

Chapter 19

Saskatchewan Health Authority—Analyzing Surgical Biopsies in Regina and Saskatoon Labs

1.0 MAIN POINTS

The Saskatchewan Health Authority is responsible for providing lab services that include analyzing surgical biopsies at its Regina and Saskatoon labs. Together these labs analyze over 390,000 specimens, or about 87,000 cases, per year.

By September 2022, the Authority improved its processes to analyze surgical biopsies efficiently at the Regina and Saskatoon labs. Between April and July 2022, Regina labs took an average of 12.9 days to provide a surgical biopsy diagnosis report; Saskatoon labs took an average of 9.1 days—an improvement from 18.7 days and 12.1 days, respectively, since 2017–18.

The Authority implemented four of the seven recommendations we made in 2018, but has more work to do.

Key improvements included assessing the impact of the labs receiving accreditation through different bodies, entering into an agreement with the Office of the Chief Coroner, implementing a lab IT system to track the location of surgical biopsy specimens throughout the key stages of the lab analysis process, and identifying factors inhibiting timely diagnosis reports (e.g., staff vacancies).

However, the Authority still needs to implement a consistent approach for prioritizing and issuing timely diagnosis reports for surgical biopsies, as the Regina labs do not follow good practice. The Regina labs continue to expect a five-day turnaround time for all biopsy specimens, whereas Saskatoon labs have priority specimens processed in 72 hours. Not being consistent across the province could lead to some patients and healthcare providers having to wait longer for their diagnosis than others, and delayed care for patients.

In addition, the Authority needs to educate healthcare providers on properly completing the new surgical biopsy requisition form, and have staff document all preventative maintenance completed on lab equipment.

2.0 INTRODUCTION

The Provincial Health Authority Act makes the Saskatchewan Health Authority responsible for planning, organizing, delivering, and evaluating provincial health services. As part of this mandate, the Authority is responsible for providing lab services, including surgical biopsies, in the province.

A surgical biopsy is a procedure that involves the surgical removal of tissue for laboratory analysis by pathologists.



The Authority has eight labs that analyze surgical biopsies for diagnostic purposes (e.g., potential cause of a disease). Three labs are in Saskatoon; two labs are in Regina; and one each in Prince Albert, North Battleford, and Moose Jaw.¹ The Authority's labs in Regina and Saskatoon have about 95 full-time equivalent staff.

The labs in Saskatoon and Regina are referral centres for surgical biopsies; in that, they receive biopsies collected from other lab locations (e.g., other labs in and outside the province) for analysis. As a result, the Saskatoon and Regina labs analyze the majority of surgical biopsies done in Saskatchewan. Our original audit in 2018 focused on the Saskatoon and Regina labs.

2.1 Focus of Follow-Up Audit

This chapter describes our first follow-up audit assessing the status of seven recommendations we made in our *2018 Report – Volume 2*, Chapter 23, about the Saskatchewan Health Authority's processes to analyze surgical biopsies efficiently in laboratories located in Regina and Saskatoon.² We concluded for the 12-month period ended July 15, 2018, the Authority had, other than the areas identified in our seven recommendations, effective processes.

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 audit, we interviewed key Authority staff responsible for lab services. We examined the Authority's lab IT systems and assessed relevant documentation such as procedures, key agreements, and requisition forms and guidance. We also reviewed the maintenance performed on a sample of lab equipment.

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 September 30, 2022, and the Authority's actions up to that date.

3.1 Lab Accreditation Assessed

We recommended the Saskatchewan Health Authority assess the impact of the surgical biopsy labs receiving accreditation through different bodies.

(2018 Report – Volume 2, p. 140, Recommendation 1; Public Accounts Committee agreement March 1, 2022)

Status—Implemented

¹ Saskatoon's labs are located at Royal University Hospital, St. Paul's Hospital, and Saskatoon City Hospital. Regina's labs are located at the Pasqua Hospital and the Regina General Hospital.

² *2018 Report – Volume 2, Chapter 23*, pp.135–149.

The Saskatchewan Health Authority assessed the impact of the surgical biopsy labs receiving accreditation through different bodies.

