 1.5]**

³⁴ The American Society of Anesthesiology (ASA) has for decades developed classification system based on pre-anesthesia medical co-morbidities. It ranges from ASA 1 (normal healthy person) to ASA 4 (a person with severe systemic disease that is a constant threat to life).

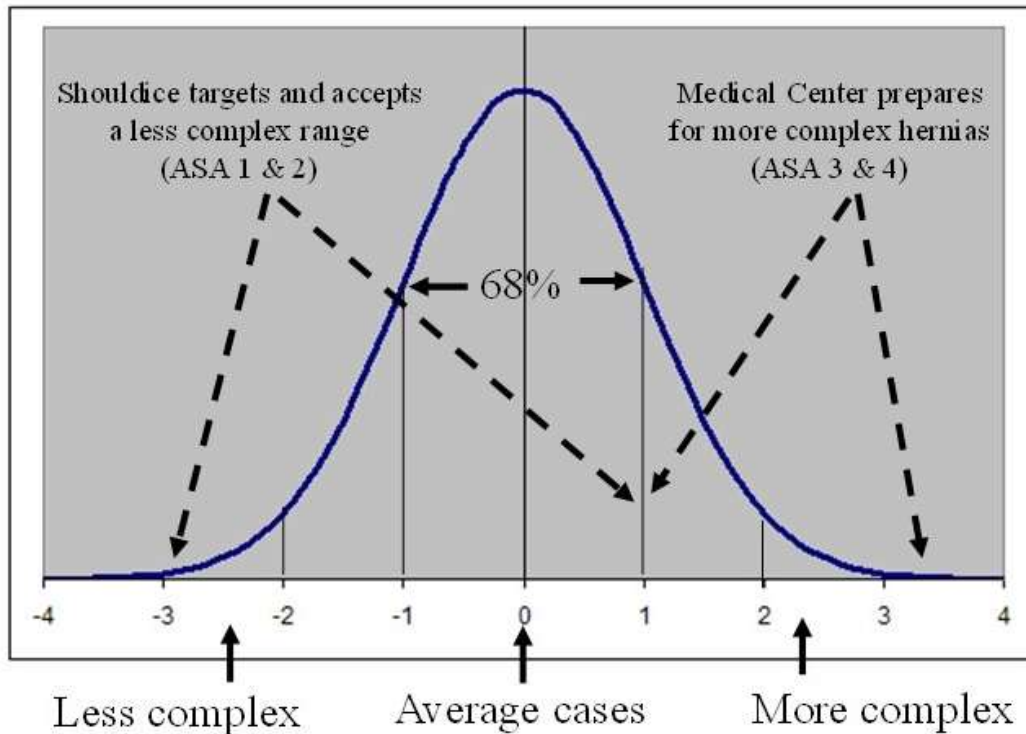


Fig. 1.5 Distribution of the Severity of Hernia Cases from Simple (ASA 1) to More Complex (ASA 4). This chart displays the distribution of the physical status of most hernia patients. It is based on the American Society of Anesthesiology physical status classification system that assesses and describes a patient’s pre-anesthesia health status with respect to medical co-morbidities and other factors. For example, ASA I are “normal, healthy,” hernia patients. ASA II are hernia patients with mild systemic disease (obesity, mild lung disease, smokers, etc.) ASA III are hernia patients with severe systemic disease, such as poorly controlled diabetes, active hepatitis, end stage renal disease, or history of CVA. ASA IV are hernia patients with a severe systemic disease that is a constant threat to life, such as cardiac ischemia, severe valve

dysfunction, shock, sepsis, etc. ASA IV is a moribund hernia patient who is not expected to survive the operation. ASA I and II comprise 72% of hernia cases, and ASA III and IV comprise 28%. This illustrates that Shouldice does not take the “easy” abdominal wall hernia cases. They make responsible decisions with respect to patient safety and risk.

Targeted Physician Segments: Surgeon Recruitment and Training. In Canada, the supply of surgeons is less than the demand. To recruit the “right” surgeon, the hospital leadership focuses on the mindset and character of the individual. They must be interested in helping patients and have a strong service attitude. Since attitude cannot be trained, they carefully recruit caregivers.

They also look for physicians with a growth mindset—a willingness to want to be a learner and who want to “learn it all,” not physicians who already “know it all.” They believe that general practitioners often make excellent hernia surgeons as they often have no qualms about relearning and being retrained to fit the Shouldice way of doing things. They also target general practitioners and non-general surgeons who are willing to be re-trained to learn the “Shouldice Method.”³⁵

Older, more experienced, physicians are easier to recruit to Shouldice than less experienced surgeons. These older physicians have good handcraft skills, have spent most of their career doing a wide range of surgeries, have spent lots of time in the operating room, and may have

³⁵ General practitioners and surgeons are trained under a structured “GP Change in Scope of Practice Program” supported by Ontario College of Physicians and Surgeons.

leadership experience such as a chief of staff. For the next chapter in their career, they have decided to operate on patients: 1) who are not very sick; 2) who have virtually no chance of mortality or morbidity; 3) who want a great work-life balance, and an opportunity to work in a collaborative and a team-based environment. Their career goals are helping patients and expecting to make “fair” compensation.

New hires are tried out as assistant surgeons for a minimum of 50 cases. After helping to perform 50 cases, they become the primary surgeon with the Chief Surgeon, in the role of assistant, observes them for another 50 or more cases. After this initial training period, a new surgeon will perform 150-200 cases supervised by a rotating group of senior trained Shouldice surgeons. Dr. Shouldice added: “We do not worry about speed. Once you do 1,000 cases, the speed picks up.”

Trainees become Shouldice surgeons only when both that surgeon in training and the Chief Surgeon agree that the training is completed. Depending on the surgeon’s technical background and experience, the training period can last from two to six months.

We have discussed both the patient and physician segments that are targeted. Next, we discuss the Shouldice service concept and how it defines results for patients, caregivers, staff, and leadership.

Shouldice Service Concept

A service concept conveys the way Shouldice wants to be perceived by patients as well as by its caregivers and staff. More importantly, it clarifies the end results and the effort required of both

employees and patients. The service concept describes how value will be created for patients and employees in a language that is inspiring and relevant to external and internal stakeholders.

Shouldice’s mission is to “deliver the world’s best surgical outcomes and patient experience in hernia treatment” with the goal of “exceeding the expectations of our patients by delivering the best surgical outcome and highest quality patient experience” (see **Fig. 1.6**). Shouldice has a goal of offering a permanent repair with zero defects and a lifetime guarantee. To remain the world leader in hernia surgery, the service concept is not only about a surgical technique that achieves superior results, but it is also about creating a unique patient and employee experience. To realize those aspirations requires an effective operating strategy and service culture with a commitment to solving each patient’s problem. **[INSERT Fig. 1.6]**

| | |
|----------------------------|--|
| Our Mission: | To deliver the world’s best surgical outcomes and patient experience in hernia treatment. |
| Our Vision: | To continue to be the patient’s “provider of choice” in hernia treatment and be a global leader in hernia education and research. |
| Our Core Values: | With an unwavering focus on our patients and commitment to our staff, the following values form the foundation of Shouldice Hospital’s operating culture. |
| Quality/Excellence: | We will exceed the expectations of our patients by delivering the best surgical outcome and highest quality patient experience. |
| Integrity: | We will adhere to the highest moral principles and standards of professionalism and ethics through our commitment to deal with patients and their families at all times with respect, honesty, confidentiality, transparency, and trust. |
| Compassion: | We will deliver world-class care to our patients by providing a supportive, sensitive and empathetic environment at all times. |

Fig. 1.6 Shouldice Mission, Vision, Values. Downloaded from Shouldice Website

1/8/2022<https://www.shouldice.com/about/#mission>.

Operating Strategy: Focused on Productive Efficiency and Quality

Shouldice has an operating strategy that is focused on three things: 1) the Shouldice surgical repair and the operating rooms; 2) a team-based, patient-centric motivating environment; and 3) a system of accountability to control quality and cost. The result is very high patient and employee productivity; there is little waste.

The Method and the Operating Rooms: Focused on Quality and Efficiency

There are 5 operating rooms, a central sterilization area, a patient pre/post-operative area, and separate nurses and doctor's lounges. All these spaces are on the same floor and situated close enough that the longest walk between any two rooms takes less than 15 seconds, so no team member walks more than 15 seconds for each step in their job. The proximity of each work area allows for incredible efficiency.

Working as a Team. In the Shouldice operating room, there is the surgeon, an assistant surgeon, a circulating nurse, and scrub nurse. Every member of the team is committed to delivering the world's best surgical outcomes and patient experience in hernia treatment. Their goal is "right first time" so the repair lasts a lifetime. They know every step of the surgical method, and they hold themselves mutually accountable. According to Katzenback and Smith that is the definition of a team [52].

Since most of the procedures are the same, each team member and all the equipment have a circular workflow that is uninterrupted and carefully designed. It appears that each person is achieving near efficient "flow" without wasted steps every day on the job, something that is unique to a single hospital that can focus on a smaller set of programs and procedures.

The surgery is performed “nearly” the same way by every surgeon, every time. As one Shouldice surgeon said:

“They have standardized solutions for every part of the surgery. I have rotated with every surgeon at Shouldice. Everything is done the same way—little to no variation. It takes 45 minutes, and again there is almost no variation.” (Shouldice surgeon)³⁶

Service Process Flow. The surgeon and assistant work so closely together that little conversation occurs between them. Both seemed to be on the same page, with four hands carefully taking care of each patient, always. The surgery is as beautiful to watch as attending a live duet piano performance. In near perfect synchronization, the other teams work together with the surgeon and assistant surgeon to support the OR team. Like a duet, endlessly agile in the twists of individual anatomy and defined by myriad complex shifts of tempo. The surgical nurse in synchronized efficiency started to clean up the tools while the surgeons are closing the incision.

Having standardized the protocols in detail, the surgery takes about 45 minutes to an hour. If the conscious patient reports some discomfort, they administer more local anesthetic. In all cases, they use intravenous conscious sedation to allow for the relaxed completion of the procedure.

³⁶ Owing to Covid19 protocols, baseline surgeries now take about 60 minutes. Once the pandemic is over, they expect they will return to the 45-minute surgical time. Every surgery we observed was less than 45 minutes.

Once completed, the patient is placed in a wheelchair that will be used to discharge them directly to their hospital room, where they are asked to stay for the remainder of the day with the required meal service. In the past, many patients went to the dining hall right after surgery,

Immediately after the patient leaves the room, the "scrub" nurse is just behind, heading directly to the central sterilization area where she places the tools in stainless steel buckets and soaked them in antiseptic detergent. The nurse drops off the linens to be laundered in the central laundry that is 15 feet away from the central equipment area. While this is happening the "relief team is opening all the pre-arranged and sanitized surgical packs containing all instruments and supplies for the next procedure and the next patient is brought into the room, less than 5 minutes after the previous patient walked out³⁷.

Most hospitals have disposable cloths and gowns. Drapes and gowns at Shouldice are all cloth and recycled and disposable items are avoided whenever possible. The total estimated variable cost of PPE and disposables including anesthesia is less than \$130; prior to 2020 and Covid19, the variable costs were less than \$30.

All delivery systems have an emergent implicit operating strategy that includes patient flow and clinical procedures, organization, quality & safety, human resources, accountability, marketing, and financing. In the OR, the 4 team members perform like a quartet and sometimes like a trio or duet. In general, Shouldice operates as a "team of teams." Each team member continually makes a significant contribution to the care process, by doing something for the care of the

³⁷ Prior to Covid in 2020, it was less than 5 minutes. After 2020 it takes 5-10 minutes to clean the room and sort out the new instruments for the next case.

patient. There is no wasted time, and there are no wasted steps. They rotate on and off teams, so everyone can learn to work together and communicate without much need for verbal interaction. The result is very little variation in the service process and the interarrival rates of the patient and the surgical teams—with few late starts and bottlenecks.

The First Surgery of the Day³⁸. At the beginning of the day, it feels like a typical operating room with 5 surgeons and 5 assistants prepping for surgery after escorting their patients into the operating room, where the nurse monitors the patient and 'preps' the operative field. Once gowned up, everyone pauses and has a 'time out' to confirm that the surgery is performed on the correct side.

Once the patient is anesthetized, the incision is made with a large blade (#22). Towels are used to protect the skin and the surgery continues. No cautery is used in most cases, so any bleeding vessels are clamped to be tied at a later point. At set times during the case, all clamps are tied with a suture on a reel. Anywhere from 4 - 10 ties are performed in succession, always with an instrument knot to save on suture.

This appears to be performed for maximal efficiency so that the surgeon doesn't alternate between dissecting and tying knots. Once the external oblique is opened, the first step of the repair is to cut the cremaster fibers and identify the preperitoneal fat or *patent processus vaginalis* (i.e., hernia sac).

Since there is variability in each patient, this step, while performed the same way looked different in each case. Once the indirect portion is complete, the cord is retracted laterally and held back with a retractor while either of the superficial nerves is retracted or dissected out of the way.

The next step is to divide the lateral cremaster fibers along with the genital branch of the genitofemoral nerve. This may be a missing step that is not routinely taught in the US as it opens the view of the transversalis fascia in a way that is almost impossible without this step. An added benefit is that the nerve cannot be entrapped, decreasing postop chronic pain while providing a thick bundle of tissue that can be sutured around the cord laterally, creating a snug, and functional new internal inguinal ring with the proximal cremasteric stump. One Shouldice surgeon described that step as creating a scarf for the cord.

³⁸ These observations about the Shouldice method were made by one of the authors who is a hernia surgeon.

The repair itself was unique in the choice of suture and the number of layers used. It was explained that the numerous layers of continuous steel suture work much like a Chinese finger trap, allowing for flexibility and distribution of pressure minimizing any semblance of tension. The transversalis fascia is always opened, and the peritoneum and preperitoneal fat is dissected off the underside and a femoral hernia is searched for. The initial suture is tied close to the pubic tubercle, taking care not to suture the periosteum.

The first layer incorporated the inferior edge of transversalis fascia and the underside to the rectus and internal oblique. The lateral most stitch incorporated the cremaster fibers, adjacent to the anterior superior iliac spine, creating the scarf for the new internal ring. The second layer brings the inguinal ligament to the internal oblique muscle, transversus abdominis muscle, transversalis fascia then ends at the pubis incorporating the rectus abdominis muscle and fascia, while taking bites of the pubic periosteum. This layer is very similar to the layer described by Bassini [53]. The 2 remaining layers include a back and forth running layer of more external oblique combined with internal oblique and rectus while taking care to not tighten the deep ring around the spermatic cord but snug enough to avoid a recurrence and continue to take more bites of the pubic periosteum. Finally, the cut distal cremaster is sutured to the external ring that is recreated, to maintain testicular retraction³⁹. Dissolvable sutures are used to close the rest of the wound except for the skin which is closed by skin clips (michel clips) which are removed 24 and 48 hours after surgery.

