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Preventing infections.
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2023/2024 Alberta Health Services
Infection Prevention and Control
Annual Report to Alberta Health

Alberta Health Services
Infection Prevention & Control

The 2023/2024 Alberta Health Services Infection Prevention and Control Annual Report to Alberta Health is prepared and submitted in accordance with the requirements set out in the Alberta Health *Standards for Infection Prevention and Control – Accountability and Reporting (2011).*

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Executive Summary

The *Alberta Health IPC Strategy* outlines five strategic directions which guide the AHS IPC program. The Alberta Health *Standards for Infection Prevention and Control – Accountability and Reporting (2011)* requires the Alberta Health Services (AHS) Infection Prevention and Control (IPC) program and its partners to submit an annual report on its outcomes and activities. The term "AHS IPC" used in this report includes Covenant Health IPC unless specifically stated otherwise.

The report sections align with the AHS IPC program Operational Plan priorities such as AHS IPC coverage and support in clinical settings and the five strategic directions of Accountability and Monitoring, Province Wide Surveillance, Human Resource Capacity, Physical Environment and Infrastructure, Public Awareness and Education; as well as Connect Care, Hand Hygiene and Personal Protective Equipment.

This report aims to link infection prevention and control to the four AHS key priorities: improving emergency medical services response times, decreasing emergency department wait times, reducing wait times for surgeries and improving patient flow throughout healthcare and to explain how AHS IPC is essential to meeting these priorities. AHS IPC contributes directly to improving patient flow and local decision-making by collaborating with local partners such as site management and programs on patient placement when overcapacity management protocols and surge spaces are required. Examples include bed management, grouping patients with the same infection together and placing patients on additional precautions.

AHS IPC partners help integrate AHS IPC principles into practice such as incorporating *routine practices* including *hand hygiene*, *IPC Risk Assessment*, *personal protective equipment* and cleaning and disinfection into everyone's daily work. AHS IPC is always looking for ways to engage with patients and families to improve the patient experience. The report sections along with quotes from AHS Patient and Family Advisors and sidebar stories showcase IPC work. This highlights the commitment of AHS IPC to prevent and control healthcare-associated infections across care settings including acute care, addiction and mental health, ambulatory care, cancer care, community care, continuing care, correctional care and emergency medical care.

IPC Practice in Clinical Settings

Most AHS IPC staff and physicians are based in clinical settings to support safe patient care.

The AHS IPC program promotes practices that prevent and control the spread of infections such as routine practices and additional precautions, screening for infectious diseases and helping to prevent and limit outbreaks when they occur.

AHS IPC acute care priorities include outbreak management and prevention and control of viral respiratory infection in acute care. Changes made in 2023/2024 supported a more sustainable approach to managing COVID-19. This included aligning public health recommendations across all acute care settings and incorporating COVID-19 learnings into processes for viral respiratory infections.

AHS IPC supports continuing care through: in-person and virtual visits, guidance in outbreaks, and consultations with review of infection prevention and control practices to inform improvements.

Connect Care

AHS successfully implemented Launch 6 and Launch 7. AHS IPC continued with optimizing of Connect Care functionality with improvements made to communicable disease screening, patient management and surveillance.

A standardized patient's electronic medical record supports consistent screening for antibiotic-resistant organisms and patient placement to prevent exposure to infectious diseases and potential spread in facilities.

Electronic tools allow for easier updates and provide a means to monitor the use of the tools over time – a significant advantage over paper-based tools..

Accountability and Monitoring

In preparation for Cycle 5 of medical device reprocessing in AHS, the *Medical Device Reprocessing of Reusable Critical and Semi-critical Medical Devices: Review Criteria and Supporting Standards* is being updated to align with all applicable standards and Accreditation Canada recommendations.

AHS IPC and Alberta Health worked jointly to reevaluate the risk framework for the medical device reprocessing review criteria and added a new risk category: critical. Critical and high-risk deficiencies require immediate intervention as they pose an immediate and significant threat to patient safety or the overall quality of care.

In spring 2023/2024, Accreditation Canada surveyors assessed AHS Addiction Treatment Centres and Programs; Community-based Mental Health; Home Care and Hospice, Palliative, End-of-life Services; Inpatient Mental Health; Public Health and Rehabilitation Programs for compliance with the *Qmentum Global Standards for Infection Prevention and Control.* AHS IPC supports Accreditation Canada surveys through the review and follow-up process. AHS was awarded accredited status until the end of 2027. All programs from the spring survey had a compliance of 87.0 per cent or higher for the infection prevention and control standard. Most sites surveyed met the required organizational practices for the infection prevention and control standard. The three sites where hand hygiene education and compliance were rated unmet have implemented changes to meet the requirements.

In fall 2023/2024, Accreditation Canada surveyors also assessed *Qmentum Global Standards for Reprocessing of Reusable Medical Devices*. Both the *Qmentum Global Standards for Infection Prevention and Control* and *Reprocessing of Reusable Medical Devices* achieved 100.0 per cent compliance. The AHS IPC program is addressing key opportunities identified during the process.

Province Wide Surveillance

AHS IPC performed provincial surveillance on various healthcare-associated infections and antimicrobial-resistant organisms.

In 2023/2024, AHS IPC and the Critical Care Strategic Clinical Network developed an evidenced-informed bundle – standardized steps to take every time a central line is inserted – to decrease the risk of infection. Implementation of the bundle is planned for 2024/2025 and includes staff education about the steps and ongoing monitoring of infection rates.

In 2023/2024, the Infection Prevention and Control Surveillance Committee was restructured to the Surveillance, Evaluation, Quality Improvement and Research Committee to combine the learnings from activities and findings into IPC-related challenges; advise the program on next steps in IPC-related research priorities; and monitor IPC interventions through trends in high quality IPC surveillance data.

This change provides strategic direction, oversight and governance for an IPC research framework.

Human Resource Capacity

In 2022/2023, IPC launched a new suite of IPC Risk Assessment resources including infographics, a practice support tool and an eLearning module *Infection Prevention and Control – Risk Assessment – Module One*. Module One enables staff to explore what is involved in an IPC Risk Assessment and why it is important.

In 2023/2024, IPC launched *Infection Prevention and Control – Risk Assessment – Module Two*. Module Two helps staff apply what was learned.

In 2023/2024, there were 55,048 successful completions of these eLearning modules, which represents a 35.0 per cent increase compared to 2021/2022.

To increase uptake, learning bundles were developed with a package of short, focused resources more manageable for staff to complete and provide just-in-time learning when needed.

Education resources have been tailored to test the learner's knowledge of content through the use of scenarios, knowledge checks and quizzes.

Resources are created and updated with diversity, equity and inclusion in mind so healthcare providers and patients are more accurately represented and to increase learner engagement. All new and existing eLearning resources have evaluation plans to continuously make meaningful and intentional updates.

Physical Environment and Infrastructure

AHS IPC worked with local clinical operations and program partners to select areas not traditionally used for inpatient care to be repurposed and expanded for the safe delivery of healthcare services.

AHS IPC continues to be involved in all stages of construction for both new facilities and renovations to existing facilities. For example, AHS IPC supported upgrades to medical device reprocessing areas through capital submissions and Alberta Surgical Initiative submissions.

AHS IPC collaborated on the development of design guidelines as part of the *Continuing Care Capital Program*.

Public Awareness and Education

Currently, there are 14 AHS IPC-authored patient care handouts on *MyHealth.Alberta.ca*. AHS released its *Animal Interactions, Personal Pet Visitation, and Qualified Assistance Dogs Policy (2024)*.

AHS IPC updated the best practice recommendations resource on *Animals in Healthcare* facilities and developed an IPC patient care handout on *Pet visits at healthcare facilities*.

In 2023/2024, the *Methicillin-resistant Staphylococcus aureus (MRSA): What it is and how to stop the spread* patient care handout was the most visited handout with an average of 3,249 visits per fiscal quarter.

Hand Hygiene

AHS strives to achieve its target hand hygiene compliance of 90.0 per cent.

AHS hand hygiene compliance was 87.8 per cent and Covenant Health hand hygiene compliance was 94.0 per cent.

Since 2020/2021, the number of hand hygiene observations collected remained relatively stable. However, AHS IPC focused on increasing the number of hand hygiene observations collected. In 2023/2024, a total of 375,700 hand hygiene observations were collected – a 76.6 per cent increase compared to the year prior.

Personal Protective Equipment

Since the AHS *Provincial PPE Safety Coach Program* launched in late 2020/2021, the number of new staff trained as coaches has steadily decreased.

As COVID-19 changed from pandemic to endemic status and with the availability of vaccination for influenza and COVID-19, there has been less urgency for personal protective equipment safety coaches on inpatient units. Several strategies are being considered.

In 2023/2024, the provincial program is now recognized by professional associations as qualifying as practice hours or evidence of continuing competency. The College of Registered Nurses of Alberta is the first to recognize the program, with others being explored. As the next step, training for personal protective equipment safety coaches will be streamlined.

Senior Medical Leadership Message

A close collaboration with AHS Population, Public and Indigenous Health is found within the integrated and comprehensive provincial AHS IPC program that provides service across the continuum of care in Alberta. Physician leadership is provided by Dr. Laura McDougall, Senior Medical Officer of Health/Senior Medical Director, Provincial Population and Public Health, and Dr. Oscar Larios, Senior Medical Director, IPC.

Healthcare organizations worldwide have been recently overwhelmed with prolonged emergency services wait times, surgical backlogs and patient flow challenges, with AHS and Covenant Health being no different. AHS IPC contributes directly to improving patient flow and local decision-making, as is outlined in this report. Our aim is to provide the best possible care without sacrificing safety and quality for the patient or the system.

AHS IPC is dedicated to mitigating the risk of harm from healthcare-associated infections when patients are treated throughout the spectrum of care. This encompasses primary care, acute care, continuing care and addictions and mental health by promoting IPC best practices and providing the highest quality and safety standards to Albertans. AHS Population and Public and Health is also vital to a sustainable healthcare system by minimizing the public's need for the latter three clinical care areas through promotion of scientific and peer-reviewed, evidence-based public health disease prevention and education.

Emerging infections have not disappeared since COVID-19. In fact, they have increased once again as worldwide travel volumes have returned. In 2023/2024, preparations for several emerging infections such as viral hemorrhagic fevers, including Ebola occurred throughout AHS. More recently, preparations included vaccine preventable diseases that resurged worldwide due to poor immunization rates, including measles and pertussis – infections that were rare or had not occurred for many years in Canada, until recently. Preparing for these communicable diseases is vital. In the event a case presents for care, it is imperative they receive the care needed and disease transmission does not occur to other patients, staff and visitors. This occurs together with Workplace Health and Safety, Public Health, AHS IPC and other partners as necessary, to confirm policies and procedures are in place should a probable case present for care.

While this full report outlines the details, we will highlight some of the magnificent achievements our teams have made over the year.

Information Technology

An important milestone was reached in 2023/2024 – Connect Care Launches 6 and 7 were successfully implemented – marking us two steps closer to providing paperless, streamlined and seamless care to our patients, regardless of their location in Alberta. AHS IPC continues to help evolve the electronic medical record system to adapt to the needs of the organization through communicable disease and antibiotic-resistant organism screening, patient management and surveillance activities.

An example of streamlined patient management occurred in 2023/2024 when Canada, including Alberta, was the recipient of refugees from the Dadaab Refugee Complex in Dadaab, Kenya where poliovirus was circulating in the camp. The Public Health Agency of Canada recommended screening for virus carriage on refugees arriving from the region and appropriate precautions were required for the care of these individuals should they present to the healthcare system until deemed free of virus carriage. Connect Care allowed an alert to be placed in these individuals' charts, so precautions could be taken at any AHS or Covenant Health site at presentation for care. This preemptive alert would not have been possible at the point of patient care entry prior to Connect Care.

Dr. Jenine Leal, Research Scientist, AHS IPC will be using Society for Healthcare Epidemiology of America Epi Project funding received to improve patient safety through enhanced understanding of current practices of antimicrobial resistant organism screening in healthcare facilities, by evaluating the electronic screening tool in Connect Care.

Human Resource and Health System Capacity

While the principles and practices of IPC seem basic at their core, education and training are essential to confirm all staff are familiar and follow these key preventative measures to minimize healthcare-associated infections, which are known to prolong length of stays, to improve patient flow. AHS IPC uses multiple modes to provide this education including face-to-face interactions, online access of resources through the external and internal AHS IPC websites, video conferencing, social media and simulations. A new AHS IPC eLearning module was introduced in 2023/2024, bringing the total to nine modules MyLearningLink. Learning bundles are packaged in short and focused formats, manageable for staff to complete.

As climate change leads to more natural disasters resulting in the evacuation of medical services, commissioning of temporary healthcare delivery areas and structures and recommissioning of healthcare facilities impacted by disasters is also increasing. AHS IPC has tools available to aid in doing this safely on the *AHS IPC Emerging Issues webpage*. These were essential in the Edson Forest Area wildfires in 2023 and will continue to provide guidance in the coming years.

Infection control professionals continue to be supported for professional development through various mechanisms to advance competency and enhance staff satisfaction. This enables our staff to build and maintain their competence as new evidence emerges.

Our physicians remain nationally and internationally sought-after and recognized for their work and contributions to the IPC community.

We continue to have members in renowned organizations such as the World Health Organization, Public Health Agency of Canada and the Canadian Nosocomial Infection Surveillance Program.

Physical Environment and Infrastructure

Healthcare system capacity continues to be challenged. AHS IPC has numerous resources to help make patient placement decisions, to support bed pressures and overcapacity needs. These resources are invaluable to the organization in peak usage times, particularly during respiratory virus season.

Work is ongoing with the 22 AHS and Covenant Health sites that received funding for medical device reprocessing area upgrades. Funding was announced for Alberta Children's Hospital, Drumheller Health Centre, Grey Nuns Community Hospital and Misericordia Community Hospital in 2023/2024. Thus far, four of the 22 projects are complete and the rest are in progress. Additional medical device reprocessing upgrades were also requested as part of the Alberta Surgical Initiative submissions.

AHS IPC is involved in all stages of construction for both new facilities and renovations to existing facilities in all zones and in both rural and urban locations.

In 2023/2024, AHS IPC collaborated on the development of design guidelines as part of the *Continuing Care Capital Program* and provided input into the *Continuing Care Capital Program – Small Care Home Design Requirements Checklist 2023-2024*.

The need for community care and continuing care is expected to rise significantly over the next 10 years as Albertans are living longer with increasingly complex needs.

Surveillance and Reporting

There continues to be 10 provincial AHS IPC surveillance protocols related to outcome measures. Both *C. difficile* and methicillin-resistant *S. aureus* colonization and infections increased throughout 2023/2024. This will be monitored closely to determine if this was a temporary increase due to overcapacity resulting in suboptimal patient separation practices.

There was a continued rise in the rate of colonization and infections with carbapenemase-producing organisms in 2023/2024. This overall trend worldwide is likely due to poor antimicrobial stewardship practices. Like *C. difficile* and methicillin-resistant *S. aureus*, this rise may also be partly due to overcapacity and suboptimal patient separation practices, as all these organisms are transmitted through contact routes.

While the rate of central line-associated bloodstream infections continued to rise in the tertiary intensive care units over the past several years, in 2023/2024, AHS IPC and the Critical Care Strategic Clinical Network developed an evidenced-informed bundle – standardized steps to take every time a central line is inserted – to decrease the risk of infection, with implementation planned for 2024/2025.

Research and Innovation

In 2023/2024, the IPC Surveillance Committee was restructured to the Surveillance, Evaluation, Quality Improvement and Research Committee to combine the learnings from activities and findings into IPC-related challenges, advise the program on next steps in IPC-related research priorities and monitor IPC interventions through trends in high quality IPC surveillance. This change provides strategic direction, oversight and governance for an IPC Research Framework. The Provincial Infection Prevention and Control Committee works in collaboration with the Surveillance, Evaluation, Quality Improvement and Research Committee.

In 2023/2024, AHS IPC established a Research Advisory Committee to address the top 10 research questions identified in 2022/2023 by AHS IPC staff and physicians, healthcare providers, researchers and patients from Alberta in a coordinated manner with input and feedback nationally. The committee consists of staff from all zones in AHS IPC and Covenant Health, IPC Physicians, Workplace Health and Safety, Antimicrobial Stewardship, Microbiology and patient and family advisors. Students from the University of Calgary are assisting with literature reviews on the research priorities.

Looking to the Future

As we look to 2024/2025, we recognize that there are expected organizational changes and others that remain unknown. Regardless of what the future holds, AHS IPC stands well-situated to be a cornerstone for all of healthcare, as IPC practices are fundamental to safe, high quality patient care.

Proper IPC practices prevent healthcare-associated infections and keep more beds open to aid in improving patient flow and reducing emergency department and surgical wait times.

We work as a collaborative team with all our partners. These strong relationships foster quality improvement and better care for all Albertans. We look forward to the coming year with anticipation for a cohesive healthcare team to allow seamless flow of patients between different levels of care.

AHS IPC Program

The AHS IPC program provides infection prevention and control services across the AHS continuum of care in collaboration with other organizations and programs providing health services in Alberta. The structure and services provided by AHS IPC are mandated by Alberta Health provincial standards and legislation. Alberta Health established an *IPC Strategy* (2008, updated in 2015) and released a series of standards (2008, updated in 2011/2019) requiring AHS to establish and maintain:

An accountability framework including relevant AHS IPC committees and the appointment of an AHS IPC Executive

Defined reporting relationships including, but are not limited to, communication with the AHS IPC Executive, the Senior Medical Officer of Health and Medical Officers of Health

Organizational policies and practices aligning with the *Reusable & Single-use Medical Devices Standards: Standards for the reprocessing of reusable medical devices and for the use of single-use medical devices in all health care facilities and settings (2019)*.

The Accreditation Canada IPC Standard provides a framework to plan, implement and evaluate an effective IPC program based on evidence and best practices in the field. The AHS IPC program demonstrates conformity to required organizational practices, high and normal priority criteria through attestation and on-site reviews.

This report aligns with the Alberta Health IPC Strategy and AHS IPC program priorities:

- IPC Practice in Clinical Settings
- Connect Care
- Accountability and Monitoring
- Province Wide Surveillance
- Human Resource Capacity
- Physical Environment and Infrastructure
- Public Awareness and Education
- Hand Hygiene
- Personal Protective Equipment.

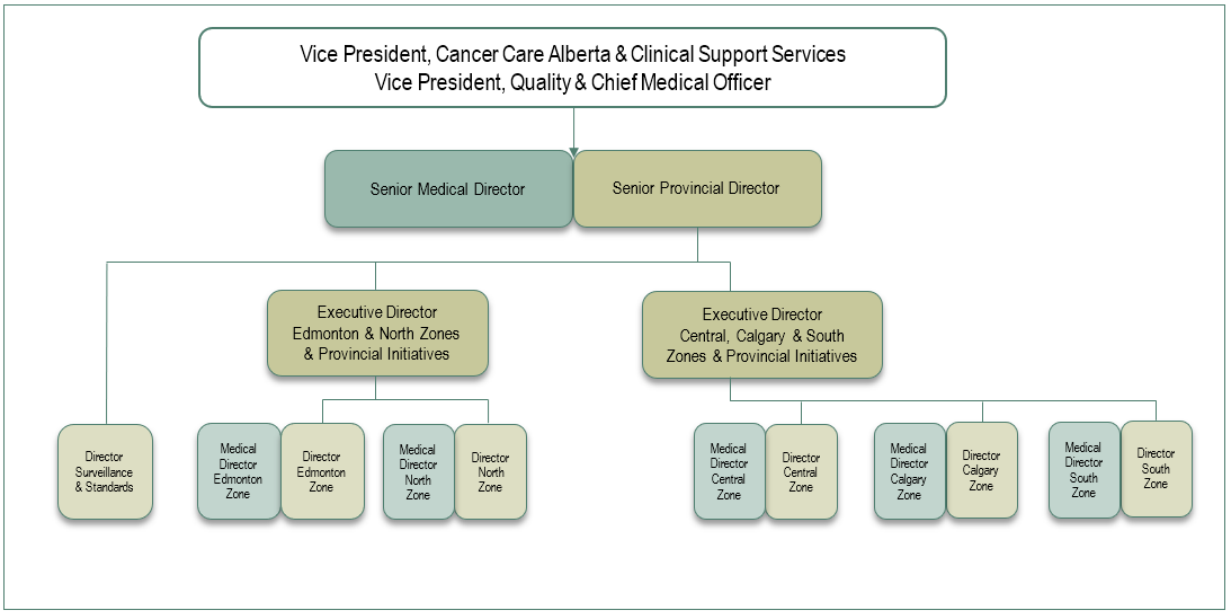
Hyperlinks are included for resources posted on the *Government of Alberta* or *AHS* websites. Quotes from AHS Patient and Family Advisors and sidebar stories are incorporated throughout the report to illustrate/demonstrate the impact of the program.

