Alberta Health Services

# Advancing Health and Care for All Albertans

## 2023-2024 Annual Impact Report

April 1, 2023 to March 31, 2024

Alberta Health Services
Inspiring solutions. Together.
Strategic Clinical Networks™

October 2024

Report prepared on behalf of the Strategic Clinical Networks (SCNs) and Provincial Programs and published by Alberta Health Services (AHS) on October 1, 2024.



## Acknowledgements

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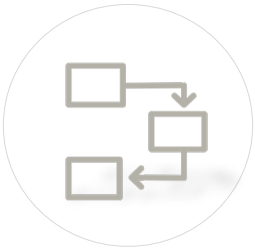
# 2023-24 Annual Impact Report

## At-a-glance

In 2023-24, Alberta's Strategic Clinical Networks™ (SCNs™), Provincial Programs and their Scientific Offices worked with patients, clinicians, operational leaders, universities, community partners, innovators and others to advance health and care, improve outcomes, apply new knowledge, and mobilize evidence into practice. This report highlights their collective achievements and marks their transition as AHS continues to nurture a high-performing, data-driven, rapidly learning health system focused on quality and outcome improvement, clinical excellence, and positive patient, family and provider experience.

### Mobilizing evidence into care



Advanced work on

**54**

clinical, referral and patient pathways, spanning many health disciplines

Co-authored or updated

**63**

clinical practice guidelines, protocols, order sets, and decision support tools, plus resources to support their implementation

Co-authored or contributed to

**69**

evidence reviews, jurisdictional scans, evaluations, and reports on priority topics; many at the request of AHS Leadership and Zone Operations

- Trialed practice changes and provided data and evidence to support capacity planning in Alberta critical care units and emergency departments, and improve patient flow
- Partnered with diverse health partners to coordinate improvements that span health sectors and enable data-enabled decision making
- Advanced implementation for Don't Misuse My Blood, Venting Wisely, and Acute Care Bundle Improvement, and supported provincial spread, scale and sustainment of other health innovations with demonstrated benefits for Alberta's health system.

## Health impacts

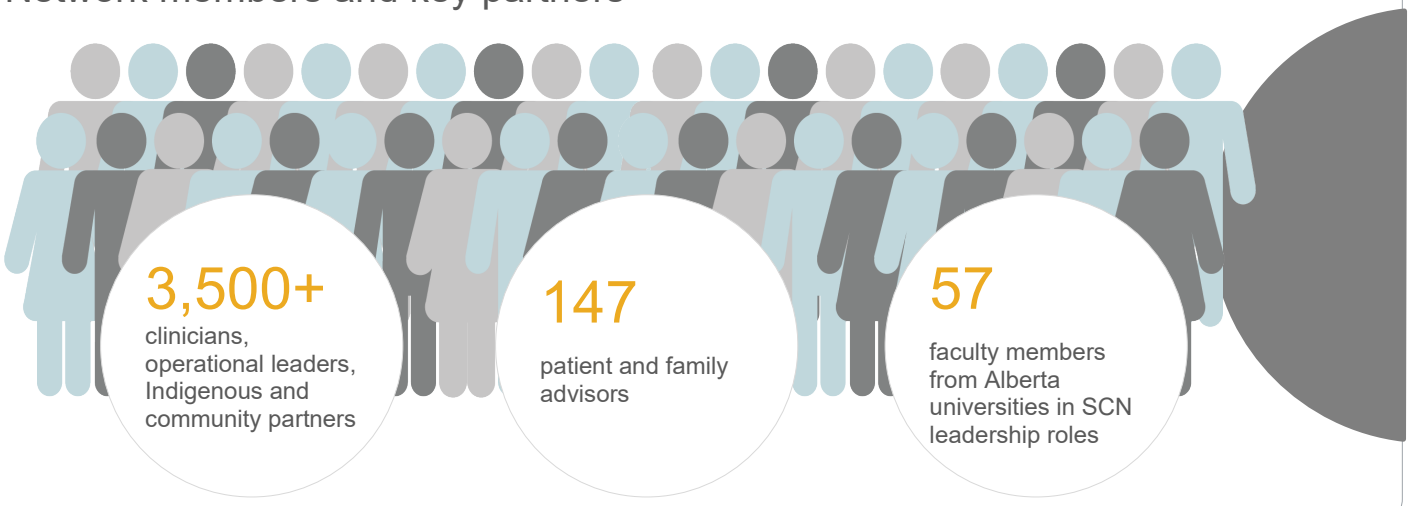
| | |
|---|---|
| Dialyzing Wisely | **Improved patient experience and quality of life** through increased adherence to evidence-based guidelines and overall decrease in days of continuous dialysis in Alberta ICUs |
| Appropriate Bronchiolitis Care for Infants | **High quality of care, consistent with clinical best practice optimizes patient safety, experience & value** through reduced use of unwarranted chest x-rays and certain medications |
| Enhanced Lipid Reporting | **Earlier detection and intervention for individuals at risk of cardiovascular disease** through improved screening and upstream prevention of major adverse cardiovascular events |
| Pressure Injury Prevention | **Reduced incidence and severity of pressure injuries** through earlier identification and implementation of SSKIN+ interventions at an early-adopter site |
| Perioperative Glycemic Management Pathway | **Improved detection and prevention of postoperative hyperglycemia and fewer surgical site infections** through earlier identification of at-risk patients and treatment of hyperglycemia following surgery |
| Hyperbilirubinemia in Newborns | **Improved outcomes for newborns with hyperbilirubinemia (jaundice), reduced incidence of concerning levels of bilirubin** |
| Virtual Diabetes Prevention Program | **Improvements in modifiable risk factors (weight loss, healthy eating, physical activity)** through participation in a virtual program with 1:1 health coaching and educational resources |