Next, the 2-3 nurses in the room get everything ready and start taking care of the next patient, starting the whole cycle again. While the patient is being prepped the surgeon and assistant have time to dictate their previous surgery and even have time for a quick cup of coffee. At this pace often 3-4 hernia repairs are completed before lunch, which the entire team in the room takes between 11:30 AM and 1:00 PM in the staff cafeteria, which is adjoining the patient cafeteria. The room is not utilized for this 30-minute chunk each day, but all team members get to socialize in a relaxed environment. Often 2-3 more cases are performed after lunch before 3:30.

Post-Operative Length-of-Stay: 3.2 days. Most hernia surgeries in the US and Canada are outpatient day procedures. When Dr. Shouldice or any Shouldice surgeon is asked why the “long” length of stay, three reasons are offered.

³⁹ Again, all these observations about the Shouldice method were made by one of the authors who is a hernia surgeon.

- The first is patient safety--technical complications (bleeding or infection) occur in the first 72 hours after surgery. So, surgeons can carefully monitor the patients for 3 nights to make sure the wound has healed well. On the morning of the 4th day, they go to their car and drive themselves home. The clinic may never see these patients again. Re-admissions are rare.
- The second reason for a 3-day stay is to eliminate sewing underneath the skin and using sterile strips across the incision. The body requires 12-14 hours for the vasculature to be created underneath the skin. That natural healing becomes the glue and allows Shouldice to use temporary clips to bring the incision together. As the vasculature is being created, half of the clips can be removed the day after surgery, and the rest on the day after that. Patients end up with a very thin scar since subcutaneous sutures are not used.
- The third reason for three days is the importance of immediate and early ambulation, patient education and emotional support. Encouraging mobility and interaction with patients reduces apprehension, fear and for some, trauma. They admit patients the day before the surgery so the patient can become acquainted with the layout and beautiful surroundings. They can interact with post-operative patients, which increases their self-confidence before the surgery.

Staying several days is critical to the post-operative therapy and the long-term results they obtain. On the first day after the procedure, the patients are coached by nurses to stretch and exercise. Most complications (they estimated 90%) present on the first post-operative day, so if there are post-surgical issues they are observed and dealt with rapidly. They eat with all of the other patients in the dining room—they are not served any meals after post-op day 1 in their rooms. They are encouraged to walk around the hospital grounds, play pool in the patient lounges and attend daily exercise classes.

Most hernia patients enter an outpatient facility of the hospital with a hernia and leave that day with a repair, medicated for pain, but not feeling well, and need to return to check the repair and remove the suture. Shouldice on the other hand allows patients to stay a few more days so they can leave confident and feeling well.

Dr. E.B. Shouldice said:

“The benefits to the patient outweigh the minimal cost of a 3-4 day stay. When you care for a convalescing patient after surgery, it not only builds their motivation and confidence, but they also take less time off from work.”

According to Dr. E.B. Shouldice, they return to work, on average, in 7 days. After hernia mesh surgery, patients go home the next day and return to light work between 1 to 2 weeks, however, full recovery can take from 4 to 6 weeks. Complications from mesh will extend recovery in some cases up to 1 year [45].

Creating a Strong Motivating Environment. A fundamental question is what motivates a surgeon who is doing hernia surgeries? As one surgeon said:

“If you come to this clinic you have to answer a basic question—are you sure you want to do hernias the rest of your life?” (Shouldice surgeon)

When asked what keeps the surgeons and OR staff motivated, the senior leaders gave several answers. First, the surgeon’s job has been designed to require a deep understanding of the anatomy and requires technical skills and experience that many general surgeons do not have.

Dr. Shouldice said,

“It is a 4-layer repair, where the transversalis fascia is incised from the internal ring laterally to the pubic tubercle medially, and upper and lower flaps are created. These flaps are then overlapped (double-breasted) with two layers of sutures...”

While the basic procedure is performed the same way, there is a great deal of variability in each patient’s hernia. To an observer, the surgery looks different from case to case. For each surgery, there is one “most responsible surgeon.” During each procedure, Shouldice surgeons exercise their autonomy.

Second, surgeons can feel like they are *top-knife* surgeons⁴⁰. One way this is illustrated is by fixing recurrent hernias from other hospitals and surgeons. Owing to their reputation as a hyper-specialized hospital, fixing a recurrent groin hernia from other hospitals soon became a significant part of Shouldice the target patient segment. Going over scar tissue and re-doing other surgeons' hernia work to make a permanent repair made Shouldice surgeons understand that they were practice leaders and world-class hernia surgeons.

Dr. Shouldice said “we are not afraid to take any type of hernia. Some hernias literally hang down to the patient’s knees.” He also confessed that more than once he came out of the operating room and thought to himself, “that was a masterpiece.”

Third, since Shouldice records every case by the surgeon, there is a strong sense of collective responsibility for the surgery and the long-term end result. During every surgery, there is immediate feedback; each team member holds each mutually accountable. Finally, they trust that they are working with a stable and competent surgical assistant and nurse as a team.

Fourth, and most importantly, to keep a team-based culture, the hospital wants to pay every surgeon the same. They are paid a fair wage with a bonus, a paid vacation, a full range of health benefits, reimbursement of all professional and insurance fees, and an allowance for professional development⁴¹. There are clear workload norms and physicians can exercise some autonomy in

⁴⁰ Hirschberg and Mattox used the phrase “top knife” playing off the popular film *Top Gun*. The idea was the disciplining required to train the very best trauma surgeons—thinking under pressure, adapting to uncertainty and rapidly changing situations [55]. Like the name of the Naval Fighters, you cannot be a Shouldice surgeon without commitment and courage in the face of adversity and being able to cut across any type of hernia and complicated anatomical areas.

⁴¹ In 2022, physician compensation is about \$300,000.

deciding when they want to exceed or relax the norms. Surgeons are expected to (1) perform 5-6 surgeries a day, (2) see 12 -15 new patients, (3) examine their patients the day before their surgery, operate on them the next day, and visit their patients in their rooms on the day of the surgery. When surgeons exceed those norms, they may obtain a bonus that is, on average, 5%. Finally, surgeons at Shouldice are choosing a lifestyle, they can always finish at 16:30 (4:30 PM) and go home to their families.

For all non-clinical employees, there is a performance-based bonus plan. Each year stretch goals, objectives and performance targets are set for each department such as (1) improving patient satisfaction, (2) staying within the operating budget, or (3) submitting audit information on a timely basis, etc. At an annual meeting the Board discusses the same question—“given each department’s contribution to our annual goals and objectives, what do we want to do our employees in that department?” After that discussion, a bonus pool is established without a formula. It is never based on annual profits.

Reviewing the employee records, one finds that annual turnover for surgeons, nurses, and other employees is less than 5%. Most importantly, they retain their “star performers.” There is a huge cost to recruit, hire and train new health care employees. In health care, the cost of turnover is the amount of time it takes to get a nurse, a surgeon, or a chef to perform. So, the real cost of turnover is a loss of productivity and/or a decrease in patient satisfaction.

In 2020, during the Covid19 pandemic, all elective surgeries were stopped and Shouldice was ordered to shut down for three months. The Shouldice family and the Board made a conscious

decision to keep everyone on the payroll at their current salary⁴². From 2020 to 2022, the hospital had to shut down three times for 7 months. Each time they lost a great deal of money. When they re-opened every employee came back—there were virtually no resignations⁴³.

A System and Culture of Patient-Centered Accountability⁴⁴

Going back to the early years, Dr. E.E. Shouldice created a system for knowledge creation and a system for knowledge dissemination that has become part of the culture at Shouldice. They have evolved and become part of the culture at Shouldice. There are 4 processes: 1) one for creating clinical standards and protocols for hernia repair; 2) one for implementing those protocols; 3) another for following the protocol, with rigorous training and closely observing surgeons while being trained; and 4) one for monitoring performance by keeping a track record of end-results for each surgeon and the team holding everyone mutually accountable. The surgeons are under the watchful eye of the assistant and nurses. Here is how it is working.

⁴² The Board not only wanted to support their employees during the pandemic, but they also understood that because of the specific training to work at Shouldice they wanted those well-trained people to come back. They would be hard to replace.

⁴³ A handful of employees did retire because of their age. After the second shutdown in 2021, they kept everyone on salary, but the second time over the 3 months, they ratcheted from 100% of salary to 90% and then 80%. Again, everyone returned. The last shutdown occurred in January 2022, for one month. This was their third shutdown. Owing to the significant losses in 2020 and 2021, they had no choice but to temporarily lay everyone off. After one month, when they were told they could re-open, every employee returned.

⁴⁴ As Dr. Shouldice suggests, for many general surgeons, and hospitals, there are no incentives to keep very accurate track records of successes or hernia recurrence rates, so they are always understated. In addition, he said, “How many patients have a recurrence and choose to live with it? Every day our surgeons are operating on patients who had a repair at another facility, and it failed. So, I did 2 informal studies. I asked these patients ‘did you go back and tell your surgeon it failed?’ Two-thirds said, ‘no’ the first study, and one-third said ‘no’ in the second study. However, 100% said they told their general practitioner.”

Quality Control. Quality control is very hands-on and performed in several ways. First, if a patient returns with a recurrence, that patient is set up for the follow-up surgery with the original surgeon. Excellent records or score cards are kept for each surgeon, noting OR time as well as those rare recurrences. Additionally, the Chief Surgeon will scrub in and assist frequently during the year to observe the surgeons directly in the OR.

The senior management team, including the Managing Director, Director of Operations, and Director of Nursing, will make frequent rounds and discuss the surgeons with the surgical scrub nurses who observe every surgeon frequently. They are the first line of alert should a surgeon's technique varies from the fundamental protocol of the surgical repair, or a new surgeon is underperforming and needs further supervision or training.

A relatively new surgeon, who had gone through the training with the Chief Surgeon, did not seem to know his way around the OR. He was a little unfocused, and he spent a longer time in training. Just 2 weeks after he was performing the surgery, one of the assistant surgeons told the senior leadership: "There was no harm to the patient, however, I will not work with that surgeon." He was immediately taken out of OR.

Next, we describe the delivery system.

Well-Designed Service Delivery System

The operating strategy will fail without a service delivery system that integrates and supports the strategy. The important attributes of the delivery system include 1) the formal organizational

arrangements and people management; 2) people and job design; 3) extensive training; and 4) a patient-centered facility. We begin with a description of the organization and people.

Organization Structure and People Management

Shouldice is a family-run enterprise managed by a few senior executives⁴⁵. The leaders have created a flat organization with minimal reporting relationships, coordinated by a mission-driven culture and teams of people on the front lines with clear roles and responsibilities. Dr. Shouldice walked through the entire hospital 10 times a day, doing listening tours and having impromptu conversations with all of the physicians and employees right until three months before his passing. There are a small handful of top managers and staff, so Dr. Shouldice knew everyone's name.

The hospital is led by the Managing Director, Mr. John Hughes, who told the authors:

“One of the beauties of being in a relatively smaller organization is that you touch everything every day. I will go from finance to human resources...I deal with families, hire a cook or nurse...Every day is a unique challenge.”

There is a Director of Operations who oversees the administrative groups, such as maintenance, front office, medical records, IT, research and inpatient services. Working in an executive dyad, the Managing Director and Director of Operations spend a great deal of time on the front lines

⁴⁵ Shouldice was headed by Dr. E.B. Shouldice, as Chair, until he passed away in April 2022. Today three of Dr. Shouldice's children sit on the Board of Shouldice.

listening and interacting with employees. They also know everyone's names and if there are any concerns, they take note and act immediately.

There are 5 service centers (or departments) reporting to the Managing Director and Director of Operations⁴⁶:

1. Medical: Chief Surgeon & Medical Officer, Surgeons (11 FTEs), Assistant Surgeons (8 FTEs), General Practitioners (2 FTEs), Anesthesiologist, (2.5 FTEs), and Clerical Staff.
2. Nursing: Director of Nursing, Manager of Floor nurses and Manager of OR Nurses, Floor Nurses (30 FTEs) and OR and Scrub Nurses (20 FTEs) Personal Support Workers (5) and Lab staff.
3. Administration (Front Office, Finance, Medical Records, IT, HR and Research).
4. In-Patient Services (Housekeeping, Dietary, Dining Room and Laundry).
5. Maintenance (Building and Grounds)

A minimal hierarchy is not a weak structure. On the contrary, when people are “carefully” selected to work together as a collaborative team, and they trust each other, they believe in the mission, and they not only share goals but are committed to accomplishing the goals, they can manage themselves.

People and Job Design

Being patient-centric runs to the heart of every job at Shouldice. As an organization, the operating strategy is driven by people: patients, nurses, surgeons, other caregivers, and staff.

⁴⁶ Everyone reports to the managing director. There are five senior executives and 7 supervisors,

There is not another single factor more important than the quality of the people. Since the employees deliver services and not technology, selecting and retaining the right people with the right service attitudes cannot be overstated.

Heskett reminds us,

“One person can regard a job in food services as a boring, repetitive task, while another can see the same job as offering an endless variety of opportunities to meet and interact with people.” [23, p.123]

Jobs are carefully designed, spelling out tasks, activities as well their broad roles and responsibilities. For example, the duties of an on-call surgeon and surgical assistants are posted on a bulletin board—see **Fig. 1.7**. That is not special, many organizations have similar job descriptions.

What does distinguish this organization is the way both clinical and non-clinical employees engage in mutually rewarding relationships with patients by sharing knowledge, offering advice, or simple guidance. Everyone’s jobs have been enlarged to include listening and talking with patients. Everyone who interacts with patients is educating and counseling patients. The dietician educates and coaches overweight patients on nutrition and eating healthy. Nurses and housekeepers educate and counsel patients about exercise and self-care. Surgeons and assistants counsel patients on the importance of immediate and continual ambulation and light exercise. And post-operative patients counsel newly admitted patients.

To deliver the world’s best hernia outcomes and patient experiences, everyone must focus their time and attention on patients. That means treating patients with dignity and respect. By doing

that, employees believe they are productive by helping patients find quick routes to health.

