



Case study: Saskatchewan Health Authority, Canada

Improving patient experience and staff satisfaction

Uncovering workflow improvements to dramatically
boost capacity and elevate the quality of care

siemens-healthineers.com/consulting



Executive summary

Optimizing MRI workflow through practical process improvements

Saskatchewan Health Authority (SHA) is the largest healthcare provider in Saskatchewan, Canada, serving about 357,000 residents across the province.

Saskatchewan Health Authority care delivery sites include three hospitals, all of which had experienced a significant increase in demand for MRI examinations. This resulted in patient wait times that did not meet the health system's quality standards. SHA therefore invited Value Advisory Services to review its processes and make recommendations to tackle this problem.

The advisory team identified numerous opportunities to streamline the workflow and expand capacity. By implementing the team's recommendations, SHA was able to substantially increase staff productivity and technology utilization, with the result that an additional 1,500 MRI exams were able to be performed annually – thereby cutting patient wait times significantly.



The customer

A relentless commitment to continuous process improvement

SHA aims to position itself as a high performer and leader across all of Canada in patient- and family-centered care. The organization is committed to creating a workplace in which staff are safe, healthy, valued, and can feel the strength of working together to improve patient and family experiences, quality, and safety.

About Saskatchewan Health Authority's hospitals:

- The Royal University Hospital
 - Acute care beds: 455
 - Number of MRIs: 2
 - Saskatoon City Hospital
 - Acute care beds: 150
 - Number of MRIs: 1
 - St. Paul's Hospital
 - Acute care beds: 230
 - Number of MRIs: 1
-

SHA encompasses more than 75 healthcare facilities, including three tertiary hospitals – the Royal University Hospital, Saskatoon City Hospital, and St. Paul's Hospital – with a combined total of more than 800 acute care beds. And these three hospitals are where the health system carries out the majority of its diagnostic imaging functions, including MRI. Committed to maximizing customer value while minimizing waste, SHA seeks to identify new efficiencies and to ensure that all technology and services are utilized to their full potential.

SHA's hospitals have embraced Lean methodology, and have undertaken several "Rapid Improvement Events" (RIEs). One of these involved diagnostic imaging and scheduling, and resulted in departmental processes running more smoothly. Following the success of this workshop, the diagnostic services management team wanted to see what else could be done to optimize its MRI capabilities.

With this in mind, they asked Value Advisory Services to evaluate their MRI services and discover efficiencies that could help promote best practices, increase throughput, decrease wait times, and ensure maximum utilization of the hospital's MRI devices.

Four priority goals to highlight from SHA's Strategic Plan, 2019-2020

- | | |
|---|--|
| <p>1 Connected care for the people of Saskatchewan</p> <p>Establish collaborative teams of health professionals and community partners to provide fully integrated services to meet the health needs of individuals and communities, reducing reliance on emergency and acute care services.</p> | <p>3 Establish physicians as leaders in the health care system</p> <p>Physician knowledge and experience is essential to improve the design of health care services, and to promote shared accountability for health system performance.</p> |
| <p>2 Deliver safe and high quality health care</p> <p>Create a health system culture that promotes patient and staff safety.</p> | <p>4 Improve system-wide coordination and alignment of services</p> <p>Integrated business systems and standardized processes will enhance effectiveness and ensure that Saskatchewan residents experience high-quality care across the province.</p> |

The partner

Choosing the right partner to deliver lasting results

Trust lies at the heart of any successful partnership. In turning to Value Advisory Services, the team at SHA felt they were in good hands right from the start.



Clinical Operations	Strategy & Finance	Digital & Transformation
Performance Improvement	Enterprise Strategy	Digital Health Strategy
Clinical Pathways	Facility & Capital Asset Planning	Digital Workflow
Workflows & Organization	M&A and Partnerships	Transformation & Implementation

Value Advisory Services leverages a dedicated global team that enables and increases value, both in the near term and over the long run. The goal is always to create better value and new value through a comprehensive portfolio that includes three key practice areas:

- Clinical Operations
- Strategy & Finance
- Digital & Transformation

The engagement with SHA would draw heavily on two Clinical Operations modules in particular:

Performance improvement

Attempting to do more with less while maintaining strong operational and financial performance is a challenge. Value Advisory Services demonstrates steps toward optimizing clinical operations to improve access to care and deliver outcomes that matter to patients.