IPC Practice in Clinical Settings

AHS IPC staff and physicians

There are 192.45 full-time equivalent positions assigned to AHS IPC. There are five zone teams and one provincial team. In mid-2023/2024, the AHS IPC organizational structure was updated to better reflect the needs of the provincial program, including elevated demand for services and expanded service delivery requirements (refer to Figure 1). The updated structure improves operational efficiency, communication and response capabilities across the healthcare system in acute care, continuing care, addiction and mental health and primary care settings while maintaining AHS standards for patient safety. There are 19.0 full-time equivalent positions assigned to Covenant Health IPC.

Figure 1: AHS IPC organizational structure



In both AHS IPC and Covenant Health IPC, most staff are frontline infection control professionals. Other staff include epidemiologists, analysts, senior consultants, project managers, coordinators and administrative support. The senior program director, executive directors and directors as well as the senior medical director and physicians with training in infectious diseases or medical microbiology in the Calgary and Edmonton Zones and the Medical Officers of Health in the South, Central and North Zones provide leadership to AHS IPC. There are 15 physicians at AHS and two physicians at Covenant Health with IPC responsibilities. AHS IPC continues to provide daily after-hours on-call service.

AHS IPC contributes to patient safety across clinical care settings through their presence and support of AHS IPC practices. The team promotes practices that prevent and control the spread of infections such as routine practices and additional precautions, screening for infectious diseases and helping with outbreaks. This section highlights examples of work within the 2023/2024 fiscal year including outbreak management; prevention and control of viral respiratory infection in acute care; and support in AHS continuing care settings.

Infection control professionals strive to be responsive to the patient:

> *"My husband contracted a Staph infection during the pandemic. At first, we had to drive over an hour to an emergency room for [intravenous] antibiotics. Staff soon realized this was hard for us and since he needed the [intravenous] antibiotics for at least six weeks, he was referred to a hospital clinic for a central line insertion. Arrangements were made for the medications to come to us. Although the referral to Home Care did not go smoothly, once in place, the Home Care nurse was very good and connected us with the [intravenous] clinic nurse and infection control nurse [professional] to support us by phone if needed. They were very responsive whenever we called."*
> – AHS Patient and Family Advisor

Outbreak management

AHS Public Health resources provide current, evidence-informed guidelines for outbreak control and management of gastrointestinal illness and viral respiratory infections at sites throughout Alberta including the *Guide for Outbreak Prevention & Control in Acute Care Sites* and *Guide for Outbreak Prevention & Control in Supportive Living Accomodations*. AHS IPC provides input into these resources and supports outbreaks. These resources are posted on the external AHS *Outbreak Management* webpage. In 2023/2024, outbreaks of viral respiratory infections were a dominant driver of workload in both acute care and continuing care with more than 354 outbreaks in acute care setting and 1,107 outbreaks in continuing care and congregate living settings (refer to Table 1).

Table 1: Number of outbreaks by fiscal year and location type*

Fiscal year	Acute care	Continuing care & congregate living
2019/2020	26	391
2020/2021	219	945
2021/2022	389	1,210
2022/2023	408	1,327
2023/2024	354	1,107

*Data includes all Exposure Investigation (EI) where the Resolution Status was "Outbreaks" and were categorized as "Respiratory".

In 2023/2024, the AHS Prevention and Control of Communicable Diseases in Healthcare Settings Advisory Committee is a multidisciplinary centre of expertise established to advise on and facilitate the integration and implementation of best practice approaches to communicable disease prevention and control in healthcare settings and to maintain overall health system integrity. This committee replaced the emergency response structures established during the COVID-19 pandemic, such as the Emergency Coordination Centre and the Readiness and Recovery Centre. Committee membership includes: Addiction and Mental Health, Contract Procurement and Supply Management, Covenant Health, IPC, Primary Healthcare, Provincial Seniors Health and Continuing Care, Public Health, Workplace Health and Safety and zone operations.

Acute care

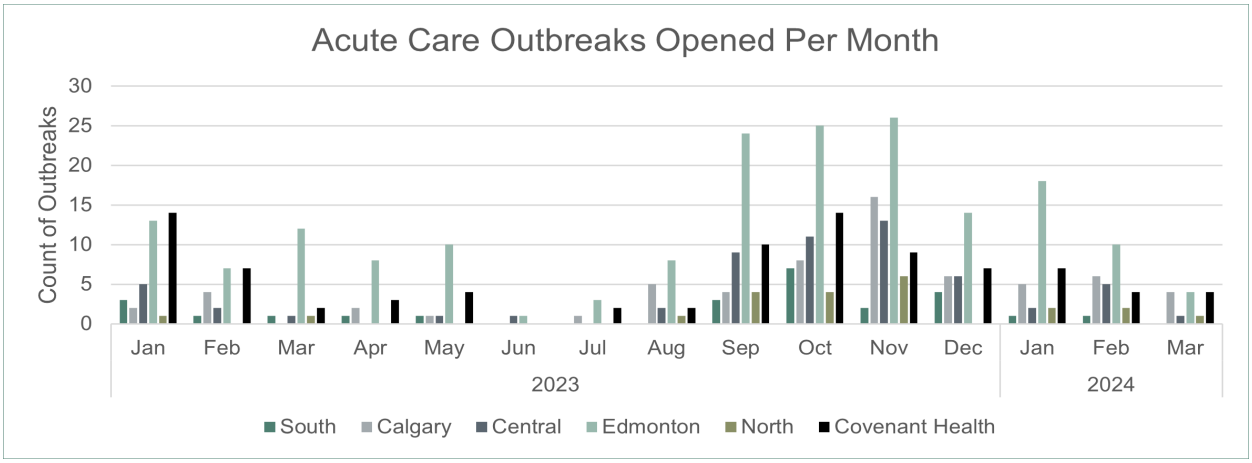
As Alberta continues to shift to a more sustainable approach to managing COVID-19, several changes took place in 2023/2024 to support Alberta's transition to an endemic approach. This included aligning public health recommendations across all acute care settings and incorporating COVID-19 recommendations under the broader scope of patient management guidelines for respiratory viral illnesses.

In Canada, the viral respiratory season typically starts in October to November and finishes in April to May, with most cases occurring in December through March. In 2023/2024, a surge in viral respiratory infections such as influenza and respiratory syncytial virus in acute care settings resulted in outbreaks at sites across the province (refer to Figure 2). Outbreaks at a site can impact capacity and other sites. To support patient flow and continuity of care in these situations, zones adopted different approaches that aligned with existing operational structures to address specific challenges within the zone. Two examples are from the Calgary Zone and Edmonton Zone.

In the Edmonton Zone, the viral respiratory infection season started early with the onset of 24 outbreaks in September and sustained activity throughout February. Capacity was significantly impacted at all acute care sites across the zone. AHS IPC collaborated with the Edmonton Integrated Operations Centre on the Edmonton Zone Short Term Escalation Plan. The IPC section of the plan outlined actions required to facilitate patient flow when the zone met specific triggers. This collaboration resulted in the safe placement of patients in both traditional and non-traditional patient care areas.

In the Calgary Zone onset of increased outbreak activity began in November and cumulative volume and frequency of outbreaks was less than in Edmonton Zone although still creating substantial capacity pressures. In collaboration with the Calgary Zone Seasonal Capacity Taskforce, IPC introduced the role of a site capacity representative and assigned this work to an infection control professional who acted as a single point of contact with each site to coordinate and respond to capacity and patient management issues.

Figure 2 : Acute care viral respiratory outbreaks opened per month



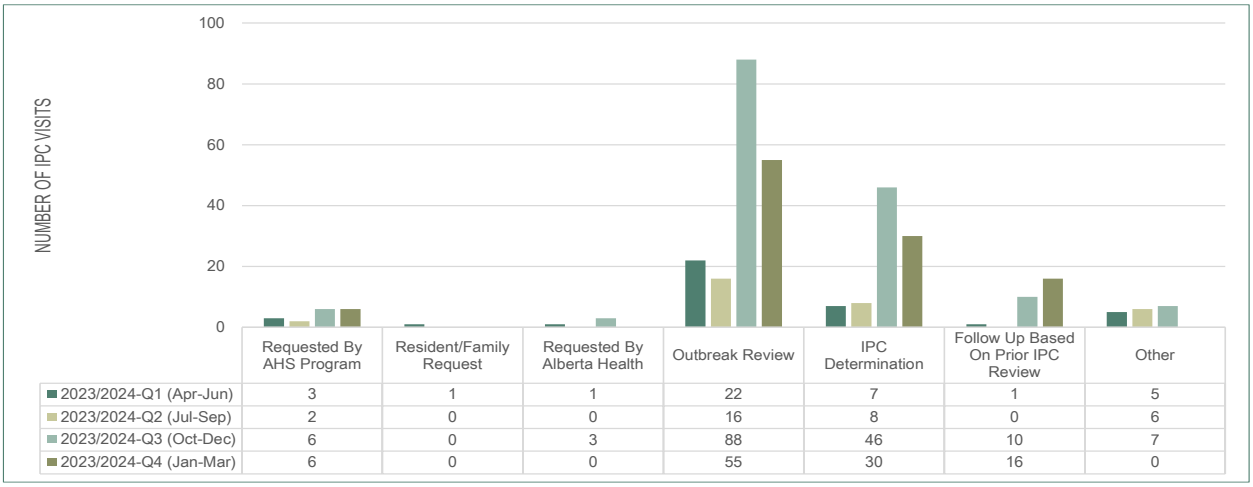
Continuing care and congregate living

AHS Provincial Seniors Health and Continuing Care supports a coordinated approach in continuing care and congregate living settings with AHS IPC and AHS Safe Healthy Environments. AHS IPC continues to work with the Provincial Continuing Care Audit Team and Safe Healthy Environments to respond to continuing care and congregate living outbreaks.

In-person and virtual visits

In 2020/2021, AHS IPC started performing in-person practice reviews with just-in-time teaching during visits in congregate living and continuing care in addition to ongoing virtual visits and consultation calls. In 2023/2024, there were 238 in-person site visits. Visits may be due to an outbreak; in preparation of an audit; on request of Alberta Health, AHS, or a resident or family member (refer to Figure 3).

Figure 3: Number of, and reason for AHS IPC visits to continuing care and congregate living sites in 2023/2024



	Requested By AHS Program	Resident/Family Request	Requested By Alberta Health	Outbreak Review	IPC Determination	Follow Up Based On Prior IPC Review	Other
2023/2024-Q1 (Apr-Jun)	3	1	1	22	7	1	5
2023/2024-Q2 (Jul-Sep)	2	0	0	16	8	0	6
2023/2024-Q3 (Oct-Dec)	6	0	3	88	46	10	7
2023/2024-Q4 (Jan-Mar)	6	0	0	55	30	16	0

In 2023/2024, a new practice review tool was implemented to document AHS IPC continuing care visits including those related to Continuing Care Health Service Standards audit preparedness or concerns. AHS IPC may offer suggestions on how the site can demonstrate compliance to the standards, for example, writing a process for cleaning and disinfection of equipment such as lifts and blood pressure machines. The new tool includes five categories: hand hygiene, additional precautions/isolation, cleaning and disinfection, other outbreak control strategies and operational considerations. Numbers of in-person visits are reported and shared between Alberta Health, AHS Safe Healthy Environments, AHS IPC and AHS Provincial Seniors Health and Continuing Care as well as site management.

Correctional care

In 2023/2024, IPC continued to support correctional facilities in collaboration with Medical Officers of Health, Communicable Disease Control, Public Health, correctional healthcare management and AHS Workplace Health and Safety. Guidance and best practice recommendations were provided to prevent and control respiratory illness, gastrointestinal illness, outbreaks and exposure events. In preparation for the Connect Care transition, IPC and correctional services have been working together to streamline access, notification, communicable disease screening and resident management.

Emergency medical care

In 2023/2024, IPC worked closely with Emergency Medical Services to support orientation for the multiple new recruit classes in providing information on infection prevention and control and hand hygiene. The increased number of new recruit classes is part of AHS' initiative to reduce emergency medical services response times. The AHS IPC program also worked with Emergency Medical Services to update measles-related documents.

The Improving Configuration of Ambulance Bays project continued, with the final steps of the project and recommendations to be provided to Emergency Medical Services in the fall of 2024.

In 2023/2024, IPC collaborated with Emergency Medical Services to showcase their commitment to hand hygiene practices for the 2022/2023 fiscal year by creating an infographic strategically posted at AHS Emergency Medical Services stations throughout the province. The infographic effectively communicates key metrics, including hand hygiene compliance rates across various operational sectors, details the total number of observations collected and provides a breakdown of compliant observations for each of the four moments of hand hygiene. By sharing this information, IPC and Emergency Medical Services continue to work jointly to increase awareness and accountability so safe patient care is always provided.

Connect Care

Connect Care is an electronic clinical information system being implemented in AHS and Covenant Health facilities giving healthcare providers a central access point to patient information, common clinical standards and best healthcare practices. In many areas, Connect Care means moving away from a paper-based system to a system where information flows between patients and their healthcare providers.

> *"When I came home from surgery, I was referred to an occupational therapist through home care. It was great that she was able to see what she could help me with through my record in Connect Care. I did not have to repeat my story over again. Having to repeat the experience of my surgery would have been traumatic."*
> – AHS Patient and Family Advisor

Connect Care was implemented in multiple launches to minimize disruptions for healthcare providers and patients. In 2023/2024, Launch 6 was implemented in May 2023 and Launch 7 was implemented in November 2023. Launch 8 and Launch 9 are planned for 2024/2025. For more information, refer to the *Connect Care: Implementation Timeline*. With each launch, Connect Care allows us to improve the way AHS provides patient care.

Connect Care and IPC

AHS IPC is involved in all phases of planning and implementing Connect Care in AHS and Covenant Health facilities. Program staff and physicians determine how the system supports IPC-related aspects of patient care. Members of the AHS IPC Connect Care Working Group, which includes representation from each of the zones, are referred to as "subject matter experts". These experts are recognized for their work in successfully integrating IPC principles into the planning and rollout of Connect Care. The IPC-related benefits to patient care from Connect Care are in three main areas: communicable disease and antibiotic-resistant organism screening, patient management and surveillance activities.

Communicable (infectious) disease and antimicrobial-resistant organism screening

AHS IPC developed tools in Connect Care to improve communication and continuity of care for patients with infectious diseases and related conditions. These electronic tools are in the patient's electronic medical record and enable standardized antimicrobial-resistant organism screening and management of patients. This information helps prevent exposure to infectious diseases and potential spread in facilities. Having electronic tools allows for easier updating of recommendations, which is a significant advantage over paper-based tools and additionally provides the ability to monitor the usage of the tools over time.

In 2023/2024, Dr. Jenine Leal, Research Scientist, AHS IPC, was the successful candidate for the Society for Healthcare Epidemiology of America Epi Project Competition. The proposed work focuses on improving patient safety through an improved understanding of current practices of antimicrobial-resistant organism screening in healthcare facilities. The work will evaluate the electronic antimicrobial resistance screening tool in Connect Care; identify barriers and enablers to implementing and use of the tool; and prioritize behaviour change interventions to improve implementation and use of the tool. Dr. Leal and the antimicrobial-resistant organism screening project team in IPC will work with key partners, including Connect Care, to identify and implement effective and feasible initiatives to improve antimicrobial-resistant organism screening practices. They are also working with sites in Ontario to evaluate antimicrobial-resistant organism screening practices including Hamilton Health Sciences, St. Joseph's Healthcare Hamilton, SickKids, and The Ottawa Hospital. This work was recognized nationally and internationally. The Canadian Institutes of Health Research and The Society for Healthcare Epidemiology of America funded and highlighted parts of this work.

> *"I really owe this to the team… that have really helped make this project happen."*
> – Dr. Jenine Leal, Research Scientist, IPC, AHS

Patient management

Connect Care allows for real-time electronic alerts and notations that help infection control professionals and healthcare providers identify and manage patients with confirmed or suspected infectious diseases and conditions. Recommendations for appropriate accommodations and need for additional precautions are communicated to frontline staff through the patient record.

In 2023/2024, work focused on strategies to improve patient flow throughout the healthcare system. Connect Care functions and features allowed managers to quickly identify available inpatient beds for occupancy. In the program, multi-bed hospital rooms not having patients on either airborne or airborne and contact additional precautions are made available sooner as additional air clearance (settle time) is not required. When airborne precautions are not required, patients with similar symptoms may be placed together – allowing for high quality, safe patient care while protecting other patients from the spread of microorganisms.

Surveillance activities

Connect Care is expected to offer many opportunities to improve provincial surveillance processes. The most noticeable improvements to date are: first, the new patient list columns with a special icon for those patients with recent abnormal microbiology results such as blood and urine cultures. These data are updated in real-time as lab results are reported. This helps infection control professionals conduct surveillance by quickly identifying potential cases, such as central line-associated blood stream infections and hospital-acquired blood steam infections, while eliminating common data entry errors. Secondly, Connect Care patient visit history and current admission columns increase awareness of patient transfers to other sites and help with casefinding. Infection control professionals can see if a patient with an abnormal lab result is currently admitted at their site or has been transferred to a new site. This facilitates communication between AHS IPC teams and reduces the risk of missing a surveillance case.

Accountability and Monitoring

The Alberta Health IPC Strategy provides a framework outlining the roles and responsibilities of each entity in Alberta, including Alberta Health, AHS and Health Profession Regulatory Colleges. These organizations collaborate to uphold IPC standards. Alberta Health established an *IPC Strategy* and a series of standards (2008, updated in 2011/2019) that AHS was accountable to establish and maintain.

Two Alberta Health IPC standards set out accountability and monitoring requirements for IPC practices in healthcare settings – *Alberta Health Standards for Infection Prevention and Control – Accountability and Reporting (2011)* and Alberta Health *Reusable & Single-use Medical Devices Standards: Standards for the reprocessing of reusable medical devices and for the use of single-use medical devices in all health care facilities and settings (2019)*.

This section focuses on AHS IPC measures and actions to comply with these standards including accountability requirements, e.g., AHS IPC program structure and committees; managing, assessing and reporting IPC concerns; performing and learning from medical device reprocessing reviews to improve patient safety; and meeting Accreditation Canada requirements. Compliance with these requirements reduces surgical wait times, helps continuity of care and improves patient flow by reducing the risk of healthcare-associated infection.

IPC accountability and reporting standard

The Alberta Health *Standards for Infection Prevention and Control – Accountability and Reporting (2011)* outlines the roles and responsibilities of key positions in AHS for managing IPC concerns; implementing IPC standards; provincial and zone committees and reporting structure; monitoring compliance with these standards; and responding to incidents of noncompliance. These actions are essential for patient, healthcare provider and public safety.

Managing IPC concerns

The Alberta Health *Standards for Infection Prevention and Control – Accountability and Reporting (2011)* set out requirements for the appointment and responsibilities of the named IPC Executive. The named IPC Executive is Dr. Oscar Larios, Senior Medical Director, IPC, and one of the key responsibilities of this role is to manage and report IPC concerns. An IPC concern is defined in the standards as:

> "*A condition or circumstance involving IPC that is or might become injurious or dangerous to the public health or that might hinder in any manner the prevention or suppression of disease. In this regard an IPC concern may include, but is not restricted to, an instance where the conditions of a Healthcare Facility or Setting, a healthcare practice, an infectious disease or an inadequate infection control measure pose a risk to public health*."

Upon receiving report of an IPC concern, the IPC Executive or, in the case of an IPC concern requiring action under the Province of Alberta (RSA 2023) Public Health Act, the Senior Medical Officer of Health (AHS), fully investigates the report; conducts a risk assessment in a timely manner and in accordance with any protocol established by the Chief Medical Officer of Health (Alberta Health); promptly reports a description of the concern, findings of the risk assessment, actions taken and next steps to the Chief Medical Officer of Health, as required; and takes all reasonable steps to address the incident and protect patients, healthcare providers and the public.