[INSERT Fig. 1.7]

| On-Call Surgeon | Week-end On-Call Surgeon |
|--|---|
| <ul style="list-style-type: none"> • After finishing in the OR, proceed to the office to see patients and stay until all patients for the day have been seen • Post-op patient rounds are after 4:00 pm and only after all office patients for the day have been seen. Patients are to be examined in their rooms to be sure they are comfortable, the dressing is dry, and intact, and no sign of hematoma. • Do Hx and Px, draw blood on late admissions. • Remain in the hospital until the cardiologist phones. Follow-up on EKG concerns, compare with the previous EKG on the chart...if surgery is canceled record the reason.. • Assess bloodwork results (phone report) • Be on the floor by 6:45 the next morning to attend to any necessary ward work (drawing blood, completing charts) • Be available and reachable by phone and respond to any problems or concerns • On-call hours are from 8 AM to 8 AM (24 hours) | <ul style="list-style-type: none"> • Ward rounds are to start at 8:30 a.m. and Saturday Office is to start at 10:00 AM • Patients for admission are to be seen after having their EKG work done, their blood drawn and being seen by the admission nurse. The history of the chart is to be reviewed with the patient and any changes in health status or medications recorded. Patients are to be examined (heart, lungs, abdomen, all potential hernia sites, testes, scrotum) and results recorded on the chart. The operative site is to be marked and recorded as marked on the chart. The pre-op orders are to be written following the prepared pre-op Order Sheet taking into account the patient's age and weight • A new complete history and physical are required if the existing history is more than 6 months old or if there is not a previous complete history and physical on the chart • Patients are not to be discharged early on the weekend • Must be available and reachable by phone and respond to any problems or concerns related to Shouldice Hospital Patients. • Hours of on-call from 8:00 A.M. Saturday morning to 8:00 A.M. Monday morning of the first day following a long weekend |

Fig. 1.7 Example of On-Call Surgeon's Duties. This is an example of the accountability system supported by setting clear expectations. It also illustrates the standardization of job design even for physicians.

Human Resource Investment in Training

Most hospitals assume that once a physician has completed a residency, there is little need for clinical training, aside from some general on-boarding. Shouldice puts newly recruited surgeons

through a 2–6-month training program⁴⁷. They take a great deal of time to get new hires comfortable with not only the surgical technique, but also the whole patient journey and experience while at the hospital.

One surgeon spoke about the first week working at Shouldice:

“The first week was shadowing physicians in the clinic, waiting for my malpractice insurance to kick in. They have a simple electronic medical record, where you press buttons and fill in blanks and it is easy to see the patient. I shadowed a surgeon and observed how the physician greets a patient, escorts her or him into an exam room, does a full head-to-toe exam, height, weight,⁴⁸ and identifies the hernia. It helped me understand that Shouldice had a patient-centric culture...” (Shouldice surgeon)

He explained his experience:

“When I started, I observed 100 Shouldice procedures, as every new surgeon must do. Since each surgeon is doing 4-6 a day, you finish your observations quickly. Slowly, they hand over the suture, and the knife and they take you through the four layers. They identified vessels that most general surgeons would never observe... At Shouldice, it is a powerful science driven by surgeons. For males, there is the tube around the spermatic cord called the cremasteric that grows off the internal oblique muscle. That is a tube you slice and open like a banana and peel it off the spermatic cord. The cremasteric must be identified and used in each repair, otherwise, there will be future complications...”

Surgeons can take approximately 1000 cases (almost two years) to get to a point where the surgery is fast and efficient. Surgeons work approximately 50% of their time in the Shouldice Hospital operating rooms and 50% of their time in the Shouldice Clinic.

⁴⁷ New “in scope” surgeons undergo an extensive in-house training program, while surgeons undergoing a “change in scope” are supervised by senior Shouldice surgeons under a program approved by the Ontario College of Physicians and Surgeons of Ontario.

⁴⁸ The clinic is invested in the patient having an excellent outcome and being healthy. As described above, to become a Shouldice patient, individuals with hernias must fall into an acceptable weight-for-their-height range (BMI). If they must lose more than 20 pounds, there is a diet that is recommended by the on-site dietician. The physicians and staff support, motivate and encourage the patient to become healthier.

This extensive onboarding and training (which occurs for all caregivers and staff) create a work environment that is motivating. The Shouldice approach is unique in its efficacy, every caregiver and staff has knowledge of the results of their effort.

Each surgeon can strive for mastery and to be in an elite set of the best hernia surgeons in the world. Additionally, there is a great work-life balance in that all cases are elective and scheduled with minimal "call coverage" and no emergency work. Surgeons can work predictable hours, with less uncertainty and stress.

A Patient-Centered Facility

There is one building that co-locates two facilities totaling approximately 73,000 sq. ft. a licensed surgical hospital, and a team-based clinic. The hospital is a private, surgical acute care hospital in Thornhill, Ontario, with 5 operating rooms and 10 examination rooms. Shouldice Hospital is restricted to 89-beds under its provincial license and is funded by the provincial government directly from the Ministry of Health. The hospital is not funded by procedure, they get a global budget (see **Table 1.1**). Consequently, they have to be efficient.

Seventy percent of the hospital costs are labor. Shouldice employs 142 FTE employees five managers, seven supervisors, (50 FTE nurses and scrub nurses, 2.5 FTE anesthetists, 1 dietician, and 89 FTE non-clinical staff employees). The only employed physician is the Chief Surgeon/Chief Medical Officer, Dr. Fernando Spencer-Netto, MD., who works for both the Hospital and the Clinic. He performs two roles, he is Chief Medical Officer for the hospital, and

he is the Chief Surgeon and the clinical leader for the surgeons. As a player coach, he is part of the group practice actively performing hernia surgeries and training new surgeons.

Shouldice Clinic is a private group practice run by physicians and under the leadership of the Chief Surgeon, Dr. Spencer-Netto. There are 18 FTE physicians in the clinic: 11 FTE surgeons⁴⁹, 2 FTE general practitioner physicians, and 5 FTE surgical assistant physicians. The clinic is funded by the Ontario Hospital Insurance Plan (OHIP). The clinic bills OHIP on a fee-surgical consults, and each hernia surgery (for-service basis and is reimbursed for all physician services such as physical examinations, see **Table 1.1**).

Over the past few years, the number of FTE employees has been reduced by 10. Since it is not a full-service general hospital, aside from crash carts for rapid response codes, there is no need for advanced technological backup. So capital budget expenditures are minimized.

Most acute hospitals built to handle a high volume of cases look like bureaucratic institutions, with giant parking lots. Shouldice hospital looks more like an estate or a home than a hospital (see **Fig. 1.8**). The original house was renovated to create a hidden hospital and clinic, designed to reduce anxiety, and promote patient and staff productivity, patient safety, respect, and comfort⁵⁰. **[INSERT Fig. 1.8]**

⁴⁹ The 11 FTE include the Chief Surgeon.

⁵⁰ In 1968 Dr. E.B. Shouldice designed and built a 58,000 square foot addition to the existing estate.



Fig. 1.8 Shouldice Hospital. This striking picture of the hospital reveals its patient-centric culture. The surgical hospital and clinic are hidden inside a beautiful luxurious well-maintained country estate with lush landscaping. For some patients we interviewed, it evokes feelings of comfort, safety, and confident expectations. The picture is the antithesis of a distant bureaucratic institution.

The front door opens to the reception, a large lounge, and a glass solarium with a beautiful view and canteen, a large clinical waiting area and the examination rooms see **Figs. 1.9a and 1.9b**.

Going down one flight of stairs there is the dining room, kitchen, housekeeping office and administration. On the hospital side of the first level are the 5 operating rooms, pre-and post-op, laundry and central supplies. On the clinic side of the first level are admissions and discharges, general practitioner clinic and examination rooms and lab. Going up two flights of stairs in the hospital there are more patient rooms, as well as another lounge and exercise room. [INSERT Figs. 1.9a and 1.9b]



Fig. 1.9a Dining and Sitting Areas. This is a view into the dining hall from a sitting area.



Fig. 1.9b Shouldice Semi-Private Room. The rooms are intentionally stoic to get patients to walk to the dining hall, recreation rooms, lounge and the grounds. Some patients said it was liberating to not be cloistered in a cluttered room.

There are several ways that the facility was designed to support both the functional care program (patient interaction, exercise and ambulation that stretch muscles) and emotional support— (reducing anxiety, finding antidotes to boredom, and the genuine feeling of enjoying their postoperative stay). First, the facility has multiple levels, and all the stairs and steps were designed with low risers for easier climbs and descents for patients having had groin surgery. Second, the floors and stairs are carpeted everywhere but the OR. Third, showers, televisions, and telephones are in common areas not in the patients' rooms.

The facility has pleasant amenities where patients can have fun. The hospital is located on 23 acres of beautifully landscaped grounds with appropriate inclines to support patient recovery with light exercise. The facility has a solarium for reading and reflection, exercise rooms, and a game room with billiards and card tables. There is even a music room with a guitar and piano lounge. On the grounds are lovely walking paths, shuffleboard, and putting greens. Patients can decide to play billiards or use the exercise equipment. Alternatively, weather permitting, they can go outside for a walk, play shuffleboard, or golf⁵¹.

Caregiver and Staff Echoes and Voices: Value Creation for Employees

Observations and interviews at Shouldice revealed that everyone understood the importance of a patient-centered service attitude and the systems and care processes that support that mindset:

⁵¹ In 2016, the land was sold and the hospital has a 20-year lease on 2.7 acres. The rest of the property surrounding the hospital is scheduled for further real estate condo development. In the past, the hospital had built an independent living facility on the grounds. That facility was sold in 2000.

“Once I started working here, I realized that Shouldice Clinic had been designed to meet all the needs of every patient. Every employee and every part of the system is patient centered. Nurses and dieticians and other staff counsel patients and do not change bedpans.” (Shouldice caregiver)

Interviews with other caregivers revealed the true appeal of a patient-centered health clinic:

” When I came here, I liked the Shouldice concept. The attention they give to patients is awesome--the dining rooms, the patient rooms. The clinic caters to the patients...”
(Shouldice employee)

One surgeon spoke of how value is created for patients:

“The whole system is designed to manage patient expectations. They are guided each step in the process by everything and everyone in the hospital. From the video they watch in the waiting room to every encounter with hospital employees. Just by coming here, patients know they are cared for by the best hernia surgeons in the world.”

Another surgeon spoke of the value created by the reputation and culture.

“I love the rich tradition. The Shouldice technique was developed by surgeons, and the procedure and care process evolved over time to become a much better set of medical practices. The outcomes are durable and recurrence rates are rare events. Finally, the patients treat me with great respect. They believe that they are being seen by the best hernia surgeon in the world. Shouldice is totally new and different from anything else I have done in my life as a physician.” (Shouldice surgeon)

The genuine enthusiasm at Shouldice is not explained by compensation but by witnessing every day that the hernia patients they operated on are eating in the dining hall, socializing in the lounge, and having fun on the putting green. There is primarily an internal labor market for promotion, and employees who deliver good service have the security of a lifetime job.

Shouldice has been successful at establishing and maintaining an outstanding surgical record.

Patients are very satisfied with the care and treatment and with the staff’s strong service attitude.

Based on these interviews, the surgeons believe in the care program and enthusiastically communicate their beliefs to non-clinical staff.

Next, we will evaluate performance including financial aspects, quality, social impact, current challenges, and future demand.

End Results and Performance at Shouldice

Shouldice has always argued that the cost per procedure is substantially lower than at other institutions and though they are a private hospital, their prices are significantly lower⁵². One prospective randomized study at a Spanish hospital in 2005 compared hospital costs when surgeons used the Lichtenstein versus Shouldice methods. They found Lichtenstein to be significantly more expensive than Shouldice (235 Euro versus 180 Euro) with comparable outcomes [57]. The next section will look closely at price and payment systems.⁵³ A description of all the price components and a summary of costs are shown in **Table 1.1**.

Financial Aspects

⁵² In Ontario in 2017 the average general hospital cost per comparable hernia surgery case was \$1,639, compared to that funded to Shouldice of \$1072. The difference is made up by the semi-private room and out-of-province fees.

⁵³ Payments made by third parties (which include government or insurers) for health services are called a reimbursement. If there are no out-of-pocket charges to the patient, the amount reimbursed is the effective “price” paid for a service in health care.

Reimbursement to Shouldice for a hernia repair is complicated. There are hospital fees and professional practice fees that comprise Shouldice's price structure.

Hospital fees. There are two charges for the hospital: a facility fee and a per diem charge. The facility fee is set by the provincial government and based on a volume (in 2021) of 6,480 cases⁵⁴. That flat fee was \$1072 per patient and includes the operating room, food services, housekeeping, nursing, etc. The other fee is a per diem charge of \$305 for each night they stay at the hospital⁵⁵.

Professional fees. Next, there are professional practice fees that include: the original surgical consult, surgeons and anesthetist's fees, post-operative follow-up fees, and a day of discharge fee. The surgeon's fee is \$357, the surgical assistant is (approximately) \$120, the anesthetist is \$180, the surgical consult fee is \$92 and the general practitioner's fee is \$77⁵⁶. There is a post-operative consult fee of \$34.10 for days 1 and 2. On the day of discharge, there is a fee of \$60. The average reimbursement (or price to the provincial government) is \$2,950.00 per hernia repair. In 2021, the operating costs for 6,480 cases were between \$17,500,000 and 18,800,000.

⁵⁴ According to the Managing Director, the government gave them a budget of \$6,946,560 for the facility fee. That was based on a day-center rate for extra post-operative days (89%) and an inpatient rate (11%). If they had more than 6,780 hernia repairs, they would not get more reimbursement. If they did fewer than 6,280, they would get less than \$6,946,560.

⁵⁵ Most rooms are semi-private, and there is a ward rate option that is covered by the provincial health care plan. Most patients want a semi-private room and stay an average of 3.2 nights. As mentioned, their insurance covers the per diem charges. Patients with bilateral hernia surgery require a 5-6 day stay and most Canadians carry insurance that pays the \$305 per diem.

⁵⁶ About 60% of patients that come to Shouldice are scheduled for surgery. About 4,000 patients are given a complete physical examination by the general practitioner, and checked for a hernia by the surgeon (surgical consult), but are not scheduled for surgery. The clinic can bill for the GP examination and surgical consult. About 10% of the Shouldice patients request a 30-minute massage, for which the clinic will bill \$75.