## Economic and social impacts

| | |
|---|---|
| Nurse-Initiated Protocols in Emergency & Urgent Care Centres | **Improved patient flow, reduced length of stay & patient wait times, and improved patient satisfaction** Reduced length of stay by 1-2 hours compared to patients who did not receive nurse-initiated protocols |
| Don't Misuse My Blood | **High quality of care, consistent with clinical best practice optimizes patient safety, experience & value** through reduced use of blood, plasma, and platelet transfusions in ICUs and for hip and knee arthroplasty surgery |

| | |
|---|---|
| Prudent Use of Oxygen Therapy | **Reduced hospital length of stay and associated costs** with consistent guidance, integrated order sets, and improved huddle and handover communication practices |
| NanoSALV Treatment for Advanced Wound Care | **Improved chronic wound healing and reduced wound dressing costs** through use of NanoSALV treatment plus standard of care (time to wound closure reduced by 29-41%; average cost savings estimated at $1,747 to $2,897 per patient) |
| Insulin Pump Therapy Program | **Improved equity via access to insulin pumps, patient education and supports, reduced healthcare utilization** in terms of fewer visits to primary care, specialist providers, emergency rooms |
| IPOP Clinics for Long COVID | **Improved access and quality of care for people experiencing long COVID** through the provincial Long COVID Inter-Professional Outpatient Program (IPOP) |
| Hyperbilirubinemia in Newborns | **Improved screening and management, reduced healthcare utilization and associated costs** through implementation of a provincial clinical practice guideline |
| Culturally Safe Care for Indigenous Peoples | **Increased understanding of health inequities for Indigenous Peoples** regarding access to ICU support and outcomes after critical illness through ongoing partnership, systematic review and environmental scan completed over the past year |
| Virtual Diabetes Prevention Program | **Positive patient and provider experience, significant long-term costs savings** based on modelling data; estimated benefit of $12.6 million for every 5,000 participants over 25-years |

## Network members and key partners



## Building capacity and capability as a learning health system

**$78.1M**

in grant funding awarded in 2023-2024, supporting studies that directly impact clinical care, improving health outcomes, patient experience and value

**86**

successful grant applications, which bring funding to Alberta for health research that benefits Albertans and supports a learning, high-performing health system

**521**

virtual and in-person outreach events, to exchange knowledge, share evidence, and support uptake & spread of practice improvements

Active partnerships and collaborations with

**100+**

research institutes and health organizations (provincial, national, and international)

**180**

letters of support to Alberta researchers for funding proposals and initiatives that could benefit the health and care of all Albertans

**$2.09M**

in grant funding disbursed by SCNs to support health research, innovation and capacity building

**93**

trainees supervised and mentored, supporting skill development in healthcare, quality improvement, and clinical research

**2,700+**

research network partners, many of whom are clinicians and knowledge leaders in health and implementation science, health innovation, and health system improvement

## Advancing knowledge

Co-authored or contributed to:

**434**

peer-reviewed manuscripts and publications

**300+**

knowledge products, including data reports, dashboards, online resources, project evaluations, white papers, training tools and modules that inform clinical care, decision making and investment

# Introduction

**Vision**.

It helps us see what's in front us, on the horizon, and beyond.
When shared with others, it can unite a team and mobilize action.
A clear vision can inspire us—to see things differently, revealing possibilities and potential.
And it can help us clarify, crystallize, and define a path forward.