In 2023/2024, there were 30 IPC concerns reported to the IPC Executive. Reports included eight other potential communicable disease exposures, 10 medical device-related adverse events and 12 facility infrastructure issues across all zones.

IPC concerns brought forward from the AHS zones and Covenant Health are summarized and provided to Alberta Health and the Chief Medical Officer of Health, using a structured format.

Note: IPC concerns reported pertain to acute care facilities or AHS operated continuing care facilities co-located with acute care facilities. Numbers represent the number of reported incidents and do not reflect number of patients involved.

Risk assessment panel

The AHS and Covenant Health Risk Assessment Panel assesses public health and IPC concerns related to significant breaches in healthcare facilities or the community with a potential impact on patient safety. Specifically, the panel assists in evaluating the risk of transmission of pathogens and provides recommendations regarding public notification or the need for a focused look-back. Findings and outcomes are communicated using the IPC concerns process. Dr. Alexander Doroshenko, Medical Officer of Health, and Dr. Uma Chandran, Physician, IPC, co-chair the panel, which reports to the Quality, Safety and Outcomes Improvement Executive Committee of the AHS Executive Leadership Team.

In 2023/2024, one issue required a risk assessment which was related to reprocessing of equipment used in the operating room. Decisions regarding disclosure are informed by the findings of the risk assessment and are guided by the AHS *Disclosure of Harm Procedure* (2022).

Improvement in patient care after IPC issue resolved

After finding an issue with reprocessing ophthalmology equipment in the 2017/2018 medical review, AHS IPC worked with ophthalmology staff to find a solution to the problem. In 2023/2024, AHS implemented use of a high-level disinfectant new to Canada for ophthalmology equipment at two clinics. Implementation of this product will expand to other AHS ophthalmology clinics at acute care sites.

High-level disinfection has been difficult to implement in medical fields such as ophthalmology because eye examination devices are fragile and easily damaged and manufacturer's instructions recommended products that were not high-level disinfectants. AHS IPC confirmed existing practices for disinfecting these medical devices in AHS were consistent with practices in other provinces. The AHS and Covenant Health Risk Assessment Panel deemed the patient risk as low based on findings from the scan of existing practices and a literature review; therefore, current processes remained in place until a better solution was found.

Tristel Duo OPH by Tristel Solutions, a new technology, was identified as a high-level disinfectant that could be used at the point of care; however, this product was not approved for use in Canada. While waiting for Health Canada approval, IPC contacted ophthalmology clinics in other countries to obtain feedback about its use. These clinics reported no equipment damage and no patient or staff concerns.

In 2021/2022, the product was approved for use in Canada and Tristel Duo OPH was trialed in ophthalmology clinics at Rockyview General Hospital and Royal Alexandra Hospital. To help staff use the product correctly, AHS IPC released best practice recommendations on the *Point-of-care High-level Disinfection for Reusable Ocular Devices that Contact the Surface of the Eye*. Clinics were able to incorporate the product into their workflow, while maintaining patient flow and supporting safe patient care. Plans are underway to expand this trial to other AHS ophthalmology clinics.

Provincial and zone IPC committees and governance structure

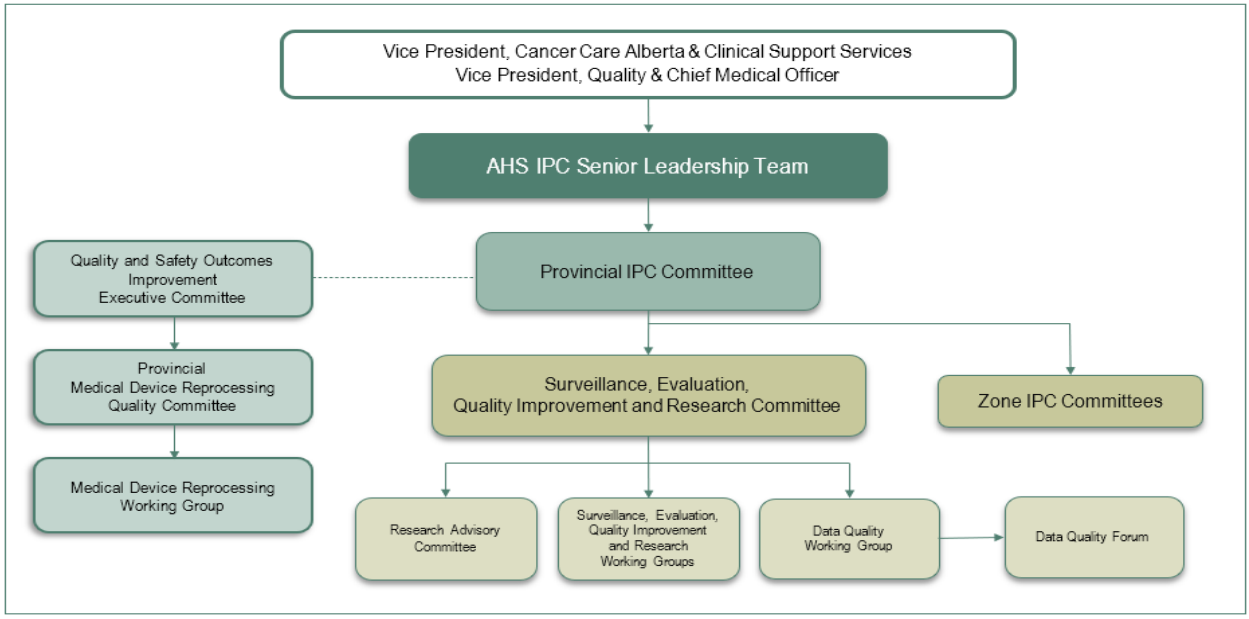
AHS provincial and zone IPC committees and governance structure is outlined in Figure 4. The Provincial Infection Prevention and Control Committee leads activities to prevent and control infections in all AHS facilities and settings, including contracted agencies and services, and serves an important communication and accountability function. The committee reports to the Quality, Safety and Outcomes Improvement Executive Committee of the AHS Executive Leadership Team. Membership includes senior leadership from several AHS departments and programs and Covenant Health.

The Provincial Infection Prevention and Control Committee works in collaboration with each of the five zone IPC committees and the Covenant Health Infection Prevention and Control Committee. These committees:

- Support strategies for prevention and control of healthcare-associated infections in their area.
- Meet regularly to receive, review and distribute IPC reports on provincial-level surveillance activities and discuss actions and trends.
- Analyze outbreaks, consider actions taken and suggest improvements to limit transmission of infections.

In 2023/2024, the Infection Prevention and Control Surveillance Committee was restructured to the Surveillance, Evaluation, Quality Improvement and Research Committee to combine the learnings from activities and findings into IPC-related challenges; advise the program on next steps in IPC-related research priorities; and monitor IPC interventions through trends in high quality IPC surveillance data. This change provides strategic direction, oversight and governance for an IPC research framework.

Figure 4: AHS provincial and zone IPC committees and governance structure



The Provincial Infection Prevention and Control Committee works in collaboration with the Surveillance, Evaluation, Quality Improvement and Research Committee.

AHS Patient and Family Advisors serve on our IPC committees to help us understand the patient and family perspective as outlined in our AHS *Patient First Strategy.* Each advisor is assigned an IPC liaison from the committee to make them feel comfortable and answer questions. Advisors are members on the following provincial committees: Provincial Infection Prevention and Control Committee; Provincial Medical Device Reprocessing Quality Committee; Surveillance, Evaluation, Quality Improvement and Research Committee; and Research Advisory Committee. AHS Patient and Family Advisors help promote patient and family-centred care and remain mindful of the patient experience throughout IPC and within AHS. They provide feedback about IPC policies and procedures. Comments are used to help guide content and to address concerns on topics. This work helps put patients and families at the forefront of all healthcare activities.

IPC reusable and single-use medical devices standard

The Alberta Health *Reusable & Single-use Medical Devices Standards: Standards for the reprocessing of reusable medical devices and for the use of single-use medical devices in all health care facilities and settings (2019)* reflect the CAN/CSA Z314:18 *Canadian Medical Device Reprocessing standards* and establish minimum requirements for the use of single-use medical devices and the cleaning, disinfection and sterilization of reusable medical devices between client uses. The standard aims to prevent the transmission of microorganisms to clients, personnel, the public and the environment; minimize the risk of harm to clients and personnel; promote the safe use of single-use medical devices; and support health professional regulatory colleges, healthcare professionals and other personnel who use or reprocess medical devices.

The AHS *Critical and Semi-critical Single-Use Medical Devices Policy (2022)* and the AHS *Management of Loaned, Reusable Critical and Semi-Critical Medical Devices Policy (2022)* align and comply with the Alberta Health standards. Covenant Health's *Standards for Single-Use Medical Devices* policy and procedure were updated and came into effect in mid-2023/2024.

Reusable medical devices

This section provides details about accountability structures for meeting the Alberta Health *Reusable & Single-use Medical Devices Standards: Standards for the reprocessing of reusable medical devices and for the use of single-use medical devices in all health care facilities and settings (2019)* including ongoing medical device reprocessing reviews. These activities support AHS priority focus for improving patient flow, continuity of care, patient safety and information from the reviews is used for ongoing improvement.

Medical device reprocessing accountability structures

The Provincial Medical Device Reprocessing Quality Committee oversees and supports standardized quality medical device reprocessing practices across AHS and its contracted service providers. This committee reports to the Quality, Safety and Outcomes Improvement Executive Committee. Membership includes representatives from: Alberta Health; AHS provincially managed programs such as Accreditation, Capital Management; Contracting, Procurement and Supply Management; IPC and Patient Safety;

AHS zone operations; Covenant Health; and a public member representative for patients and families.

The committee collaborates on quality improvement outcomes and processes for reprocessing of reusable medical devices. This includes preparation and responding to reviews of the Accreditation Canada Qmentum Global Foundational *Standard for Reprocessing of Reusable Medical Devices*. The committee also helped prepare for implementation of changes in the updated CAN/CSA Z314:23 *Canadian Medical Device Reprocessing in all Health Care Settings* standards such as new equipment requirements, development of provincial education and policies to help put this equipment in place.

Partnerships with AHS Capital Management remain strong as medical device reprocessing infrastructure priorities related to the Alberta Surgical Initiative and other capital projects require regular review. The Provincial Medical Device Reprocessing Working Group engages zone and site-level medical device reprocessing department leaders to improve consistency and quality of services across the province. This working group reports to the Provincial Medical Device Reprocessing Quality Committee. The working group includes frontline medical device reprocessing managers from AHS and Covenant Health and representatives from AHS: Accreditation; Contracting, Procurement and Supply Management; Diagnostic Imaging; Human Factors; and AHS IPC.

Learn and Share Platform for Continuous Improvement

The Provincial Medical Device Working Group developed the Learn and Share platform to review, discuss and learn from medical device reprocessing incidents to continuously improve and prevent similar incidents from occurring again.

For example, an incident was reported by the Wetaskiwin Hospital Care and Centre in Central Zone, where a pre-cleaned scope was accidentally used on a patient before it was completely reprocessed and disinfected. The working group reviewed the incident, analyzed the root causes and proposed corrective actions and preventative measures. The cause was found to be reprocessed scopes not clearly identified from non-reprocessed scopes.

After the pre-cleaning step, staff placed the scope into a bin for further reprocessing. Another staff member saw the scope in the bin and thought it was ready to use. Bin labeling was not adequate to clearly tell a reprocessed scope from a non-reprocessed scope.

Corrective actions and preventative measures included introducing communication tags for scopes, implementing color-coded bins, and establishing a tagging system to signify disinfected scopes. The new tags include detailed documentation for the end user including washer/disinfector machine load details, shelf-life date of seven days after reprocessing date and the medical device processor initials confirming high-level disinfection is complete.

The working group shared these findings and actions so other sites could learn from this incident and consider similar improvements in their own reprocessing procedures. This approach addresses immediate concerns and fosters a culture of continuous improvement and knowledge sharing within the medical device reprocessing community.

Medical device reprocessing reviews in AHS and Covenant Health

Medical device reprocessing reviews focus on continuous quality improvement. These reviews increase staff learning, improve AHS IPC-related medical device reprocessing practices and monitor compliance with standards. Ultimately, this contributes to patient safety and positive surgical outcomes by confirming surgical instruments are reprocessed correctly, reducing the risk of post-surgical complications such as surgical site infections.

AHS IPC and Alberta Health continue to work jointly to reevaluate the risk framework for the medical device reprocessing review criteria and added a new risk category: critical. This category flags high-risk deficiencies that pose an immediate and significant threat to patient safety or the overall quality of care; require immediate corrective action; and are reported to IPC Senior Leadership for further follow-up as required, e.g., Risk Assessment Panel review. Alberta Health is also notified through the IPC Concerns reporting process.

The rest of the criteria remained the same risk level as in previous cycles. The updated risk framework provides a consistent and accurate response to deficiencies identified in the medical device reprocessing reviews.

All areas in AHS and Covenant Health reprocessing reusable critical and semi-critical medical devices are reviewed on a scheduled cycle. To date, there have been four review cycles: Cycle 1 (June 2010 to March 2013); Cycle 2 (June 2013 to April 2015); Cycle 3 (November 2016 to June 2017); and Cycle 4 (July 2020 to August 2022). Results from these reviews are reported at the site, zone and provincial levels and deficiencies and corrective actions are followed-up. Cycle 4 reviews indicated very high compliance, i.e., 92.0 per cent to 100.0 per cent, with the *Medical Device Reprocessing of Reusable Critical and Semi-critical Medical Devices: Reviewing Criteria and Supporting Standards* requirements. Infrastructure deficiencies identified require long-term actions and are addressed on an ongoing basis.

Off-cycle review to support patient safety

In mid-2023/2024, a medical device reprocessing event occurred at the Medicine Hat Regional Hospital in the South Zone involving a missed manual cleaning step during endoscope reprocessing. A risk assessment confirmed the patient was not harmed. The endoscope underwent microbiological testing and was cleaned and reprocessed until there was zero growth of microorganisms.

This was also an opportunity for just-in-time support of the reprocessing area to help identify and correct deficiencies and prevent them from happening again. Changes can occur between medical device reprocessing review cycles. An off-cycle review was performed to support patient safety.

The off-cycle review found an absence of specific standard operating procedures for management, follow-up and documentation when endoscope reprocessing failures occur. A multidisciplinary team, including clinical leadership, AHS IPC, medical device reprocessing and surgical leadership, created an action plan. Standard operating procedures were established and deficiencies in record-keeping procedures were corrected. Documentation processes were improved to confirm comprehensive record keeping for quality assurance, equipment performance qualification and comprehensive tracking of staff training activities.

In preparation for Cycle 5, scheduled to start in 2024/2025, the *Medical Device Reprocessing of Reusable Critical and Semi-critical Medical Devices: Review Criteria and Supporting Standards* is being updated. These standards align with the Alberta Health *Reusable & Single-use Medical Devices Standards: Standards for the reprocessing of reusable medical devices and for the use of single-use medical devices in all health care facilities and settings (2019)*, Accreditation Canada and Canadian Standards Association standards including the updated CSA Z314-23 *Medical Device Reprocessing in all Health Care Settings.*

The updated CSA Z314 standard changes include:

- Requirements for air purging drying cabinets for endoscope storage to confirm adequate drying and storage of high-level disinfected endoscopes.
- Annual review of standard operating procedures to reflect use of accurate and up-to-date procedures.
- Increased testing of ultrasonic cleaners to confirm they are functioning properly.
- Clarification of training requirements for managers supporting medical device reprocessing areas.

These changes will be put in place for the Cycle 5 medical device reviews to support patient safety.

Medical device reprocessing reviews in chartered surgical facilities

AHS performs joint reviews of chartered surgical facilities with the College of Dental Surgeons of Alberta and the College of Physicians and Surgeons of Alberta.

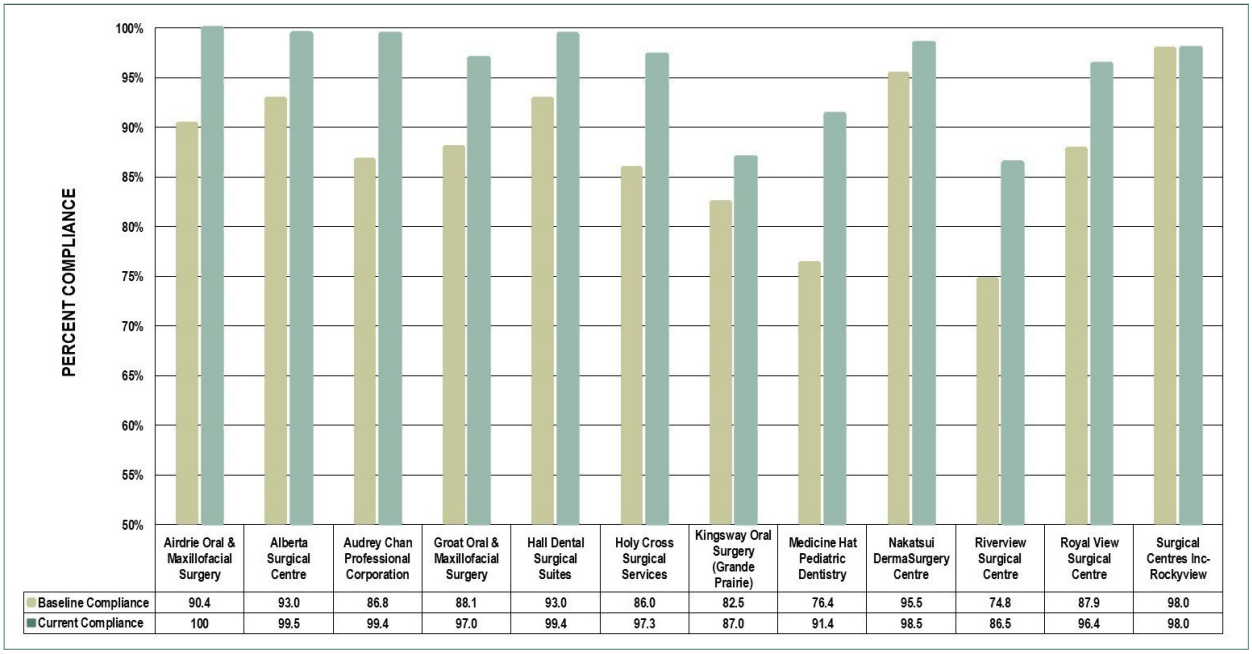
AHS reviews the medical device reprocessing area while the respective college performs a broader operational review.

Successful collaboration of all three organizations during the review process has led to an increase in efficiencies and stronger working relationships.

Currently there are 38 chartered surgical facilities with AHS contracts and in a typical fiscal year, seven to 12 reviews are completed. In 2023/2024,12 joint reviews were completed. Average initial compliance for the 12 reviews in 2023/2024 was 87.8 per cent and after completion of many corrective actions, compliance currently sits at 96.0 per cent (refer to Figure 5).

Chartered surgical facilities are largely independent of each other though several facilities merged to form larger corporations. Reporting combined results from these facilities provides general information about how well medical device reprocessing practices are followed and may be used to identify commonalities or trends in identified deficiencies. Three reports on medical device reprocessing of chartered surgical facilities have been produced to date. This information is used to determine appropriate corrective actions.

Figure 5: Medical device reprocessing reviews compliance for chartered surgical facilities



	Airdrie Oral & Maxillofacial Surgery	Alberta Surgical Centre	Audrey Chan Professional Corporation	Groat Oral & Maxillofacial Surgery	Hall Dental Surgical Suites	Holy Cross Surgical Services	Kingsway Oral Surgery (Grande Prairie)	Medicine Hat Pediatric Dentistry	Nakatsui DermaSurgery Centre	Riverview Surgical Centre	Royal View Surgical Centre	Surgical Centres Inc-Rockyview
Baseline Compliance	90.4	93.0	86.8	88.1	93.0	86.0	82.5	76.4	95.5	74.8	87.9	98.0
Current Compliance	100	99.5	99.4	97.0	99.4	97.3	87.0	91.4	98.5	86.5	96.4	98.0

Single-use medical devices

Reusing medical devices authorized and labeled for a single use poses serious safety risks to patients and clients. Devices may only be considered for reuse if they are reprocessed by a commercial reprocessor that operates in accordance with Health Canada's requirements for the reprocessing and distribution of medical devices originally authorized and labeled as single-use devices, or if an exception process is followed as per the Ministerial Directive D4-2019.

