

Chapter 14

Health—Coordinating the Provision of Timely Neurosurgery Services

1.0 MAIN POINTS

Saskatchewan's average wait to see a neurosurgery physician has increased over the last two decades. At April 30, 2023, about 240 Saskatchewan patients were waiting more than a year for a neurosurgeon to provide surgery related to the brain, spine, or nervous system.

We found the Ministry of Health had, for the period ended May 31, 2023, effective processes to coordinate the provision of timely neurosurgery services in Saskatchewan other than the areas of our eight recommendations. The Ministry needs to:

- Analyze the appropriate number of staff and physicians needed to meet neurosurgery service expectations and establish action plans to address workforce gaps in neurosurgery services. In 2022–23, Saskatchewan neurosurgery physicians performed over 2,500 surgeries, with over half relating to the spine. Overall, the total wait list for spine surgery in Regina doubled since 2019–20, whereas Saskatoon remained unchanged.
- Communicate performance expectations and monitor neurosurgery physicians against those expectations to determine whether they meet neurosurgery needs timely.
- Assess patient referral systems to help reduce wait times for first consultation with a neurosurgery physician. Under the pooled referral system, patients have the option of seeing the first available neurosurgeon in the pool. Patients waited an average of 43.4 days for their neurosurgery consultations under the pooled referral system. Under the direct referral system, with the limited data available, we found patients waited an average of 151.7 days for their neurosurgery consultations. Regina uses the direct referral system.
- Increase the use of Saskatchewan Spine Pathway clinic referrals (e.g., physiotherapists assess whether spine surgery needed or if non-surgical, alternate treatments available). In 2022–23, less than 20% of the patients assessed by the Spine Pathway required surgical consultation, suggesting more referrals to the Spine Pathway could significantly reduce the wait list for spine consultations and surgeries.
- Document clear surgery prioritization criteria to support consistent and fair access to neurosurgery services. Inconsistent prioritization processes can lead to variation in how different surgeons categorize their patients, resulting in inappropriate surgery delays for certain patients. In 2022–23, Regina neurosurgery physicians prioritized more spine procedures as emergent or urgent (83%) compared to Saskatoon (68%).
- Determine enhancements to surgical scheduling (e.g., use of flex days) to ensure efficient use of operating rooms for neurosurgery services.



Without effective coordination of timely neurosurgery services, patients can face worsening health conditions, increased pain and mental anguish, and economic losses from inability to work while waiting to see a neurosurgery physician and while waiting for the surgeries that may follow diagnosis.

2.0 INTRODUCTION

This chapter outlines the results of our audit of the Ministry of Health's processes to coordinate the provision of timely neurosurgery services.

Neurosurgery services provided by the Saskatchewan Health Authority includes consultations and surgery related to the brain, spine, and nervous system that may be needed to treat conditions such as a pinched nerve in the back or neck, damage to the brain or spine from an injury, or a brain tumour.¹ Neurosurgery physicians (i.e., neurosurgeons, orthopedic surgeons) perform these surgeries either as day or inpatient (i.e., requiring hospital stay) surgeries in either Regina or Saskatoon.

In 2022–23, Saskatchewan neurosurgery physicians performed 2,568 surgeries, with 60% of those surgeries related to the spine.

Under *The Health Administration Act*, the Ministry is responsible to develop, coordinate, and maintain the healthcare system for Saskatchewan. It is also responsible to determine facilities to meet health needs, assist in developing adequate health resources (human and material), collect and publish information on the state of public health, and recommend programs to meet health needs (including organizational, administration, staffing, and financing). This includes coordinating the provision of neurosurgery services.

The Ministry spends about \$6.6 billion annually to support the healthcare system, including \$4.6 billion to the Ministry's partner, the Saskatchewan Health Authority, and over \$600 million to fee-for-service physicians, including to some neurosurgery physicians (i.e., neurosurgeons, orthopedic surgeons).^{2,3,4} From April 1, 2022 to April 30, 2023, the Ministry and the Authority paid \$18.4 million to neurosurgery physicians for services provided to patients.⁵

For 2023–24, the Ministry committed to an increase of \$42.5 million (2022–23: \$21.6 million) to address the surgical wait list for all specialties, including neurosurgery, by setting targets and performing thousands of additional procedures.⁶

¹ www.saskhealthauthority.ca/your-health/conditions-diseases-services/healthline-online/ps2020 (1 August 2023).

² *Ministry of Health Annual Report for 2022–23*, p. 18.

³ *Saskatchewan Health Authority Annual Report to the Legislature 2022–23*, p. 38.

⁴ Under the fee-for-service arrangement, the Ministry pays licensed physicians (e.g., neurosurgeons) for each specific insured service (e.g., initial assessment, consultation, follow-up visits) provided to a Saskatchewan resident based on pre-set rates negotiated with the Saskatchewan Medical Association, as set out in the *Payment Schedule for Insured Services Provided by a Physician*.

⁵ Includes all services provided by orthopedic surgeons who performed spine surgeries.

⁶ Ministry of Health, *Business Plan 2023–24*, p. 2; Ministry of Health, *Business Plan 2022–23*, p. 2.

2.1 Importance of Timely Neurosurgery Services

Saskatchewan's average wait times for medically necessary specialist services increased over the last two decades, as have Canadian wait time averages. In a 2022 survey-based report, Saskatchewan patients waited for 30.1 weeks (1993: 9.8 weeks) on average from when a general practitioner (i.e., family physician) referred them to a specialist until treatment, compared to 27.4 weeks (1993: 9.3 weeks) on average in Canada.⁷

Prolonged wait times to see a specialist, such as a neurosurgeon, increase the risk that a health condition will worsen or become irreversible, even resulting in disability or death. Patients can face economic losses and experience increased pain, suffering, and mental anguish not only while they wait to see specialists, but also while waiting for surgery that may follow diagnosis.⁸

As shown in **Figure 1**, 722 patients in Saskatchewan were waiting for surgery by a neurosurgeon at April 30, 2023, with about one-third waiting more than a year. The longest a patient is expected to wait for surgery based on the Saskatchewan Health Authority's prioritization guidelines is no longer than three months, depending on severity of diagnosis.

Of the 239 patients waiting more than a year, neurosurgeons considered 81 patients (34%) as higher priority (expected surgery in less than six weeks).

Figure 1—Patients Waiting for Surgery by a Neurosurgeon at April 30, 2023

Time Waited	Patients by Priority Level				Total	Percentage of Total
	Within 3 weeks (Urgent)	Within 6 weeks (Priority)	Within 3 months (Elective)	Unknown		
Less than 3 weeks	20	26	23	3	72	10%
4–6 weeks	5	13	17	1	36	5%
7 weeks to 3 months	5	41	45	2	93	13%
4–12 months	13	119	141	9	282	39%
13–18 months	2	29	45	-	76	10%
19–24 months	2	25	41	1	69	10%
> 24 months	2	21	69	2	94	13%
Total	49	274	381	18	722	100%
% waiting past prioritization^A	59%	86%	78%	67%		

Source: Adapted from information provided by the Ministry of Health.

^A Calculated.

Without effective processes to coordinate the provision of timely neurosurgery services, the risk increases that patients' health declines—pain, suffering, and mental anguish worsen—thereby affecting patients' quality of life. In addition, patients may be unable to work while waiting, increasing financial losses to the patient and the economy.

⁷ Fraser Institute, *Waiting Your Turn: Wait Times for Health Care in Canada*, 2022 Report, p. iii.