As part of its licence, each lab is required to choose a recognized accreditation body to accredit the lab. In 2018, and still in 2022, Regina and Saskatoon labs had different accreditation bodies with varied inspection standards—Regina used College of American Pathologists (CAP) and Saskatoon used Western Canada Diagnostic Accreditation Alliance (WCDAA). Accreditation shows the labs have appropriate and suitable standards and processes for analyzing surgical biopsies.

In 2020, the Authority completed a review of its accreditation processes. The review included:

- An evaluation of the quality of the two accreditation bodies (i.e., CAP, WCDAA)
- Comparison to other jurisdiction practices (i.e., Manitoba, Alberta)

Upon completion of its review, the Authority made a recommendation in October 2020 to its Laboratory Medicine Provincial Executive Committee.³ It recommended a phased-in approach for standardization in accreditation as shown in **Figure 1**.

Figure 1—Phased-In Approach for Standardization in Accreditation of Surgical Biopsy Labs

- CAP and WCDAA accreditation in both Saskatoon and Regina labs (i.e., adding CAP accreditation to Saskatoon labs and adding WCDAA accreditation to Regina labs)
- Transitioning other labs (e.g., Moose Jaw) to CAP accreditation from WCDAA, depending on type of testing performed (e.g., pathology, microbiology) and complexity of service

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

At August 2022, the Authority continues to work on implementing its transition plan. Management indicated it could take the Authority up to four years to achieve standardization in accreditation of surgical biopsy labs using the phased-in approach.

Having a standardized accreditation process for its surgical biopsy labs will promote consistency in lab operations and allow for more accurate comparisons to be drawn between the sites.

3.2 Agreement with Office of the Chief Coroner In Place

We recommended the Saskatchewan Health Authority enter into a written agreement with the Office of the Chief Coroner about surgical biopsy lab services it provides for forensic autopsies. (2018 Report – Volume 2, p. 141,

Recommendation 2; Public Accounts Committee agreement March 1, 2022)

Status—Implemented

The Saskatchewan Health Authority entered into a written agreement with the Office of the Chief Coroner about surgical biopsy lab services it provides for forensic autopsies.⁴

³ Members of the Laboratory Medicine Provincial Executive Committee consist of the Executive Director of Laboratory Medicine, Directors of Integrated Service Areas, Director of Quality, Safety and Logistics, and various physicians.

⁴ A forensic autopsy is an examination of the deceased's body to help determine the cause of death.



In December 2020, the Authority signed an agreement with the Office of the Chief Coroner outlining the services the Authority provides to the Coroner's Office. For example, the Authority agreed to provide services such as:

- Operating rooms to conduct post-mortem examinations
- Authority staff to assist the forensic pathologist (i.e., medical examiner) while conducting post-mortem examinations
- Surgical instruments and all personal protective equipment required to conduct post-mortem examinations
- All equipment (e.g., tissue processor, embedding centre, water bath, specimen stainer), service contracts, and reagents (e.g., compounds for chemical analysis) to process specimens
- Authority lab staff to process specimens

In October 2022, the parties amended the agreement to further clarify the services (i.e., space, equipment, personnel) provided by the Authority to the Coroner's Office and related costs covered by each party.

Having a written agreement helps ensure both the Authority and the Office of the Chief Coroner have clear expectations and understanding of each party's responsibilities and obligations.

3.3 Consistent Completion Targets and Approaches to Prioritizing Requests Not Yet Implemented

We recommended the Saskatchewan Health Authority implement a consistent approach for prioritizing and issuing timely diagnosis reports for surgical biopsies. (2018 Report – Volume 2, p. 144, Recommendation 3; Public Accounts Committee agreement March 1, 2022)

Status—Not Implemented

The Saskatchewan Health Authority has not implemented a consistent approach for prioritizing and issuing timely diagnosis reports for surgical biopsies.

The Authority continues to have differing target turnaround times for processing requests to analyze surgical biopsies and issue diagnosis reports at its Regina and Saskatoon labs.⁵ See **Section 3.5** for average turnaround times at each lab.