At \$2,950 (Canadian dollars) Shouldice continues to have lower costs per procedure than hospitals in the United States and in Canada⁵⁷. The average price of a single hernia repair surgery in the United States is \$7,750 (US dollars). Prices can range from \$3,900 to \$12,500 depending on location, which procedure is done—open or laparoscopic, and what type of facility (outpatient or inpatient)⁵⁸. As discussed previously, in Ontario, Canada the average general hospital’s OR cost per comparable hernia surgery case was \$1,639, compared to \$1,072 for Shouldice. Adding in physician fees, the average price for a hernia is closer to \$4,000 (Canadian dollars) compared to Shouldice’s \$2,950. The cost of a laparoscopic case in Ontario would be even higher⁵⁹. As mentioned earlier, a Toronto ambulatory care center sent a quote in writing that a laparoscopic hernia procedure would cost between \$6,500 and \$9,000 in 2022.

The variable OR costs are \$130 and total fixed costs (both direct and indirect) per patient are between \$2,574 to \$2,774. The total cost per patient for the hospital and clinic is between \$2,704 and \$2,904. The excess of hospital and clinic revenue (\$2,950) against the total per patient expense is between \$46 to \$246. [INSERT Table 1.1]

Table 1.1 Shouldice Financial Aspects. These were estimates based on interviews with the Chief Administrative Officer to illustrate the importance of managing

⁵⁷ The data for Canada came from a 2014 research study [58] and the data from the US are from New Choice Health, [59].

⁵⁸ In the United States, the average price for an inpatient hernia repair is \$11,500 USD, while the average price for an outpatient procedure is \$6,400 USD. Those estimates came from New Choice Health [59].

⁵⁹ The \$4,000 estimates are conservative. The Chief of Surgery at Shouldice conducted a hernia cost study in a Toronto general hospital comparing open versus laparoscopic hernia surgery from 2011-2009 [58]. He found that operating room and total hospital costs for open inguinal hernia repair were lower than for laparoscopic, (median cost, \$3,207 vs \$3724). Over the last 8-10 years, it is likely that these costs have risen much higher than \$4,000.

costs at Shouldice. The costs and prices are much lower than other facilities even in Canada. Note: price, as it is used here, refers to what the Canadian government “reimburses” Shouldice. There are other sources of revenue from the clinic and other services that are not listed.

| Ontario Reimbursement to Shouldice | Patient costs: Full Cost Accounting |
|--|---|
| <ul style="list-style-type: none"> • \$1072 for Surgery | <ul style="list-style-type: none"> • Variable OR costs= \$130 per patient |
| <ul style="list-style-type: none"> • \$357 for Surgeon’s Fee | <ul style="list-style-type: none"> • Fixed costs per patient = \$2574 - \$2774 per patient |
| <ul style="list-style-type: none"> • \$120 for Surgical Assistant’s fee | <ul style="list-style-type: none"> • Maintenance of 50-year-old building |
| <ul style="list-style-type: none"> • \$180 for Anesthetist’s fee | <ol style="list-style-type: none"> 1. Replaced boiler, \$180,000 |
| <ul style="list-style-type: none"> • \$77 for GP and \$92 surgical consult fee | <ol style="list-style-type: none"> 2. Replaced Elevator, \$265,000 |
| <ul style="list-style-type: none"> • \$34.1 for a post-operative consult on day 1 | <ol style="list-style-type: none"> 3. Internal EMR, \$400,000 |
| <ul style="list-style-type: none"> • \$34.1 for a post-operative consult on day 2 | <ol style="list-style-type: none"> 4. HVAC Issues, etc. \$200,000 |
| <ul style="list-style-type: none"> • \$60 day of discharge | <ol style="list-style-type: none"> 5. Cosmetic renovation, \$1,000.000 |
| <ul style="list-style-type: none"> • \$305 each day of stay (Average is 3.2 days = \$976) | <ol style="list-style-type: none"> 6. New electric beds, \$150,000 |
| <ul style="list-style-type: none"> • Total Hospital and Clinic Revenue: \$2,950 per patient | <ul style="list-style-type: none"> • Total Hospital & Clinic Expenses: \$2,704 – \$2,904 per patient |

Next, we will discuss the quality of care in five dimensions [2]. First, we will review the outcomes literature comparing Shouldice with the alternatives on recurrences, complications, and post-operative pain.

Incidence of Recurrent Hernias: Shouldice Versus Mesh

One of the most important complications of hernia surgery is a hernia recurrence. One study of three databases in the United States challenged the finding that hernia recurrence rates following tension-free mesh repair were between 1 to 5% [60]. Calling those statistics “overly optimistic they found the recurrence rates to be 10.5% (2015), 11.2% (2014), and 11.5% (2014).

Shouldice wants to achieve a permanent repair with zero defects. One independent 14-year research study of all the hospitals in Ontario, Canada performing primary inguinal hernia repairs (excluding Shouldice) found that the age-standardized recurrence rate ranged from 4.79% to 5.63%; whereas the age-standardized recurrence rate at Shouldice hospital was 1.15% [61]. That is not zero defect, but it is close.

Over many years, Shouldice published superior end results in non-comparative retrospective studies. A 10-year study of Shouldice hernia patients found a .13% recurrence rate. A 17-year follow-up of all 6,773 repairs performed at Shouldice in 1985 found a .6% recurrence rate [4].

A measure of the learning performance of a hernia surgeon is the reduction in recurrences after repeating the same surgery over time. **Figure 1.10** shows the number of hernia recurrences after

409,229 hernia surgeries for Shouldice from 1945 to 2020. There is a nearly exponential decrease in recurrences from 1945 (20% recurrence rates) to 1952 (1% recurrence rate). An asymptote of 1% was sustained with small fluctuations until 2020. It took Shouldice surgeons about 10 years to learn how to achieve mastery at that near-perfect level of recurrence⁶⁰. They continue to aim for zero defects. [INSERT Fig. 1.10]

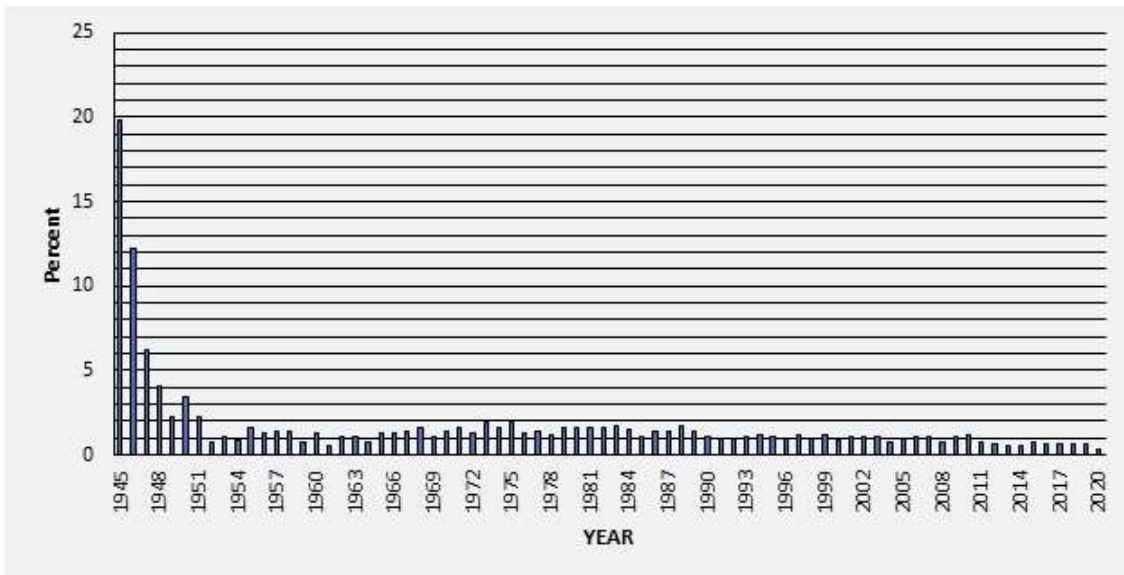


Fig. 1.10 Shouldice Recurrence Rate 1.2% from 1945 to 2020. This graph displays the recurrence rates from the beginning. There were 4,934 recurrences after 409,229 surgeries. Eyeballing the data one can make two observations. First, there was a learning curve during the first 8-10 years. Second, although the recurrence rate dropped below 1.2% it reached an asymptote.

⁶⁰ Shouldice found several innovative ways to conduct longitudinal follow-up studies with patients. For 50 years, Shouldice had an annual reunion of patients with a celebration and dinner and at those events, thousands of Shouldice patients were checked for hernias. They also reach out to patients for whom they had performed surgeries and conduct monthly traveling clinics in Ontario, and now across western Canada.

Chronic Post-Operative Pain and Complications

Throughout the world, studies report anywhere from 8% to 54% of patients with hernia repairs experience a level of postoperative chronic pain that not only interferes with daily life but also can be disabling [62, 63]. Post-hernia pain is associated with lowering one's quality of life, interfering with social activity and interpersonal connections, and leading to suicidal ideation [63]. More prevalent than hernia recurrences, chronic pain is the most common adverse event.

One retrospective study of 76,173 mesh hernia repair patients demonstrated the prevalence of pain to be 20%, and the year pain was diagnosed resulted in a 1.75-fold increase in inpatient/outpatient costs, and a 2.26-fold increase in pain prescription versus the next 9 years [63]. This is value destruction

Another retrospective cohort study of emergency department (ED) visits and hospital admissions from 2014-2018 in Ontario in the three days after ambulatory surgery found that of 14,950 patients who visited the ED 4,440 (29.7%) had had a hernia repair [14]. Complications such as haemorrhage, haematoma, and acute pain were among the top reasons for the ED visit and admission to the hospital. All of these hernia surgery patients had an outpatient procedure that was not performed at Shouldice and reveals the hidden costs of mesh surgery and the high price society pays.

Shouldice's standardized open groin repair and early ambulation are associated with comparatively lower complication rates. There is a .15% hematoma rate (seven in 5000 cases, and a .05% urinary retention rate [4]. Only mild and superficial infections occur in .6% of the cases, and the testicular atrophy rate is .02% in primary repairs [4]. Patients operated on by

Shouldice surgeons rarely experience chronic pain; rather a few may report some mild discomfort from time to time.

On the other hand, there has been a strong association between the utilization of mesh in herniorrhaphy and the escalation of serious chronic pain syndromes. The literature has reported that after mesh repair there is a high incidence of inguinodynia, dysejaculation, pain during sexual activity, and other types of nerve damage and complications. One meta-study of mesh complication rates found: 3.1% for dysejaculation; 10.9% for sexual pain; 10% hernia recurrence rate; and 13% chronic post-inguinal herniorrhaphy pain [64]. A recent randomized clinical trial in four Dutch hospitals comparing two mesh procedures found the recurrence rates were greater than 5% and the incidence of pain after 1 year was greater than 7% [65]⁶¹.

Studies of post-operative complications when mesh is used suggest there is value destruction, not value creation. There are three implications. First, there is no trade-off between cost and quality. Post-operative complications are associated with poor quality and escalating health care costs. Procedures done at Shouldice are associated with higher quality and lower costs and lower prices [62, 63, 64].

A second] implication is the proliferation of poor-quality mesh studies. Most of the studies are retrospective cohort studies and cover short time periods; longitudinal studies would be better. Moreover, very few studies are randomized clinical trials. The third implication is that when comparing different surgical mesh techniques researchers should consider outcomes such as

⁶¹ A recent study of the utilization of mesh in hernia repair from 2014-2018 found most studies (81%) had one or more authors who had received payments from any one of 8 major mesh suppliers but did not declare a conflict of interest accurately [66]. The open payments database was used [66].

chronic pain, hernia recurrences, and the annual and cumulative inpatient and outpatient costs over longer time periods. This should be a required area of focus for meaningful hernia research publications.

Social Impact of High-Performance Care at Shouldice: Value Creation

At the outset of this chapter, we defined value as offering the highest quality to patients for a relatively lower price, and at a reasonable cost to the organization. Quality, as defined here, has five dimensions [2, 67]. The first dimension is the outcome, whether the surgery shows an improvement in health status and quality of life (absent any complications or a recurrence). The second is decision-making efficiency, Was the right mix of clinical activities and resources used to obtain a good outcome? The third dimension is the overall patient experience and satisfaction with the care processes. The fourth is the amenities and convenience of the care program. The fifth dimension is the quality of the relationships between the caregivers and the patients, in terms of information, emotional support, and respectful interactions. To create value, Shouldice had to deliver on all five dimensions of quality with fair or relatively lower prices.

Figure 1.11 displays that Shouldice not only challenged the pricing model of the industry by being low-cost, but they have also been able to deliver on the five dimensions of quality at competitive prices. The technical outcomes are excellent with lower recurrence rates, complications, and less time in pain. We see patient experience and satisfaction are also very high, with a lifetime guarantee, and 99% willing to recommend the service. There are trusting relationships between patients and staff with information conveyed to offer psychological

support with carefully planned social interactions. The walk-in clinic and admissions process is simplified and convenient. The patient is admitted with a hernia and is discharged feeling that the hernia was permanently repaired, knowing that the surgeon discovered the weak areas and prevented future occurrences.

Past success does not guarantee future success. As Kim and Mauborgne state, there are no permanently successful organizations [36, 37]. We asked the leadership about problems and opportunities they are facing. **[INSERT Fig. 1.11]**

| | |
|---|--|
| <p>Excellent Outcomes/Strong Clinical Reputation</p> <ul style="list-style-type: none"> • No mesh used in surgery • Low recurrence rates: less than 1% over the last 10 years • Complication rates: less than .5% • On average patients back to work in 7 days | <p>Decision-Making Efficiency</p> <ul style="list-style-type: none"> • Quick diagnosis to treatment: combining primary care, lab testing, surgery, and rehabilitation in one care process • Rapid turnaround of lab tests, medications, OR rooms, etc • Optimal involvement of the patient in the care process • Sutures removed the second day after the surgery • Immediate and early ambulation reduces complications |
| <p>Overall Patient Experience: Extremely High Patient Satisfaction</p> <ul style="list-style-type: none"> • 98% extremely satisfied (5/5); 2% satisfied (4/5) • Less time in pain • 99% willing to recommend the service again • Repair has a lifetime guarantee | <p>Amenities and Convenience</p> <ul style="list-style-type: none"> • Walk-in clinic no appointment needed • Admission takes 2 visits with short waits • Excellent dining services • Semi-Private rooms have no: showers, telephones, televisions, or electric beds. • Staying at Shouldice is fun not boring (lounges, putting green, exercise machines, etc) |
| <p>Excellent Relationship, Psychological Support, and Information</p> <ul style="list-style-type: none"> • High touch clinical work (surgeon walks with patients into clinic, in and out of the operating room) • High degree of trust • Nurses, Dietician and Surgeons answering questions & teaching patients • Membership in the Shouldice network | <p>Lowest Price Hernia Repair with 3 to 4-day Length-of-Stay</p> <ul style="list-style-type: none"> • In the United States the average cost per case is \$7,750 USD, compared with \$2,700 (in Canadian\$) • Historically, Shouldice is @42% of the price per case in any hospital in Ontario, Canada. |

Fig. 1.11 Price and Five Quality Dimensions as Strategic Factors for Shouldice. This figure illustrates why Shouldice has been successful. Patient value is created in nearly every dimension of quality and price.