Exceptions permitting the reuse of specified single-use medical devices are evaluated using a multi-level approach. The approved exceptions are listed in the *Single-use Medical Device List of Approved Exceptions* on the external *AHS IPC* website.

Accreditation Canada

AHS and Covenant Health participate in the accreditation of health services to help the organization deliver safe quality healthcare. Accreditation compares AHS health services with established national standards of excellence to identify areas for improvement. Survey visits are unannounced and AHS staff, physicians and leaders strive to always be accreditation-ready throughout the cycle.

Two Accreditation Canada Qmentum Foundational Standards are particularly relevant to AHS IPC: the *Infection Prevention and Control* standard and the *Reprocessing of Reusable Medical Devices* standard. Accreditation Canada identifies several criteria within various standards as required organizational practices, which are essential practices organizations have in place for patient safety.

Structures to support the accreditation cycle

The AHS IPC Accreditation Service Excellence Team and the AHS IPC Accreditation All Standards Working Group support AHS IPC staff throughout the accreditation process. This working group developed a compendium of AHS IPC resources cross-referencing to the relevant Accreditation Canada criteria. AHS IPC staff can access and review recordings of pertinent information on demand. AHS IPC also participates in the AHS Medical Device Reprocessing Accreditation Service Excellence Teams. Similarly, Covenant Health IPC supports the Covenant Health Accreditation Service Excellence Teams.

Results from the 2019-2023 accreditation cycle

The spring survey cycle occurred between May 29, 2023, to June 02, 2023 and assessed Addiction Treatment Centres and Programs; Community-based Mental Health; Home Care and Hospice, Palliative, End-of-life Services; Inpatient Mental Health; Public Health and Rehabilitation. All programs from the spring survey had a compliance of 87.0 per cent or higher for the infection prevention and control standard. Most sites surveyed met the required organizational practices for the infection prevention and control standard. For sites that did not meet all required organizational practices, the gaps were around hand hygiene compliance and hand hygiene education. Hand hygiene compliance was rated as unmet for one site in Community-based Mental Health and for two sites in Public Health. Actions to improve compliance began immediately and are ongoing. For example, 74/78 staff at the Safe and Health Environments have completed Hand Hygiene education and training. Tools developed to monitor hand hygiene compliance include daily automated self-audits and usage of alcohol-based hand rub. Compliance rates are shared regularly with leadership and staff.

For more information on previous Accreditation Canada survey visits refer to the *AHS website*.

After completing the 2019-2023 accreditation cycle, Accreditation Canada awarded AHS accredited status until the end of 2027. Each AHS site will receive a new certificate.

Results from the 2023-2027 accreditation cycle

The fall survey took place between October 16 – 20, 2023. The fall survey assessed five Accreditation Canada Qmentum Global Foundational Standards: Governance; Leadership; Infection Prevention and Control, Medication Management; Reprocessing of Reusable Medical Devices; and one Qmentum Global Clinical Standard for Perioperative Services and Invasive Procedures. Foundational Standards are only assessed once per accreditation cycle. Both the *Infection Prevention and Control* standard and the *Reprocessing of Reusable Medical Devices* had a compliance of 100.0 per cent in the fall survey.

The *Infection Prevention and Control* standard had a compliance of 100.0 per cent. Areas of excellence and key opportunities were identified (refer to Table 2).

The AHS IPC program is following-up on the key opportunities:

- Hand hygiene compliance monitoring and education: The direct observation method is the gold standard for collecting hand hygiene observations. In clinical areas and non-clinical settings where this method may not be reasonable nor practical, alternative approaches may be considered. In 2023/2024, members of the AHS IPC Hand Hygiene Program developed various tools and resources to support these alternative approaches. Consultation between an area, the provincial IPC program and an AHS Accreditation Advisor is required before implementation.

- Decluttering clinical areas: AHS IPC promotes best practices for cleaning. The *Principles for Environmental Cleaning and Disinfection Best Practice Recommendations* provide direction on removing unnecessary items from surfaces to be cleaned.

- Share the AHS IPC Strategic Plan at the local level: The strategic plan, roadmap and quarterly goals are regularly discussed and shared with all staff – physician to administrative staff – within the AHS IPC program.

Table 2: *Infection Prevention and Control* standard areas of excellence and key opportunities

Area of excellence	Key opportunities
Medical leadership is active and engaged	Hand hygiene compliance monitoring and education
Useful information for the public on the external *AHS IPC* website	Decluttering clinical areas
AHS IPC dashboard provides an overview of patients in facility	Opportunity to share the AHS IPC Strategic Plan at the local level
Strong partnership with provincial and organizations partners	

The *Reprocessing of Reusable Medical Devices* standard has a compliance of 100.0 per cent. Areas of excellence and key opportunities were identified (refer to Table 3).

Table 3: *Reprocessing of Reusable Medical Devices* standard areas of excellence and key opportunities

Area of excellence	Key opportunities
Collaboration at provincial level with IPC	Infrastructure and equipment rejuvenation
Sterile Processing Microsystem tracking system	Impact of surgical volumes
Consolidation of reprocessing under oversight of Medical Device Reprocessing Department	Endoscopy reprocessing
Cross-trained medical device reprocessing department staff	Sterile Processing Microsystem expansion

When required organizational practices are unmet, the site or program develops an action plan to address the unmet items. AHS IPC supports the site or program in this process when it relates to the *Infection Prevention and Control* standard and the *Reprocessing of Reusable Medical Devices* standard.

For more information, including previous reports, refer to the *Alberta Health Services Accreditation Status and Activities for Health Facilities and Programs: Submission to Alberta Health*. Evidence submissions demonstrating compliance with unmet ratings from the spring survey and fall survey will be submitted to Accreditation Canada in June 2024 and October 2024, respectively.

Facility and practice audits impact patient safety

In Covenant Health, Facility and Practice Audits were conducted in select emergency, medicine, surgery and mental health acute care units in preparation for spring 2024 Accreditation to identify areas of improvement. The audit findings and follow-up actions support patient safety and decrease risk of infection transmission through use of best practices, improving the physical environment and proper storage of items.

Audit results identified common deficiencies across the units and were collated to create a "How to Be IPC Accreditation Ready" tip sheet, which was distributed to frontline managers, clinical educators, staff. IPC recommendations included:

- Know how to access IPC resources for staff and visitors on CompassionNET (internal Covenant Health website).
- Be aware of the most recent hand hygiene compliance rate and where it is posted on the unit and CompassionNET.
- Be informed of unit infection rates, e.g., MRSA (methicillin-resistant *S. aureus*), CDI (*C. difficile* infection), viral respiratory infections.
- Be familiar with individual responsibilities to keep the environment and patient equipment clean.
- Reduce clutter on the unit, especially in medication, soiled utility, supply and patient rooms.
- Store and handle supplies in a manner to prevent contamination, e.g., clean and sterile supplies, linen and patient hygiene products.

Infection control professionals helped their units by sharing IPC messages on rounds; providing just-in-time education where deficiencies were noted; written staff communications; and attending Service Excellence Team meetings to share IPC resources about Accreditation.

Province Wide Surveillance

Surveillance for the identification of healthcare-associated infections is an essential component of AHS' response to the hazard these infections pose to Albertans. AHS IPC surveillance focuses on infections with a significant cost to the healthcare system or those causing significant patient illness or death. Surveillance data are used to monitor trends, identify increases or decreases of infection rates and are used to identify and support necessary actions to improve patient care. AHS IPC Surveillance definitions and processes to determine the presence of an infection are different than the clinical assessment for patient diagnosis and treatment.

Provincial IPC surveillance program

AHS IPC has an integrated provincial surveillance program. AHS IPC committees and working groups develop and approve surveillance protocols and these are applied consistently throughout AHS and Covenant Health. There are 10 provincial AHS IPC surveillance protocols related to outcome measures (refer to Table 4).

Table 4: Provincial IPC surveillance protocols related to outcome measures

Category	Protocol
Antibiotic-resistant organisms	Laboratory-confirmed carbapenemase-producing organisms in acute care settings Laboratory-confirmed methicillin-resistant *S. aureus* colonizations and infections in acute care settings Laboratory-confirmed vancomycin-resistant enterococcus infections in acute care settings
Bloodstream infections	Laboratory-confirmed bloodstream infections with antibiotic-resistant organisms including carbapenemase-producing organisms, extended-spectrum beta-lactamase-producing organisms, methicillin-resistant *S. aureus* and vancomycin-resistant enterococcus in all admitted patients and central line-associated bloodstream infections in adult and pediatric intensive care units
Clostridium difficile infection (*C. difficile* infection)	Laboratory-confirmed with clinical signs and symptoms in an acute care setting Laboratory-confirmed in a continuing care setting
Surgical site infections	Eligible cardiovascular procedures including coronary artery bypass graft or cardiac procedures that involve valve replacement, septum repair and reconstruction procedures Eligible orthopedic procedures including total hip or total knee replacement Eligible vascular procedures including peripheral vascular bypass procedures
Viral respiratory infection	Laboratory-confirmed positive test with at least one viral respiratory infection pathogen in acute care settings

All surveillance protocols are posted on the *Surveillance & Reporting* webpage on the external *AHS IPC* website and on the internal Covenant Health IPC website. All protocols are updated on an annual basis. These protocols align with national and international surveillance protocols, allowing comparison between Alberta's health system and other jurisdictions in Canada.

The provincial IPC surveillance platform enables the collection and reporting of surveillance data for outcome measures. Vendor-supported platforms – AHS Clean Hands, Covenant Health HandyAudit, and AHS Medical Device Reprocessing Reviews – enable the collection and reporting of surveillance data for process measures, which are described elsewhere in this report. Education and training for staff are provided before platform access is granted to promote accuracy and validity of the data.

Local IPC surveillance programs

Local surveillance protocols are also accommodated in the provincial surveillance platform. These surveillance initiatives are based on needs identified at the local level. For example, sites can target a specific surgical procedure of local importance.

Surveillance engagement workshops

In 2023/2024, when provincial surveillance initiatives resumed, surveillance engagement workshops were held to review practices and to identify education and support possibilities to restart the work. In these workshops, infection control professionals and AHS IPC physicians discussed priorities for increasing surveillance awareness and knowledge. Themes included surveillance barriers and solutions; the clinical relevance of surveillance data; strategies and processes to improve data entry processes; the importance of data quality; and actions using surveillance data to improve patient safety. Next steps include each team identifying actions to address their surveillance barriers to increase the quality of the AHS IPC surveillance data and, ultimately, take action from these data.

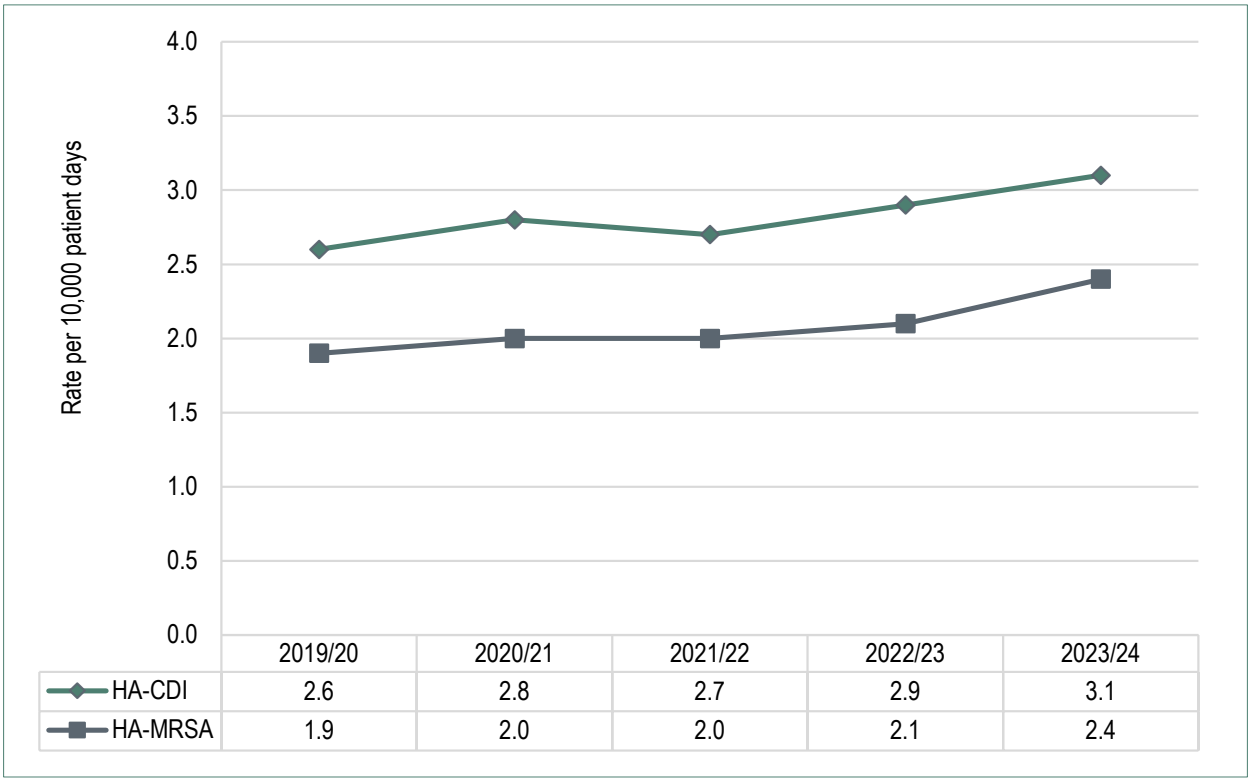
Review of surveillance trends for 2023/2024

C. difficile infection and methicillin-resistant *S. aureus* colonization/infection

In 2023/2024, the hospital-acquired *C. difficile* infection rate was 3.1 per 10,000 patient-days, which was below the Canadian Nosocomial Infection Surveillance Program benchmark of 3.7 per 10,000 patient-days.

The data demonstrate that hospital-acquired *C. difficile* infections and hospital-acquired methicillin-resistant *S. aureus* colonization and infections increased throughout 2023/2024 (refer to Figure 6). These increased infection rates have been reported to the Surveillance, Evaluation, Quality Improvement and Research Committee. Continued surveillance will help determine potential factors driving the increased incidence, such as overcapacity challenges or lack of adherence to IPC protocols and identify where preventive measures could be targeted.

Figure 6: Provincial hospital-acquired rates for *C. difficile* infection and methicillin-resistant *S. aureus* colonization/infection, 2019/2020 to 2023/2024

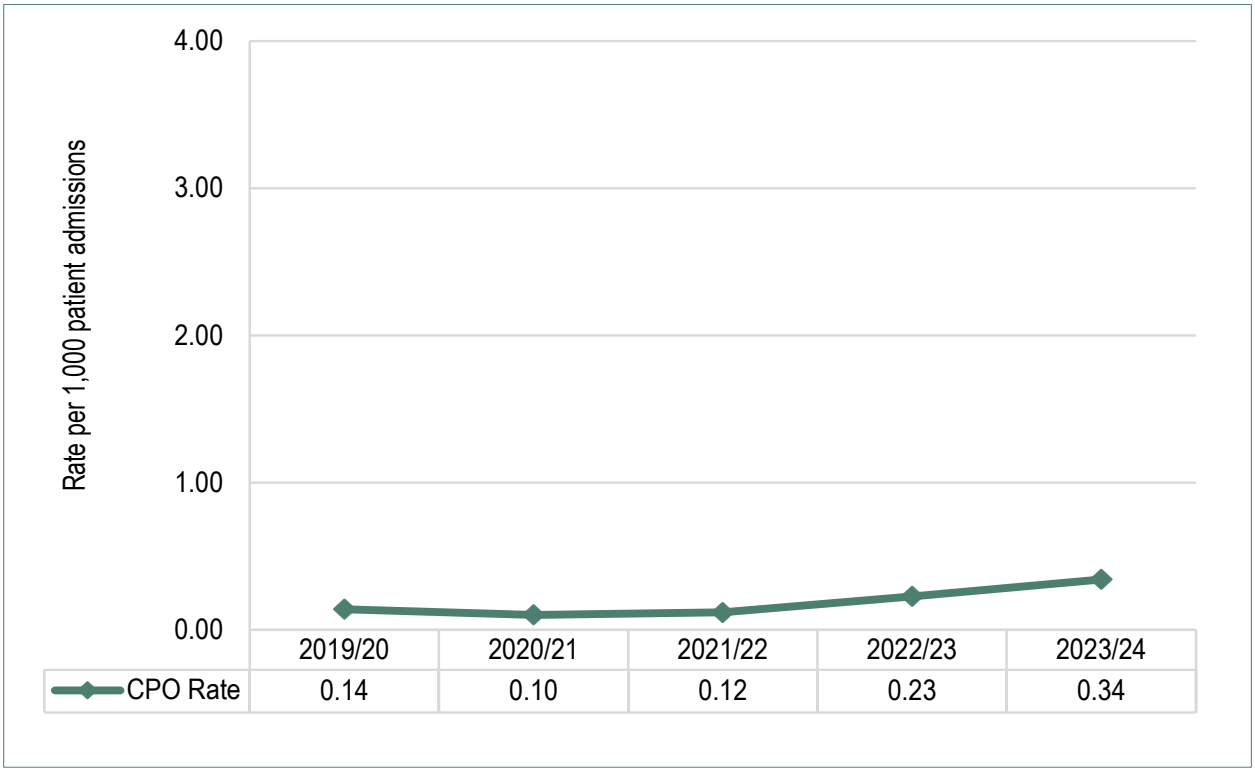


	2019/20	2020/21	2021/22	2022/23	2023/24
HA-CDI	2.6	2.8	2.7	2.9	3.1
HA-MRSA	1.9	2.0	2.0	2.1	2.4

Carbapenemase-producing organisms

The overall rate of colonizations and infections with a carbapenemase-producing organism continued to increase in 2023/2024 (refer to Figure 7). A multidisciplinary project between IPC and Alberta Health to further explore carbapenemase-producing organisms risk factors and genetic relatedness is expected to proceed in 2024/2025.

Figure 7: Provincial rate of carbapenemase-producing organisms, 2019/2020 to 2023/2024



	2019/20	2020/21	2021/22	2022/23	2023/24
CPO Rate	0.14	0.10	0.12	0.23	0.34

Central line-associated bloodstream infections

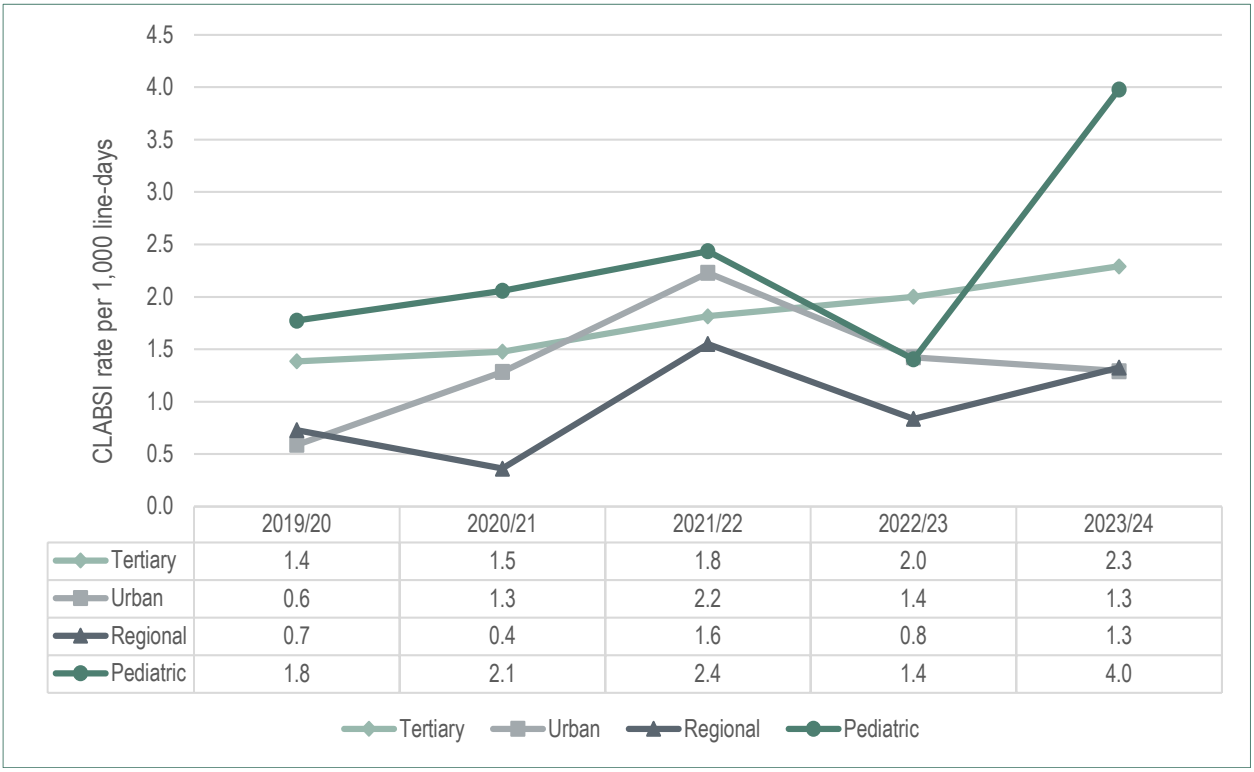
Central line-associated bloodstream infections continued to rise in the tertiary intensive care units over the past several years, with an increase in pediatric intensive care units this fiscal year (refer to Figure 8). AHS IPC participated in a national review of central line care practices through the Public Health Agency of Canada, as the national surveillance system endeavors to understand the increased central line-associated bloodstream infection rates seen across the country.

