

Chapter 19

Saskatchewan Health Authority—Efficient Use of MRIs in Regina

1.0 MAIN POINTS

By February 2022, the Saskatchewan Health Authority implemented one recommendation and continues to make progress on the three other remaining recommendations we originally made in 2017 about the efficient use of magnetic resonance imaging (MRI) services in Regina.

At December 31, 2021, Regina had 4,333 patients waiting for MRI scans (as compared to 2,610 patients at the time of our 2017 audit).

The Authority regularly reviews and analyzes weekly and monthly MRI data to determine causes of significant waits of patients for MRI services. The reviews identify anomalies (e.g., significant decrease in the number of MRI scans provided in a specific location), staff shortages (e.g., technologists), and other issues. The Authority also regularly monitors the timeliness of MRI services that contracted private MRI operators provide.

The Authority has not yet formally assessed the quality of MRI services that radiologists, including private operator radiologists, provide; however, the Authority is in the process of developing a peer-review program to do so. Once the Authority develops a process to monitor the quality of MRI scans, it needs to determine the nature and timing of reporting about MRI service quality to better monitor service delivery.

Having timely and quality MRI services helps facilitate appropriate diagnosis, treatment plans, and helps to improve patients' outcomes.

2.0 INTRODUCTION

2.1 Background

Under *The Provincial Health Authority Act*, the Saskatchewan Health Authority is responsible for the planning, organization, delivery and evaluation of the health services that it provides. This includes provision of MRI services.

Efficient use of MRI services can support timely diagnosis and monitoring of injuries and disease. Effective MRI services involve patients receiving quality scans within an appropriate timeframe, and physicians appropriately using MRIs as diagnostic tools after obtaining reliable interpretations of the scans within a reasonable timeframe.



The Authority has eight MRI scanners in six Saskatchewan hospitals located in:

- Dr. F.H. Wigmore Regional Hospital in Moose Jaw
- Regina General Hospital (two)
- Saskatoon City Hospital
- Royal University Hospital (two) in Saskatoon
- St. Paul's Hospital in Saskatoon
- Lloydminster Hospital¹

In 2020–21, the six hospitals provided approximately 33,500 MRI scans.² In addition, the Authority contracted two licensed private-imaging operators to supplement hospital-based MRI services in Regina and Saskatoon.³ The contracts require the licensed private operators to conduct a total of 10,000 MRI scans each year.

The Patient Choice Medical Imaging Act gives Saskatchewan residents the option of personally paying for MRI services through a licensed private operator. The Act requires private operators to provide a free MRI scan to an individual on the public MRI waitlist for each scan personally paid for by residents (i.e., one-for-one model). In 2020–21, the Authority received 2,142 MRI scans through the one-for-one model.

2.2 Focus of Follow-Up Audit

This chapter describes our second follow-up audit of management's actions on the recommendations we first made in 2017.

In 2017, we assessed the Saskatchewan Health Authority's processes for efficient use of MRIs in Regina. Our *2017 Report – Volume 1*, Chapter 10, concluded the Authority had effective processes other than the areas identified in our seven recommendations.⁴ By January 2020, the Authority implemented three of the seven recommendations.⁵

To conduct this audit engagement, we followed the standards for assurance engagements published in the *CPA Canada Handbook—Assurance* (CSAE 3001). To evaluate the Authority's progress toward meeting our recommendations, we used the relevant criteria from the original audit. The Authority's management agreed with the criteria in the original audit.

To complete this follow-up, we interviewed key staff at the Authority, and examined its reports and other relevant documents related to MRI services.

3.0 STATUS OF RECOMMENDATIONS

This section sets out each recommendation including the date on which the Standing Committee on Public Accounts agreed to the recommendation, the status of the recommendation at February 28, 2022, and the Authority's actions up to that date.

¹ Patients in Lloydminster can receive MRI services at the community-based scanner provided through a contract between the Saskatchewan Health Authority, Alberta Health Services, and Lloydminster Medical Imaging.

² saskatchewan.ca/residents/health/accessing-health-care-services/medical-imaging/medical-imaging-wait-times#supply-and-demand (5 April 2022).