Challenges for the Coming Years

Discussions with Dr. Shouldice and the Managing Director revealed 4 problems. The first problem they face is the need to break away from old assumptions about who has been coming to Shouldice to understand the future potential demand. One assumption is about referrals from family and friends. As one Shouldice surgeon said:

“It is common to meet patients that come to Shouldice because family members have been there before. In some instances, I met a third-generation patient, where their grandfather and father were there before them.”

One 14-year study found that Shouldice performed 27.7% of all abdominal wall hernias in Ontario, Canada, some 167,274 patients went to competing hospitals [61]. There are several possible reasons why they went elsewhere such as (1) lack of capacity at Shouldice, (2) an emergent or overweight case, (3) being unsuitable owing to their co-morbidities, (4) the referring physician or patient not understanding the benefits of natural tissue repair, or (5) for other health or attitudinal reasons.

The Managing Director and others hypothesized there are at least four hernia patient segments that come to Shouldice:

- Those who do not want mesh or general anesthesia.
- Those who want a “home-like, family” setting.
- Those who trust the Shouldice brand and care program.
- Those referred by former patients (friends, relatives, coworkers), or by a physician.

They know that after a patient spends three or four days at Shouldice, virtually everyone discharged becomes a fierce advocate. The Shouldice experience creates an enduring emotional and trusting relationship with nearly all their patients. That “strong brand” hypothesis has been tested year after year for decades, eliminating the need for advertising and marketing on social media.

They hasten to add that the brand is very powerful in what they called “Old Toronto,” and that reputation translated into new patients who heard about Shouldice from a very loyal patient network of family and friends. However, people have been emigrating to Toronto from all over the world. That is creating important new communities in Toronto. The leaders at Shouldice said it could take years to build networks in these new communities. They also realize the need to take advantage of social media, and the powerful “word of mouse” when people look for caregivers not on official websites, but from on-line patient communities.

The second problem is the changing mix of medical tourists--local versus international patients. Many years ago, the hospital claimed that only 56% of its patients are Canadian, while 42% are from nearby, English-speaking United States (42%), while the remaining 2% come from Europe [5]. Medical tourism has been dramatically reduced by US Medicare changing rules on foreign coverage as well as the Ontario Hospitals being required to focus on Ontario patients. The local health authority reminded hospitals in Ontario that they are funded by a mandate to care for residents of Ontario and medical tourism must stop⁶². Since 2016, the hospital has focused on

⁶² According to the Managing Director, it was further fueled by a newspaper headline from the nurses’ union “Ontario health dollars going to the US.” That resulted in less medical tourism. In the US, when Senator Rand Paul came to Shouldice and paid for his hernia procedure, the newspaper headline said “Kentucky Sen. [Rand Paul](#), one of the fiercest political critics of *socialized medicine*, will travel to Canada later this month to get hernia surgery.”

servicing the residents of Ontario and now performs surgery on non-Ontario patients less than 10% of the time.

A third challenge is how to continue to position the Shouldice Care Program as an in-patient, holistic medical experience with a pure-tissue and suture repair that comes with a lifetime guarantee, in a hernia repair world that has gone 90% to mesh in an ambulatory setting.

A fourth and final challenge is that the hospital facility is more than 54 years old and it must be maintained. Given that the funding model does not include capital expenditure items, operating fees must cover all facility maintenance. Recently, they installed a new elevator costing \$265,000, a new boiler system that cost \$180,000, and are investing in a proprietary electronic medical record. The historical appeal of Shouldice was being a comfortable, home-like family setting. Will that advantage become a disadvantage?

In Ontario, Canada the Shouldice brand has always been strong. In 2021, they performed 20% of the 32,000 hernia repairs [61]. Management is concerned that this market share will not continue unless inroads are made in the new communities of Greater Toronto and surrounding areas. The next section will explore ways to analyze future demand.

Future Demand for Hernia Repairs

Patient demand for hernia repairs is very high--hernia repairs are among the top major ambulatory and inpatient surgeries for general surgeons as well as health systems throughout the world. Globally, each year more than 20 million patients have a groin hernia repair [8]. In the

Today Shouldice would charge a patient who is not a Canadian citizen approximately a total of \$5,500 for the surgery and 4-day hospital stay.

United States, alone, more than 965,000 patients underwent abdominal hernia repairs in 2019 [68] at an annual direct cost of more than \$2.5 billion [6]. In Canada, there are about 50,000 hernia repairs annually, and more than 32,000 in Ontario. The universe of hernia patients seems large. Next, we explore how Shouldice can bring some of that future demand to Shouldice.

The Four Tiers of Shouldice Patients

We described a large pool of hernia patients above. To determine the size of a target market for Shouldice requires precise ways to catalog current and potential patients. Kim and Mauborgne argue that the way to target new patient segments is by categorizing patients by their demographic and psychographic characteristics⁶³ and their proximity to the current patients [36, 37].

Based on interviews with senior leadership at Shouldice, we defined and identified four categories of patients. Tier zero is the current tier of loyal patients. Tier 1 includes some of the current patients who may leave if a better opportunity is offered. Tier 2 are the patients who have refused the Shouldice care program. The third tier is patients and payors who are unaware of Shouldice but could be potential patients. Each tier will be described.

Tier Zero Patients

⁶³ Psychographic segmentation clusters patients by their attitudes, interests, opinions, personalities, sentiments, and values.

Shouldice patients have a referral through their general practitioner, the internet, a friend, colleague at work, or a family member. These are the most loyal hernia patient. They are somewhat stoic and are not looking for a 5-star hotel. They select Shouldice by choice and after they go, they are extremely satisfied believing they have chosen the right care program. They urge other patients to go there.

Another group in tier zero believes that results and the patient experience are excellent. The fact that Shouldice guarantees the repair for life seals the deal. These extremely satisfied patients will tell everyone about this experience and as we have seen in this chapter, the network of patients has grown.

There are several patient segments and sub-populations in Canada and the United States who have chosen Shouldice. For example, there is a community of Mennonite patients from Pennsylvania in the US who have historically patronized Shouldice. They travel to Shouldice because they do not want mesh and they believe they will get the best care. They also like the fact that it is a lifetime guarantee, unlike when a hernia patient has a recurrence in the US.

Some patients are practicing physicians who know this surgery is superior [17]⁶⁴, and some are patients who have had a hernia repair that failed. Another group of patients goes to Shouldice not only because they believe this surgical technique is better, but even more importantly they do not want a foreign device, mesh, in their body. These patients may have heard about complications with mesh or plug and patch. Since 90% of surgeons around the world use mesh, Shouldice may

⁶⁴ One study of 165 young German surgeons, median age 33, found that 36% would choose a pure tissue repair for their own hernia repair [17].

be their only choice. Finally, there are patients who had a mesh repair with post-operative complications and want it removed and to have the guarantee of a Shouldice repair.

Tier One Patients

In the future, some patients in tier zero may disappear and go elsewhere. As mentioned, Toronto is changing, and new subpopulations are emerging. In the past, patients were given a referral from a trusted friend, co-worker, and/or relative, but newcomers will not know about Shouldice. In the future, they will rely on multiple sources of information. Shouldice needs to get ahead of this problem.

Another part of this group got a referral from a friend or family and thought about going to Shouldice, but they have different personalities, values, and attitudes. They are not sure about an open surgical procedure and a natural or pure tissue repair. Being with a group of strangers and staying as an inpatient (with little to do) is a concern. If they find a better alternative, they will go there.

Tier Two Patients

The patients in this group thought about going to Shouldice but immediately changed their minds. They may ask only one or two questions. They might ask how much pain will there be? They are told there is only mild pain that is treated with Acetaminophen (such as Tylenol). Or they might ask when can I get back to work? They are told on average 7 days. However, when

they learn that they will be conscious during the procedure and the procedure requires 4 days in the hospital with little to do, they immediately reject going there.

The fact that these Tier Two patients investigated Shouldice and made a rational choice, suggests that some persuasive arguments and a better understanding of their pain points may have reversed their refusal [37]. If Shouldice can understand the pain points of that patient, it could result in a new type of Shouldice patient.

Tier Three Patients

These patients are unlike any from the past. They do not understand the difference between natural (or pure) tissue versus mesh, or laparoscopic versus open surgeries. Their needs are taken care of by alternatives or other health care organizations. They may also include people who have health anxiety or a fear of hospitals and surgery. Other segments in tier three have been trying alternatives to surgery. They wear a corset or truss to ease the pain and discomfort. They may try to reduce the hernia manually, and/or use ice packs. These uninvestigated patients are health avoiders and need better information, counseling from trusted sources, and more emotional support.

In addition to these patients, there are non-governmental payors or corporations like Walmart, looking for low prices and excellent outcomes. For example, there are payors, like Blue Cross of Massachusetts, who have begun Alternative Quality Contract (AQC) programs. The program was introduced in 2009 to pay for better patient experiences and better technical outcomes, instead of fee-for-service payments for doctor visits, tests and hospital admissions. The

Shouldice model would have great appeal to these large-scale payors. A final example is situations when patients have deductibles, co-pays, and co-insurance; these patients may not realize that their insurance plan does not cover the entire cost and their out-of-pocket payments might be lower if they go to Shouldice.

In the next section, we discuss what accounts for their success. We begin with positioning and the strategic landscape.

Discussion and Conclusions

This chapter has attempted to explain a mystery—the success of Shouldice as a modern health care organization, especially compared with the apparent satisfactory underperformance or malperformance of many general hospitals in recent years. To understand its success, we summarize some of the advantages of the focused clinic.

Being a focused clinic means that they set expectations for what they will do and will not do⁶⁵.

As a focused clinic, the mission, and results at Shouldice are brought into sharp relief—to deliver the world's best surgical outcomes and patient experience in hernia treatment. However, management is not only focused on the external market for hernia patients, but also on the internal organization, values, and relationships that enable the caregivers and staff to achieve their objectives. Adopting a focused clinic strategy puts both the patient and the caregivers at the

⁶⁵ They have chosen hundreds of diagnoses and procedures that they will never do.

center. They clearly defined their clinical practice and the activities necessary to implement the focused clinic strategy.

They have learned how to respectfully refuse patients they are unable to treat, while they learned how to meticulously serve every aspect of care their patients' experience. They do this by adopting some important managerial practices: 1) strategic positioning; 2) leveraging value to patients and employees in relation to the cost of care; 3) an integrating culture; and 4) value innovation [23, 36, 37, 69].

Positioning and the Strategy Landscape

Positioning identifies how to turn the targeted patient and employee segments into external and internal “customers.” It answers the questions “what would create value for patients and employees” and “how is their value proposition unique”? In 1945, Dr. E.E. Shouldice clearly understood that there were many pain points in hernia repair at a hospital: poor outcomes, weeks of recovery in the hospital, and a boring, forgettable patient experience.

Patients in a traditional hospital or ambulatory center experience many pain points before, during, and after day surgery. For example, there is no choice, they must accept a mesh repair. The cost is high, and the experience is not fun. Pre-admission is complex, requiring many separate visits that are somewhat inconvenient and inefficient. Post-operative care does not really exist other than removing sutures a few weeks later. There are complications with mesh and sometimes higher recurrence rates depending on the surgeon and technique used.

Shouldice, in contrast, offers a durable non-mesh natural tissue repair with very low recurrence rates, significantly lower postoperative complications, less chronic pain, and an overall cost saving to society. Their hernia repair comes with a lifetime guarantee—correcting any recurrence is free of charge⁶⁶.

Our research surfaced three findings of the internal value added for both caregivers and for non-clinical staff. First, Shouldice offers its employees challenging goals with high standards, continuous learning, and opportunities to achieve by doing “productive work.”⁶⁷ Second, Shouldice offers patients and employees a blend of centralized clinical goals, and standardized procedures along with the requisite autonomy to make important choices. Third, the leadership and the caregivers take time to explain the rationale behind important clinical, non-clinical, and staff decisions, which creates a perception of fairness in the workplace. When employees perceive fairness in the workplace they feel a sense of pride, they become more connected and attached to the patients and other employees, and more loyal to Shouldice [70].

With respect to the first value-added, Shouldice hires and trains employees for the three-pronged approach of (1) educating, (2) counseling and (3) caring for patients. They look for people who can take responsibility for outcomes and who can contribute to the mission and goals. More specifically, we found that they look for:

⁶⁶ They do fewer than 50 recurrences a year on patients who previously had their hernia repair performed at Shouldice.

⁶⁷ The term “productive work” implies that managers continuously eliminate anything that diverts caregivers and staff from patient care and performance. Removing unnecessary paperwork and unproductive meetings will improve caregiver and staff productivity and their job satisfaction.

knowledge workers and service workers with service attitudes and growth mindsets, energized and willing to take responsibility as part of a team delivering the world's best surgical outcomes and patient experience in hernia treatment.

Knowledge workers, a term coined by Peter Drucker, are highly trained professionals who not only concentrate on their job, but they also know how to use their skills and experience to be very productive, never straying from performance [71]. The caregivers, administrative staff and senior managers are all well-educated knowledge workers who can manage themselves. Non-clinical service workers do food preparation, housekeeping, maintenance, clerical, and support work. They can also manage themselves when the tasks, goals and standards are clear.

What brings both clinical and non-clinical employee groups together at Shouldice is a desire to help patients and to contribute to a “world-class” patient experience. The clinical and non-clinical service staff are not “know-it-alls” or in competition, but instead are people who see each surgery and every patient encounter as an opportunity to learn and improve their coordination and performance—that requires growth mindsets [72].

Shouldice recognized that compensation must be perceived as “fair.” Fair compensation means employees doing the same tasks should be paid in line with their colleagues and equivalent to what others are paid in similar organizations. However, compensation does not motivate employees [73]. Caregivers and other staff are motivated by a belief in the organization's mission and values, which creates very high employee satisfaction. There is annual turnover at Shouldice, however, it is low compared to similar hospitals.

Leveraging Value to Patients and Employees over the Cost of Care

Shouldice positioned its service concept to simultaneously focus on offering a low price, high quality, and an “unwavering focus” on patient experience and caregiver/staff experience.

However, that is not enough to achieve financial sustainability. As Heskett argues:

“A properly positioned service concept has to be provided at a margin that allows for adequate employee salaries, investment, and return on investment.” [23, p 36.]