Workflow optimization

A multidisciplinary team identifies underlying issues and determine what will help healthcare providers thrive in the near and long-term. The signature Value Stream Analysis allows healthcare providers to visualize every task that a healthcare team works on, so they can identify both the value-adding and wasteful steps and implement optimized processes accordingly.

The challenge

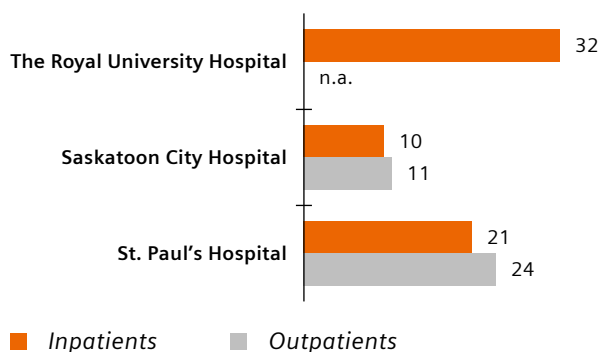
Accommodating increased demand with existing resources

With a rapidly growing and aging population in Saskatchewan, demand for MRI services was escalating. However – as with many healthcare institutions across Canada and elsewhere – funding had not kept pace with this rising demand, creating a major funding gap and requiring smarter solutions.

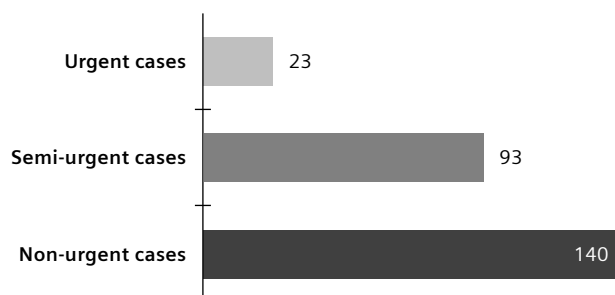
The statistics documented at the time of this project highlight SHA's quandary vividly.

This escalation in demand produced a corresponding increase in wait times for MRI scans.¹

Single-year increase in demand for MRI imaging studies (in %)



Average wait times for MRI exams at SHA (in days)



“Demand for services was rising substantially every year – sometimes by double digits. We enlisted Siemens Healthineers to help us pinpoint some options for optimizing our throughput in the face of this trend – and thereby decrease patient wait times, improve the patient experience and quality of care, and improve staffing satisfaction as well.”

Shane Timm, Director of Medical Imaging and Nuclear Medicine

¹ As reported by the Canadian Press

The method

Driving performance in healthcare to create more value

With this clear challenge in view, Value Advisory Services got busy. The aim: to work closely with a core team of SHA stakeholders to deliver fast but lasting results.

The advisory team interviewed 13 different SHR staff members, from Directors of Medical Imaging and Nuclear Medicine to technologists and schedulers, in an effort to understand the current state of operations and identify areas for improvement.