⁸ *Ibid.*, p. ii.



3.0 AUDIT CONCLUSION

We concluded, for the 16-month period ended May 31, 2023, the Ministry of Health had, except in the following areas, effective processes to coordinate the provision of timely neurosurgery services in Saskatchewan.

The Ministry needs to:

- Analyze patient referral systems to help reduce wait times for first consultation with a neurosurgery physician
- Analyze the staff and physicians needed to meet neurosurgery service expectations and establish action plans to address gaps in neurosurgery services
- Increase the use of Saskatchewan Spine Pathway clinic referrals (e.g., physiotherapists assess whether spine surgery needed or if non-surgical, alternate treatments available)
- Collect and analyze complete wait time data for patients who are directly referred to a neurosurgery physician by a family physician
- Communicate performance expectations and monitor neurosurgery physicians against those expectations
- Document clear surgery prioritization criteria to support appropriate surgery scheduling
- Determine enhancements (e.g., use of flex days) to surgery scheduling

Figure 2—Audit Objective, Criteria, and Approach

Audit Objective:

The objective of this audit was to assess the effectiveness of the Ministry of Health's processes, for the 16-month period ended May 31, 2023, to coordinate the provision of timely neurosurgery services in Saskatchewan.

Audit Criteria:

Processes to:

1. **Plan for efficient use of neurosurgery services**
 - Understand supply and demand for neurosurgery physicians
 - Coordinate responsibility for neurosurgery resource planning
 - Set targets for wait times (e.g., time to first neurosurgery physician appointment, time to surgery)
2. **Facilitate timely neurosurgery services provided by the Saskatchewan Health Authority**
 - Have standardized systems to manage neurosurgery physician referrals
 - Prioritize patients based on diagnosis and condition (e.g., maintain prioritized wait lists)
 - Schedule surgeries based on prioritization
3. **Monitor timeliness of neurosurgery services**
 - Collect accurate information on neurosurgery wait times
 - Analyze results to targets (e.g., identify factors that slow access to services)
 - Take action to address areas where results fall short of targets
 - Periodically report results to senior management, partners (e.g., Saskatchewan Health Authority), and the public

Audit Approach:

To conduct this audit, we followed the standards for assurance engagements published in the *CPA Canada Handbook—Assurance* (CSAE 3001). To evaluate the Ministry of Health's processes, we used the above criteria based on our related work, reviews of literature including reports of other auditors, and consultation with management. Ministry management agreed with the above criteria.

We examined the Ministry's policies and procedures relating to processes to coordinate the provision of timely neurosurgery services. We interviewed Ministry and Authority staff, as well as neurosurgeons responsible for helping to coordinate the provision of timely neurosurgery services. We assessed processes to gather and analyze information about neurosurgery services. In addition, we tested a sample of neurosurgical bookings and analyzed data about surgeries pending and completed. We also used an independent consultant with subject matter expertise in the area to help us identify good practice and assess the Ministry's processes.

4.0 KEY FINDINGS AND RECOMMENDATIONS

4.1 Neurosurgery Wait Times Growing

The Ministry of Health and the Saskatchewan Health Authority estimate the number of annual spine surgeries anticipated in the province. They did not meet the projected number of surgeries for 2022–23 with over 1,000 patients waiting for spine surgery at March 31, 2023.

In spring 2023, the Ministry prepared a neurosurgery target report for the first time, *Neurosurgery Report Against Targets*, comparing annual neurosurgery volume projections against actual results. The report also compared 2022–23 results to 2019–20 (pre-COVID-19 pandemic). The projected number of surgeries has grown since 2020.

As shown in **Figure 3**, the Ministry expected neurosurgery physicians to complete 1,750 spine surgeries in 2022–23, but they completed just over 1,500 surgeries in Saskatoon and Regina. This does not include cranial (brain) surgeries performed by neurosurgeons. The Authority met the expectation for projected spine surgery volumes in Saskatoon, but not in Regina.

Neurosurgery physicians performed a higher total number of spine surgeries overall in 2022–23 compared to 2019–20, but the wait list has grown over this same timeframe (see **Figure 4**). This seems to indicate that if the pace of spine surgeries continues at the current rate, the wait list for spine surgeries will not improve despite increased surgeries performed. Prolonged wait times may detrimentally affect patients' health conditions and quality of life.

Figure 3—Actual Spine Surgery Volume Comparison to Expected between 2020 and 2023

	2019–20 Actual (pre-COVID-19 pandemic)	2022–23 Actual	2022–23 Target
Saskatoon total:	615	776	650
Day surgery	140	229	319
Inpatient surgery	475	547	331
Regina total:	854	770	1,100
Day surgery	134	121	200
Inpatient surgery	720	649	900
Total	1,469	1,546	1,750

Source: Adapted from the Ministry of Health's *Neurosurgery Report Against Targets*.



The Ministry's report also included information on spine surgery wait lists and wait time targets. For example, a 2022–23 target for the surgical program was to have no patients waiting longer than 24 months for surgery by March 31, 2023.

As shown in **Figure 4**, at March 31, 2023, Saskatoon met the target and had no patients waiting longer than 24 months, whereas Regina did not meet the target and had 90 patients waiting for spine surgery more than 24 months (as compared to zero in 2019–20).

Overall the total wait list for spine surgery in Regina doubled since 2019–20, whereas Saskatoon remained unchanged.

Figure 4—Spine Surgery Wait Lists

	Wait List as at March 31, 2020 (pre-COVID-19 pandemic)		Wait List as at March 31, 2023	
	Total Waiting	Waiting >24 Months (target)	Total Waiting	Waiting >24 Months (target)
Saskatoon total:	268	0	268	0
Day surgery	68	0	53	0
Inpatient surgery	200	0	215	0
Regina total:	321	0	765	90
Day surgery	48	0	79	3
Inpatient surgery	273	0	686	87
Total	589	0	1,033	90

Source: Adapted from the Ministry of Health's *Neurosurgery Report Against Targets*.

The Ministry and Authority can use various supply and demand initiatives to better manage and reduce neurosurgery wait times.

Supply changes may include increasing the number of surgical procedures, improving surgical productivity, or using the private sector. Demand initiatives could involve better managing demand for surgical procedures such as consistently prioritizing patients on wait lists; auditing ongoing wait lists; or using pooled neurosurgery referral methods and alternate treatment options like physiotherapy, which may resolve a health condition without surgery.

This chapter outlines process improvements the Ministry should make to reduce neurosurgery wait times province-wide.

4.2 Improved Monitoring of Neurosurgery Services Needed

The Ministry of Health and the Saskatchewan Health Authority do not effectively monitor the performance of neurosurgeons to determine whether they meet neurosurgery needs.

The Ministry works with various partners to deliver neurosurgery services.

For example, when a patient experiences back pain, they will likely see their family physician (i.e., general practitioner) who may refer them to a neurosurgeon to diagnose and treat significant conditions related to the spine. The neurosurgeon will then meet with the patient to determine whether spine surgery is necessary to treat the condition. If a

patient needs surgery, a date will be set when the neurosurgeon, along with other necessary surgical staff of the Saskatchewan Health Authority (e.g., surgical nurses), will perform the surgery.

The roles and responsibilities of each health sector partner contributing to the care of neurosurgery patients is as follows:

Ministry of Health

Legislation makes the Ministry of Health responsible for Saskatchewan's healthcare system.⁹ Coordinating the provision of neurosurgery services is one of many aspects of the Ministry's role in maintaining a system to provide comprehensive health services.

