

Chapter 18

Saskatchewan Health Authority—Preventing and Controlling Hospital-Acquired Infections in the Regina General and Pasqua Hospitals

1.0 MAIN POINTS

The Saskatchewan Health Authority is responsible for keeping patients safe, including in hospitals. Infections acquired in hospitals can extend a patient's hospital stay and may lead to increased complications and treatment costs.

At February 2024, the Authority continued to work on addressing recommendations we first made in 2018 about preventing and controlling hospital-acquired infections at the Regina General and Pasqua Hospitals. The Authority implemented two recommendations and continues to work on the two other remaining recommendations.

The Authority trained over 120 hand-hygiene auditors to conduct direct observation hand-hygiene compliance audits in the Regina hospitals and implemented an IT system for tracking hand-hygiene audit results. Using trained observers to conduct hand-hygiene compliance audits decreases the risk of observation bias and having inaccurate compliance rates.

The Authority also uses oversight committees to review and discuss hospital-acquired infection trends. Monitoring infection trends helps identify when improvements are needed to infection prevention and control practices.

The Authority makes annual training on infection prevention and control practices mandatory for all hospital staff. However, unit managers are not monitoring or ensuring staff take the required training. Not monitoring whether staff take the annual refresher training increases the risk staff are not up-to-date on key infection prevention and control processes. For example, we found two units with low staff training completion rates in 2023 (38% and 64%).

The Authority intends to have unit managers monitor hand-hygiene compliance rates and develop action plans when compliance rates fall below 80%. However, managers have yet to begin developing such action plans at February 2024. Doing so will help unit managers actively reinforce the importance of good hand-hygiene practices, and take sufficient steps to improve hand-hygiene practices of staff in their unit.

2.0 INTRODUCTION

2.1 Background

The Provincial Health Authority Act makes the Saskatchewan Health Authority responsible for planning, organizing, delivering, and evaluating provincial health services. *The Provincial Health Authority Administration Regulations* specify that health services include disease and injury prevention services.



Regina General Hospital and Pasqua Hospital are two of the major hospitals providing healthcare services to people of southern Saskatchewan. For the year ending March 31, 2023, about 36,800 people were admitted to these two hospitals.¹

A hospital-acquired infection is an infection that a patient acquires while in a hospital that was not present or incubating on admission.² Examples of common hospital-acquired infections include infections caused by organisms such as *Clostridium difficile* (CDI), Methicillin-resistant staphylococcus aureus (MRSA), and Vancomycin-resistant enterococcus (VRE).^{3,4,5}

Such infections can extend a patient's hospital stay and may lead to additional complications and treatment costs. Having an effective infection prevention and control program can help to reduce the burden associated with hospital-acquired infections, lessen the length of hospital stay, and lower costs related to the treatment of infections.

2.2 Focus of Follow-Up Audit

This chapter describes our second follow-up audit of management's actions on the four recommendations we first made in 2018.

Our *2018 Report – Volume 2*, Chapter 24, concluded that, for the period 12-month period ended August 31, 2018, the Saskatchewan Health Authority had effective processes to prevent and control hospital-acquired infections in the Regina General Hospital and Pasqua Hospital except for the areas reflected in our four recommendations.⁶ By February 2022, we found the Authority had not fully implemented the recommendations.⁷

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. Authority management agreed with the criteria in the original audit.

To complete this follow-up audit, we interviewed key Authority staff responsible for infection prevention and control at Regina's two hospitals. We examined and assessed relevant documentation including hand-hygiene audit compliance reports, infection rate reports, Infection Prevention and Control Oversight Committee meeting minutes, as well as the Authority's online training modules.

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 16, 2024, and the Authority's actions up to that date.

¹ Information provided by the Saskatchewan Health Authority.

² World Health Organization, *Health care without avoidable infections, The critical role of infection prevention and control* (2016), p. 4.

³ *Clostridium difficile* is a bacterial spore that causes irritation in the bowel leading to severe cramps and diarrhea.

⁴ Methicillin-resistant staphylococcus aureus is a bacterium resistant to common antibiotics and affects the heart, lungs, bones, joints, and/or bloodstream.

⁵ Vancomycin-resistant enterococcus is a bacterium resistant to common antibiotics and causes severe urinary tract infections.

⁶ *2018 Report – Volume 2, Chapter 24*, pp. 151–167.

⁷ *2022 Report – Volume 1, Chapter 21*, pp. 211–217.