This requires offering the services efficiently leveraging value to patients over the cost. We observed 4 management practices that Shouldice used (1) standardization in the backstage and customization on the frontstage; (2) managing patient demand; (3) optimizing patient co-production; and (4) creating a loyal patient base.

Standardization in the Backstage and Customization on the Frontstage

Another advantage of a focused clinic is learning better ways to perform clinical and non-clinical work. Over time, the clinical leaders and managers found standardized ways to accomplish work to obtain the best outcomes while using the fewest resources. In this chapter, we observed that leadership standardized the following areas (1) communicating with patients in detail about what to expect; (2) explaining the benefits of the semi-private room; (3) preparing surgical instruments and sutures; (4) preparing the operating room for the surgery; (5) preparing and administering medication; (6) performing the hernia surgery; (7) cleaning and disinfecting rooms⁶⁸.

⁶⁸ Although not discussed in this chapter, there are protocols for cleaning and disinfecting rooms.

Standardized work does not mean that it is done exactly the same way by every nurse and physician. There is often small variation, such as making adaptive responses when encountering uncertainty during the surgery. However, standardization is key to success, and when a standardized procedure is not followed, the patient can be at risk.

Outside of the operating room, there is a customization of the care program to meet patient needs. For example, patients can begin the process of booking their surgery by going to the walk-in clinic. Admitted patients are matched up with someone in a semi-private room. Post-surgery recreation is always customized. Patients choose to walk to the game room, or lounge and pick up a guitar or play the piano. Depending on their recovery, patients can request an earlier discharge.

While the people who work at Shouldice matter and help to customize the patient experience, they can only be successful if the outcomes are excellent. And while the outcomes matter, so does the patient's experience, their relationships with caregivers and staff, simplicity and convenience, and efficient care processes [2].

Managing Patient Demand and Coordinating Patient Flow

Focused clinics can reduce unexpected demand and uncertainty for some diagnoses and procedures. Repairing abdominal wall hernias is a case in point. It is an elective procedure, so there is little uncertainty. Shouldice does have excess demand, but the wait list is only several weeks. They can manage their demand with superb scheduling and a care process managed by a cross-functional team of people.

Once a patient is admitted there are standardized steps that must be followed. The result is a care pathway or value stream, defined as the entire care process (from admission to discharge) crossing over and coordinating with multiple caregivers and staff. They manage patient demand in the following way.

Every day (from Sunday to Thursday) 25-30 patients are admitted. As noted in the chapter, the average length of stay is 3.2 days. Since there are only 89 acute beds, they will reach capacity by Tuesday or Wednesday. Part of their success is not taking more patients than their staff can manage. This also reduces the stress and strain on the caregivers and other staff. However, to reduce the surgical backlog due to Covid-19, Shouldice started admitting patients on Friday and performing Saturday surgeries.

Figures 1.12-1.15 show a high-level service process flow chart that breaks the care process down into activities and identifies the interdependencies with other caregivers and staff and departments. The boxes represent different departments, caregivers, or steps in the process. The black boxes are patients' wait times (which are very short). **Figure 1.12** is the diagnosing & scheduling process. **Figure 1.13** is the admission process. **Figure 1.14** shows day two which includes the surgery. **Figure 1.15** shows post-operative days three and four, as well as day five, which is the typical day of discharge. All these care processes have standardized solutions, so there is little variation. [INSERT Figs. 1.12 & 1.13]

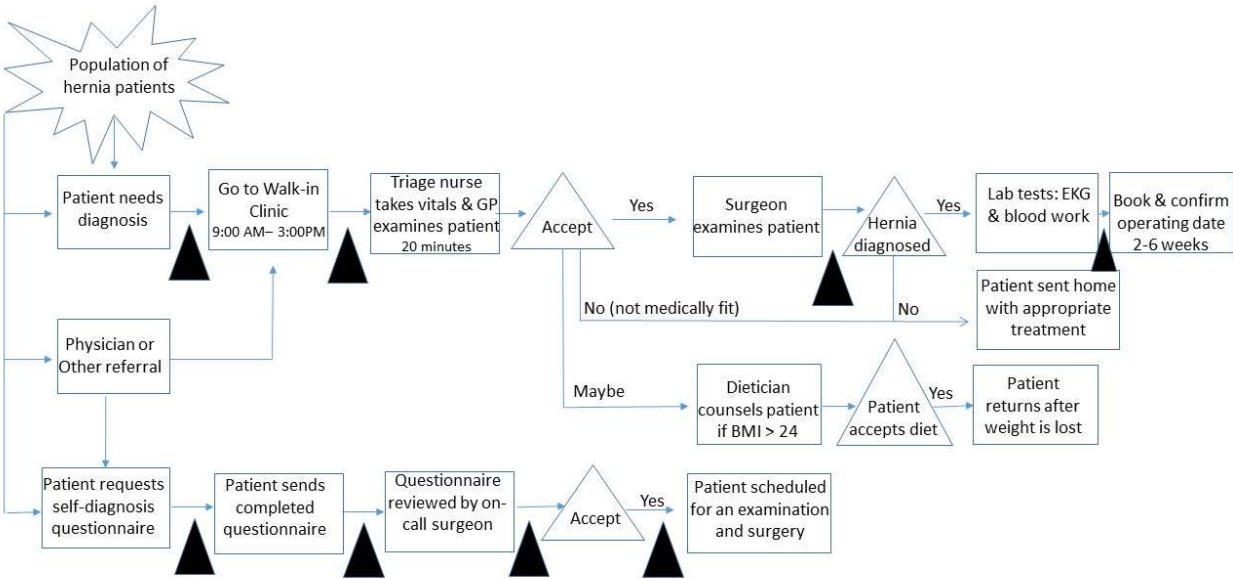


Fig. 1.12 Diagnosing and Scheduling the Surgery. Several elements of the care process are illustrated in the flow maps (**Figs. 1.12-1.15**).

Overall, we observed very smooth flow times. There were very few repetitions for any one of the steps in the process since they were done “right first time.” We also observed people working in parallel, one team ending a care process while another team is starting the cycle again. For example, a great deal of pre-processing work is accomplished before a patient arrives—checking for co-morbidities, verifying insurance or an address, or listing allergies (see **Fig. 1.12**).

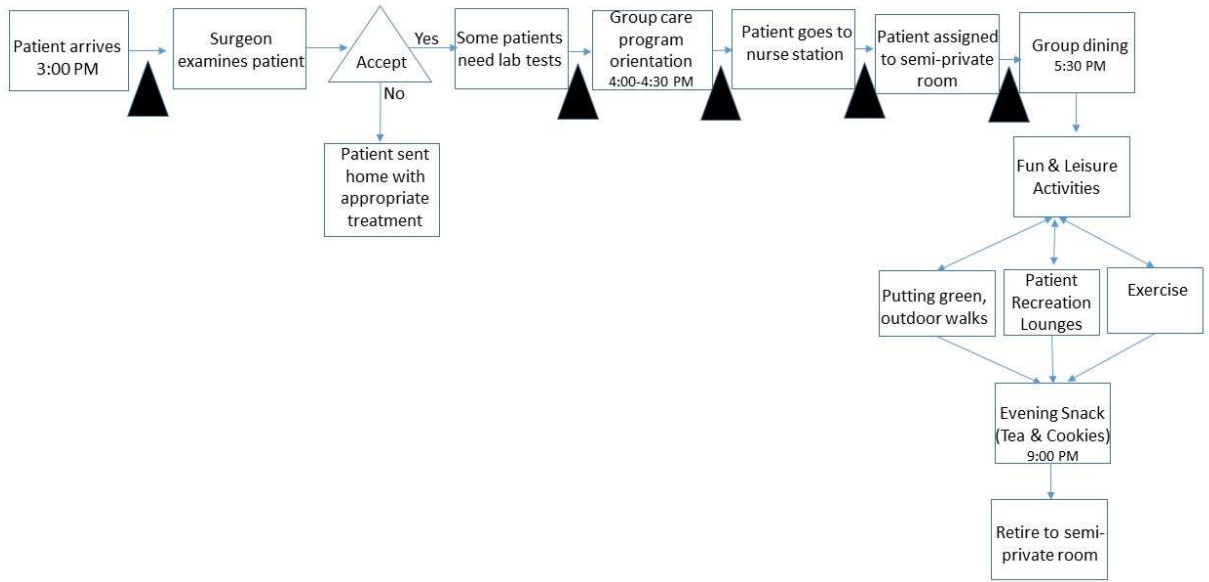


Fig. 1.13 Admission Process Day One.

We observed that the flow in and out of the operating room is smooth. Every surgeon follows the standardized protocols, so the actual surgery is approximately 45 minutes, with very little variation. Although the members of the team rotate, they are dedicated to one activity—concentrating on the repair of hernias. That increases the speed and quality of the surgery, in contrast to clinical teams working on many different surgeries with rotating team members. Finally, when we observed the surgery, we noted that the patient, surgeon and assistant arrive and enter the operating room on time (with very little variation in the inter-arrival rate) because (by design) they walk in together (see **Fig. 1.14**). [INSERT Figs. 1.14 & 1.15]

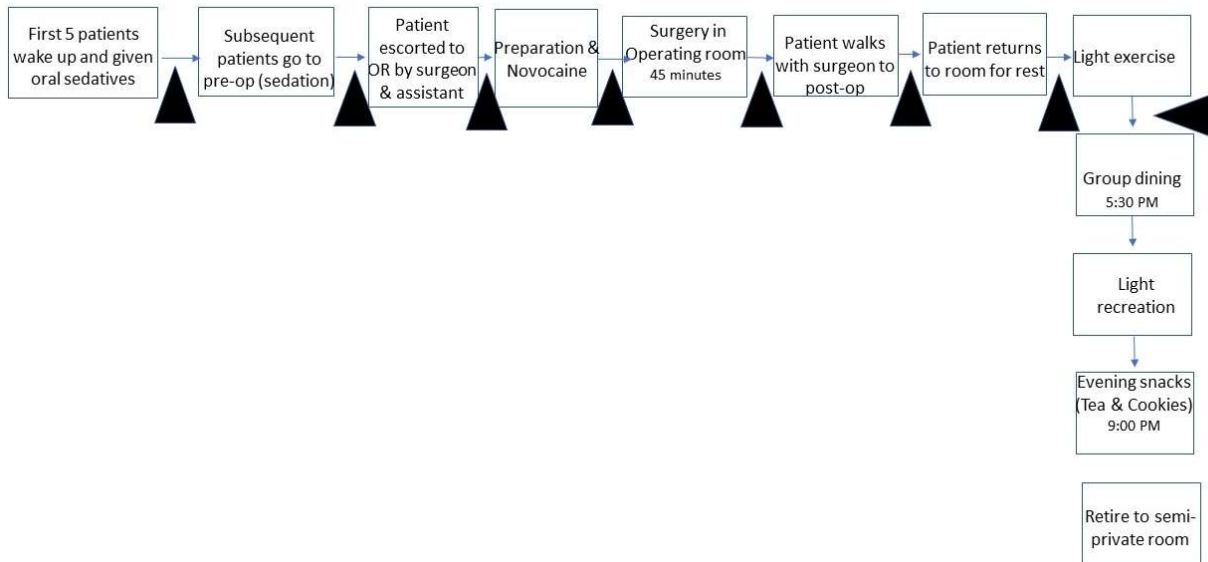


Fig. 1.14 Surgery Day Two.

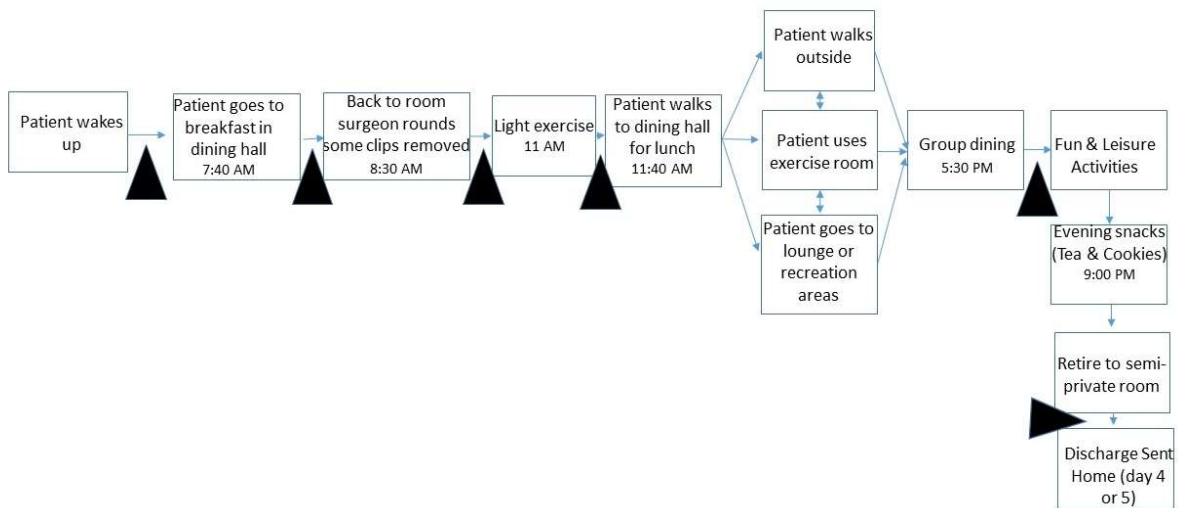


Fig. 1.15 Post Operative Day 3, 4 and 5.

After performing their 1,000th surgery, the typical Shouldice surgeon becomes very efficient. As we noted in the case, the team works in parallel. The surgeon and assistant have “four hands carefully taking care of each patient.” When the surgeons are closing the wound, the nurses get everything ready for the next patient. Immediately, after the patient walks out of the room with the physicians, the "scrub" nurse goes to the central sterilization area and soaks the surgical tools. Another nurse takes the linens to the central laundry 15 feet away.

In parallel a "relief" team is opening all the tools and supplies for the next procedure, as the next patient is brought into the room, less than 5 minutes after the previous patient walked out. While the next patient is being prepped the surgeon and assistant dictate surgical notes. They re-enter the room with the next patient and the process starts again. The result is productive efficiency and value creation for Shouldice.

Optimizing Patient-Caregiver Co-Production

Patients are not passive recipients of care; they play an active role in the care program as co-producers in the care processes. They are encouraged (and they agree) to take part in their own care and recovery in the following ways.