Patient safety through Covenant Health surveillance

Three hospital-acquired central line-associated bloodstream infection cases were identified at Grey Nuns Community Hospital in their intensive care unit. These cases occurred during a supply shortage when a product was substituted for the antiseptic wipes typically used to 'scrub the hub' of central lines. The replacement antiseptic used a lollipop style applicator difficult to use on the catheter hub. The intensive care unit and patient safety representatives reviewed methods to decrease these infections at the site. Covenant Health IPC was consulted as part of the review. Once the original product became available and returned to use for cleaning catheter hubs, no further cases were identified.

AHS IPC engaged the Critical Care Strategic Clinical Network regarding these trends and this network saw the need for a provincial approach after an environmental scan identified variability in practices and process across the province. In 2023/2024, AHS IPC and this network developed an evidenced-informed bundle – standardized steps to take every time a central line is inserted – to decrease the risk of infection. The bundle includes appropriate hand hygiene and sterile central line insertion. Maintenance steps include scrubbing the hub [central line] and skin antisepsis and daily review of the necessity of the line. Implementation of the bundle is planned for 2024/2025 and includes staff education about the steps and ongoing monitoring of infection rates.

Figure 8: Central line-associated bloodstream infection rate by facility type, 2019/2020 to 2023/2024



	2019/20	2020/21	2021/22	2022/23	2023/24
Tertiary	1.4	1.5	1.8	2.0	2.3
Urban	0.6	1.3	2.2	1.4	1.3
Regional	0.7	0.4	1.6	0.8	1.3
Pediatric	1.8	2.1	2.4	1.4	4.0

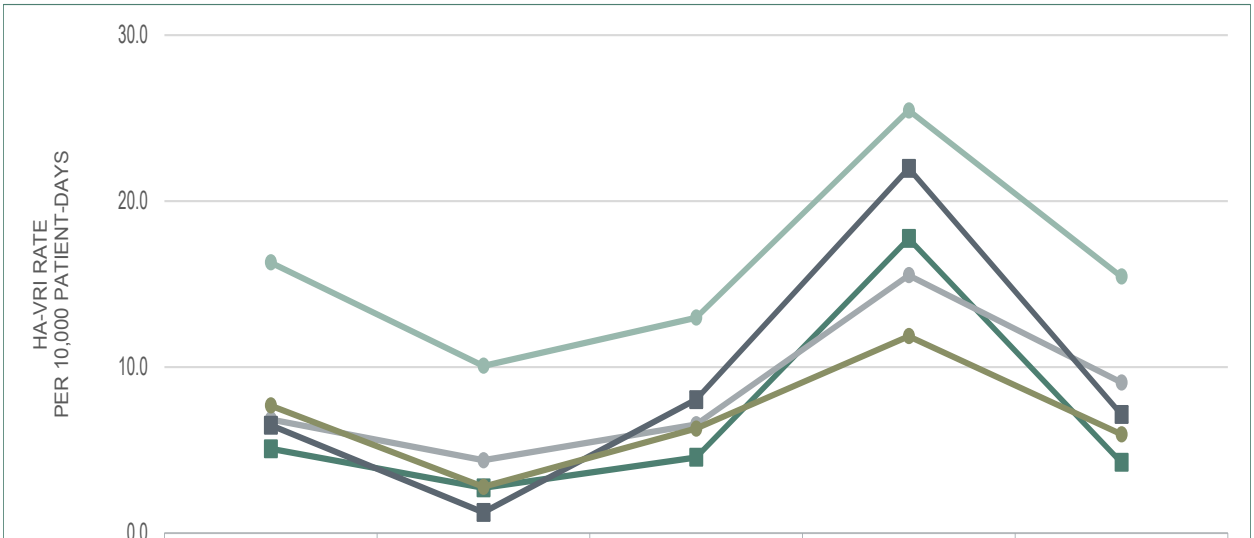
Viral respiratory infections

At the end of 2022/2023, surveillance activities on COVID-19 were discontinued. In 2023/2024, these surveillance activities were replaced with activities on viruses causing respiratory infection, including influenza and respiratory syncytial virus. Viral respiratory infections may cause severe patient illness or death in both adult and pediatric healthcare settings.

Age is a key risk factor with regards to the severity, transmission and impact of viral respiratory infections. The consequences of viral respiratory infections are especially concerning for children and older adults with existing diseases or underlying conditions such as cardiac and pulmonary disease, cognitive disorders or immunosuppression. The emergence of COVID-19 underlined the need for data to inform AHS IPC practices for respiratory pathogens in healthcare settings. The focus of this surveillance is on patients who acquire a viral respiratory infection during their hospitalization. The AHS IPC protocol is based on the protocol developed by the Canadian Nosocomial Infection Surveillance Program. AHS IPC physicians and staff are members of the protocol working group.

In 2023/2024, viral respiratory infection rates decreased in the spring, but increased in the fall and winter (refer to Figure 9). For adults, most hospital-acquired viral respiratory infections were COVID-19 and for pediatrics, the majority were enterovirus or rhinovirus infections.

Figure 9: Hospital-acquired viral respiratory infection cases by zone, January 2023 to March 2024



	2022/23 Q4	2023/24 Q1	2023/24 Q2	2023/24 Q3	2023/24 Q4
South	5.1	2.7	4.6	17.7	4.3
Calgary	6.9	4.4	6.6	15.5	9.1
Central	6.5	1.3	8.0	22.0	7.2
Edmonton	16.3	10.1	13.0	25.5	15.5
North	7.7	2.8	6.3	11.9	6.0

Surveillance for surgical site infections

Provincial surveillance occurs for surgical site infections following selected cardiovascular, orthopedic and vascular procedures.

AHS surgeon shares hand hygiene expertise to benefit patients

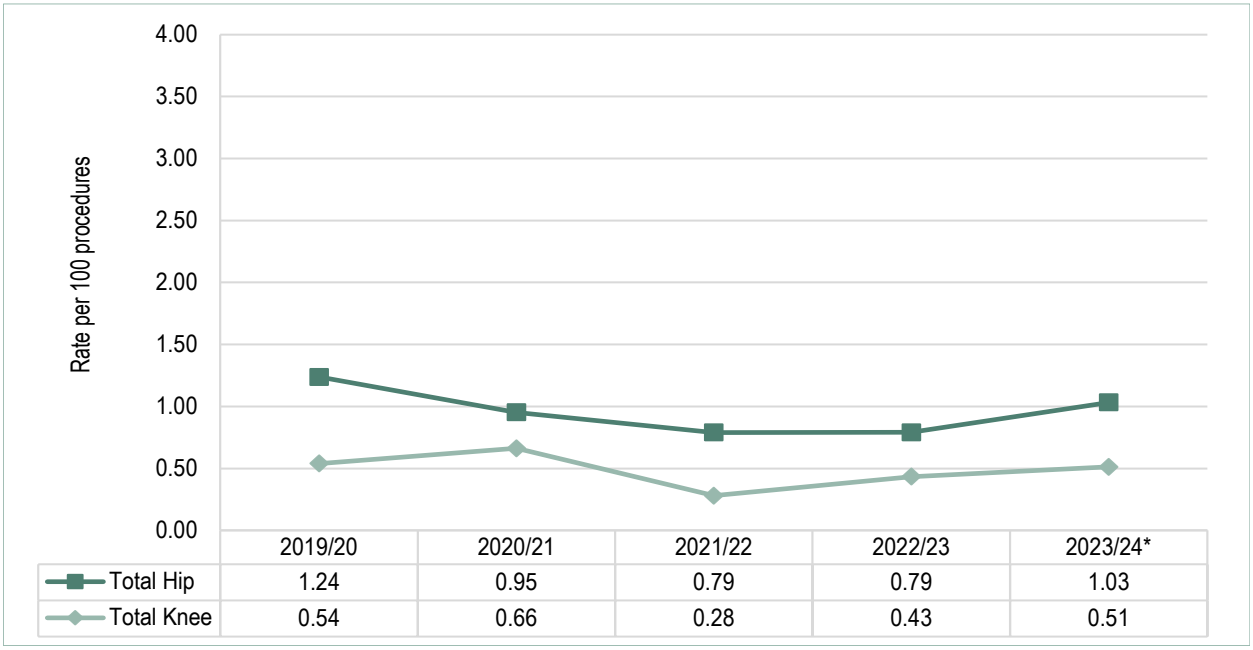
An AHS surgeon has become the first clinician from the province to have an educational video published by the New England Journal of Medicine. University of Alberta Hospital surgeon Dr. Rachel Khadaroo developed the eight-minute video with the aim to decrease surgical site infections by teaching proper preoperative surgical hand hygiene technique.

The Alberta-made video joins about 100 other peer-reviewed educational videos shared and promoted by the world's oldest continuously published medical journal. These videos teach procedures requiring skilled techniques and specialized physical examination.

Reducing the risk of surgical site infections benefits patients and the healthcare system. Surgical site infections increase the length of a hospital stay; lead to a longer recovery and/or unplanned hospital readmissions following surgery; and result in more time spent in intensive care units.

Surveillance following orthopedic procedures are performed at facilities across the province. Surgical site infection rates following total hip and total knee replacement procedures increased (refer to Figure 10). These rates are within the previously reported range and remain lower than rates in 2019/2020.

Figure 10: Complex surgical site infection rate following total hip replacement and total knee replacement, 2019/20 to 2023/2024* ***preliminary rate (April 2023 – December 2023)**



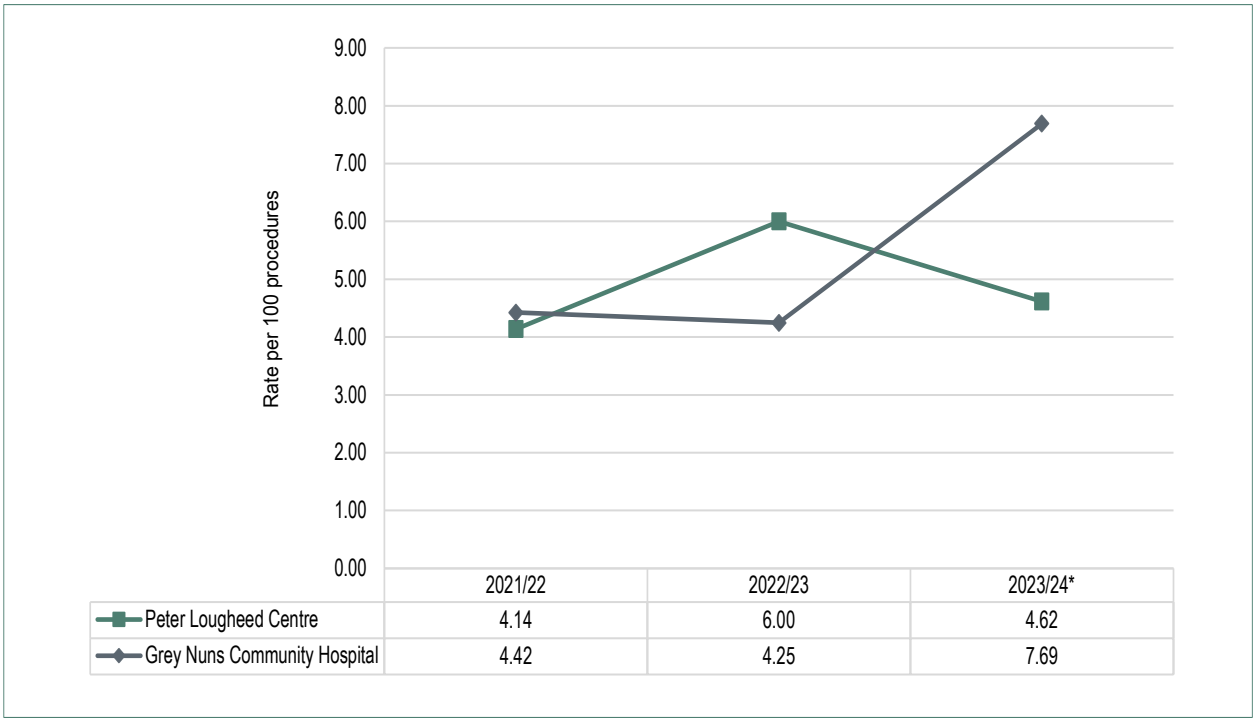
	2019/20	2020/21	2021/22	2022/23	2023/24*
Total Hip	1.24	0.95	0.79	0.79	1.03
Total Knee	0.54	0.66	0.28	0.43	0.51

Finding surgical site infections using automation

In 2023/2024, a team at the Centre for Health Informatics at the Cumming School of Medicine, University of Calgary, developed and validated machine learning models in automating the detection of surgical site infections. Gold standard surgical site infections cases were those identified by AHS IPC. Machine learning models used a combination of administrative data and data from patient medical records to identify deep incisional, organ space and complex surgical site infections. This advancement holds significant promise in enhancing AHS IPC measures within healthcare settings.

Surveillance following peripheral vascular bypass procedures is performed at the Peter Lougheed Centre and the Grey Nuns Community Hospital. In 2023/2024, surgical site infections following peripheral vascular bypass procedures decreased at the Peter Lougheed Centre and increased at the Grey Nuns Community Hospital (refer to Figure 11). In response to the elevated rates of vascular surgical site infections at the Grey Nuns Community Hospital, the IPC team engaged with the surgical program and the National Surgery Quality Improvement Program team to discuss the rates and maintain open communication to address these increases. Infection rates are shared with the Covenant Health IPC committee and these data are included in Unit Surveillance Reports. IPC also share surveillance data and collaborate with the surgical team on infection reduction initiatives.

Figure 11: Complex surgical site infection rate following peripheral vascular bypass procedures, 2021/22 to 2023/2024* ***preliminary rate (April 2023 – December 2023)**



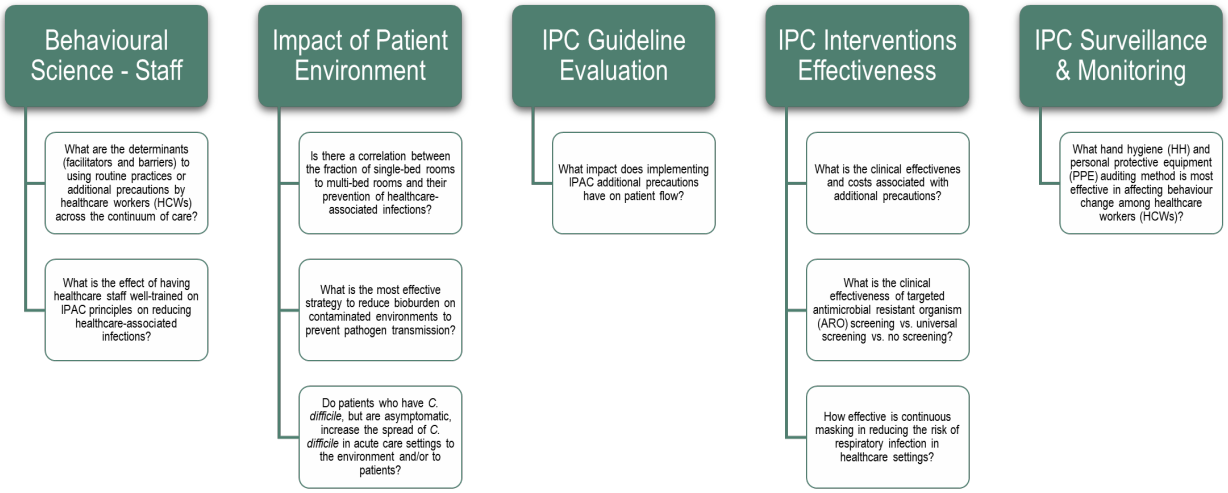
	2021/22	2022/23	2023/24*
Peter Lougheed Centre	4.14	6.00	4.62
Grey Nuns Community Hospital	4.42	4.25	7.69

Provincial IPC research priorities

In 2019/2020, the AHS IPC Research Priority Setting Planning Committee was established to oversee a research priority setting project. In 2021/2022, 300 individual research questions submitted were grouped into 159 questions further categorized into either evaluation, surveillance or quality improvement questions (96/159, 60.4 per cent) or research questions (63/159, 39.6 per cent).

In 2022/2023, a survey asked participants to rank the importance of the 63 research questions identified. Through the survey, 21 research questions were identified as important. AHS IPC staff and physicians, healthcare providers, researchers and patients from Alberta selected their top 10 research questions (refer to Figure 12).

Figure 12: AHS IPC top 10 research questions



In 2023/2024, AHS IPC established a Research Advisory Committee to address these research questions in a coordinated manner. The committee consists of staff from all zones in AHS IPC and Covenant Health IPC; IPC Physicians; Workplace Health and Safety; Antimicrobial Stewardship; Microbiology; and Patient Partners. Students from the University of Calgary are assisting with literature reviews on the research priorities. All research identifies actions to help prevent healthcare-associated infections. AHS IPC staff use these actions to reduce patient infections. With fewer healthcare-associated infections, more beds will remain open to patients, improving patient flow and reducing emergency department and surgical wait times.

Human Resource Capacity

AHS IPC develops, implements and evaluates resources and tools that integrate IPC principles into clinical and non-clinical practice for all AHS staff and physicians. Collaboration with AHS Knowledge Resource Services contributes to improved access to evidence and information to support up-to-date IPC practices. AHS IPC also develops, implements and evaluates opportunities to support professional development for AHS IPC staff and physicians. AHS IPC staff have the opportunity to take an Infection Prevention and Control (IPAC) Canada endorsed or sponsored IPC course. Infection control professionals with at least two to three years of experience are encouraged to complete and maintain their Certification in Infection Control through the Certification Board of Infection Control and Epidemiology, Inc. Certification provides a meaningful indicator of a standard scope of knowledge and level of expertise.

Enabling IPC capacity for AHS

Education and training

AHS IPC supports education and training for AHS employees, medical and midwifery staff, students, volunteers and those acting on behalf of AHS such as contracted service providers. The provision of AHS IPC education and training is both extensive and diverse and uses a variety of teaching and learning approaches.

Across all zones, face-to-face interaction and using just-in-time feedback is one of the most important ways infection control professionals connect with staff and physicians. Other methods such as online access through the external and internal AHS IPC websites, video conferencing, social media and simulations are also used.

The AHS IPC Education and Learning Framework was released in 2021/2022 and the AHS IPC Teaching and Learning Working Group oversees the implementation of this framework.

eLearning modules

Interactive eLearning modules allow for convenient and flexible education while promoting learner engagement. eLearning modules are available through the AHS learning management system – MyLearningLink – on AHS Insite. AHS staff including medical staff are encouraged to complete the modules through this system as it records staff progress, modules completed and usage of these resources. All modules are also posted on the *Education & Training* webpage on the external *AHS IPC* website for contracted service providers and others without access to MyLearningLink.