The Saskatoon labs continue to have varied target turnaround times for processing and issuing diagnosis reports based on an assessment of both priority and the complexity of the biopsy. As indicated in our initial audit, this approach aligns with good practice. For example, breast surgical biopsy specimens are classified as priority 1. The turnaround

⁵ Lab management calculates turnaround time as the time between the entry of a requisition into the lab information system and completion of a pathologist's diagnosis report.

time for processing the specimen is less than 48 hours and a diagnosis report is required within 24–72 hours.

The Regina labs continue to have a five-day turnaround time for all biopsy specimens, which does not align with good practice. It does not have documented prioritization classifications and associated target turnaround times, but management indicated it does classify certain specimens as urgent (e.g., lung, breast) and expects staff to process them in two to three days.

Management indicated the Authority has a designated working group tasked with reviewing the prioritization of surgical biopsies. It expects to have a consistent approach for prioritization and turnaround times for processing requests for analysis of surgical biopsies implemented in early 2023.

Having an inconsistent prioritization strategy for processing and analyzing specimens may result in some patients and healthcare providers having to wait longer for diagnosis results than others. In addition, inconsistent target turnaround times for processing and providing diagnosis results leads to inconsistent patient care across the province.

3.4 Lab IT System Used to Track Specimens

We recommended the Saskatchewan Health Authority assess the cost-benefit of electronically tracking the location of surgical biopsy specimens throughout the key stages of the lab analysis process. (2018 Report – Volume 2, p. 145, Recommendation 4; Public Accounts Committee agreement March 1, 2022)

Status—Implemented

The Saskatchewan Health Authority electronically tracks the location of surgical biopsy specimens throughout the key stages of the lab analysis process at its Saskatoon labs and plans to do so at its Regina labs beginning November 2022.

In December 2018, the Authority implemented a lab tracking IT system at its Saskatoon labs. The system assigns a barcode to each healthcare provider's requisition and the biopsy specimen received. Lab staff scan the barcode at each step in the analysis process (e.g., when the specimen is grossed [tissue prepared for a microscopic examination] and sectioned) to register the date and time in the system. With these system entries, staff can identify the location of a specimen at any given point in the process.

The system is also equipped to prevent a specimen mix-up. We found when the requisition for one patient and the specimen for another patient were scanned together, the system sounded an alarm (i.e., as the requisition and specimen did not match for the same patient) that prevented lab staff from continuing to process the items together.

In November 2020, the Authority approved acquiring a lab tracking IT system for its Regina labs. Management indicated it expects to implement the system in November 2022.

Having an adequate lab tracking system in place helps ensure specimens do not get misplaced or misidentified, which could result in untimely or inaccurate diagnosis results to healthcare providers, and in turn, their patients.



3.5 Inhibiting Factors of Timely Diagnosis Identified

We recommended the Saskatchewan Health Authority formally assess the surgical biopsy process at its surgical biopsy labs to identify factors inhibiting timely diagnosis. (2018 Report – Volume 2, p. 147, Recommendation 5; Public Accounts Committee agreement March 1, 2022)

Status—Implemented

The Saskatchewan Health Authority identifies factors inhibiting timely diagnosis.

The Authority tracks and monitors daily workload data for all Regina and Saskatoon labs. For example, it tracks the number of surgical biopsy cases at key stages in the analysis process such as the number of pending cases (i.e., not started), the number of cases grossed (i.e., tissue prepared for a microscopic examination), and the number of cases in pathologists' offices.

Management also discusses the workload statistics with staff at daily meetings. We found discussions include any issues with the daily workflow such as demand, capacity, and equipment. Management also discusses staffing issues at these daily meetings, including the amount of overtime staff work.

The Authority strives to have no more than 750 cases pending/in progress at any one time in each lab. At August 31, 2022, the Regina labs had 969 cases pending, and Saskatoon labs had 871.⁶

Where necessary, lab management takes action to address backlogs in the process (e.g., approve scheduled overtime). However, management indicated the delays are mainly due to lack of staff—with about 19 staff vacancies between the Regina and Saskatoon labs at September 2022 (compared to almost 10 vacancies in 2017–18). Staff in the Regina and Saskatoon labs work overtime to keep up with demand. For example, 48 staff in the labs worked 1,051 hours of overtime (an average of 20 hours per staff) in August 2022.