³ saskatchewan.ca/residents/health/accessing-health-care-services/medical-imaging/procedures/magnetic-resonance-imaging-exam#service-locations (29 March 2022).

⁴ *2017 Report – Volume 1*, Chapter 10, pp. 133–146

⁵ *2020 Report – Volume 1*, Chapter 25, pp. 247–255.

3.1 MRI Data Regularly Analyzed

We recommended the Saskatchewan Health Authority regularly analyze MRI data to determine causes of significant waits of patients for MRI services. (2017 Report – Volume 1, p. 140, Recommendation 1; Public Accounts Committee agreement June 13, 2018)

Status—Implemented

The Saskatchewan Health Authority regularly analyzes MRI data to determine causes of significant waits of patients for MRI services.

The Authority uses data from its IT system called the Radiology Information System (RIS) to closely monitor completion of MRI scans. Since our 2020 follow-up audit, the Authority continued to use detailed reports to help staff analyze its data about MRI services. In addition, it developed new reporting tools to help monitor MRI services. Examples of weekly and monthly reports reviewed by senior management include:

- The community MRI contract target report—sets out the number and type of MRIs provided by its contracted private-imaging operators compared to their target number of MRIs expected under the contract with the Authority. The Authority began using this report to monitor MRIs provided by private operators in 2020–21.
- Wait-time buckets report—shows MRI exams outstanding at a point in time filtered by priority level and by specific categories (e.g., cardiac, spine).⁶ The Authority began using this report in 2021–22.
- Provincial patient count report—shows the number of patients receiving MRIs by patient type (i.e., emergency, inpatient, outpatient) across facilities.
- MRI waitlist analysis monthly rollup report—provides the number of patient requests waiting in three areas (i.e., Regina, Saskatoon, Moose Jaw) by priority level.

At December 31, 2021, Regina had 4,333 patients waiting for MRI scans. Of those, 1,245 (28%) had not waited for more than seven days for an MRI in Regina. As shown in **Figure 1**, there was an increase of patients waiting by each priority level since 2019.⁷ Authority management indicated that demand continues to exceed capacity for MRI services.

Figure 1—Number of Patients Waiting to be Scheduled for a Regina MRI by Priority Level

MRI Priority Level	At December 31, 2019			At December 31, 2021		
	More than 7 days	More than 30 days	More than 90 days	More than 7 days	More than 30 days	More than 90 days
Level 2 (Urgent)	5	9	0	14	21	20
Level 3 (Semi-Urgent)	482	345	66	561	647	539
Level 4 (Non-Urgent)	241	271	77	207	528	551
Total number of patients	728	625	143	782	1,196	1,110

Source: Adapted from information provided by the Saskatchewan Health Authority.

⁶ The Authority classifies MRIs in four priority levels: Level 1 (emergency) MRI done within 24 hours; Level 2 (urgent) within 2-7 days; Level 3 (semi-urgent) within 8-30 days; and Level 4 (non-urgent) within 31-90 days.

⁷ At December 31, 2019, Regina had 3,237 patients waiting for MRI scans—1,741 (54%) had not waited for more than seven days.



Senior management discuss (via email, informal meetings) and analyze the weekly and monthly reports to help identify issues such as anomalies (e.g., significant decrease in the number of MRI exams provided in a specific location), staffing issues (e.g., shortage of technologists), and whether private operators are meeting contracted MRI targets.

The Authority also uses its Medical Imaging Executive Committee to discuss MRI services. At each meeting, management provides an update on MRI wait times and service demands. For example, in November 2020, management indicated there was a backlog of Level 2 (i.e., urgent) MRIs and were developing a strategy to decrease wait times (e.g., investing in staff overtime to help address backlogs).

Systematic data analysis on MRI services can help identify root causes for delays and opportunities to enhance efficiency.

3.2 Quality of MRI Services Not Yet Assessed

We recommended the Saskatchewan Health Authority formally and systematically assess the quality of MRI services that radiologists provide.