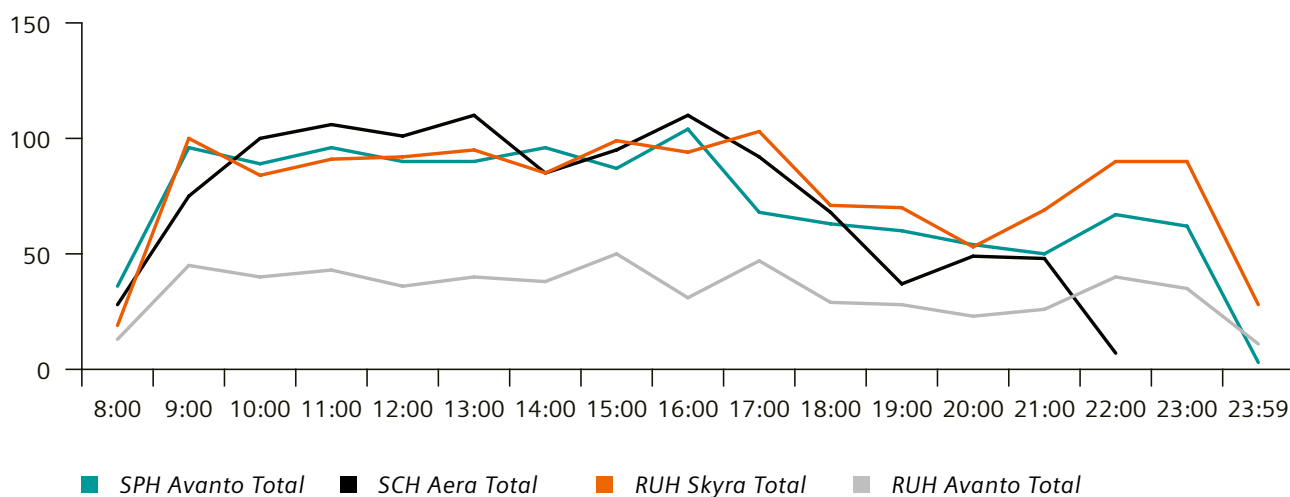
The team also reviewed utilization management reports spanning 14 months for all sites. Access to detailed data, such as the MRI volumes by hour of day (see chart below), provided insights into workflow and processes, specifically exam volumes by time of day and day of week, wait times, exam durations, and no-shows.

Key findings:

- Low volumes of MRI exams were being performed between 8 a.m. and 9 a.m. and between 7 p.m. and 9 p.m. across all three hospitals
- On average, more time was being allocated for exams than was actually needed

MRI Utilization Management Report at SHR Hospitals

January to March



² Utilization management reporting for the Avanto MRI at Royal University Hospital started mid- month, resulting in lower volumes being recorded there than at other sites.

The solution

Adjusting schedules and procedures to reduce inefficiency and optimize utilization

The Siemens Healthineers team identified numerous opportunities to improve collaboration between the two radiology groups operating across SHA's three hospital sites, to achieve more consistent service quality, and to boost productivity.

Key recommendations

- **Improve collaboration between** the two groups of radiologists serving SHA's **three hospital sites**, increasing service consistency and standardizing processes
- **Align protocols, approval processes, and scheduling** practices to save time and reduce staff burden
- **Adjust** scheduling procedures and **staff shift times based on periods of peak demand** for MRI exams, taking advantage of quiet times and thus maximizing the number of exams that can be performed in a day
- Move to a **web-based direct order entry system for all referrals** to help eliminate missing information and reduce time requirements for follow-up by scheduling staff
- Incorporate an **auto-notification** function to **remind patients about appointments**, helping to reduce the incidence of no-shows
- **Share different departments' staffing schedules** with each other in advance to help ensure that exams are carried out efficiently, reducing the need for rescheduling

"The recommendations were all actionable, well thought out, and based on global and national best practices as well as a very thorough understanding of our operations. Value Advisory Services has an in-depth background in diagnostic imaging, so they were able to hit the ground running."

Christine Dawson, Manager of Nuclear Medicine and PET/CT Services at SHA

The results

Improved coordination, reduced staff burden,
and enhanced quality of care

By implementing the recommendations of Value Advisory Services, SHA achieved multiple improvements:



-15 min

SHA was able to achieve additional utilization capacity by **shortening exam slots for non-contrast patients by 15 minutes** (from 60 to 45 minutes)



+1,500

Thus, SHA was able to perform **more than 1,500 additional MRI exams** per year while ensuring that staffing levels aligned with patient flow, thus enhancing departmental efficiency



Implemented **new utilization management reports** across the three hospitals, enabling diagnostic imaging managers at each site to better identify trends and respond proactively



Added **new data and metrics** to existing reports, supporting continuous refinements to services and ensuring full utilization of the available MRI equipment

"Having Siemens Healthineers objectively examine our workflow has been a great experience with tangible results. Receiving a different perspective from such an experienced team was invaluable. Best of all, we know they will be with us not only today but in the long run, helping to coach us along the way."