Patients fill out a medical questionnaire and self-diagnose their hernia. Based on careful screening, patients are scheduled for surgery based on their ability to work with the caregivers and staff and take responsibility for self-care. They are motivated and committed to the care

program, but they may feel insecure in this new situation. Consequently, patients need some coaching and counseling, which physicians and staff are trained to provide. Incoming patients receive a detailed orientation that includes videos.

Throughout the stay, patients are given information and have re-assuring conversations with other patients about what to expect. The patient and caregivers walk into the operating room together. Moreover, patients are awake and can talk with the surgeons during the surgery.

After the surgery immediate ambulation helps with the recovery process⁶⁹. A few hours after the surgery, patients are told to do light exercise. They take themselves to the dining room and toilets. They have the freedom to go almost anywhere and to do almost anything that they want. In this way, they become willing and able partners and leave feeling extremely loyal to the clinic.

A Loyal Patient Base: The Lifetime Value of Shouldice Patient

Another advantage of focus is the ability to carefully select patients who will most likely get an excellent outcome. By improving the likelihood of an excellent result, they can focus more attention on customized care (meeting individual patient needs) and designing standardized service processes to meet general patient needs. The result is that patients become Shouldice advocates.

⁶⁹ Before Covid19, patients were invited to get off the operating table and walk (with the help of the surgeon) to the post-operative room.

The retention of loyal patients is a critical success factor at Shouldice. For decades, Shouldice has maintained a continuing and active relationship with its patients. They track discharged patients and invited a small cohort to attend the annual “commemorative” alumni reunions⁷⁰. At the reunions, they checked more than 1,500 people for hernias. Patients received an invitation:

“You are cordially invited to attend our annual reunion to be held in the Royal York Hotel in downtown Toronto. The gala event will include dinner, entertainment, camaraderie, and an examination of your hernia repair.”

Shouldice leaders learned several lessons from these reunions. For nearly 50 years, their patients have been motivated to attend reunions of 1500+ patients. That fact alone redefines extreme patient satisfaction. Second, after checking tens of thousands of patients the caregivers learned that their four-layer hernia repair was not only long-lasting but also eliminated the burden of a future hernia and any risk of recurrence—in short, it was both a repair and prevention. Third, they discovered that patient gratitude translated into a family, friend, and co-worker referral network that eliminated the need to build referral networks with primary care physicians. When former patients share their knowledge and experience by making positive referrals, there is a large future payoff. This has been described as the “lifetime value” of a patient [69].

The lifetime value of a Shouldice patient is the number of positive referrals they help to generate because they believe in the outcome and the patient experience. According to Dr. Shouldice, once a patient is admitted, has the hernia repair, and the post-operative care, there is a transformation—

⁷⁰ While they no longer have reunions, they still contact patients annually and offer free examinations.

“We send everyone out as a life-long advocate for the clinic. They tell everyone who needs a hernia repair to go to Shouldice.”

Research suggests that when customers have an outstanding experience a small percentage tell their caregivers [69]. Less than one-third of truly dissatisfied patients tell the original caregivers; however, they do tell dozens of other people about a poor outcome or experience [69]. In this age of social media and posts going viral, it is no longer dozens of people, but an order of magnitude above that. Therefore, when patients are asked “how likely are you to recommend this hospital to a family member or friend” only the “top box” (or extremely likely) scores matter in health care [69].

An Integrating Culture

Shouldice Hospital was created for a purpose—to deliver the best surgical outcomes and patient experiences in hernia treatment. The fundamental (though invisible) aspects of an organization are the shared assumptions that emerge around how to achieve the mission, accomplish the goals, and get work done. Once people find a way to achieve the purpose a culture emerges and evolves [56]. It is a shared product of shared learning as the group began solving external patient problems and internal operating problems [56].

The Shouldice culture evolved through the leadership of Dr. E.E. Shouldice and the other surgeons, using their influence to frame clinical and care management problems, experiment, propose solutions, and facilitate learning. The first problem they had to solve was identifying large groups of hernia patients with common characteristics that could be helped by their open surgical repair technique.

In the previous section **Fig. 1.10** showed how the accumulation of knowledge, skills, and experience in the operating room over the first 8-10 years led to a rapid decline in failures (recurrences). They learned that their pure tissue surgical technique, with local anesthesia and immediate ambulation, was delivering the best outcomes for large groups of patients. However, they had to select the right hernia patients with consideration to patient safety given documented co-morbidities and obesity. They would never take a case to “fill the beds.”

Next, they experimented with different ways of offering the highest quality patient experiences. They accomplished this by asking employees to focus on identifying and satisfying unmet patient needs. Every caregiver and many staff became a subject matter expert on the functional and emotional needs of hernia patients during every phase of care from precondition and admission, surgery, and post-operative care to achieve rapid and durable recovery.

By listening and interacting with patients, they learned how to deliver excellent patient services. As Schein argues, once a solution obtains a reasonably good result, it is approved by the senior leaders and taught to new members as the correct way to perform a task and behave [56]. This learning process is how culture evolves.

Patient-Centered Focus

One way to understand organizational culture is to visualize the basic assumptions using a cultural paradigm. A cultural paradigm is a way to display the underlying clinical assumptions, ways of thinking, and premises, deeply embedded at Shouldice (see **Fig. 1.16**). Their cultural paradigm is a mix of clinical and managerial assumptions, reflecting the group’s values, beliefs,

methods and techniques. The culture at Shouldice is patient-centered, employee-centered, and team-based. As the caregivers and staff interact and counsel patients daily, they enact the organizational values of excellent quality, integrity, and compassion. [INSERT Fig. 1.16]

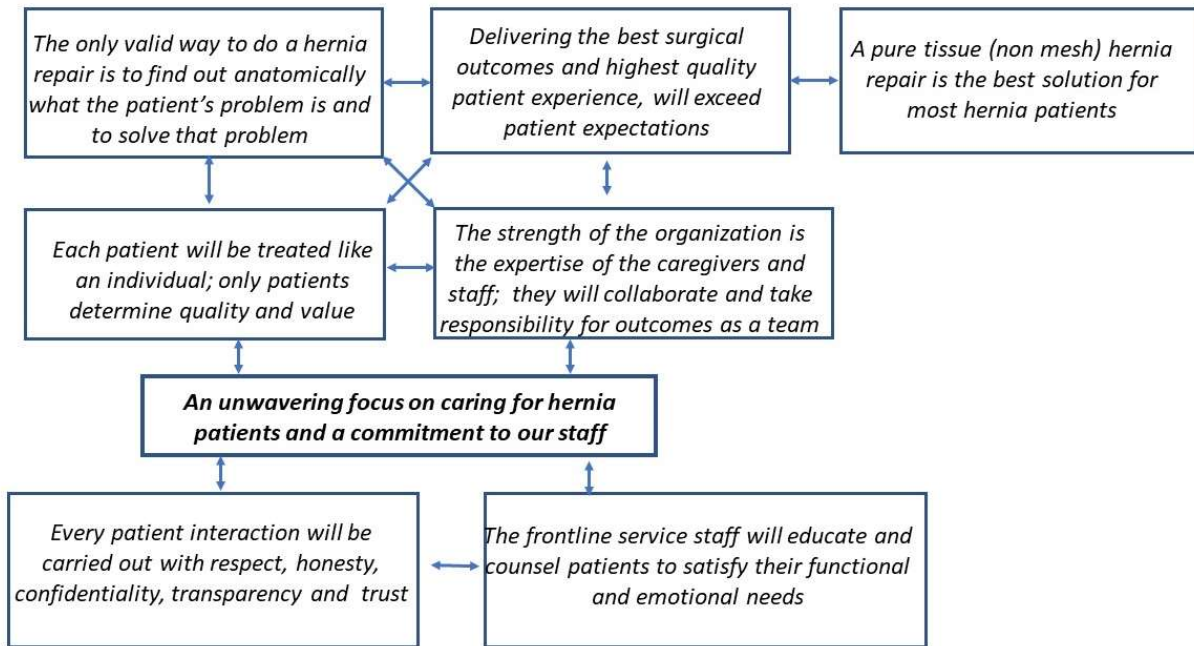


Fig. 1.16 Shouldice’s Cultural Paradigm (basic assumptions). To understand how Shouldice’s stated beliefs and values influence caregiver and staff behavior, Schein argues that the researchers must decipher the cultural paradigm by revealing the underlying premises and assumptions [56]. This figure is our interpretation of what we believe unconsciously enacts Shouldice’s values and reduces variation in employee behavior and supports self-management and teamwork.

The fundamental assumption puts both the patient and employee at the center. The seven assumptions surrounding the fundamental assumption help us see how the Shouldice culture integrated the delivery system with the operating strategy.

They recognized that each patient is an individual with a unique hernia that can only be repaired by a 4-layer incision and a pure tissue repair. If every patient interaction is carried out respectfully, with transparency and honesty, the patient will not only have an excellent technical outcome but also a very good experience. However, they assume that only a patient can determine quality and value. That means they must measure and track performance to fulfill their mission.

Managing Patient Expectations

Patient-focus means conscientiously knowing and serving the needs of patients. When patients do not know what to expect, they experience uncertainty, which is dissatisfying. A patient's experience is what happens in relation to what they expect [69]. One of the underlying reasons that patients have a poor service experience is uncertainty--the lack of knowledge about what happened, what is happening, or what will happen next [50].

At Shouldice patients are not only told what to expect, they are given step-by-step instructions and counseling. They see a daily itinerary posted on bulletin boards throughout the areas they travel. During the orientation, a nurse prepares them for every phase pre- and post-surgery. They are told when they must fast, and the importance of being able to get on and off the operating room table. They are taught how to sit up, reassured that their bowels will move, and when the sutures will be removed.

Team-Based and Patient-Centered Culture

Interviews with employees revealed that caregivers and staff felt they were, as individuals and working in teams, contributing to Shouldice's success. There was a strong perception of fairness in the employment relationship. This perception is one way that Shouldice integrates the operating strategy and the delivery system.

The second way is by creating a patient-centered culture. Having discovered a purpose that everyone agrees is more important than self-interest, the culture supports the focused strategy.

Value Innovation at Shouldice

Kim and Mauborgne offer a four-action framework to analyze innovative value. The four actions lead a health organization to simultaneously pursue higher quality and low prices by asking probing questions [36, 37]⁷¹:

1. What strategic activities do not add value and can be eliminated without harming quality?
2. What strategic activities do not add value and can be reduced below current standards without harming quality?
3. What strategic activities can be raised well above the current standards to improve quality?
4. What new strategic activities can be created that have never been offered and will improve quality?

⁷¹ This tool is called the eliminate-reduce-raise-create, or ERRC grid [36, 37].

Eliminating and reducing medical practices that do not add any value but will reduce the cost of care enable strategic options that will create and raise value for patients, caregivers and staff, and for the organization. In other words, it allows a reallocation of existing resources to create better quality at a lower cost. This framework will be used to make some analytic comments about Shouldice.

Figure 1.17 is the eliminate-reduce-raise-create grid for Shouldice Hospital. It reveals how value is created for patients and forces us to reconsider factors or practices that the health care industry competes on. Shouldice eliminated several factors offered by hospitals and outpatient clinics such as the use of mesh, high-risk patients, emergency cases, private rooms, and direct marketing. They reduced: difficult check-in procedures; dependency on dietary workers serving food, housekeepers changing linen and nursing staff at the bedside; and variation in surgical outcomes. By eliminating and reducing those factors they could offer a much lower price and raise and create factors that add value for patients. **[INSERT Fig. 1.17]**

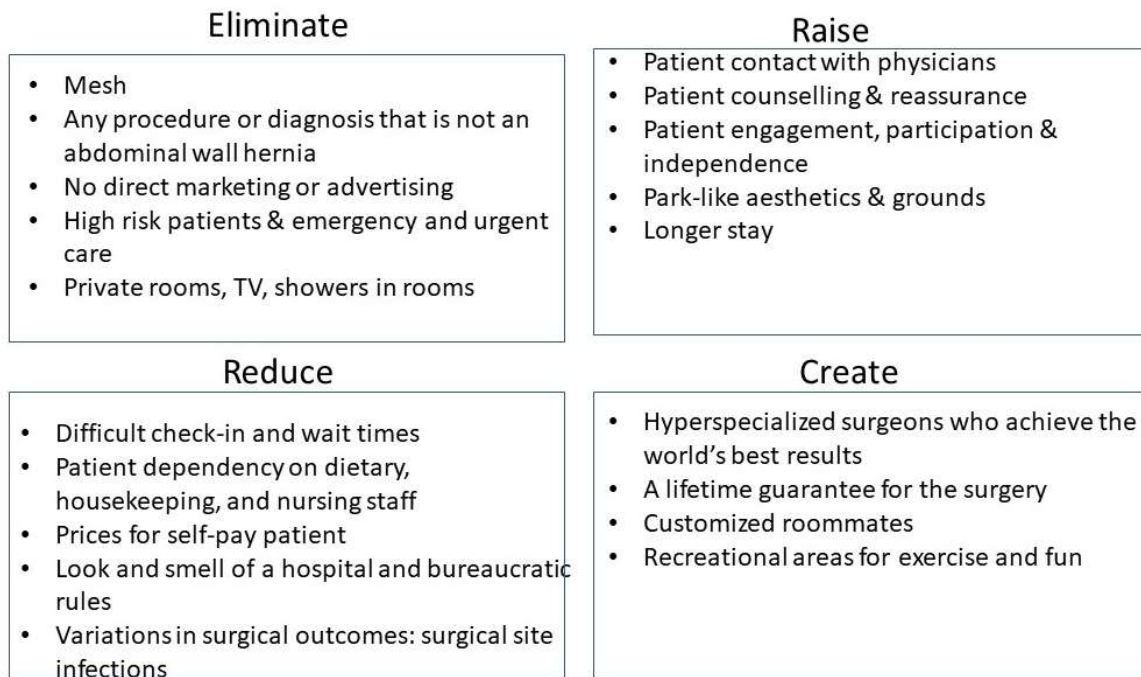


Fig. 1.17 Value Innovation at Shouldice. This shows how Shouldice is able to create patient value with no trade-off between low prices and quality. This tool is called the eliminate-reduce-raise-create, or ERRC grid. To raise and create value for patients, they found ways to reduce or eliminate some of the costs that do not create value. This links innovation with the value it offers patients. This way of thinking does not fall into the trap of adopting the next new ingenious expensive technology or that conveys the symbolic look of a hi-tech hospital. Note--this figure only displays value for patients. In addition, there is an ERRC grid to create value for caregivers and staff, and value for the enterprise.

Patient value is raised by increasing the frequency and amount of contact with physicians; involving patients with their own care; offering patients the freedom to walk about and exercise indoors or outdoors on the park-like grounds. While most hernia procedures are “in and out” in less than one day, Shouldice raises the post-operative length-of-stay to a more comfortable four days, at a much lower price than the “treat em’ and street em’” outpatient facilities.