**Dr. Cy Frank**,
Co-founder, Alberta's SCNs

For more than a decade, Cy Frank's vision for improving health and care in Alberta has informed the work of Alberta's Strategic Clinical Networks (SCNs). Cy was a surgeon, an Assistant Vice President of Research at Alberta Health Services (AHS), a former CEO of Alberta Innovates (Health Solutions), and one of Canada's most visionary and influential leaders in health innovation and public health policy. Throughout his career, Cy saw an opportunity to drive quality and outcome improvement across the continuum of care, ensuring the people of Alberta benefit from these advancements.

He also recognized the importance of doing this *in partnership* with patients, clinicians, community partners, and others. Cy's unwavering commitment to engaging diverse partners, and his ability to break down boundaries and barriers between health sectors, disciplines, regions, and organizations, has expanded our understanding of how to work together. His vision has propelled Alberta as a leader in health innovation, and his legacy continues to inform how our health system learns and improves.

**Year in Review**

This report highlights the diverse collaborations between AHS and its partners and their achievements in advancing a shared vision for improving health and care through action, evidence, and engagement. Through the SCNs, Provincial Programs and their Scientific Offices, clinicians, patients, health leaders and community partners have come together to:

- co-design solutions that address the needs of Albertans and Indigenous Peoples
- support clinical operations in implementing practice changes that address key priorities
- rigorously evaluate those changes and provide evidence and information to guide decisions
- apply their knowledge, skills and expertise to improve quality and outcomes across many areas of health

**Looking Forward**

With Alberta's health system in a period of transition, there is some fluidity to its organizational roles and structures. In April 2024, AHS Executive Leadership launched changes to its approach as a learning health system. Called "Learn Improve Together," the new approach builds on learnings over the past decade to integrate and strengthen its performance management, quality management, and innovation programs. At the time of writing, a new unified governance structure is being implemented through the Program Improvement and Integration Networks (PINs), plus an Office of Partnerships for Health Services Research, Innovation & Improvement. This approach represents the next step in our evolution as we continue to advance a shared vision to improve health and care for all people of Alberta.

Each year, this report showcases how much can be achieved by working together. We look forward to continuing this important work and remain committed to the vision championed by Cy—one of evidence-based, patient-centred care within a collaborative, high-performing, learning health system.

# About this report

This report highlights the achievements of Alberta's Strategic Clinical Networks™ (SCNs™), Provincial Programs and their Scientific Offices over the past fiscal year (April 1, 2023 to March 31, 2024) and describes the impact of this work and the many ways it benefits the people of Alberta.

It also acknowledges the essential collaborations and contributions of patients and families; clinicians and operational leaders, Indigenous and community partners, including Alberta's universities, research community and others, and the mutual benefits of these partnerships.

In evaluating impact, the report uses a framework developed by the Canadian Academy of Health Sciences (CAHS) and performance indicators common to all SCNs. The CAHS framework is widely used by government, funding agencies, and research institutions to evaluate the impact of health research. For details on methods and indicators, see Appendix A.

# Creating the future of health and care together

Collaboration and engagement have been an essential part of both the work, and the success, of Alberta's SCNs and Provincial Programs. In bringing together diverse partners, the networks have accessed critical expertise, knowledge, experience and perspectives from people across the province. By providing a seat at the table for all partners to participate, exchange ideas, and work together, they have continued to mobilize evidence into practice and spread, scale and sustain innovations for maximum impact.

SCNs and Provincial Programs have worked with Zone operations, clinicians, patients, families and caregivers, and community, academic and provincial partners to align their efforts, targeting key priorities for the people of Alberta.

Over the past year, AHS reached a key milestone in its digital health capabilities with Connect Care implementation in all zones. It launched a provincial pathways hub, a virtual chronic pain program, and innovations that aim to improve access and appropriate, high-value care.