3.1 Completion of Mandatory Training Not Monitored

We recommended the Saskatchewan Health Authority give hospital staff, responsible for patient care, formal training updates on infection prevention and control practices at least annually. (2018 Report – Volume 2, p. 158, Recommendation 1; Public Accounts Committee agreement March 1, 2022)

Status—Partially Implemented

The Saskatchewan Health Authority makes annual training on infection prevention and control practices mandatory for all hospital staff. However, unit managers are not monitoring or ensuring staff take the required training.

In June 2022, the Authority began requiring all staff to complete annual infection prevention and control training. It makes the training available through an online training platform, which includes a learning module on infection prevention and control. The module includes an overview of:

- Routine practices (e.g., point-of-care risk assessments, cleaning techniques)
- Chain of infection (explaining how infection spreads)
- Hand hygiene (outlines when to perform hand hygiene, such as after risk of exposure to bodily fluid)
- Personal protective equipment (information on how to put on and take off)

We also found the module includes training videos (e.g., how to conduct proper hand hygiene) and links to standard procedures for proper donning and removal of personal protective equipment.

Authority management indicated it is unit managers' responsibility to track whether their staff complete the annual training as required.

We tested four hospital units and found unit managers are not monitoring attendance. For 2023, two units were unable to provide evidence of staff training. The other two units' staff had low training completion rates (38% and 64%).⁸

Monitoring whether staff take annual refresher training decreases the risk staff are not up-to-date on key infection prevention and control processes. Annual refresher training provides an opportunity to reinforce the importance of key practices to prevent and control hospital-acquired infections, helping to reduce infection transmission and protect the health of patients and staff.

⁸ At time of testing, 2024 training was not yet required to be completed.



3.2 Trained Observers Conducting Hand-Hygiene Compliance Audits

We recommended the Saskatchewan Health Authority use external observers to conduct regular direct observation hand-hygiene compliance audits in its hospitals. (2018 Report – Volume 2, p. 161, Recommendation 2; Public Accounts Committee agreement March 1, 2022)

Status—Implemented

The Saskatchewan Health Authority uses trained hand-hygiene auditors to conduct monthly direct observation hand-hygiene compliance audits in its Regina hospitals.

Upon signing a service agreement in November 2022 for an IT system for hand-hygiene audits, the Authority began a phased-in approach for units and facilities to use the new system. For example, in December 2022, the Authority requested all Managers and Directors of Care in all acute and long-term care units to identify a minimum of two individuals to become hand-hygiene auditors for their respective unit.

At November 2023, the Authority had over 120 individuals trained as hand-hygiene auditors at its Regina General Hospital and Pasqua Hospital. At February 2024, we found the Authority continues to send reminders to all Managers and Directors of the requirement to identify and train hand-hygiene auditors.

To become hand-hygiene auditors, individuals complete the online hand-hygiene auditor training modules. As shown in **Figure 1**, this training consists of nine modules.

Figure 1—Hand-Hygiene Auditor Training Modules

- Hand-hygiene review basics (e.g., importance of hand-hygiene audits, who performs audits)
- The Four Moments for Hand Hygiene (i.e., before contact with patient, before clean/aseptic procedure, after contact with patient, after body fluid exposure)
- Further considerations for hand-hygiene reviews (e.g., patient and healthcare environments to consider while performing hand-hygiene reviews)
- How to perform hand-hygiene reviews (e.g., how to record observations using the direct observation method)
- Performing an audit using the hand-hygiene IT system
- Logging into the hand-hygiene IT system
- Performing an audit using paper-based forms
- Connecting the pieces (provides various scenarios to identify and record the Four Moments of Hand Hygiene)
- Generating reports in the hand-hygiene IT system

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

While the Authority does not use external observers to conduct hand-hygiene compliance audits, we found using trained observers is consistent with good practice.⁹

For the four hospital units tested, we found trained hand-hygiene auditors conducted monthly hand-hygiene audits as required.

Using trained observers to conduct hand-hygiene compliance audits decreases the risk of observation bias and having inaccurate compliance rates.

⁹ IPAC Canada, *IPAC Canada Practice Recommendations for Hand Hygiene in Health Care Settings*, (2022), p. 5.

3.3 Corrective Action Plans for Lower Hand-Hygiene Compliance Rates Expected but Not Yet Used

We recommended the Saskatchewan Health Authority actively monitor actions taken by Regina hospitals' patient-care units with lower than acceptable hand-hygiene compliance rates. (2018 Report – Volume 2, p. 163, Recommendation 3; Public Accounts Committee agreement March 1, 2022)

Status—Partially Implemented

The Saskatchewan Health Authority has established required action plan templates for units with lower than acceptable hand-hygiene compliance rates. However, it does not yet require unit managers to complete these action plans when hand-hygiene compliance rates fall below specific thresholds.