The Ministry has two branches involved in funding neurosurgery services.

The Acute and Emergency Services Branch is the Ministry's primary unit responsible for coordinating neurosurgery services. This branch determines estimated funding required each year for delivering these services.

The Medical Services Branch works with physicians to develop initiatives toward improving access to specialists such as neurosurgeons. It also works with the Saskatchewan Health Authority on physician resource planning activities, as well as negotiates the physician compensation agreement with the Saskatchewan Medical Association. This agreement provides compensation to fee-for-service physicians, including some neurosurgery physicians (e.g., neurosurgeons, orthopedic surgeons).

Saskatchewan Health Authority

Using funding from the Ministry of Health, the Saskatchewan Health Authority provides neurosurgical services to patients.

The Authority schedules and provides operating rooms used for surgeries, hires and pays surgical nurses, and contracts and pays some neurosurgery physicians (i.e., contracted physicians). The Authority spends about \$5 billion annually to deliver healthcare services, including neurosurgery, of which nearly \$500 million is for medical remuneration and benefits (including payments to contracted neurosurgery physicians).¹⁰

The Authority is a large organization with a large number of service lines. As shown in **Section 5.0**, the organizational structure is very complex and includes many individuals who directly support the delivery of neurosurgery services (not including areas indirectly supporting these services, such as finance or building maintenance staff).

The Authority uses its Governance Charter and Interim Practitioner Staff Bylaws to communicate roles and responsibilities. For example, the bylaws indicate Area Division Leads are required to report to Area Department Leads on provincial practice for standardization of care and quality improvement activities such as patient and other concerns, critical incidents, morbidity and mortality rates, and adverse events.

⁹ Section 6 of *The Health Administration Act* and Section 2 of *The Provincial Health Authority Act*.

¹⁰ *Saskatchewan Health Authority Annual Report to the Legislature 2022–23*, p. 77.



Neurosurgery Physicians

Physicians performing neurosurgery services primarily include neurosurgeons (who perform surgery on the brain, spine, and peripheral nervous system) and some specially trained orthopedic surgeons (who perform spine surgery). **Figure 5** shows the number of neurosurgery physicians working in Saskatchewan at June 2023. There were seven neurosurgery physicians in Regina and 13 in Saskatoon. As noted in **Section 4.1**, the Ministry expected Regina to complete 1,100 spine surgeries in 2022–23 and Saskatoon to complete 650. The Ministry has not analyzed the reasons for these differences.

Figure 5—Number of Neurosurgery Physicians Working in Saskatchewan at June 2023

Location—Surgeon Type	Contract	Fee-for-service	Total
Saskatoon—Neurosurgeon ^A	8	1	9
Saskatoon—Orthopedic surgeon	2	2	4
Regina—Neurosurgeon	0	5	5
Regina—Orthopedic surgeon	0	2	2
Total	10	10	20

Source: Ministry of Health records.

^A One contract neurosurgeon moved to fee-for-service in early 2023.

Neurosurgery physicians can work either on a contracted or a fee-for-service basis. Under contractual arrangements, the Authority pays regular monthly amounts to licensed physicians. Under the fee-for-service arrangement, the Ministry pays licensed physicians for each specific insured service (e.g., initial assessment, consultation, follow-up visits) provided to a Saskatchewan resident based on pre-set rates negotiated with the Saskatchewan Medical Association, as set out in the *Payment Schedule for Insured Services Provided by a Physician*.¹¹

Our analysis found, from January 1, 2022, to April 30, 2023, there were 3,347 neurosurgeries performed by 20 surgeons, with one neurosurgeon completing 362 (11%) of these surgeries.

From April 1, 2022, to April 30, 2023, the Ministry and the Authority paid \$12.1 million to neurosurgeons and \$6.3 million to orthopedic surgeons who provided neurosurgery services to patients.¹²

We found, on average, contracted and fee-for-service neurosurgeons made over \$850,000 in 2022–23, with fee-for-service neurosurgeons making over 50% more than contracted neurosurgeons to perform about 35% more surgeries. Three fee-for-service neurosurgeons each made over \$1 million in 2022–23. The fee-for-service model rewards productivity, but also promotes a competitive environment where fee-for-service neurosurgeons may want as many surgical patients as possible. This creates challenges for the Ministry to manage actual surgical volumes and patient wait lists.

¹¹ The Saskatchewan Medical Association is a provincial division of the Canadian Medical Association representing the collective view of physicians in Saskatchewan.

¹² Includes all services provided by orthopedic surgeons who performed neurosurgeries.

We found fee-for-service physicians had triple the number of patients waiting for surgery compared to contracted physicians, and nearly twice as many operating room cancellations (see **Section 4.10** expecting further analysis around surgery scheduling including cancellations). These differences suggest some neurosurgeons may have too many patients, while other neurosurgeons may have capacity to treat more patients.

We found the contract templates for both contracted and fee-for-service neurosurgeons did not set out clear performance expectations. Contracts provide an opportunity to reinforce and clarify expectations for neurosurgeons to promote consistent understanding and resulting practices. For example, the contracts could include expectations for managing patient volumes and wait lists, using operating rooms, and contributing to all required activities to serve patients (e.g., conducting rounds for patient discharge, accepting on-call shifts).

Clear performance expectations could support efforts to balance patient loads and treat neurosurgery patients more timely.

- 1. We recommend the Ministry of Health and the Saskatchewan Health Authority communicate clear expectations and monitor the number of neurosurgery services provided by each physician to determine whether neurosurgery needs are met.**

4.3 Revisit Purpose of Surgical Committees

The Ministry of Health participates on a number of committees focusing on surgical services and backlogs, but should work with the Saskatchewan Health Authority to make sure every committee is necessary.

We found the Ministry and the Authority used a number of committees to help manage planning and oversight for surgery, including neurosurgery (see **Figure 6**).

It is important to ensure committees are not redundant. Each committee should have a significant impact on the organization's success and its mandate. Otherwise, it may be more efficient to place committee members within another committee's purview.

Most of the committees we reviewed did not have formal reporting relationships with each other, but in some cases, decisions or recommendations went to another committee and some had overlapping membership.

For example, during our review of committee minutes, we found the Surgical Executive Committees in Regina and Saskatoon did not share plans, status reports, or minutes of meetings with the Provincial Surgical Executive Committee. We expected this would occur as the Regina and Saskatoon committees may have local insights, specific initiatives, and good practices that they could and should share on a province-wide basis. The Committees had a common member to help informally share information.

We also found most committees had documented objectives and protocols (e.g., terms of reference), but one did not and one had outdated objectives and protocols.