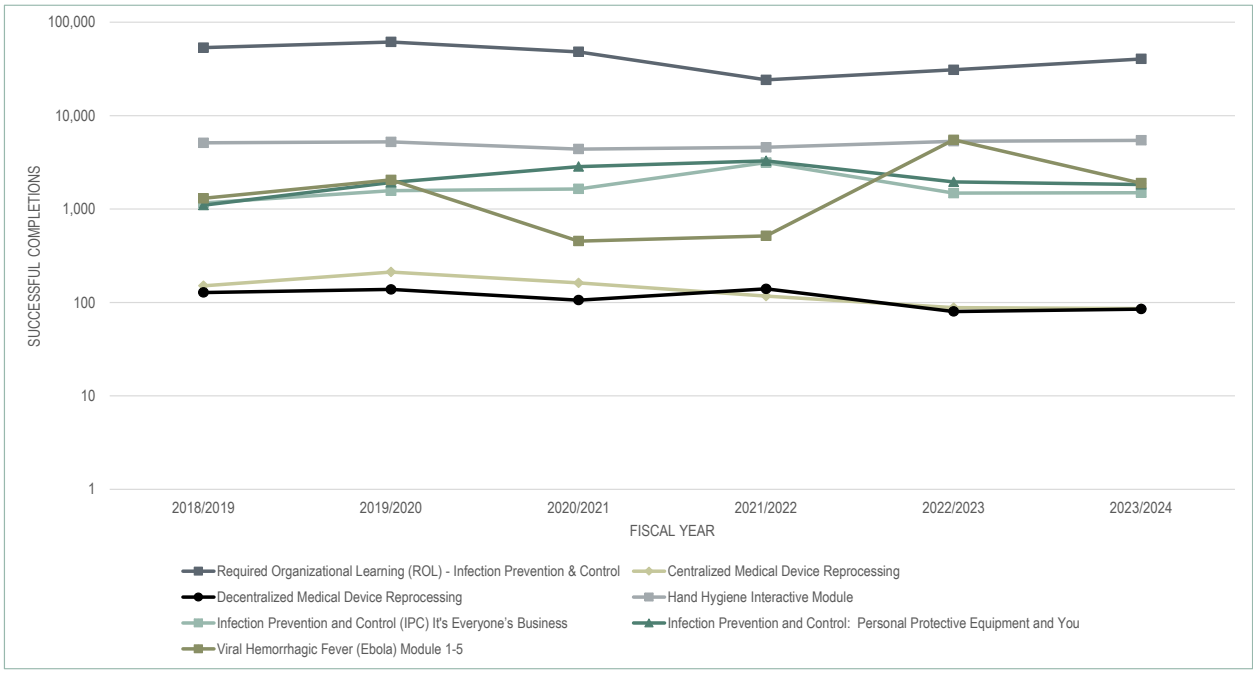
In 2022/2023, AHS IPC launched a new suite of IPC Risk Assessment resources including infographics, a practice support tool and an eLearning module: *Infection Prevention and Control – Risk Assessment – Module One*. Module One enables staff to explore what is involved in an IPC Risk Assessment and why it is important. In 2023/2024, AHS IPC launched *Infection Prevention and Control – Risk Assessment – Module Two*. Module Two helps learners apply what they learned in scenarios. An IPC Risk Assessment is a core principle and part of routine practices staff need to perform before and during every interaction with a person, task or environment to determine if exposure to an infectious agent is possible. By identifying risks and using IPC measures to reduce risk, staff protect themselves and others.These resources address knowledge gaps in both clinical and non-clinical staff to reduce the risk of spreading infection.

There are now nine AHS IPC-related eLearning modules on MyLearningLink, with the Required Organizational Learning: Infection Prevention and Control offered on MyLearningLink. In 2023/2024, there were 55,048 successful completions of these eLearning modules, which represents a 35.0 per cent increase compared to 2021/2022. AHS continued to support clinical practice across all care areas (refer to Figure 13). In mid-2020/2021, as part of a review of all Required Organization Learning courses, the AHS Learning Council revised the Required Organization Learning: Infection Prevention and Control frequency from annually to once every three years. As Figure 13 demonstrates, the uptake of eLearning modules increased in 2023/2024 as three years have passed since the revised required frequency.

To increase uptake, learning bundles were developed with a package of short, focused resources more manageable for staff to complete.

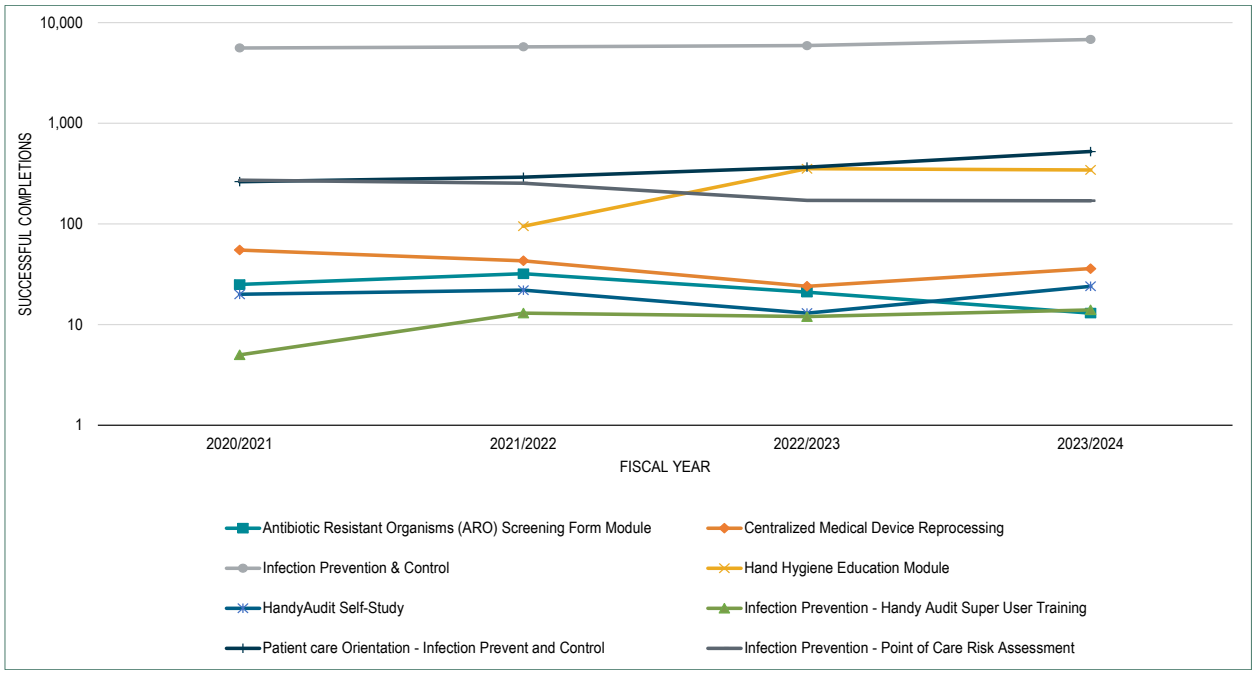
AHS IPC is increasing awareness among staff through discussion with clinical leadership teams as well as through AHS Community Engagement and Communications to promote all IPC educational opportunities, emphasizing the *IPC Competencies for Healthcare Providers*, which was developed by the Canadian IPC professional body (IPAC Canada). This will support patient safety, staff well-being and promote quality care delivery.

Figure 13: Number of AHS staff passing online eLearning modules



Covenant Health has its own learning management system – Covenant Learning Connection, known as CLiC – including its own IPC-specific eLearning modules. Currently, there are eight IPC-related eLearning modules on Covenant Learning Connection. In 2023/2024, there were 7,942 successful completions of these eLearning modules, which represents a 15.5 per cent increase compared to 2022/2023. (refer to Figure 14)

Figure 14: Number of Covenant Health staff passing online eLearning modules



Continuing Care AHS IPC Designate Education Program

In 2020/2021, the *Improving Quality of Life for Residents in Facility-Based Continuing Care: Alberta Facility-Based Continuing Care Review Recommendations Final Report (2021)* was released. This report made 42 recommendations. Recommendation 38 states continuing care sites must *"ensure that there is an on-site leader in each facility that has the expertise or access to expertise to devise an early pandemic management and prevention plan and has the authority to implement that plan to improve issues related to infection prevention and control."* In response, AHS IPC identified IPC Designate Education programs, which identify a person who is considered a site leader for IPC at each continuing care site, are in place in Calgary and Edmonton Zones, but such a program did not exist in the South, Central, or North Zones. In response, throughout 2021/2022 and 2022/2023, AHS IPC developed a Continuing Care IPC Designate Education Program for the three rural zones.

In 2023/2024, the three rural zones completed a pilot 10-week Continuing Care IPC Designate Program with five education modules to establish the IPC designates' foundational knowledge of AHS IPC best practices. The IPC designate completed the modules and a post-module survey including a knowledge check. The designate had access to one-to-one support from AHS IPC. As part of the pilot program, 37 IPC designates at 26 sites across the South, Central and North zones were recruited.

These designates implemented IPC best practices while overseen by infection control professionals supporting their site. The designate supported IPC practices by providing staff, patients and families with education, guidance and reminders. These actions reduce the risk of spreading infections and help keep patients in their homes. Patients who go to hospital may return home earlier, freeing up hospital beds. There are now plans underway to expand this to all zones with an implementation date scheduled for 2024/2025.

AHS IPC resources for practice

AHS IPC develops resources to support evidence-informed practice and provide direction to AHS staff and physicians. These resources are created in collaboration with partners and are reviewed at least once every three years. IPC resources are created and updated to manage new infections and disease emerging in healthcare settings requiring changes to standard Infection Prevention and Control (IPC) practices. Most resources are available on the external *AHS IPC* website so it is easy for healthcare partners and the public to find IPC information including an *IPC Emerging Issues* webpage. Most Covenant Health IPC program resources are available on the internal Covenant Health IPC website.

Resource manuals

AHS IPC develops provincial resource manuals supporting staff in acute, addiction and mental health, community-based, or continuing care to manage the care and placement of patients with known or suspected diseases. These resources are posted on the *IPC Resource Manuals* webpage on the external *AHS IPC* website and on the internal Covenant Health IPC website. In late 2023/2024, as cases of measles increased in Europe, AHS actively monitored the situation in Alberta to prevent possible outbreaks. In preparation for potential cases in the province, AHS IPC reminded staff about resources specific to measles on the external *AHS IPC* website.

Examples of these resources included the *Patient Symptoms Alert Poster* encouraging patients to report relevant symptoms and the *Rash Algorithm* helping healthcare providers assess patients in the emergency department with relevant symptoms. Increased awareness can help healthcare providers identify and manage patients early to prevent spread within healthcare settings.

Disaster management resources

Healthcare services are an integral component of every community. In the event of a disaster, healthcare services must remain accessible.

The AHS Incident Management System structure – based on the Incident Command System – enables rapid integration and connectivity between sites, services, zones and external partners. AHS IPC is represented at each level when systems are activated in the event of an emergency or disaster.

AHS IPC supports the commissioning of temporary healthcare service delivery areas and structures used during a post-disaster period and recommissioning healthcare facilities impacted by a disaster. Using lessons learned from the Slave Lake (2011) and Fort McMurray (2016) wildfires, AHS IPC released *IPC Tools for Disaster Management* on the external AHS IPC website in 2018/2019. AHS IPC staff use these tools to inform decisions in events, such as the 2023 Edson wildfires.

AHS IPC helps hospitals safely close and reopen during Edson wildfires

Wildfires caused the evacuation and recommissioning of the Edson Hospital twice in the spring of 2023. AHS IPC acted quickly to support patient and staff safety during this emergency, working with partners such as AHS Safe Healthy Environments, Facilities Maintenance and Engineering and the local medical device reprocessing experts, to evaluate potential smoke and humidity damage and recommend steps to safely get the hospital operational again. For example, they found a solution for monitoring humidity in clean supply storage areas that continues working in the event of a power outage.

Infection control professionals supporting the site used the AHS *IPC Post Disaster Recommissioning of Healthcare Facilities Checklist during hospital recommissioning. Recommendations* for recommissioning included discarding open medical supplies, laundering and replacing linens, cleaning the environment and resterilization of all sterile wrapped packages.

Lessons learned from this wildfire will be used to improve facility preparedness and response throughout Alberta in the future.

Best practice recommendations

In 2023/2024, AHS IPC working groups continued to consult on, develop or revise documents to help inform staff, physicians, patients and families and to support implementation of evidence-informed practice. AHS IPC consulted with the provincial AHS Patient and Family Advisory Council on *Horticulture in Healthcare*, *Laundering Personal Patient Items in Washing Machine* and the provincial *AHS Animal Interactions, Personal Pet Visitation,* and *Qualified Assistance Dogs Policy*.

AHS Patient and Family Advisors provided feedback to help improve the documents. For example, their input informed the recommendations and the *Horticulture in Healthcare Frequently Asked Questions*. Question 4 addresses what patients, families and visitors need to know before bringing flowers or plants into a healthcare setting for a patient.

All best practice recommendations are posted on the *Best Practice Recommendations* webpage on the external *AHS IPC* website and on the internal Covenant Health IPC website.

Enabling IPC competency for infection control professionals

AHS IPC strives to align its human resources across the province to meet workload requirements and provide ongoing improvement in safe patient care. Professional development for infection control professionals is supported to advance competency and enhance staff satisfaction. The work below aligns with the AHS IPC program's strategic goals to improve the experience and professional development of AHS IPC staff.

Orientation and ongoing educational opportunities to support AHS IPC staff

An influx of staff into the AHS IPC program led to the implementation of standardized processes and tools, including two orientation "How To" guides, an orientation checklist specific for each role in the AHS IPC program, an orientation ongoing self-assessment tool and a progress report tool. These tools standardized the orientation process and provided consistency for all program staff.

The AHS IPC Competency Framework outlines the competencies for each role in the program and describes the expectations at different levels. Once a staff member has determined their learning goals such as acquiring a new competency or advancing expertise in an existing competency, conversations with their leader help them set learning goals and identify resources needed to succeed. Follow-up conversations are planned with that leader to provide feedback on each person's progress.

This work complements the AHS IPC orientation process and tools by focusing on the importance of professional development and growth for all people and positions in the program not only as part of the orientation process, but beyond. This is the first competency framework to describe all positions in an IPC program, and IPAC Canada held a webinar in late 2023/2024 to highlight the work.

Experiential Learning Program for novice infection control professionals

Throughout 2023/2024, a new experiential learner-centred program for novice infection control professionals was piloted in the Calgary Zone. The learning program helps new infection control professionals learn and apply IPC principles and processes. New infection control professionals reported the current onboarding and orientation processes did not fully meet their needs to become proficient (refer to Figure 15).

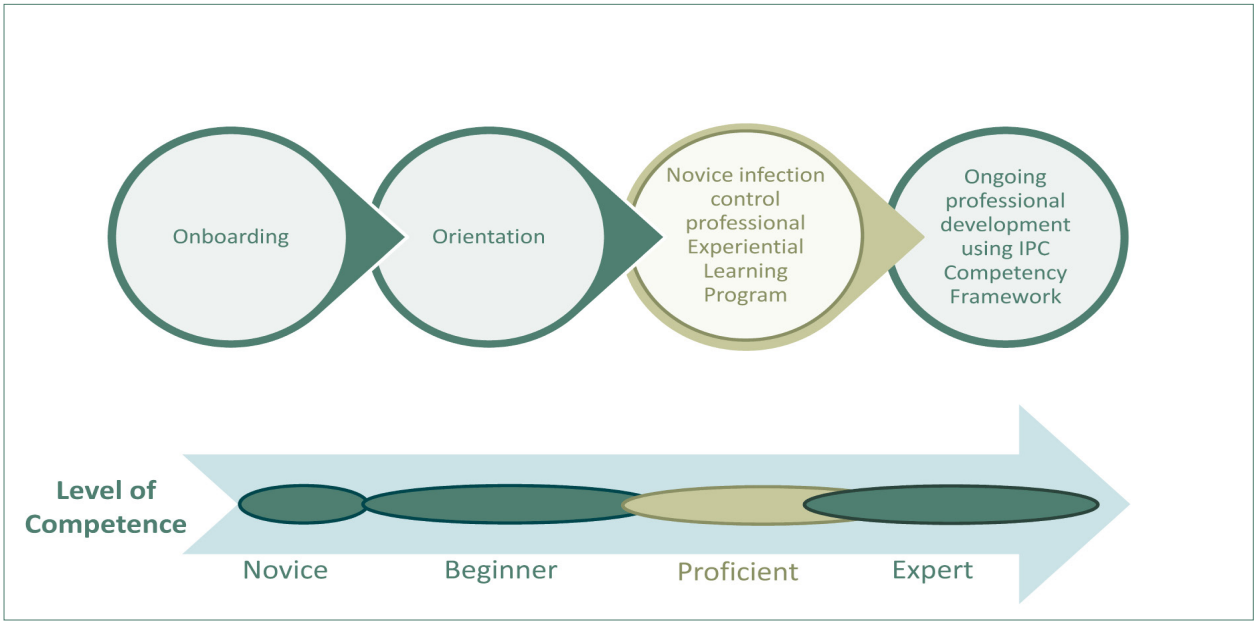
There was a steep learning curve and dedicated support was not always available. The new program helps new infection control professionals acquire and apply knowledge and skills required in the AHS IPC Competency Framework. Previously, new infection control professionals learned about infection prevention and control by reading and recalling information. The new program enables new infection control professionals to learn about IPC by doing and applying what they have learned with dedicated support. This helps them to competently translate knowledge into practice.

The Calgary Zone pilot occurred between late 2022/2023 and late 2023/2024 and included 20 sessions over 10 months. Eight infection control professionals participated in the pilot, which was evaluated using a pre- and post-assessment survey, guided reflections following each session and grading of the assignments. All infection control professionals indicated their competency improved and they felt “more confident, self-assured and practiced in their role”.

> *“I highly recommend that this pilot program become formalized to provide some structure and basic knowledge that all [infection control professionals] gain collectively; I think this program, instills and reinforces the basics from the orientation manual but also opportunity to assess and improve your ICP practice knowledge.”*
> – Anonymous, Infection Control Professional, AHS IPC

This pilot demonstrated the value of the AHS IPC Competency Framework as a tool for guiding educational content. It also highlighted the benefits of an experiential learning approach for novice infection control professionals to become proficient. Plans are underway to incorporate this program provincially to support the learning of AHS IPC staff.

Figure 15: Experiential Learning Program



Education and information sessions

The AHS IPC program encourages AHS IPC staff and physician participation in education opportunities to build and maintain competencies. Two examples of these opportunities are AHS IPC PLuS sessions and Special Education Sessions.

AHS IPC PLuS sessions are short 13-minute talks allowing colleagues to share experiences and learn from others about highlighted work. Sessions are hosted once a month and two speakers present at each session.

In mid-2023/2024, Chris Mayhew, Senior Consultant, Engagement and Patient Experience, AHS, presented an AHS IPC PLuS session – “In the Balance - Family Presence and Visitation during the Pandemic” – and in late 2023/2024 Andrea Laboni, Associate Professor, Geriatric Psychiatry, University of Toronto presented an IPC PLuS session – “Person-centred Infection Prevention and Control for People with Dementia”. Both sessions focused specifically on patient-related topics and were important reminders for AHS IPC of the person on the other side of the decisions we make as a program and the effects those decisions can have on them.

In addition to AHS IPC PLuS, the AHS IPC program hosted Special Education Sessions on an ad hoc basis on topics thought to be of broad interest to AHS IPC staff and physicians. In 2023/2024, eight special education sessions were offered.

In early 2023/204, Mark Loeb, Professor, Pathology and Molecular Medicine, McMaster University, presented a special education session on the results from an international randomized control trial of N95 masks.

This was important for the program to understand emerging research on this topic as it was an area with limited evidence to inform AHS IPC practices throughout the COVID-19 pandemic and continued to be relevant.

In early 2023/2024, AHS rescinded the Use of Masks During COVID-19 Directive and in mid-2023/2024, implemented the Use of Masks to Prevent Transmission of COVID-19 Directive supporting zone and site leadership in determining if additional masking is necessary in their acute care facilities.