Christine Dawson,
Manager of Nuclear Medicine and PET/CT Services at SHA

"Changing protocols requires the involvement of many stakeholders. While we have realized immediate benefits from the changes we've already made, we are looking forward to working with our colleagues in the wider SHA community in making some of the more long-term improvements."

Shane Timm, Director of Medical Imaging and Nuclear Medicine

The future

While results from the implemented changes are bearing fruit, it is paramount that continuous measurement is undertaken on a regular basis

That's why the Siemens Healthineers advisors worked with SHA to identify what metrics should be tracked and incorporated into SHA's medical imaging dashboard. The team recommended 11 new data points designed to uncover trends and reveal further opportunities for workflow improvement. The key metrics are now being reviewed and reported on a regular basis.

Do you want to collaborate with Siemens Value Advisory Services to optimize your operations?

Get in contact:

 siemens-healthineers.com/consulting

 eshq.team@siemens-healthineers.com

Key metric

No-show rates, with times and reasons for the no-show, across all sites

Wait time for inpatients, from date of admission to date of MRI

Number of patients who were not notified by their referring physician **of their imaging appointment** – by site and by referring physician

Ø **interval between exams**

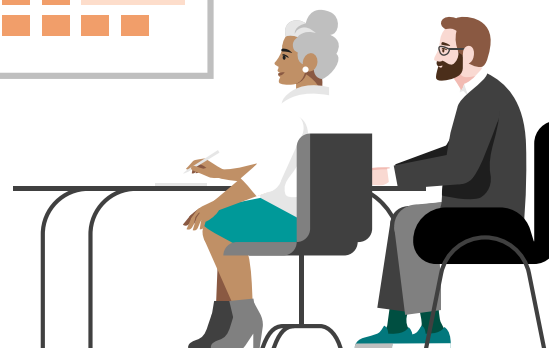
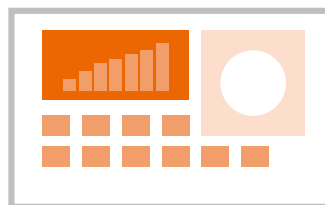
Ø **delayed start times** for first cases

Requisition error or information omission rate – by floor, by site and by referring physician

Requisitions for inpatient exams being sent to central scheduling instead of directly to the hospital

Ø **exam duration**

Ø **duration of exams with/without contrast**



"SHA's improvement agenda really is driving the future of healthcare delivery in Saskatoon. Siemens Healthineers shares our values and is passionately committed to helping institutions like ours fine-tune their operations to deliver the best possible services, while recognizing the constraints that all of us in the healthcare field face."

Shane Timm, Director of Medical Imaging and Nuclear Medicine

About Value Partnerships

Siemens Healthineers Value Partnerships are long-term, performance-oriented, collaborative engagements. We bring a combination of clinical insight, medical technology innovation, strategic vision, implementation expertise, and operational excellence to the table for you. As trusted partners, we help you formulate and achieve your strategic goals, increasing enterprise-wide value.

Value Partnerships drive value across your entire enterprise with focus on four domains: Technology, Operations, Workforce and Facility. Furthermore, together we enable breakthroughs through holistic and transformative initiatives such as Strategic Transformation and Digital Innovation.

Disclaimer

The products/features and/or service offerings mentioned here are not commercially available in all countries and/or for all modalities. If the services are not marketed in countries due to regulatory or other reasons, the service offerings cannot be guaranteed. Please contact your local Siemens Healthineers organization for more details.

The results described herein by customers of Siemens Healthineers were achieved in the customers' unique setting. Since there is no "typical" hospital, and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.

Siemens Healthineers Headquarters

Siemens Healthineers AG
Siemensstr. 3
91301 Forchheim, Germany
Phone: +49 9191 18-0
[siemens-healthineers.com](https://www.siemens-healthineers.com)