**Figure 6—Key Committees Supporting Neurosurgery Services**

Committee	Purpose	Terms of Reference – last updated	Membership
Provincial Surgical Executive Committee (PSEC)	Sets strategic direction and oversight to address the surgical backlog and achieve the 3 month wait target for elective surgeries by 2030	Yes – September 2020	Authority, physician, and Ministry members Common members with SSEC and RSEC
Saskatoon Surgical Executive Committee (SSEC)	Deals with specific issues such as budgets, strategic direction, and makes high-level decisions influencing the direction of Surgery Services of Saskatoon	Yes – Unknown, but after December 2017	Authority and physician members; no Ministry representation Common members with PSEC and RSEC. Decisions and recommendations from any project teams/working groups SSEC establishes must go to SSOC SSEC reports to the APAC
Regina Surgical Executive Committee (RSEC)	Provides leadership and direction to enable the former Regina Qu'Appelle Health Region to achieve the goals and objectives of its Surgical Program	Yes – March 2017 (prior to creation of the Authority, so not up-to-date)	Authority and physician members; no Ministry representation Common members with PSEC and SSEC
Saskatoon Surgical Operations Committee (SSOC)	Coordinates and manages patient care issues in Surgery Services	Yes – Unknown	Authority and physician members; no Ministry representation Reviews decisions and recommendations from any project teams/working groups SSEC establishes
Provincial Practitioner Advisory Committee (PPAC)	Assists Chief Medical Officer with effective organization, management, and functioning of the Practitioner Staff	Yes – September 2020 (SHA Interim Practitioner Staff Bylaws)	Authority and physician members; no Ministry representation
Area Practitioner Advisory Committees (APAC—Regina, Saskatoon)	Assists Area Chiefs of Staff with effective organization, management, and functioning of the Practitioner Staff within that area	Yes – September 2020 (SHA Interim Practitioner Staff Bylaws)	Authority and physician members; no Ministry representation.
Improving Access to Specialists Committee	Engages physicians and patients in developing system supported strategies to increase access to specialists and diagnostic services and to improve quality, and safety of, patient care	N/A – contracts with physicians and patient advisors include purpose	Ministry and physician members; no Authority representation

Source: Committee terms of reference, minutes, reports, or documents obtained from the Ministry of Health.

Reviewing the role of the various committees supporting delivery of neurosurgery services may help to clarify potential confusion about reporting relationships, identify and remove any duplication of effort, and support coordination.

4.4 Neurosurgery Volumes and Wait Time Targets Set

The Ministry of Health has set annual wait time targets for all surgeries and annual plans for volume of neurosurgeries.

In its 2023–24 annual plan, the Ministry set a goal to reduce all surgery wait times. To support this goal, the Ministry set the following targets for the year ending March 31, 2024:

- 90% of surgical patients receive a first offer of surgery within 10 months, and no patients are on the wait list longer than 18 months
- 90% of urgent cancer surgery patients receive a first offer of surgery within three weeks, and no urgent cancer patients are on the wait list longer than five weeks
- Achieve the pre-COVID-19 pandemic wait list target of no more than 25,000 patients on the wait list¹³

We found the Ministry does not set separate targets specific to neurosurgery services, and instead applies its broad surgical targets.

The Saskatchewan Health Authority shares its planned monthly surgical volumes specific to neurosurgery with the Ministry, by location, to provide the Ministry with an additional way to monitor whether completed neurosurgeries stay on track for the year.

By March 31, 2024, the Authority plans for neurosurgery physicians to provide patients with 533 day surgeries and 2,114 inpatient surgeries (see **Figure 7**) for a total of 2,647 surgeries. By comparison, neurosurgery physicians completed 2,568 surgeries in 2022–23.

Figure 7—Planned Monthly Surgical Volumes for Neurosurgeries by Location

Date	Day Surgeries		Total Day Surgeries	Inpatient Surgeries		Total Inpatient Surgeries	Total Planned Surgeries
	Regina	Saskatoon		Regina	Saskatoon		
April 2023	20	23	43	80	74	154	197
May 2023	19	30	49	80	88	168	217
June 2023	18	26	44	84	81	165	209
July 2023	15	23	38	71	69	140	178
August 2023	17	22	39	76	86	162	201
September 2023	18	29	47	106	81	187	234
October 2023	17	33	50	104	82	186	236
November 2023	18	27	45	106	81	187	232
December 2023	16	26	42	105	83	188	230
January 2024	18	29	47	106	89	195	242
February 2024	15	26	41	95	80	175	216
March 2024	19	29	48	117	90	207	255
Total	210	323	533	1,130	984	2,114	2,647

Source: Adapted from information provided by the Ministry of Health.

¹³ Ministry of Health, *Business Plan 2023–24*, p. 6.



In addition, the Authority uses neurosurgery prioritization categories (e.g., emergent, urgent, priority, elective). These categorizations have different wait times associated with them to support measuring whether patients receive timely surgery based on severity of their medical conditions. However, the Authority does not have documented criteria for neurosurgery prioritization categories to help ensure patients end up in the right category (see **Recommendation 6**).

Setting wait time targets and anticipated neurosurgery volumes helps the Ministry identify whether it is meeting surgical wait time goals and allows for setting corrective action plans as needed.

4.5 Insufficient Analysis of Resources to Deliver Neurosurgery Services

The Ministry of Health does not conduct sufficient analysis to determine whether the health sector has sufficient staff to meet neurosurgery service expectations.

Having an appropriate supply of neurosurgery physicians and support staff is important to ensure wait times are reduced and managed appropriately.

The Ministry uses IT systems to forecast up to 10 years of demand for neurosurgery services by considering historical surgery volumes, medical trends (e.g., increase in stroke risks), and population changes (e.g., size, aging).

For 2023–24, we found the Ministry provided its forecasts to the Saskatchewan Health Authority to support the Authority’s annual planning processes. However, the Ministry did not know whether the Authority used the forecasts. The Ministry indicated it uses its IT systems to assess reasonability of the Authority’s plans and budget (e.g., confirms sufficient budget to support planned surgical volumes), but we found it did not retain this analysis as support for its recommendations to the Authority or for eventual approval of the Authority’s 2023–24 budget.

Other than funding for new contracted physicians, we found for 2023–24 the Authority budgeted based on expected demand for health services and did not consider how many physicians are required to meet the province’s needs.

As a result, the Ministry does not know whether the Authority has enough, or too many, neurosurgery physicians and support staff to meet the anticipated neurosurgery volumes. Without this information, the Ministry may not be adequately supporting the Authority in addressing existing gaps (see **Recommendation 8** about developing action plans to address identified gaps).

In addition, the Ministry does not receive sufficient detail about other non-physician needs of the neurosurgery divisions that could improve efficiency and reduce wait times. For example, nurse practitioners could support patient discharges and transfers to help with inpatient bed management in Regina, or other staff could support pathway, strategic, and quality improvement initiatives that could help manage wait lists.

For 2023–24, the Authority did not request any new contracted neurosurgery positions. Also, at May 31, 2023, the Authority did not have contracts with the private sector for neurosurgery services. Yet, the Ministry increased the expected volume for neurosurgery from 2,568 (2022–23 actuals) to 2,647 (2023–24 planned).

Since the Ministry does not forecast, or request from the Authority, the number of physicians and support staff needed to deliver neurosurgery services in the province, it cannot complete a sufficient gap analysis to assess whether the Authority has an appropriate number of physicians and support staff delivering neurosurgery services. This also impacts the ability to sufficiently conduct workforce planning over the longer term (e.g., five years).

2. We recommend the Ministry of Health forecast the number of neurosurgery physicians and other staff required to provide neurosurgery services annually and over the longer term.

4.6 Assessment of Patient Referral Systems Required

The Ministry of Health has not analyzed the different systems used by physicians to refer patients to a neurosurgery physician in Saskatchewan to support timely patient service and healthcare efficiency. Neurosurgery patients in Regina currently wait longer than those in Saskatoon.

Saskatchewan physicians use two different systems to refer patients for neurosurgery services. The Saskatoon neurosurgery division uses a pooled referral system, while the Regina neurosurgery division uses a direct referral system. Both Regina and Saskatoon orthopedic spine surgeons use a direct referral system. Under the pooled referral system, patients have the option of seeing the first available neurosurgeon in the pool, or waiting to see a specific neurosurgeon. If one neurosurgeon in the pool is at full capacity, patients flow to others who are not, which eventually results in a more or less equally distributed workload.