> *"Even though masks were no longer mandatory I appreciated seeing so many staff wearing masks and that a mask was available for me when I visited. There is so much sickness in winter here and the last thing my friend needed was to contract a cough after abdominal surgery."*
> – AHS Patient and Family Advisor

Provincial IPC staff debrief

Throughout 2020/2021 and 2021/2022, AHS IPC leadership conducted debrief sessions with AHS IPC staff to capture lessons learned from the COVID-19 pandemic.

In mid-2023/2024, AHS IPC staff participated in an in-person engagement session to identify high-yield work and discuss barriers to completing work, including duplication and low-yield activities. Seven priority activities were identified: managing emergencies; daily clinical support including consulting with unit staff and communicating with patients; providing education to healthcare workers; surveillance activities; provincial operations including supporting accreditation, hand hygiene, appropriate personal protective equipment and outbreak management; supporting innovative practices; and AHS IPC staff professional development.

Focus on Diversity, Equity and Inclusion

In late 2023/2024, AHS IPC established an AHS IPC Diversity, Equity and Inclusion Committee dedicated to communicating diversity and inclusion messaging and learning opportunities across the provincial IPC program. This includes applying a diversity, equity and inclusion lens to public facing resources and AHS IPC screening and additional precautions practices as well as building inclusiveness into the provincial IPC program.

Workplace Health and Safety

AHS IPC and Workplace Health and Safety have a shared mandate to protect healthcare providers from acquiring or transmitting communicable diseases while at work. Healthcare providers are at increased risk of acquiring communicable diseases and potentially transmitting these diseases to others because of their close contact with others. AHS IPC and Workplace Health and Safety collaborate on communicable disease management in healthcare settings to help staff respond appropriately, especially in the face of emerging infectious organisms and emerging evidence.

The health and safety of our workforce is critical to allow for a patient-focused high quality healthcare system to continue to exist. AHS, including IPC and Workplace Health and Safety, participates in regular meetings with the Alberta Union of Provincial Employees, Health Sciences Association of Alberta and United Nurses of Alberta. AHS engagement with the unions is also improved through ongoing union participation in all Joint Workplace Health and Safety Committees. These committees bring together managers and workers from AHS areas to promote health and safety and promote communication on important topics such as the Aerosol-Generating Medical Procedure Guidance Tool. The committees provide input, recommendations and support to AHS leaders who are held accountable for creating and promoting a safe, healthy and inclusive workplace.

Workplace Health and Safety works to improve the safety culture at AHS. This is accomplished through targeted initiatives to increase incident reporting, streamline and support incident investigations and to promote positive changes aiming to prevent and reduce hazards in patient care environments.

Preventing and reducing the severity of physical and psychological injuries is necessary for creating and maintaining a healthy and fully staffed workforce. This leads to increased patient safety and contributes to more positive outcomes.

In alignment with direction and guidance from Alberta's Chief Medical Officer of Health, the Public Health Agency of Canada, World Health Organization and others, all appropriate controls were in place in AHS and Covenant Health to support healthcare provider safety throughout the response to respiratory viral season and throughout the year.

In 2023/2024, the AHS Influenza Immunization Campaign was supported by 767 Flu Champions and 64 casual staff, who provided roving influenza vaccinations on site and at AHS Workplace Health and Safety immunization clinics at over 118 sites across the province. During this campaign, the COVID-19 Moderna XXB.1.5 vaccine was also offered to AHS staff during the same appointment as their influenza vaccine.

The AHS goal is to immunize 80.0 per cent of the workforce against influenza annually. AHS Workplace Health and Safety tracks voluntary submissions on the number of AHS employees immunized for influenza through the Got My Flu Shot Form, to help in workforce planning in the event of an outbreak. AHS Workplace Health and Safety works to support ongoing strategic communication, including reminders of the importance and benefits of vaccination, to expand the network of Flu Champions and to continue active collaboration with AHS Public Health to make immunization accessible to all staff.

Physical Environment and Infrastructure

Managing the physical environment helps break the chain of infection and AHS IPC works closely with partners to provide appropriate infrastructure, risk reduction strategies and clean care environments. There is collaboration at site, zone and provincial levels with AHS Capital Management; Contracting, Procurement and Supply Management; Facilities Maintenance and Engineering; and Linen and Environmental Services for infrastructure and construction activities.

Infrastructure and construction

AHS IPC supports new facility construction and ongoing renovations at existing facilities. Facility design is fundamental in the prevention of infection transmission. Current design requirements include, but are not limited to, the use of single versus multi-bed hospital rooms; adequate spacing between patient spaces; the ability to prevent airborne infections using negative airflow; heating, ventilation and cooling in operating theatres; and use of non-splash sinks in clinical areas. AHS IPC works closely with partners to optimize design in new and existing facilities. To provide guidance on IPC principles related to construction and design, AHS IPC staff and physicians are active participants of the multidisciplinary project teams.

Airborne isolation rooms

An inventory of airborne isolation rooms in AHS and Covenant Health acute care facilities is updated annually. The inventory provides guidance to frontline staff when managing patients with suspected or confirmed communicable diseases requiring airborne precautions, such as measles, pulmonary tuberculosis and varicella.

Reducing the risk of infection in correctional care

The correctional centre setting is different from the traditional healthcare setting as healthcare is not the primary service provided. The primary service is providing custodial and community supervision with AHS acting as a contracted service provider. For many patients entering a correctional centre it may be the only form of healthcare they receive and the first time they find out they have an infection. AHS IPC helps these settings identify and manage symptomatic patients and reduce the risk of spreading infection to others.

Patients with tuberculosis require careful placement to prevent exposing other patients to this infection. In 2023/2024, infection control professionals and the staff in the medical infirmary at the Edmonton Remand Centre found the negative air pressure in the airborne isolation room could not be easily monitored. After discussions with property management, monitors were installed.

Adapting spaces and expanding capacity

AHS IPC staff and physicians consult with partners such as site management and programs to assess non-traditional spaces for inpatient care when additional spaces are required for patients. These spaces are not originally designed for patient accommodation but can be adapted to deliver safe healthcare services. While providing care to patients in these non-traditional spaces can be challenging, AHS IPC provides guidance on ways to reduce the risk of infectious disease transmission and provide safe patient care when these spaces are the only accommodations available. In acute care settings, AHS IPC updates the status of patients placed on additional precautions daily. This step, in addition to attending zone capacity meetings and site bed meetings, provides required support to maintain capacity and patient flow through the healthcare system.

Staff use AHS IPC resources, including *IPC Patient Risk Assessment Checklist for Use of Overcapacity Spaces* and *IPC Space Risk Assessment for Potential Acute Care Overcapacity Space* during pandemic to make decisions about where to place patients. AHS IPC review these resources to support ongoing bed pressures and overcapacity needs as a result of the fall and winter viral respiratory season.

Adapting hospital spaces improves patient flow during Calgary childcare facilities outbreak

Sites, departments and programs worked together to quickly adapt to improve emergency room wait times, patient flow and continuity of care during an unexpected outbreak at Calgary childcare facilities.

The emergency department, AHS IPC and other programs at the Alberta Children's Hospital in Calgary Zone partnered to use existing spaces and resources to manage a large increase of infections. Access to all existing services for patients, families and the public continued. Volunteer resources helped with signage and wayfinding to guide patients and families.

In mid-2023/2024, a sudden and unusual increase in the number of children with gastrointestinal illness symptoms presented to the site. The Medical Officer of Health later declared an outbreak of pathogenic Shiga toxin-producing Escherichia coli. These bacteria may lead to a life-threatening disease – hemolytic uremic syndrome – especially in young children.

AHS Safe Healthy Environments worked to identify the source in the community and the hospital prepared for a surge of cases. AHS IPC reinforced best practices to reduce the risk of transmission, including placement of patients, hand hygiene messaging, using additional precautions, designating washrooms and cleaning and disinfecting measures. The use of Connect Care was invaluable for managing patient information and staff communication during the outbreak.

Additional patient assessment and follow-up laboratory testing was required and a procedure room within the emergency department was repurposed to function as a follow-up clinic. As more symptomatic children presented to the emergency department, the site acted quickly to create a large-scale follow-up clinic in non-traditional spaces.

AHS IPC provided recommendations for a patient check-in and initial waiting area, nursing assessment stations, laboratory collections, physician assessment stations and a second waiting area consisting of a nourishment station. Dedicated follow-up clinics were established at the Peter Lougheed Centre and South Health Campus to supplement Alberta Children's Hospital and improve convenience and access for patients and families.

Provincial capital funding review of medical device reprocessing areas

Provincial capital funding for medical device reprocessing areas requires a long-term commitment and is based on the Alberta Health *Reusable & Single-use Medical Devices Standards: Standards for the reprocessing of reusable medical devices and for the use of single-use medical devices in all health care facilities and settings (2019)*. Provincial review of AHS and Covenant Health medical device reprocessing areas began in 2010 to assess compliance with the standards and continues on a scheduled cycle. These reviews identify the equipment and infrastructure needed to maintain operations. Correcting equipment and infrastructure deficiencies decreases the risk of reprocessing failures, addresses patient and staff safety concerns and contributes to maintaining surgical service.

To support capital requests arising from the provincial reviews, two Major Capital Needs Assessments were completed in 2013 (Phase 1) and 2021 (Phase 2). These needs assessments outline the background and scope of projects for priority sites and were followed up with cost estimates to inform the capital funding request to the Government of Alberta.

Capital funding was requested for a total of 26 AHS and Covenant Health sites with medical device reprocessing areas. To date, 22 sites have received funding. Four of the 22 are complete, the rest are in progress. The Government of Alberta announced funding for three sites in 2019/2020, eight sites in 2020/2021, two sites in 2021/2022, five sites in 2022/2023 and four sites in 2023/2024. Sites in the most recent announcement include the Alberta Children's Hospital, Drumheller Health Centre, Grey Nuns Community Hospital and Misericordia Community Hospital. A total of four sites remain unfunded.

Remaining projects will be reviewed for priority, scope and cost confirmation in the coming years.

The Provincial Medical Device Reprocessing Department Upgrades project was one of AHS' top priorities submitted in the 2022 Capital Submission. Additional medical device reprocessing upgrades were also requested as part of the Alberta Surgical Initiatives submissions. These Alberta Surgical Initiatives submissions are more focused on additional capacity or functionality to support surgical uplifts and changes in service rather than deficiencies to maintain essential operations.

Construction-related resources

Design and construction

The Design and Construction Working Group is an initiative between AHS Capital Management and AHS IPC supporting compliance with IPC requirements during facility design, construction and maintenance activities.

In 2022/2023, AHS IPC also participated in the review of the *Design Guidelines for Continuing Care Facilities in Alberta (2018)*. Released in late 2023/2024, this document – now referred to as the *Continuing Care Design Standards and Best Practices in Alberta (2023)* – was authored jointly by Alberta Infrastructure, Alberta Health and AHS and incorporated learnings from COVID-19.

In 2023/2024, AHS IPC collaborated on the development of design guidelines as part of the *Continuing Care Capital Program*. The need for community care and continuing care is expected to rise significantly over the next 10 years as Albertans are living longer with increasingly complex needs.

There is an identified need to develop specialized housing options to address the unique care and supports for people living with dementia, young adults with disabilities and others living with overlapping health needs. As part of the Small Care Home Stream of Continuing Care Capital Program, supporting standalone homes with four to 14 residents, AHS IPC provided input into the *Continuing Care Capital Program – Small Care Home Design Requirements Checklist 2023-2024*.

AHS IPC is also developing general design guidelines for small care homes to reduce the risk of infection in smaller home-like environments for clients and residents.

The IPC Design and Construction Forum, which includes representatives from Alberta Infrastructure, meets monthly to share information and discuss topics in a multidisciplinary setting.

Linen and Environmental Services

AHS IPC and Linen and Environmental Services work together on the Linen and Environmental Services Practice Working Group. This working group develops and revises practices related to cleaning and disinfection to maintain clean and safe patient environments. In 2023/2024, this working group reviewed and updated 14 AHS Linen and Environmental Services resources with IPC content. AHS IPC also provides representation supporting the Nutrition Food Services Safety Practice Working Group, which is responsible for developing and revising practices related to food safety. In 2023/2024, this working group reviewed and updated five Nutrition Food Services resources with IPC content.

The partnership between AHS IPC and AHS Linen and Environmental Services remains strong. This important relationship enabled the creation of collaborative responses to emerging needs and the development of resources for frontline staff. Throughout 2023/2024, the programs were unified in their efforts to transition away from COVID-19 specific processes and resources to move towards an approach encompassing all viral respiratory infections.

Auditing for excellence

The AHS Linen and Environmental Services Auditing for Excellence Program continued to perform visual and ultraviolet cleanliness audits of the patient environment. Visual audits assess whether the physical environment and surfaces look clean compared to expected cleaning outcomes. Visual audits must score 85.0 per cent or more to pass. Ultraviolet or microbial audits use a luminescent, colorless material applied to high-touch surfaces prior to a room being cleaned.

Once the area is cleaned, the auditor uses a hand-held ultraviolet flashlight to detect any remaining residue of ultraviolet marker on the surface. Each ultraviolet audit is comprised of up to 10 markers and must score 80.0 per cent or more to pass. Audit findings are entered electronically from a hand-held mobile device. The web-based platform supports real-time access to audit results informing AHS' response and improvement initiatives.

As of late 2023/2024, more than 18,000 audits – both ultraviolet and visual – were completed across AHS sites. The provincial audit scores averages for the fiscal year were 90.6 per cent for visual audits and 82.05 per cent for ultraviolet audits. The highest rated items were ceilings, cubicle curtains, light fixtures and window coverings. Areas that required the most improvement included hard flooring with dirty residue, debris or inconsistent appearance; sinks, tubs or showers with mineral deposits, spots or dirty residue; and doors with dust, adhesive residue or removable clean chemical residue. With continued staffing pressures and other challenges faced by Environmental Services, ongoing audits showed the importance of and commitment to the program within the department and organization.

In late 2023/2024, a member of the AHS Nutrition, Food, Linen and Environmental Services Provincial Operations Support team gave an AHS IPC PluS session entitled "Linen and Environmental Services Cleaning Audits and Apps" to increase awareness on the Auditing for Excellence Program and its functions. This sharing of Information helps AHS IPC staff and physicians to expand on cleanliness standards and expectations with the AHS clinical operations teams.

Other Linen and Environmental Services and AHS IPC collaboration

In 2023/2024, Linen and Environmental Services representatives continued as ad hoc members on several AHS IPC working groups and committees including the Provincial Medical Device Reprocessing Working Group and the AHS IPC Document Working Group. Nutrition, Food, Linen and Environmental Services continue to be a standing member of the Provincial Infection Prevention and Control Committee.

Public Awareness and Education

AHS IPC collaborates with multidisciplinary partners to support public awareness and education. Antimicrobial stewardship is the wise use of antibiotics to preserve their value and effectiveness. It is an example where public awareness and education is important for both the healthcare and public domains. AHS IPC physicians are leaders in the work directed to patient populations and healthcare providers. AHS IPC also collaborates with partners, such as Do Bugs Need Drugs?, a community program about the wise use of antibiotics and *MyHealth.Alberta.ca* who focus on providing information targeted to the public.

Promoting antimicrobial stewardship awareness and education in the healthcare domain

Antimicrobial Stewardship promotes optimal antimicrobial therapy including assessment of the need for antimicrobials, and if antimicrobials are needed, the appropriate selection, dosing, route and duration of antimicrobial therapy. It is a patient safety initiative meant to:

- Optimize patient clinical outcomes
- Minimize antimicrobial adverse effects/toxicity
- Reduce the selection of certain pathogenic organisms, e.g., *C. difficile*
- Reduce or stabilize antimicrobial resistance.

Work continues to increase healthcare providers' knowledge about appropriate use of antimicrobials. The AHS Provincial Drug Formulary is the list of medications, including antimicrobials, available within AHS and Covenant Health and utilizes restrictions to guide their use. Additionally, there are several evidence-informed, measurable and targeted antimicrobial stewardship interventions promoting appropriate antibiotic use.

AHS Antimicrobial Stewardship Program

In 2023/2024, the AHS Antimicrobial Stewardship Program restructured to better align with the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America Guideline for Implementing an Antibiotic Stewardship Program to leverage supports and expertise from other programs and develop an integrated provincial structure with provincial activity. Moving forward, the program reports to AHS Quality and Patient Safety. The Antimicrobial Stewardship Committee reports to the AHS Quality, Safety, and Outcomes Improvement Executive Committee. The primary focus of the committee is to monitor antimicrobial use and develop and implement initiatives that enable optimal prescribing and improved patient outcomes. The committee provides recommendations for the Drugs and Therapeutics Committee. Information about antimicrobial stewardship initiatives, resources, events, references and external links are posted on the *AHS Antimicrobial Stewardship Program* webpage located on the external AHS website.

Pharmacists use antimicrobial stewardship to improve patient flow in emergency departments

Contributing to AHS' key priorities to improve patient flow and continuity of care, temporary funding was provided to 16 sites to increase the complement of pharmacists and pharmacy technicians working in emergency departments.

This intersects with antimicrobial stewardship when pharmacists review microbiology results for antibiotic appropriateness and follow up with patients and prescribers to optimize care. Also, pharmacy technicians help with collecting best possible medication histories. This maintains an accurate record of the patient's recent antimicrobial treatment to help influence antimicrobial prescribing for any unresolved or persistent infections.

Provincial antimicrobial stewardship highlights

Appropriateness and Stewardship in Asymptomatic Bacteriuria Initiative

The Appropriateness and Stewardship in Asymptomatic Bacteriuria Initiative is an interdisciplinary, provincial project with the goal of reducing inappropriate urine testing and treatment of asymptomatic bacteriuria. The initiative's resources are available at the *Appropriateness & Stewardship in Asymptomatic Bacteriuria (ASAB) Initiative* webpage.

In 2022/2023, the initiative changed the Connect Care Urine Culture Order Set to require a clinical indication for urine testing, with the intent of reducing routine urine testing and tests with low clinical value. In 2023/2024, a study measured the impact of this change. It was found there were 1.81 fewer urine tests per 1,000 patient-days performed after the change resulting in 63 fewer urine cultures performed every month and a lower proportion of routine or low clinical value urine testing performed.

Optimizing the Management of *S. aureus* Bacteremia (OPTIMUS-SAB)

S. aureus bacteremia is a bloodstream infection associated with high mortality rates of 30.0 per cent. Alberta has high rates of about 1,800 per year and local data suggests only 30.0 per cent of patients are managed optimally. In 2023/2024, the Optimizing the Management of *S. aureus* Bacteremia initiative was designed to maintain timely, equitable and evidence-informed care to all patients. This will be accomplished through automated notification of cases to a centralized care team, enabling recommendations to the most responsible physician so patient care and timely Infectious Diseases consultation can be optimized. This initiative will be launched in one new zone at three-month intervals, with the Edmonton Zone launch planned for early 2024/2025.

Local antimicrobial stewardship highlights

Select areas have local antimicrobial stewardship programs supporting local improvement initiatives. Often activities use prospective audit and feedback initiatives, where trained physicians and pharmacists review targeted antimicrobial therapies and make recommendations to prescribing clinicians in real time when therapy is suboptimal.

Reviewing Remdesivir antiviral use to improve patient care

Remdesivir is an effective antiviral used to treat COVID-19. A remdesivir drug shortage was declared in early 2024. Due to reports of guideline-discordant remdesivir use, prospective audit and feedback of all remdesivir prescriptions began at the University of Alberta and Royal Alexandra Hospitals with the goal of maintaining appropriate use, thereby preserving remdesivir for those most likely to benefit. Work is currently in the data entry phase, but information from these audits will be valuable for an upcoming remdesivir formulary review.

Antimicrobial stewardship activities in the Calgary Zone

Throughout 2023/2024, prospective audit and feedback activities for bacteremia cases in the urban Calgary Zone sites continued. This work aligns with the Optimizing the Management of Staphylococcus aureus Bacteremia (OPTIMUS-SAB) initiative mentioned previously and will be reported along with it.

Antibiotics are one of the most prescribed medications. Of these, penicillin is the most prescribed and is the most common allergy listed in patients' medical records. However, most patients with a penicillin allergy are not allergic. The cost of treating patients with penicillin allergies is higher as treatment with other antibiotics often results in longer hospitalizations with increased rates of adverse effects. In late 2023/2024, the Foothills Medical Centre began systematic penicillin allergy de-labeling assessments for patients. Research has shown de-labeling penicillin allergies can decrease the risk of certain healthcare-associated infections, reduce costs and optimize patient outcomes.