In February 2024, the Infection Prevention and Control Oversight Committee approved a hand-hygiene corrective action plan, which includes thresholds for monitoring hand-hygiene compliance, as well as standardized action items.¹⁰ It considers a compliance rate below 80% as a lower than acceptable hand-hygiene compliance rate.

For example, if a unit's compliance rate is between 70–79%, the Authority requires unit managers to complete one action item (e.g., have staff review the hand-hygiene policy). When the compliance rate is 69% or less for one quarter, unit managers must complete two action items (e.g., unit manager to conduct hand-hygiene observations for four weeks, staff to review hand-hygiene scenarios, staff to identify factors contributing to non-compliance). When the compliance rate is 69% or less for two consecutive quarters, unit managers must complete three action items.

The Committee also expects to update its hand-hygiene policy in 2024–25 to require the use of the corrective action plan.

During our testing of four hospital units for October 2023, we found the following:

- One unit was not able to provide the compliance rate
- Two units had hand-hygiene compliance rates of 93% or more
- The compliance rate at one unit was only 68% and had no documented action plan

Unit managers indicated they informally monitor hand-hygiene compliance rates. Each manager noted staff (e.g., clinical nurse educators) post results of their units' hand-hygiene compliance audits on their visibility walls and discuss results in staff huddles (i.e., meetings).

¹⁰ The purpose of the Infection Prevention and Control (IPAC) Oversight Committee is to review and support evidence-based recommendations that can be consistently applied to IPAC activities in the Authority. The Committee has a minimum of 10 members, including at least one senior leadership team member from various portfolios (e.g., Public Health or Medical Health Officer, Clinical Standards, Quality and Safety, Provincial Acute Care, Provincial Primary Health Care). The Committee meets every two months.



Having corrective action plans will help unit managers actively reinforce the importance of good hand-hygiene practices, and take sufficient steps to improve hand-hygiene activities of staff in their unit. In turn, this will help to reduce patient and staff risk of hospital-acquired infections.

3.4 Hospital-Acquired Infection Trends Monitored

We recommended the Saskatchewan Health Authority regularly give senior management a written analysis of emerging risks and causes based on trends of hospital-acquired infections. (2018 Report – Volume 2, p. 166, Recommendation 4; Public Accounts Committee agreement March 1, 2022)

Status—Intent of Recommendation Met

The Saskatchewan Health Authority regularly reports to senior management, through the Infection Prevention and Control Oversight Committee, trends of hospital-acquired infections. The Committee discusses trends at each of its meetings.

The Authority's Infection Prevention and Control Oversight Committee's purpose is to review and support evidence-based recommendations that can be consistently applied to infection prevention and control activities. It includes senior leadership team members from various portfolios (e.g., Provincial Acute Care, Provincial Primary Health Care, Quality and Safety). The Committee meets every two months.

We reviewed the 2022–23 and 2023–24 quarterly reports for hospital-acquired infections (i.e., MRSA, VRE, CDI) and found the reports do not include trend analysis or potential root causes for the changes. However, we found the Committee has a standing agenda item to review the reports at each of the meetings. We discussed the Committee's process with the Committee's Chair who noted they discuss the reports in detail, along with any significant changes in trends, at each meeting.

As shown in **Figure 2**, the number of infections for each type of hospital-acquired infection decreased since 2017–18.

Figure 2—Number of Infections by Organism Acquired at Regina General and Pasqua Hospitals

Organism	2017–18	2021–22	2022–23	April 1, 2023 to January 31, 2024
Regina General Hospital				
Vancomycin-resistant enterococcus (VRE)	94	10	19	14
Methicillin-resistant staphylococcus aureus (MRSA)	52	12	10	12
Clostridium difficile (CDI)	41	19	54	30
Pasqua Hospital				
Vancomycin-resistant enterococcus (VRE)	112	51	52	35
Methicillin-resistant staphylococcus aureus (MRSA)	26	7	7	12
Clostridium difficile (CDI)	19	21	39	23
Total	344	120	181	126

Source: Adapted from information provided by the Saskatchewan Health Authority. Years outlined align with timing of our initial and follow-up audits.

We found the Authority is also implementing 11 infection prevention and control committees for various areas of the province. In January 2024, the Regina committee met for the first time. We noted the Committee also has a standing agenda item to review hospital-acquired infection reports at its meetings.

Having oversight committees that are responsible for reviewing and discussing hospital-acquired infection trends can help the Authority appropriately identify contributing factors to concerning rates and opportunities to improve infection prevention and control practices that help protect staff and patients from infections acquired in its facilities.