They create clinical value by employing hyper-specialized surgeons who achieve the world's best results and offer a lifetime guarantee for their surgery. By using a unique algorithm to connect patients to a compatible roommate and offering recreational areas for light exercise and fun even more value is created.

Conclusions: Lessons from Shouldice

The Shouldice hernia repair and care process has consistently produced excellent outcomes for more than 75 years. They perform about 6,480 abdominal wall hernia repairs each year. The surgery is durable with very low recurrence rates, significantly lower postoperative complications, less chronic pain, and an overall cost saving to society. All hernia repair comes with a lifetime guarantee--any recurrence is done for free⁷². They offer exceptional patient experience.

Shouldice is an example of a well-managed organization [38]. By breaking away from the competition, Shouldice has found what Kim and Mauborgne [36] call a "blue ocean."

Competing for hernia patients does not seem to enter either into their strategic thinking or their lexicon. They are focused on creating value for their patients, implementing their mission and patient care goals, with a relentless pursuit of high-performance standards.

⁷² As previously stated, Shouldice has fewer than 50 recurrences a year on patients who previously had their hernia repair performed at Shouldice.

Shouldice has a set of clear and measurable goals. Patient care processes are standardized procedures monitored by clinical and managerial leadership. Their care processes are steadily and continuously improved.

Clinical outcomes, productivity, costs, patient experience and staff turnover are relentlessly tracked over decades. Performance is not only tracked but also reviewed so problems can be addressed quickly. Talented, high-performing surgeons are retained, and poor or under-performing caregivers are dealt with quickly.

This chapter is an account of our investigation, research, and findings of a highly effective health care organization. It is based on depth interviews, careful observations, facts, anecdotes, interpretations, concepts and analysis. We conclude this chapter with five lessons for health care organizations.

Lessons for Health Care Organizations

Lesson One

- *Working as a focused clinic, Shouldice not only cares deeply about their patients, but they also partner with their patients, and they set clinical targets and establish performance standards that are well-defined, measured, and clearly understood*

Shouldice is a focused clinic specialized in abdominal wall hernias. This allows them to understand each patient as an individual and to fine tune the process of care delivery in ways that add patient value. By understanding patients as individuals, they learned that the only way to improve value in health care is by creating a true partnership between the patients and the caregivers. Productivity at Shouldice requires continuous learning and self-improvement. The

best way for caregivers, patients, and staff at Shouldice to be productive is for them to play the dual role of learner and teacher for other caregivers and patients⁷³. Senior surgeons teach incoming surgeons. Patients who had the surgery the day before teach the incoming patients what to expect. Nurses and other staff counsel and educate patients.

Lesson Two

- *The care program and surgical workflow have been scientifically studied with standards and protocols to achieve excellent end results.*

A focused health care program that wants to offer the best surgical outcomes and best patient experience at the lowest prices must be supported by efficient care processes that reduce unproductive work. The care program had 4 components (1) diagnosing and scheduling (2) admission and day one; (3) surgery and day two; and (4) post-operative care and discharge days three to five. All four processes had standardized protocols to facilitate patient flow with little variation and congestion. These care processes were designed so each team member would get the right information to perform their function or task and be able to identify emergent patient problems and customize solutions⁷⁴. When the workflow is structured efficiently, caregivers and

⁷³ The classic model for training physicians was described as “see one, do one. teach one.” Though some have called this practice old-fashioned, the benefits of teaching others include improving communication skills and feelings of self-efficacy while building leadership skills.

⁷⁴ Patients get information from the staff, nurses and physicians, as well as other patients. In the operating room, the surgical team gets information from the patient and the situation. The chief of surgery and the administrator gets information from the nurses, and assistant surgeons, about underperformance or concerns, and so on.

staff spend most of their time on patient care activities; reducing unproductive work creates a strong people proposition for employees.

Lesson Three

- *A health care organization's culture is the de facto competitive strategy.*

The focus on the market for hernias and the care program are integrated by a patient-centered, self-directed, and team-based culture. There are so many stakeholders in health care (government, insurance, primary care physicians, etc.) that often we ask, “who is the customer?” At a focused clinic, everyone knows the hernia patient is the external customer, and the clinical caregivers and staff are the internal customer.

The 142 employees plus 18+ FTE physicians work together for a long time. They have learned how to solve problems and take advantage of opportunities. Their values are strongly held and have become an unconscious cognitive map of where to focus attention, how to feel about a patient situation, and what actions to take when patients have unmet needs.

The cultural paradigm not only enacts their values but also activates their collective purpose and identity as a working team, partnering with patients. They know that their performance is greater than the sum of the individuals and everything is centered on the patient outcomes and experience. Shouldice designs processes that allow the caregivers and staff to learn from each other and avoid processes that pit employees against each other.

Lesson Four

- *Health care organizations need a strong people proposition.*

People are at the center of every health care organization. In most hospitals, studies reveal that some clinical caregivers have low productivity because they do not spend most of their time on patient care. A good deal of time is spent on workarounds, administrative paperwork, logging into medical records, waiting for patients, queueing in the operating or exam rooms, looking for other caregivers, looking for supplies, etc.

Shouldice offers their employees challenging goals, continuous learning, and an opportunity to achieve while doing productive work. They take a profound sense of responsibility for their people. The workflow is structured so efficiently that they spend most of their time on patient care activities that create value. Every employee (surgeons, nurses, staff, and patients) is both a learner and a teacher, focused on listening to patients and offering outstanding quality, learning, and new ways to reduce costs. They may not always achieve the goal that employees feel fulfilled, but they aim to send people home believing that their abilities and talents are being used to help patients at the end of every workday.

Lesson Five

- *There is a system of accountability, with no extra layers of management.*

Shouldice has found a way to reduce the cost of administrative overhead⁷⁵ and middle management, by balancing an individual's autonomy with their team interdependence. They do this by hiring people who can (1) identify with the mission; (2) learn and believe in the Shouldice methodology and protocols; (3) become committed to the goals; and (4) learn to be team players. They thrive at Shouldice by taking responsibility for their own productivity and achievement while holding each other accountable for the goals and standards.

Finally, before setting expectations, the leadership and the caregivers take time to explain the rationale behind important clinical, non-clinical, and staff decisions, which creates a perception of fair process and justice at Shouldice. When employees identify with the mission and perceive fairness in the workplace, they become more committed to the goals and expectations and more allegiant to Shouldice. Consequently, caregivers and staff do not need to be managed; they manage themselves. In the words of two former senior leaders:

“Every patient and every staff member, doctor, nurse, administrator, and housekeeper knows exactly why he or she is there. Each of them knows exactly what to expect at every moment...all feel the effects of being cared for in a facility designed, built, and staffed exclusively for the purpose of caring for people with their condition. The result is confidence...” [5, p.631].

This final quote summarizes the indispensable quality of Shouldice as a well-managed organization--having an inspirational organizational purpose. A higher purpose becomes a greater good and a source of pride for employees. It is more important than individual self-

⁷⁵ Larger hospitals often lose money on patient care because of their total cost structure—direct plus indirect costs. First, they may have higher direct costs. Second, their indirect costs (e.g., administrative overhead) are substantially higher. Even if their direct costs are competitive, most large hospital systems have crushing indirect overhead costs.

interest. To conclude this chapter, we submit that our facts, assertions, and theory cannot fully describe or explain a complex health care organization, like Shouldice⁷⁶.

On that note, we invite others to continue to study this fascinating organization. It is far from a perfect medical care organization, but the people at Shouldice believe that it is perfectible. This organization like every organization can be improved.

⁷⁶ We are not the first to write a case study on Shouldice. In 1983, James L. Heskett wrote a business School case study [74]. That case brought this fascinating hospital into the management curriculum of virtually every business school worldwide. We owe a debt of gratitude to him for that well-written, nicely framed original case study. Although we have added more clinical details, new facts, and updates, the narrative told in the original case has not changed much. Dr. Atul Gwande also visited Shouldice, observed surgeries, and talked about the distinct repair method and clinical efficiency [75].

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Table

Table 1.1 Shouldice Financial Aspects. These were estimates based on interviews with the Chief Administrative Officer to illustrate the importance of managing costs at Shouldice. The costs and prices are much lower than other facilities even in Canada. Note: price, as it is used here, refers to what the Canadian government “reimburses” Shouldice. There are other sources of revenue from the clinic and other services that are not listed.

| Ontario Reimbursement to Shouldice | Patient costs: Full Cost Accounting |
|---|---|
| <ul style="list-style-type: none"> • \$1072 for Surgery | <ul style="list-style-type: none"> • Variable OR costs= \$130 per patient |
| <ul style="list-style-type: none"> • \$357 for Surgeon’s Fee | <ul style="list-style-type: none"> • Fixed costs per patient = \$2574 - \$2774 per patient |
| <ul style="list-style-type: none"> • \$120 for Surgical Assistant’s fee | <ul style="list-style-type: none"> • Maintenance of 50-year-old building |
| <ul style="list-style-type: none"> • \$180 for Anesthetist’s fee | <ul style="list-style-type: none"> 7. Replaced boiler, \$180,000 |
| <ul style="list-style-type: none"> • \$77 for GP and \$92 surgical consult fee | <ul style="list-style-type: none"> 8. Replaced Elevator, \$265,000 |

| | |
|--|---|
| <ul style="list-style-type: none"> • \$34.1 for a post-operative consult on day 1 | 9. Internal EMR, \$400,000 |
| <ul style="list-style-type: none"> • \$34.1 for a post-operative consult on day 2 | 10.HVAC Issues, etc. \$200,000 |
| <ul style="list-style-type: none"> • \$60 day of discharge | 11.Cosmetic renovation, \$1,000.000 |
| <ul style="list-style-type: none"> • \$305 each day of stay (Average is 3.2 days = \$976) | 12.New electric beds, \$150,000 |
| <ul style="list-style-type: none"> • Total Hospital and Clinic Revenue: \$2,950 per patient | <ul style="list-style-type: none"> • Total Hospital & Clinic Expenses: \$2,704 – \$2,904 per patient |

Figure Legends

Fig. 1.1 The New Quadruple Performance Problem. Health care organizations are being asked to achieve (1) excellent technical outcomes, (2) outstanding patient experiences, (3) team well-being, and (4) cost-efficient care. For most health care organizations achieving even two out of four is a very difficult management task.

Fig. 1.2 Comparing Admission Process for Hernia Surgery in Ontario. Obtained from informants at Shouldice Hospital, 2016.

Fig. 1.3 Excerpt of the Medical Information Questionnaire. Patients can fill out this form to facilitate their admission.

Fig. 1.4 Example of Shouldice Daily Itinerary. The daily schedule is posted throughout the hospital, to guide patients.

Fig. 1.5 Distribution of the Severity of Hernia Cases from Simple (ASA 1) to More Complex (ASA 4). This chart displays the distribution of the physical status of most hernia patients. It is based on the American Society of Anesthesiology physical status classification system that assesses and describes a patient's pre-anesthesia health status with respect to medical co-morbidities and other factors. For example, ASA I are "normal, healthy," hernia patients. ASA II are hernia patients with mild systemic disease (obesity, mild lung disease, smokers, etc.) ASA III are hernia patients with severe systemic disease, such as poorly controlled diabetes, active hepatitis, end stage renal disease, or history of CVA. ASA IV are hernia patients with a severe systemic disease that is a constant threat to life, such as cardiac ischemia, severe valve dysfunction, shock, sepsis, etc. ASA IV is a moribund hernia patient who is not expected to survive the operation. ASA I and II comprise 72% of hernia cases, and ASA III and IV comprise 28%. This illustrates that Shouldice does not take the "easy" abdominal wall hernia cases. They make responsible decisions with respect to patient safety and risk.

Fig. 1.6 Shouldice Mission, Vision, Values. Downloaded from Shouldice Website 1/8/2022 <https://www.shouldice.com/about/#mission>.

Fig. 1.7 Example of On-Call Surgeon's Duties. This is an example of the accountability system supported by setting clear expectations. It also illustrates the standardization of job design even for physicians.

Fig. 1.8 Shouldice Hospital. This striking picture of the hospital reveals its patient-centric culture. The surgical hospital and clinic are hidden inside a beautiful luxurious well-maintained country estate with lush landscaping. For some patients we interviewed, it evokes feelings of comfort, safety, and confident expectations. The picture is the antithesis of a distant bureaucratic institution.

Fig. 1.9a Dining and Sitting Areas. This is a view into the dining hall from a sitting area.

Fig. 1.9b Shouldice Semi-Private Room. The rooms are intentionally stoic to get patients to walk to the dining hall, recreation rooms, lounge and the grounds. Some patients said it was liberating to not be cloistered in a cluttered room.

Fig. 1.10 Shouldice Recurrence Rate 1.2% from 1945 to 2020. This graph displays the recurrence rates from the beginning. There were 4,934 recurrences after 409,229 surgeries. Eyeballing the data one can make two observations. First, there was a learning curve during the first 8-10 years. Second, although the recurrence rate dropped below 1.2% it reached an asymptote.

Fig. 1.11 Price and Five Quality Dimensions as Strategic Factors for Shouldice.

This figure illustrates why Shouldice has been successful. Patient value is created in nearly every dimension of quality and price.

Fig. 1.12 Diagnosing and Scheduling the Surgery. Several elements of the care process are illustrated in the flow maps (**Figs. 1.12-1.15**).

Fig. 1.13 Admission Process Day One.

Fig. 1.14 Surgery Day Two.

Fig. 1.15 Post Operative Day 3, 4 and 5.

Fig. 1.16 Shouldice's Cultural Paradigm (basic assumptions). To understand how Shouldice's stated beliefs and values influence caregiver and staff behavior, Schein argues that the researchers must decipher the cultural paradigm by revealing the underlying premises and assumptions [56]. This figure is our interpretation of what we believe unconsciously enacts Shouldice's values and reduces variation in employee behavior and supports self-management and teamwork.

Fig. 1.17 Value Innovation at Shouldice. This shows how Shouldice is able to create patient value with no trade-off between low prices and quality. This tool is called the eliminate-reduce-raise-create, or ERRC grid. To raise and create value

for patients, they found ways to reduce or eliminate some of the costs that do not create value. This links innovation with the value it offers patients. This way of thinking does not fall into the trap of adopting the next new ingenious expensive technology or that conveys the symbolic look of a hi-tech hospital. Note--this figure only displays value for patients. In addition, there is an ERRC grid to create value for caregivers and staff, and value for the enterprise.