Antimicrobial stewardship activities in the North, Central and South zones

Prescribing awareness is a proven quality improvement mechanism aiding clinicians to amend their practice. In 2021/2022, prescribers and patient care units in the South Zone were provided with infographics that outlined their antimicrobial prescribing and usage for the calendar year. An evaluation of this initiative was found beneficial for both prescribers and the patient care units as the teams discussed this topic. In 2022/2023, this was expanded to the Central Zone and North Zone and is now standard practice.

North Zone antimicrobial stewardship team looks for improvements

In 2023/2024, a local antimicrobial stewardship team was established at the William J. Cadzow – Lac La Biche Healthcare Centre in the North Zone. A pre- and post-questionnaire asking about the levels of nursing and physician awareness and comfort with antimicrobial stewardship was performed. This identified areas for future focus, including the reduction of over prescribing of antibiotics and improving access to antimicrobial prescribing resources.

Antimicrobial stewardship activities in the Edmonton Zone

The prospective audit and feedback of restricted antibiotics, such as carbapenems, daptomycin and linezolid continued to be a core initiative. Since 2018, more than 3,500 prescriptions were reviewed. More than one-third of these prescriptions were optimized through the University of Alberta Hospital / Mazankowski Alberta Heart Institute / Kaye Edmonton Clinic Antimicrobial Stewardship Program.

In 2023/2024, at the Royal Alexandra Hospital, a retrospective review identified almost three-quarters of patients were misdiagnosed as having *C. difficile* infection and were unnecessarily treated. This was likely due to a misinterpretation of test results. Subsequent prospective audit feedback of patients tested for *C. difficile* infection provided an opportunity to promote appropriate diagnoses and allow for judicious use of antimicrobials to reduce risk of acquiring *C. difficile* infection.

Covenant Health Antimicrobial Stewardship Program

Antimicrobial stewardship includes optimizing antimicrobial therapy to achieve best patient outcomes, reduce risk of infection and promote patient safety. Antimicrobial stewardship information, such as the Covenant Health Antimicrobial Stewardship e-Newsletter (CHASE), site-based antibiotic usage reports, educational posters and pre-printed forms and tools for management of key infectious diseases are located on the internal Covenant Health website. There are several antimicrobial stewardship initiatives using prospective audit and feedback, including four ongoing initiatives on restricted antibiotics, inpatient fluoroquinolone prescriptions, inpatient piperacillin-tazobactam prescriptions and *S. aureus* bacteremia cases.

Promoting awareness and education in the public domain

Do Bugs Need Drugs?

The focus of Do Bugs Need Drugs? is to make antibiotic education a part of good primary healthcare, which contributes to the health, understanding and satisfaction of the patients and their families. In 2023/2024, Do Bugs Need Drugs? expanded electronic outreach to all Albertans and numerous communities and organizations including development, validation, translation and distribution of materials.

Versions of the *Guide to Wise Use of Antibiotics* are available online, including English, four Indigenous and 27 immigrant languages. This enables more Albertans to get healthcare information in their preferred language. The guide aims to improve antibiotic use, by educating the public on how to manage infections, how to understand when an infection potentially needs antibiotics, when it likely does not and how to recognize serious symptoms.

All of these initiatives aim to reflect the three key messages of Do Bugs Need Drugs?: hand hygiene is the best way to stop infection transmission; bacteria and viruses are different and antibiotics do not work for viral infections; and use antibiotics wisely to limit the development of antimicrobial resistance.

MyHealth.Alberta.ca

MyHealth.Alberta.ca is Alberta's online health resource for non-emergency health information. It offers valuable information on more than 8,700 health topics and tools to help Albertans make important decisions about their health. AHS IPC-related content includes 14 patient care handouts. Many of these handouts are translated into various languages. Albertans, Canadians and international citizens, primarily those from the United States of America, access AHS IPC-related content. The AHS IPC patient care handouts are also available on Connect Care so staff can print them for patients.

> *"I don't know how I got an infection. It happened at home and not when I was in the hospital. What would have helped me is some education on wound care and I am sure they had it, but it was not given to me when I was discharged."*
> – AHS Patient Family Advisor

The *Hand hygiene: A guide to clean hands* patient care handout was accessed, on average, 452 times per fiscal quarter and provides valuable information on when and how best to clean your hands.

In 2023/2024, AHS released its *Animal Interactions, Personal Pet Visitation, and Qualified Assistance Dogs Policy (2024)* co-sponsored by AHS IPC. AHS welcomes animals into its facilities as their important role in supporting patients, designated family or support persons and is recognized. This policy supports patient and family-centred care and the health, safety and well-being of all involved.

AHS IPC has a supporting best practice recommendations resource on *Animals in Healthcare* and an IPC patient care handout on *Animals in healthcare facilities: Pet visits*. AHS Patient and Family Advisors helped develop these resources.

> *"Seeing my dog while I was in hospital for 3 months would have made a huge difference in my wellness. Knowing there is a policy to make this happen safely is fantastic. I wish I had known about it."*
> – AHS Patient Family Advisor

Hand Hygiene

Hand hygiene is a general term referring to practices that remove microorganisms from the hands. Hand hygiene may be performed using alcohol-based hand rub or handwashing using soap and water. When performed correctly, hand hygiene remains the single most effective measure to reduce microorganism transmission in healthcare and maintaining hand hygiene compliance is essential. Ongoing work within AHS and Covenant Health strengthens hand hygiene practices in healthcare.

AHS IPC Hand Hygiene Program

In 2023/2024, AHS reported a hand hygiene compliance of 87.8 per cent. Hand hygiene reviews are performed across the province and throughout the continuum of care on an ongoing basis, with quarterly reporting. In 2023/2024, reviews were performed at 288 AHS acute care and non-acute care sites and in 1,239 areas or clinics across the province.

> *"I know staff clinicians are supposed to sanitize their hands between patients, but I am never sure they do unless I see them do it. During my last trip to the [emergency department], the doctor cleaned his hands in front of me. As an immunocompromised person I felt relief and greater confidence in his care."*
> – AHS Patient Family Advisor

The AHS IPC Hand Hygiene Program consists of zone teams, each comprised of a project manager and coordinator(s) and members from the provincial team providing support. The AHS IPC Hand Hygiene Program is a partnership between AHS IPC and healthcare providers and involves clinical and non-clinical departments.

One aspect of this partnership is recruiting and training healthcare providers to be site-based reviewers performing hand hygiene reviews. These reviewers are critical to both the success and sustainability of the AHS IPC Hand Hygiene Program. They perform hand hygiene reviews and identify barriers or challenges to performing hand hygiene at the local level, such as required education and training needs. Another aspect of this partnership is the alignment of provincial-level activities. The AHS IPC Hand Hygiene Program coordinates these activities with direct engagement at the local level through zone IPC committees.

Improving hand hygiene compliance at Alberta Children's Hospital Hematology Oncology Treatment (HOT) Clinic

A hand hygiene reviewer on modified duty was hired to collect monthly hand hygiene observations at the HOT clinic from April 2023 to December 2023. The reviewer provided real-time feedback directly to staff when they missed hand hygiene opportunities and reported monthly to the HOT clinic about unit hand hygiene compliance. Immediate, in person feedback promoted meaningful dialogue between clinical staff and the hand hygiene reviewer. Staff wanted to know "Which hand hygiene moment did I miss? Moment 4, 3, 2 or 1? Tell me now."

"A report is after the fact, no one has time to read all these numbers, and we need timely feedback to make a difference to increase patient safety."
– Carol Yuen, Registered Nurse Lead, Hematology Oncology Treatment Clinic, Alberta Children's Hospital

A total of 881 hand hygiene observations were collected with an increase in hand hygiene compliance through this initiative.

The AHS *Hand Hygiene Policy (2021)* and *Hand Hygiene Procedure (2021)* guide hand hygiene practices.

Monitoring hand hygiene compliance and offering direct feedback to healthcare providers are essential elements of hand hygiene improvement initiatives. For example, South Zone provided monthly update hand hygiene progress reports to each site showing the target requirements and the number of observations needed to reach target. Many partners connect with members of the AHS IPC Hand Hygiene Program as a result.

The AHS IPC Hand Hygiene Program uses a vendor-supported platform – Clean Hands. Site-based reviewers collect data entered or uploaded into the Clean Hands Portal via the Clean Hands Paper Tool or iPad app. The platform supports immediate feedback as users of the system can access real-time information on hand hygiene compliance through the Clean Hands Portal.

Addressing hand hygiene observation gaps identified by Accreditation Canada

The direct observation method continues to be the gold standard for collecting hand hygiene observations. In clinical areas and non-clinical settings where this method may not be reasonable nor practical, alternative approaches may be considered. To comply with the Accreditation Canada Hand Hygiene Compliance Required Organizational Practice IPC Standard, two (or more) of the following are required:

- Team members recording their own compliance with accepted hand hygiene practices (self-audits)
- Measuring product usage
- Questions on patient satisfaction surveys asking about team members' hand hygiene compliance
- Measuring the quality of hand hygiene using ultraviolet gels or lotions.

In 2023/2024, members of the AHS IPC Hand Hygiene Program developed various tools and resources to support these alternative approaches. Consultation between an area, the provincial IPC program and an AHS Accreditation Advisor is required before implementation.

Increasing accountability and ownership

The AHS IPC Hand Hygiene Program increases accountability and ownership of hand hygiene practices using site-based reviewers. In 2019/2020, it was identified that while AHS' hand hygiene compliance remained stable, the number of sites and units performing hand hygiene compliance reviews decreased. This was reflected in the results from the 2019-2023 Accreditation Canada surveys. A common deficiency is a lack of, or inconsistent numbers of hand hygiene observations collected.

Performing hand hygiene reviews can be challenging due to competing priorities of frontline staff. These included the launches of Connect Care, increasing patient acuity, staff turnover and frontline staff deployed to other areas within the healthcare system. The introduction of alternate work arrangements for eligible staff has also been a factor. The AHS IPC Hand Hygiene Program supports zones, sites and units by providing numerous hand hygiene compliance reports on an ongoing basis.

Recruiting and supporting reviewers

In 2022/2023, the recruitment of reviewers was a priority for AHS. Two projects were undertaken to help understand the barriers and challenges clinical operations leaders encountered with recruitment: a Manager's Needs Assessment and a Time-in-Motion Study.

A manager's needs assessment was completed. Data were collected through online surveys, one-on-one interviews and focus group interviews. A comprehensive communication strategy was developed with key messages linking hand hygiene compliance monitoring to AHS organizational values and patient safety outcomes. A recruitment campaign was developed to promote the hand hygiene reviewer role and its benefits.

In 2023/2024, additional work focused on performing an analysis of hand hygiene observations collected by site-based reviewers. Originally started in the Central Zone, a pilot project aimed to enhance data validity for site-based reviewers was expanded to the four remaining zones. Comprehensive data quality reports are shared with the IPC Zone Coordinators who can connect directly with a site-based reviewer to discuss improving validity of data. This allows for a provincial standardized follow-up process, while enabling the IPC Zone Coordinators to establish and maintain individualized, meaningful and supportive relationships with their site-based reviewers.

One of the barriers identified by reviewers and leadership was the time required to perform hand hygiene reviews using the direct observation method. A time-in-motion study was proposed to better understand the time needed to collect 50 hand hygiene observations across various acute care settings. Members of the AHS IPC Hand Hygiene Program and infection control professionals performed four 30-minute reviews at various pre-selected facilities throughout the province, including patient care areas in emergency, medical, surgical, mixed inpatient and intensive care units. Hand hygiene observations were collected most quickly in a weekday morning at all facility types. Under ideal conditions, 50 hand hygiene observations could be collected on a unit within 60 minutes at large urban, tertiary and pediatric sites. Regional facilities and smaller acute care facilities may need up to 90 minutes or two hours, respectively. This information was valuable for leaders to determine the approximate time commitment for their staff to collect hand hygiene observations as site-based reviewers.

Increasing awareness

The AHS IPC Hand Hygiene Program promotes activities to increase awareness of hand hygiene, accountability and ownership of hand hygiene practices. Covenant Health IPC participates in the planning and implementation of events. The IPC Events Working Group coordinate these events, which include Clean Your Hands Day on May 05, Global Handwashing Day on October 15 and National Infection Prevention and Control Week during the third week of October. These events are intended to connect staff and patients in a positive way relating to hand hygiene and IPC to inspire conversations and have fun.

In recognition of Clean Your Hands Day, May 05, 2023, Hand Hygiene Excellence Awards were presented to 31 people who were involved in hand hygiene related activities in their areas. In recognition of Global Handwashing Day, October 15, 2023 and National Infection Control Week, October 16 – 20, 2023, a package of IPC-related activities was developed to help promote and encourage frontline staff engagement.

"We always ask all medical professionals to clean their hands before any time they need to touch our daughter. Even if they have just done it in the hallway, as the doors aren't clean themselves. It's surprising how much resistance and frustration we are still faced when we ask this."
– AHS Patient Family Advisor

Site-based hand hygiene reviewer model increases observations

Identifying solutions for collecting sufficient hand hygiene observations is an ongoing challenge. In 2022/2023, an initiative at the Sturgeon Community Hospital highlighted a collaboration between AHS IPC and operations. They reestablished site-based reviews through their site IPC committee that, ultimately, increased hand hygiene observations.

In early 2023/2024, Foothills Medical Centre site management pursued alternative options for building a more comprehensive and sustainable site-based reviewer model. The model included staff on modified duties who met the role requirements to complete the Hand Hygiene Reviewer Training and perform reviews. It also included having a dedicated position to manage day-to-day operations, including scheduling of reviews at the site. This allowed reviewers to perform observations at various days and times, including evenings, weekends and holidays. This change provided a larger sample size and as a result, a more representative hand hygiene compliance. This model was used in areas with sufficient reviewers and those experiencing recruitment challenges and was shared with other facilities within the Calgary Zone and other zones.

"Our goal is to provide important value-added work for the site which is meaningful to workers with modified duties."
– Erin McConnell, Manager, Logistics Team, Foothills Medical Centre

In 2023/2024, 53 staff were trained to become hand hygiene reviewers, collecting 49,786 hand hygiene observations. As a site, the Foothills Medical Centre collected a total of 75,371 hand hygiene observations – a 241.4 per cent increase from 2022/2023.

Covenant Health IPC Hand Hygiene Program

In 2023/2024, Covenant Health reported a hand hygiene compliance of 94.0 per cent. Hand hygiene compliance is monitored in all Covenant Health acute care and continuing care sites at minimum twice a year between April 01 – May 31 and October 01 – November 30. It is important to note AHS and Covenant Health data are not directly comparable because of key differences between the data collection methods and the systems used to perform hand hygiene reviews.

The Covenant Health IPC Hand Hygiene Program is a partnership between Covenant Health IPC and healthcare providers. Education for auditors is standardized. There are new auditor training sessions as well as continued competency forum sessions for auditors provided by the infection control professionals to site-based reviewers every review period. Hand hygiene compliance is monitored in all Covenant Health acute care and continuing care sites. Although not mandatory, some ambulatory care and outpatient units participate in hand hygiene improvement initiatives by performing hand hygiene reviews and providing education. Specific hand hygiene practices and trends identified during reviews are reported to the unit manager for appropriate follow-up and tailoring of hand hygiene education. This just-in-time feedback as well as identification and reporting of trends at the unit level continue to be essential elements of hand hygiene improvement initiatives. Each program, site or unit creates a targeted action plan with specific interventions to increase hand hygiene compliance when hand hygiene compliance rates are less than 95.0 per cent.

In mid-2023/2024, leaders were provided with education on the Covenant Health IPC Hand Hygiene Program to increase their awareness and knowledge. It also empowered leaders to implement safe and effective hand hygiene practices locally.

In Covenant Health, the Covenant Health Hand Hygiene Policy (2021) and Hand Hygiene Procedure (2021) guide hand hygiene practices.

The Covenant Health IPC Hand Hygiene Program uses a vendor-supported platform – HandyAudit – based on the direct observation method. Data are entered into the HandyAudit portal using an AHS or Covenant Health issued iPad. The HandyAudit system, like the Clean Hands System, has the capacity to provide real-time compliance results.

Improving compliance with the Four Moments of Hand Hygiene

In 2023/2024, in Central Zone, Lady of the Rosary Hospital's action plan detailed specific moments missed as opportunities for education. The target hand hygiene compliance set by Covenant Health is 95.0 per cent. The spring 2023 hand hygiene compliance for the site was 94.5 per cent, with 104 compliant opportunities out of 110 opportunities observed. In the fall 2023 hand hygiene auditing period, the site experienced a decrease in all Four Moments of Hand Hygiene and the overall compliance for the site decreased to 87.4 per cent, with 108 compliant opportunities out of 135 opportunities observed. This prompted the development of a hand hygiene action plan. The site's action plan included specific comments, such as:

Moment 2 during medication pass was an area where education was provided. Moment 3 during resident feeds for our healthcare aides was another area where education was provided. Additionally, an IPC topic reviewing the Four Moments of Hand Hygiene was added as a standing item to staff meetings and the Hand Hygiene Education Module was assigned to all [Registered Nurses], [Licensed Practical Nurses] and healthcare aides for completion with site management to track completions.

Note: The overall site compliance includes both acute care units and long-term care units.

Personal Protective Equipment

Personal protective equipment are items worn to provide a barrier to help prevent potential exposure to infectious disease. These items include eye protection, face shields, gloves, gowns, medical masks and N95 respirators. When appropriately selected, based on an individual AHS IPC Risk Assessment and donned and doffed correctly, personal protective equipment is an effective measure to reduce microorganism transmission in healthcare. Ongoing work within AHS and Covenant Health strengthens personal protective equipment practices.

AHS Provincial Personal Protective Equipment Safety Coach Program

The improper use of personal protective equipment was identified as a major factor in microorganism transmission and was a common theme during outbreaks in acute care and continuing care settings. The staff needed support in the appropriate selection and use of this equipment and to address fatigue associated with its use. There were zone and site-specific initiatives throughout AHS and Covenant Health to address this.

> *"As a transplant patient in hospital numerous times I had blood tests, [intravenous lines] as well as paracentesis drains regularly. I felt very safe that sterile protocols were being practiced because I witnessed healthcare professionals constantly using hand sanitizer when putting on their gloves for each procedure. I witnessed staff removing their gloves upon completion of my procedure and redoing this very process upon their return to my care."*
> – AHS Patient Family Advisor

In late 2020/2021, AHS launched a Provincial Personal Protective Equipment Safety Coach Program for all zones and sites. This provincial program builds off of and complements existing initiatives. The program was developed by AHS IPC and endorsed by AHS Workplace Health and Safety. The goal of the program was to create a system of peer safety coaching with just-in-time support and mentorship to frontline healthcare providers, so they become more comfortable selecting and using personal protective equipment to prevent transmission of infectious diseases within healthcare. In late 2020/2021, the provincial program was offered to AHS subsidiaries and contracted partners in continuing care using a modified designate or train-the-trainer process.

> *"Inconsistencies in when and how [personal protective equipment] is used by medical professionals leads to confusion and anxiety in families."*
> – AHS Patient Family Advisor

In 2023/2024, the AHS IPC program determined next steps for the Provincial Personal Protective Equipment Safety Coach Program, given the number of staff trained as coaches and designates decreased. For example, training materials were updated to include routine staff personal protective equipment education and working with AHS Workplace Health and Safety to promote appropriate use. Other actions included marketing and incorporating the program into interventions to prevent outbreaks such as viral respiratory infections and into communicable disease emergency response planning. Work is underway to increase awareness of the program and encourage professional regulatory colleges recognize and give credit for the training. In 2023/2024, the College of Registered Nurses of Alberta was the first regulatory college to recognize this training and give competency credits for those who complete it.

Appendix: AHS IPC-related Publications

Abani, O., Abbas, A., Abbas, F., **Smith, S.W.**, et al. Higher dose corticosteroids in patients admitted to hospital with COVID-19 who are hypoxic but not requiring ventilatory support (RECOVERY): a randomised, controlled, open-label, platform trial. *The Lancet*. 2023;401(10387):1499-1507. https://doi.org/10.1016/S0140-6736(23)00510-X

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