On a monthly basis, we found the Executive Director of Laboratory Medicine reviews the number of biopsy cases in progress and the turnaround times for all Regina and Saskatoon labs.⁷

We found turnaround times for surgical biopsies improved since our original audit. From April to July 2022, the average turnaround time for Regina labs was 12.9 days (2017–18 average: 18.7 days). For the same period at Saskatoon labs, the average turnaround time was 9.1 days (2017–18 average: 12.1 days). Management attributes the improvement to work the Authority completed since 2018 (e.g., reviewing and changing workflows in each lab, hiring additional pathologists).

Management indicated the Authority has two quality improvement consultants working with the Regina labs to help identify other areas for improvement in further reducing the turnaround time. It expects a report in December 2022.

⁶ At September 25, 2018, the Regina labs had 848 cases pending, and Saskatoon labs had 503.

⁷ Lab management calculates turnaround time as the time between the entry of a requisition into the lab information system and completion of a pathologist's diagnosis report.

By regularly monitoring workload data and turnaround times for pathology processes, lab management can take action to address delays in a timely manner that helps ensure healthcare practitioners can provide appropriate treatment to their patients.

3.6 Revised Requisition Form for Healthcare Providers Not Yet Implemented

We recommended the Saskatchewan Health Authority educate healthcare providers on properly completing surgical biopsy requisitions for Regina and Saskatoon labs. (2018 Report – Volume 2, p. 147, Recommendation 6; Public Accounts Committee agreement March 1, 2022)

Status—Partially Implemented

The Saskatchewan Health Authority revised its surgical biopsy requisition form and plans to educate healthcare providers on how to properly complete it in late 2022.

In our 2018 audit, the Regina labs received 1,700 incomplete requisitions from healthcare providers (Saskatoon did not track or report on incomplete requisitions). This may have resulted in delays to diagnosing a patient's biopsy.

In 2019, the Authority created a provincial general surgical requisition form, along with guidance for healthcare providers on how to complete the requisition. In September 2022, the Authority approved the new form and guidance.⁸

We found the new requisition form clearly sets out key sections healthcare providers must complete. For example, healthcare providers must indicate whether the request is routine or priority, document key clinical information and relevant medical/family history, as well as sample/tissue information (e.g., exact bodily site, organ of origin, collection procedure).

Management indicated the Authority expects to educate healthcare providers about the new requisition form and guidance in November 2022, with implementation in January 2023.

Having one provincial requisition form and better guidance and training will help healthcare providers to include consistent and priority information for all surgical biopsies. This may help to reduce the risk of incomplete requisitions and possible delays to diagnosing a patient's biopsy.

3.7 Preventative Maintenance Not Consistently Documented As Required

We recommended the Saskatchewan Health Authority require its labs to keep records of preventative maintenance completed by technical staff on its surgical biopsy equipment. (2018 Report – Volume 2, p. 149, Recommendation 7; Public Accounts Committee agreement March 1, 2022)

Status—Partially Implemented

⁸ Management indicated the delay in finalizing the form and guidance was due to the COVID-19 pandemic.



The Saskatchewan Health Authority requires labs to track the completion of preventative maintenance on surgical biopsy equipment; however, technical lab staff are not consistently documenting completion of required maintenance.

Each lab uses technical lab staff to maintain certain equipment such as embedding machines and specimen stainers. Staff are required to complete a maintenance log to show the maintenance completed. Maintenance can include daily, weekly, and monthly tasks. Each month, management reviews and signs off on the maintenance logs.

For the eight maintenance logs tested, we found five maintenance logs where staff did not document completion of all the required weekly and monthly maintenance tasks.

Management indicated they plan to review logs more frequently (i.e., weekly instead of monthly) until staff compliance improves.

Not performing all preventative maintenance on surgical biopsy equipment increases the risk key pieces of equipment are not maintained appropriately. Lab equipment must receive appropriate maintenance to ensure analysis is properly completed.