At March 31, 2023, Saskatoon had 268 patients waiting for spine surgery compared to 765 in Regina (See **Figure 4**).¹⁴

Pooled Referrals

Since June 2021, the Saskatoon neurosurgery division has used the pooled referral system managed by eHealth Saskatchewan. eHealth developed a standard form and written guidance to support physicians referring patients through the pooled system. We found the guidance and form provided information consistent with good practice to facilitate neurosurgery physicians having complete information to assess referrals. We also found eHealth provided a training manual with clear direction to support staff in completing the referral process.

¹⁴ The majority of neurosurgery services relates to spine surgeries. The information provided by the Ministry of Health focused on spine surgeries.



eHealth follows up with a referring physician up to three times to address issues with an incomplete referral form before sending a notice indicating it is unable to process the referral. eHealth advised us it is working on a change to its IT system to provide real-time error reports while referring physicians are completing the form to reduce the risk of incomplete forms.

eHealth uses its IT system to identify the next available appointment based on the neurosurgery physician with the greatest capacity (based on the number of referrals desired in a 30-day period) and within the required scope of practice (based on medical procedures a physician is licensed and willing to complete). eHealth sends a digital referral package (e.g., referral form, patient diagnostics) to the neurosurgery physician through the IT system, within a target of two days from when it received the referral request.

Neurosurgery physicians either accept, decline (e.g., referral is not appropriate for patient's condition), or recommend the patient referral to another physician (e.g., specialized in specific condition) within 7–10 business days from receipt of the referral. Once accepted, eHealth advises the referring physician by faxing them a completed acceptance form stating the patient can expect to see the neurosurgery physician within three weeks for urgent reasons or within six weeks for elective reasons. If declined, eHealth or the neurosurgery physician notify the referring physician so they can take necessary action (depending on the reason for declining the referral).

If a patient requests a specific neurosurgery physician, eHealth sends the referral package to the requested physician and treats the file as a direct referral. One of the neurosurgeons in Saskatoon works under a fee-for-service contract and all of their patients used direct referral.

eHealth prepares quarterly reports for Saskatoon's head of neurosurgery to monitor the referral process. For the quarter ending March 31, 2023, eHealth reported for Saskatoon:

- All referrals sent to neurosurgery physicians within its two-day target
- 29% of 439 active referrals were pooled
- 61% were direct referrals (including the one fee-for-service neurosurgeon out of nine neurosurgeons working in that quarter)
- 10% were redirected by the neurosurgery physician to another surgeon
- Patients waited 43.4 days on average for their neurosurgery consultations

Direct Referrals

The Regina neurosurgery division uses a direct referral system. The Ministry has a generic referral template available within each of the two electronic medical record IT systems used by family physicians in Saskatchewan. We found the forms required information consistent with good practice to properly inform the neurosurgery physician at the patient's appointment. We also found the Ministry provided good guidance on its website to support family physicians in appropriately completing the forms.

The Ministry has the ability to collect data from when a family physician makes a referral to when a neurosurgery physician initially assesses the patient. Saskatoon's neurosurgery division collects this data through the pooling IT system. However, for Regina, these processes rely on family physicians correctly coding referrals in the Ministry's billing system when they submit fee claims for services provided. The Ministry encouraged, but did not require, family physicians to use the fee code that would enable it to collect the necessary data to determine this wait time. Because of this, there is limited data available for Regina.

Based on the limited data available, we found from January 1, 2022, to April 30, 2023, for Regina:

- Physicians completed only 65 patient referrals using the appropriate fee code
- Patients waited 151.7 days on average for their neurosurgery consultation

The Ministry noted some patients wait longer than others due to the surgeon to whom they are referred (e.g., surgeon has a longer wait list). At May 31, 2023, the Ministry had not analyzed the reasons for the delays to determine any related action it may take to help patients access more timely consultations.

Without analysis to determine the effectiveness of using pooled versus direct referrals, patients may be waiting longer than necessary to see a neurosurgery physician. Patients who wait longer to see a neurosurgery physician may risk declining health that affects their quality of life, or have difficulty working that causes financial hardship.

3. We recommend the Ministry of Health analyze patient referral systems used for neurosurgery services and determine an efficient system to use for referrals across the province.

4.7 Incomplete Patient Referral Data Collected

The Ministry of Health does not collect and analyze complete data from when a family physician makes a referral to when a neurosurgery physician initially assesses a patient.

As noted in **Section 4.6**, physicians use two different systems to refer patients for neurosurgery services—pooled or direct referral systems. While the Ministry receives data for the pooled referral service from eHealth, we found the Ministry does not collect complete data for the direct referral system. This is due to how fee-for-service physicians code referrals in the Ministry's billing system.

We found the Regina data appears significantly understated as there were only 65 direct referrals in 16 months (January 1, 2022, to April 30, 2023) compared to 1,861 neurosurgery referrals made in 12 months (April 1, 2022, to March 31, 2023) in Saskatoon as tracked through the pooling system.

Not collecting complete referral data limits the Ministry's ability to analyze and assess wait times, as well as the effectiveness of the direct referral system. It also means the Ministry does not have a good understanding of total neurosurgery wait times—total time from when



a family physician makes a referral to a neurosurgery physician to the point when a patient receives surgery.

4. We recommend the Ministry of Health collect and analyze complete wait time data for patients directly referred to a neurosurgery physician.

4.8 More Spine Pathway Clinic Referrals Needed

The Ministry of Health and the Saskatchewan Health Authority do not require or encourage physicians to refer patients to a Spine Pathway clinic prior to referring a patient to a neurosurgery physician.

The Saskatchewan Spine Pathway is a standardized assessment and treatment process for patients with low back pain. Physicians and other healthcare providers can refer patients to a Spine Pathway clinic managed by the Authority located in either Saskatoon or Regina. At the clinic, healthcare providers (e.g., physiotherapists) work with patients to help assess whether surgery is necessary or an alternate treatment option, such as physiotherapy, may resolve their condition without surgery.

Staff at the Spine Pathway clinic can also order tests such as a magnetic resonance image (MRI) to help assess patients' need for surgery, prepare a patient for surgery (e.g., manage weight or dietary restrictions before surgery, reduce risk of medical complications) and help patients manage pain while waiting for surgery. If the Spine Pathway clinic deems a patient as a surgical candidate, it refers the patient to a spine surgeon (i.e., neurosurgeon or orthopedic surgeon).

During the audit, neurosurgeons advised us that the Spine Pathway allows patients to access other supports (e.g., physiotherapy) and many spine patients' conditions will resolve in time with these supports without surgery.

In 2022–23, Saskatoon referred 20.5% out of 1,583 initial assessments completed through the Spine Pathway for surgical consultation, and Regina referred only 4.4% of 733 initial assessments. These rates may suggest that more referrals to the Spine Pathway could significantly reduce the wait list for spine consultations and surgeries, as well as limit the number of patients getting surgery because of alternate treatments. However, the Authority redeployed physiotherapists during the COVID-19 pandemic and the wait lists grew, so additional resources may be needed if the Ministry determines the Spine Pathway could help improve timely access to neurosurgery services.

Figure 8 shows that Saskatchewan spine surgery rates averaged higher than the Canadian average from 2016–17 to 2022–23, ranking in the top three highest rates. Use of alternate methods, such as through the Spine Pathway, may help Saskatchewan to reduce its spine surgery rates.