(2017 Report – Volume 1, p. 143, Recommendation 4; Public Accounts Committee agreement June 13, 2018)

Status—Partially Implemented

We recommended the Board of the Saskatchewan Health Authority receive periodic reports on the timeliness and quality of MRI services, including actions taken to address identified deficiencies. (2017 Report – Volume 1, p. 146,

Recommendation 7; Public Accounts Committee agreement June 13, 2018)

Status—Partially Implemented

The Saskatchewan Health Authority does not formally and systematically assess the quality of MRI services radiologists provide, but work is underway. It expects to provide senior management with periodic reports on the quality of MRI services once it assesses the quality of those services.

The Authority revised its reporting so the Board no longer receives and reviews periodic reports on MRI services. Rather, this is now the responsibility of Authority senior management.⁸

In June 2019, the Authority began working with eHealth to develop an IT system to help assess the quality of radiologists' interpretations of MRI scans. It plans to use the system to support formal peer reviews of the scans performed. Because of the COVID-19 pandemic, the Authority put this project on hold. The Authority continues to work with eHealth and plans to implement the IT system in 2022–23.

Once the Authority develops a process to assess the quality of MRI services provided, senior management expects to determine the nature and timing of reporting required about MRI service quality.

⁸ As reported in our 2020 Report – Volume 1, Chapter 25, the Authority provided the Board and senior management with periodic reports on the timeliness of MRI services. We found the Authority continued to provide senior management with such reports.

Without formally and systematically assessing the quality of MRI services that radiologists provide, the Authority does not know whether they are providing reliable MRI services. Accurate interpretation of MRI scans can be crucial to proper diagnosis and treatment plans for patients.

3.3 Better Monitoring of MRI Service Quality Provided by Private Operators Needed

We recommended the Saskatchewan Health Authority regularly monitor the quality and timeliness of MRI services that contracted private MRI operators provide. (2017 Report – Volume 1, p. 144, Recommendation 6; Public Accounts Committee agreement June 13, 2018)

Status—Partially Implemented

The Saskatchewan Health Authority does not sufficiently monitor the quality of MRI services contracted private-imaging operators provide; however, it is monitoring the timeliness of MRI services that private operators provide.

The Authority has contracts with two private MRI operators, with the private MRI operator in Regina contracted for 5,500 MRI scans per year.⁹

The Authority uses detailed reports to help staff analyze its data about timeliness of MRI services provided by contracted private MRI operators.

As described in **Section 3.1**, the Authority monitors the MRIs provided by the private operators to ensure the operators are meeting the yearly contracted targets (e.g., 5,500 MRIs in Regina). In 2020–21, the private operator delivered 5,225 MRI scans in Regina.

The Authority tracks the number of exams private contractors complete each week and compares it to the operators' weekly target (e.g., 103 weekly exams in Regina). The Authority uses this report to monitor whether it provides the operators with the appropriate number and type of MRI requisitions (e.g., semi-urgent and non-urgent requests) to meet the contracted targets.

The Authority also reviews weekly data in relation to MRIs for specific body parts (e.g., cardiac, chest/abdomen/pelvis, extremities, head/neck, spine), as the private operators also have specific targets for each body part as well as their overall yearly targets. For example, the Authority expects the private operator in Regina to provide 1,900 head/neck and 1,600 spine MRIs each year.

Each week, staff review the list of MRIs sent to the private operators. Authority staff follow up with the private operators if they did not schedule MRI requests in a timely manner to understand the reasons why (e.g., operator unable to contact a patient).

In addition, the Authority completes daily checks in the Radiology Information System to determine whether radiologists (including private operator radiologists) complete timely reports for the ordering physicians following MRI exams. We found the Authority tracks the

⁹ One private operator operates in both Regina and Saskatoon. The second operator operates solely in Saskatoon.



number of draft or unsigned reports over 14 days, over seven days, and under seven days by radiologist. It sends periodic emails to follow up on outstanding reports.

As described in **Section 3.2**, the Authority does not yet monitor the quality of MRI services radiologists provide (including private operators). It expects to do so in 2022–23.

Not monitoring the quality of MRI services provided by the Authority and private operator radiologists can affect whether a patient receives an appropriate diagnosis or treatment plan.