Figure 8—Interprovincial Spine Surgery Rates (Rate per 100,000 Population)

Province ^A	Fiscal Year of Discharge						
	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
New Brunswick	157.6	158.5	150.6	137.6	131.3	124.4	144.7
Saskatchewan	141.8	132.7	152.7	140.1	118.5	130.1	141.1
Newfoundland and Labrador	118.2	112.6	122.7	127.8	108.6	119.9	121.9
British Columbia	120.3	126.4	134.1	125.8	121.6	119.1	93.7
Alberta	93.0	93.0	95.2	89.6	77.8	80.4	87.1
Nova Scotia	108.6	101.9	95.1	91.4	70.7	70.3	79.2
Ontario	79.6	79.1	78.4	78.4	69.4	71.9	72.0
Manitoba	71.5	66.3	66.3	66.8	56.8	54.0	60.5
Prince Edward Island	0	0	0	0	0	0	0
All Nine Provinces	94.4	94.3	96.0	92.9	83.2	84.8	83.0

Source: Adapted from information provided by the Ministry of Health (from Canadian Institute of Health Information). Includes both inpatient and day surgeries.

^A Quebec does not report data to the Canadian Institute of Health Information the same way as other provinces and is not included. Prince Edward Island did not report any spine surgeries performed throughout this period.

Referring more patients to a Spine Pathway clinic can help the Ministry and the Authority better manage timely access to neurosurgery services for those who need spine surgery.

5. We recommend the Ministry of Health work with the Saskatchewan Health Authority to increase the use of Spine Pathway referrals to reduce potentially unnecessary neurosurgery consultations and surgeries.

4.9 Surgery Prioritization Criteria Needed

The Ministry of Health does not document surgery prioritization criteria to support timely and fair access to neurosurgery services.

Neurosurgery physicians assign patients to a prioritization category when completing the booking form to place patients on the surgical wait list. The main prioritization categories are:

- Emergent—within 24 hours
- Urgent (including cancer)—within 3 weeks
- Priority (including cancer)—within 6 weeks
- Elective—within 3 months

The Saskatchewan Health Authority's scheduling units generally schedule surgeries on a first-in, first-out basis according to the assigned priority on the booking forms submitted by neurosurgery physicians.



We found neither the Ministry nor the Authority had documented factors or criteria to guide the neurosurgery prioritization decisions to support consistency and fairness of access to services by patients. For example, they could base prioritization criteria on diagnosis considering related risks of death, mobility, ability to work, and ability to manage pain.

Our testing of 19 patient files found the Authority completed surgeries within the prioritization timeframes 26% of the time. From February 1, 2022, to April 30, 2023, our analysis found similar results in that the Authority completed 36% of surgeries within the prioritization timeframes. This means up to three-quarters of neurosurgery patients may be experiencing longer periods of pain, suffering, and reduced quality of life as they wait longer than expected for surgery.

At April 30, 2023, 233 (one in Saskatoon, 232 in Regina) out of 1,226 patients waiting for neurosurgery had already waited longer than 18 months (the Ministry's 2023–24 target) after adjusting for periods where the patient was not available. Of these 233 patients, surgeons categorized 178 patients (over half) as urgent or priority (expect surgery in six weeks or less) and 12 of these patients had already waited over three years.

In May 2023, the Ministry completed analysis of spine procedure prioritizations and found neurosurgery physicians prioritized a large number of surgeries as emergent or urgent. In 2022–23, the Ministry found Regina neurosurgery physicians prioritized more spine procedures as emergent or urgent (83%) compared to Saskatoon (68%).

Inconsistent prioritization processes can lead to variation in how different surgeons categorize their patients, resulting in inappropriate surgery delays for some patients. It also increases the risk surgeons can manipulate the system to get their patients in sooner, while also increasing the volume of surgeries they can complete and be paid for. Good prioritization drives scheduling expectations and capacity planning to help prevent delays for patients awaiting surgery.

6. We recommend the Ministry of Health work with the Saskatchewan Health Authority to document surgery prioritization criteria to support timely and fair access to neurosurgery services.

4.10 Assessment of Scheduling Enhancements Needed

The Saskatchewan Health Authority schedules neurosurgery patients for surgeries based on patient prioritization and surgeon availability, but the Ministry of Health has not worked with the Authority to assess whether improved scheduling processes could contribute to better neurosurgery wait times.

The Authority's operating room scheduling teams schedule patients for surgery in the Authority's IT surgical scheduling system based on allocation of operating room time to surgeons, patient prioritization, and equipment availability. In **Section 4.9**, we noted the Ministry needs surgery prioritization criteria to support consistent prioritization and appropriate scheduling of surgeries for neurosurgery patients.

We found the teams typically scheduled neurosurgery patients' surgeries two weeks in advance of their surgery date through a phone call. Given the number of patients waiting for over two years during 2022–23, after scheduling urgent cancer cases, the teams usually gave long-waiters priority before other categories to try to manage the wait lists. The teams documented in the IT system whether a patient was unavailable or declined initial surgery dates, along with their reason (e.g., vacation, work commitment).

During 2022–23, Regina and Saskatoon operating room scheduling teams allocated operating room time to surgeons in four to six week blocks of time to manage resource uncertainty and reduce the risk of rescheduled surgeries. The teams released the schedule to surgeons six to eight weeks in advance. Prior to the COVID-19 pandemic, the Authority scheduled surgeries six to nine months in advance.

We found the Ministry had not assessed whether the timeframes used to schedule neurosurgery are effective.

Regina maintains documented work standards to guide and support its scheduling processes. We found these standards consistent with processes used. Saskatoon had not documented its standards, except for emergent surgeries, although we did not note any significant deficiencies in the scheduling processes it followed.

We found the Ministry has a number of opportunities to look at the Authority's scheduling processes, including operating room flex days, after hour surgeries, cancellations, and late starts, to determine whether changes could improve neurosurgery wait times.

Flex Days

We found the Ministry had not assessed whether flex days improve access to neurosurgery to consider if this practice should be considered in Regina.

Regina and Saskatoon allocate operating room time blocks differently, as follows:

- In Saskatoon, the Authority allocated operating room time blocks by specialty (e.g., neurosurgery) and the division head is actively involved in allocating the time block amongst the individual surgeons based on patient prioritization and wait times. Saskatoon's Neurosurgery Division also plans a flex day where patients are not booked, to leave capacity to manage emergent or urgent cases, which reduces the risk of repeatedly bumping other surgeries far into the future creating excessive waits for other patients.
- In Regina, the Authority allocates operating room time blocks to individual surgeons based on analysis of their patient wait lists—generally the longer the wait list, the more operating room time allocated to the surgeon. Regina does not allocate any flex time for emergent or urgent cases.

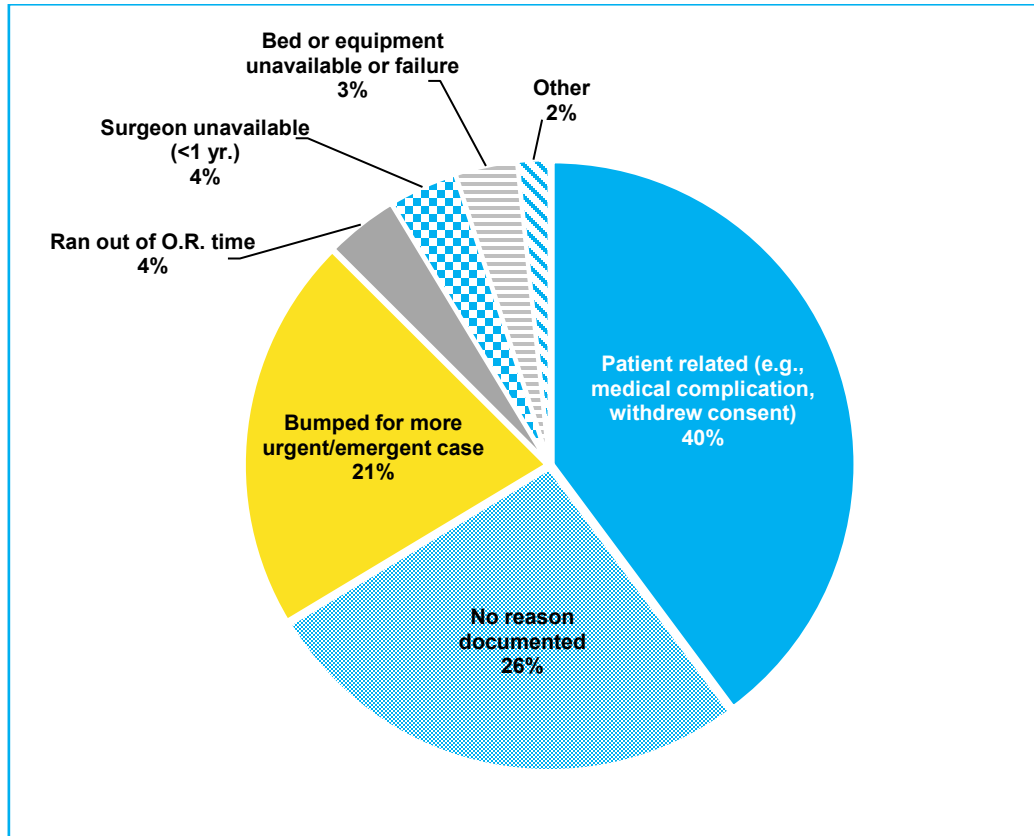
Cancellations

We found about a quarter of the Authority's surgery postponements had no documented reason for the postponement, making it difficult to determine whether there are process improvements needed.



Figure 9 shows the main reasons why the Authority postponed surgeries for patients waiting for neurosurgery between January 1, 2022, and April 30, 2023. We found emergent or more urgent cases bumped 21% of cases, suggesting practices such as flex time, may help treat patients in a more timely way and improve rescheduling efficiency.

Figure 9—Reasons for Neurosurgery Postponements for Patients Waiting between January 1, 2022, and April 30, 2023



Source: Ministry data from the Saskatchewan Surgical Registry.
O.R. – operating room

After-Hours Spine Surgeries

The Ministry analyzes the number of spine surgeries performed by neurosurgeons on weekends and after hours, but has not made any system changes as a result.

The Ministry's analysis showed Regina had higher proportions of spine surgeries performed on weekends (see **Figure 10**). Performing spine surgeries after-hours and on weekends results in more spine surgeries overall, which helps address the wait list. However, the Ministry's analysis noted spine surgeries performed after-hours or on weekends cost at least double in operating room time and considerably more in terms of the physician cost.

Figure 10—After-hours and Weekend Spine Surgery Volumes

	Regina	Saskatoon
% spine procedures performed after-hours (November 2022 to March 2023)	26%	28%
% spine procedures performed on weekends (November 2022 to March 2023)	22%	14%

Source: Adapted from information provided by the Ministry of Health.

Late Starts

The Authority analyzed the number of surgeries that started late and why, but identified no further actions to reduce lateness.

The Authority has an overall target of 75% of surgeries started within five minutes of the scheduled start time. It found, in 2022–23, only 8% of neurosurgery cases started on time in Regina and 36% started on time in Saskatoon.

However, we found the Authority did not include further analysis such as the impact on its ability to meet the surgical targets or actions it planned to take to reduce late start times. It also did not have complete data about why the surgeries started late (e.g., 82% of the cases in Regina were missing the reason for the late start), which reduces the usefulness of the analysis.

Without assessments to determine the most efficient scheduling processes, patients may wait longer for surgery than necessary. Better analysis and consideration of scheduling alternatives and enhancements (e.g., flex days) may result in better use of operating room blocks, save the health sector money, and provide patients with necessary surgery.

7. We recommend the Ministry of Health work with the Saskatchewan Health Authority to assess enhancements for improving efficiency of scheduling patients for neurosurgery.

4.11 Sufficient Action Plans to Address Gaps Needed

The Ministry of Health collects a significant amount of data related to surgeries, including neurosurgeries. However, its reports lack analysis and action plans to address gaps identified.

We found the Ministry prepares a number of standard statistical reports from its surgical registry and provides these reports weekly or monthly to management at the Ministry and the Authority. The Ministry prepares over 10 different weekly reports and about 40 different monthly reports for management's review.

For example, these reports include information such as:

- Counts of surgeries performed, patients waiting, bookings, cancellations by month
- High-level summary graphs of total cases waiting, demand (elective bookings plus emergency surgeries), and removals (surgeries performed plus cancelled surgeries)



- Surgeries performed outlining cases exceeding/meeting/not meeting target timeframes

While we found management regularly used at least some of the reports, the Ministry indicated it did not know which reports management regularly reviewed. Producing numerous reports that management may not use is an inefficient use of resources.

We found the Ministry completed very little analysis related to the statistics reported to make review of the reports efficient and effective. For example, it had interprovincial comparisons illustrating Saskatchewan typically having higher hospital stays following neurosurgery than the Canadian average (see **Figure 11**), but did not analyze why this occurs and what plans it or the Authority have to address this concern.

Figure 11—Interprovincial Comparison of Average Hospital Stay (in Days) for Spine Surgery

Province ^A	Fiscal Year of Discharge						
	2016–17	2017–18	2018–19	2019–20	2020–21	2021–22	2022–23
Manitoba	13.0	10.3	10.4	8.5	10.3	11.8	12.2
Saskatchewan	8.1	9.2	7.5	8.9	10.6	9.6	10.9
Alberta	8.9	8.5	8.2	9.1	9.1	10.3	9.9
Nova Scotia	7.1	7.8	8.3	7.8	10.1	9.1	9.2
Ontario	7.2	7.7	8.1	8.3	8.5	8.9	9.1
New Brunswick	7.7	6.5	5.7	6.0	5.2	6.3	9.1
British Columbia	8.2	7.7	7.7	7.6	7.6	8.4	8.4
Newfoundland and Labrador	6.3	5.4	6.4	7.1	5.7	7.3	6.7
Prince Edward Island	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Average inpatient length of stay	8.0	7.9	7.9	8.2	8.4	9.0	9.3

Source: Adapted from information provided by the Ministry of Health (from Canadian Institute of Health Information).

^A Quebec does not report data to the Canadian Institute of Health Information the same way as other provinces and is not included. Prince Edward Island did not report any spine surgeries performed throughout this period.

In addition, we found the Ministry completed some ad hoc analysis on the number of spine surgeries performed as compared to targets, as well as to wait list information.

For example, in **Section 4.1**, we noted the Ministry prepared a neurosurgery target report for the first time, *Neurosurgery Report Against Targets*, comparing the targets set for March 31, 2023, against actual results. It also compared results to 2019–20 (pre-COVID-19 pandemic). The report shows the Authority met its target for spine surgery volume in Saskatoon, but did not in Regina. It also shows the number of spine surgeries completed in Regina were about 30% lower in 2022–23 than in 2019–20, while surgeries increased in Saskatoon by about 20%.

The report also included information on wait lists and wait time targets. For example, a 2022–23 target for the surgical program was to have no patients waiting longer than 24 months for surgery by March 31, 2023. Saskatoon met the target and had no patients waiting longer than 24 months, whereas Regina did not meet the target and had 90 patients waiting more than 24 months at March 31, 2023 (as compared to zero in 2019–20). The

report also shows the wait list in Regina has more than doubled in 2022–23 as compared to 2019–20, whereas in Saskatoon the wait list remained relatively unchanged (see **Figure 4**). We found the Ministry did not use this analysis to make clear recommendations for corrective actions to address shortfalls from targets, or request action plans from the Authority.

In May 2023, the Ministry also provided the Authority with a report analyzing neurosurgery services, which it compiled in response to patient concerns, highlighting that:

- Saskatchewan generally performs more spine surgeries per 100,000 population than most other provinces. For example, in 2021–22, Saskatchewan had a spine surgery rate of 130.1 as compared to 54.0 in Manitoba and 80.4 in Alberta.
- Saskatoon refers patients to the Spine Pathway more than twice as often as Regina, and only 10–25% of patients referred through the Spine Pathway required a subsequent surgical consult.
- Neurosurgery physicians prioritized 83% of spine procedures performed in Regina as urgent or emergent, compared to 68% in Saskatoon.
- Regina has higher volumes of after-hour surgeries (e.g., weekends), which costs the system nearly double the cost of surgeries completed within standard hours.
- The volume of spine surgeries requiring a second surgeon is increasing with a second surgeon costing the system about 25–30% more per surgery. A second surgeon is typically due to the complexity of the case, but the report notes some neurosurgeons consistently require a second surgeon regardless of complexity.
- Regina had 74% of the total provincial wait list of 1,033 spine cases at March 31, 2023.

While the report contained good information, we found it lacked analysis (e.g., causes of results) and action plans or recommendations to address the identified gaps.

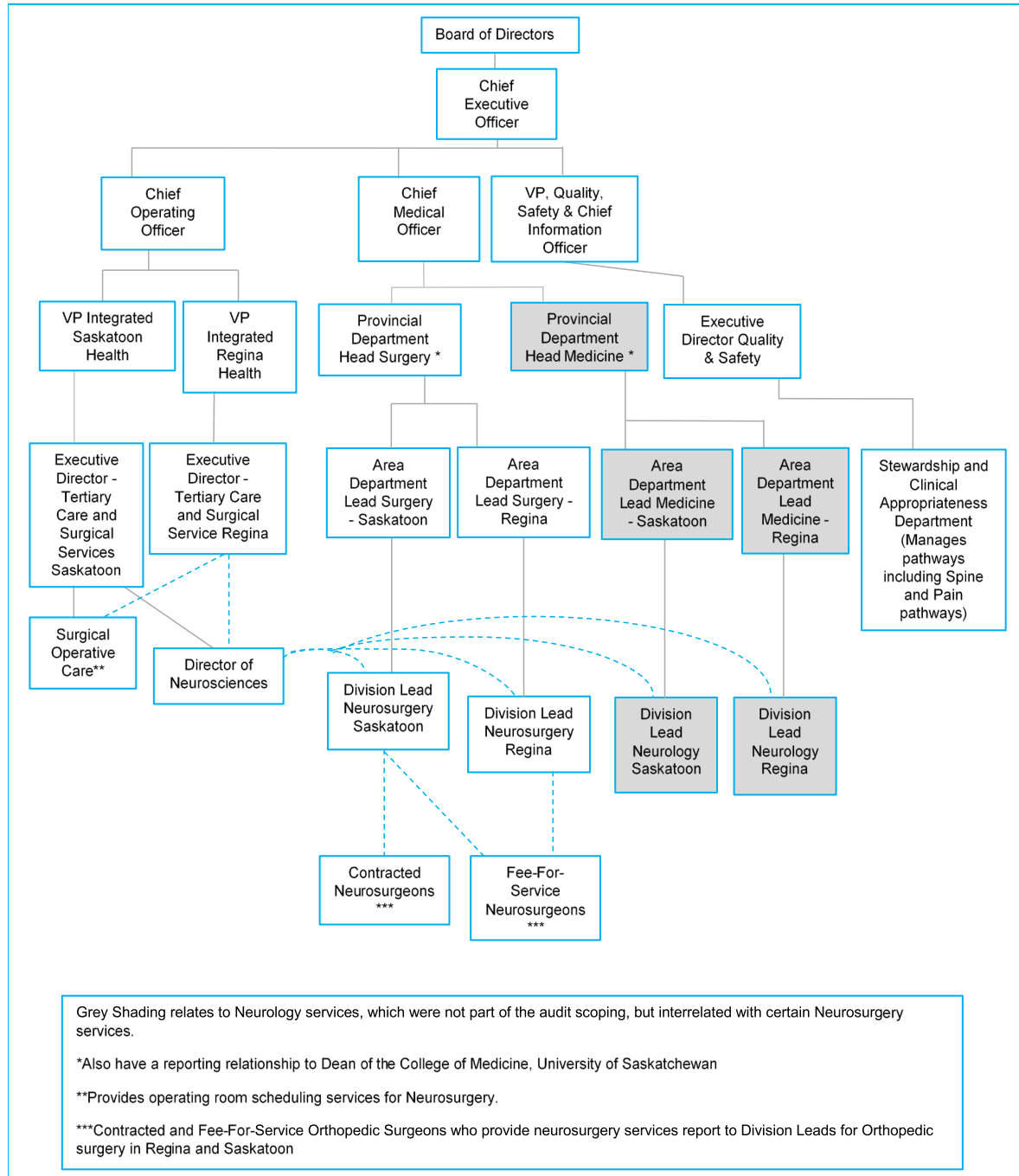
Action plans should clarify expectations of different organizations and people involved in providing timely access to neurosurgery services so they clearly understand assigned roles and responsibilities. Such plans outline what actions are expected to be provided, by who, and by when.

Senior management and partners need robust analysis reported about progress toward targets so they can revise action plans to achieve long-term goals and to reduce wait lists. Without appropriate actions to support timely access to neurosurgery services, patients' health may decline resulting in greater pain, suffering, and mental anguish, as well as the costs may increase to treat those patients.

8. We recommend the Ministry of Health formally establish annual action plans to address gaps in neurosurgery services.



5.0 SASKATCHEWAN HEALTH AUTHORITY POSITIONS SUPPORTING NEUROSURGERY SERVICES



Source: Derived from Saskatchewan Health Authority organizational charts.

6.0 SELECTED REFERENCES

Moir, M., & Barua, B. (2022). *Waiting Your Turn: Wait Times for Health Care in Canada, 2022 Report*. Vancouver: Fraser Institute.

Office of the Auditor General of Ontario (2021). *Value-for-Money Audit: Cardiac Disease and Stroke Treatment*. Toronto: Author.

Provincial Auditor of Saskatchewan. (2013). *2013 Report – Volume 1, Chapter 20, Use of Surgical Facilities at Regina Qu'Appelle Regional Health Authority*. Regina: Author.

Provincial Auditor of Saskatchewan. (2017). *2017 Report – Volume 1, Chapter 10, Regina Qu'Appelle Regional Health Authority – Efficient Use of MRI*. Regina: Author.