Patients, families, frontline healthcare providers, operational leaders, primary care, allied health professionals, and researchers, Indigenous and community partners have been key partners in this work, and their contributions are featured throughout this report and in the linked materials. For specific examples, see the:

- Patient Engagement Summary
- Research Collaboration Summary
- Summary of University Faculty Involvement

## By the numbers



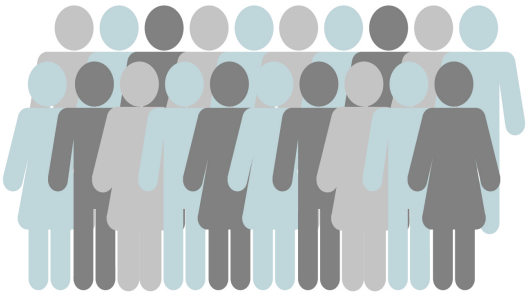
**147** patient & family advisors
many supporting multiple networks

**57** faculty members
from Alberta universities in SCN leadership roles

**100+** partnerships
with provinical or national research institutes and health organizations

**2,700+**
research network members

**3,500+**
clinicians, operational leaders & community partners



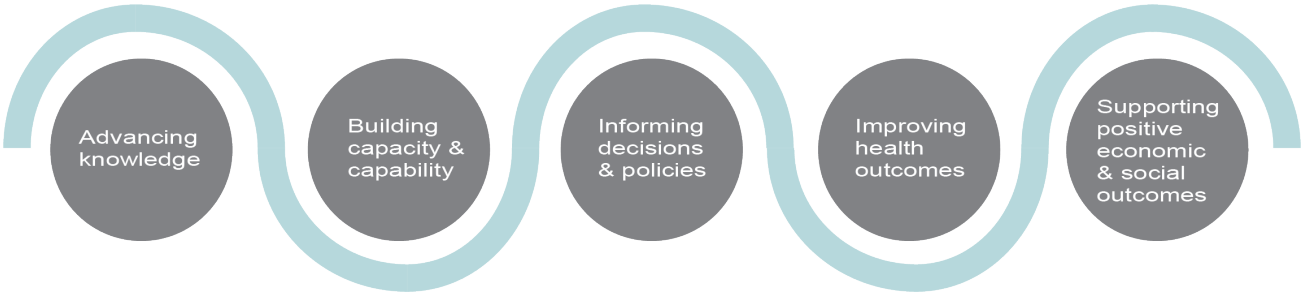
Serving **4.6 million** Albertans

NOTE:

SCN committee and working group members have included key partners from all five Zones; AHS and Covenant Health; all major hospitals and care facilities; urban, rural and remote communities; First Nations communities and Indigenous Wellness Centres; primary care; community partners; universities; and patient and family advisors.

# Collective achievements, impact and value

Collective achievements and contributions of the SCNs, Provincial Programs and their Scientific Offices over the past year are described using the CAHS impact framework, which characterizes areas of impact across five domains:




These domains reflect a “system view” of health research and innovation.

Activities in one domain fuel and impact the next, creating a cascading effect that provides the knowledge, resources, capacity, investment, and momentum needed to advance improvements in health and care and ensure that the benefits of this work extend to patients, clinicians, and all Albertans.

SCNs, Provincial Programs and their Scientific Offices actively engage in work that supports each of these domains, generating the evidence and knowledge needed to mobilize evidence into practice, and implement and sustain practices that improve quality, outcomes, and value while supporting a high performing, learning health system.

This work is reflected in the AHS Innovation Pipeline (Appendix B), a systematic process that illustrates how practice changes, quality and outcome improvements, and health innovation are advanced based on evidence and input from key partners. By integrating health research with the needs of Alberta’s health system, the Innovation Pipeline enables potential solutions to be evaluated and scaled provincially if supported by strong evidence of clinical effectiveness and potential to delivery significant impact and value.

This section of the report highlights the results of these efforts; notable achievements, outcomes and deliverables over the past year; and the impact and value this work is having for the people of Alberta.

# Mobilizing evidence into care

The SCNs and Provincial Programs have played an important role in mobilizing evidence into practice. Zone operations, patients, families, government and community partners have been essential partners in defining priority needs, developing solutions, and implementing practice changes that positively impact patient and provider safety, access and quality of care, and health outcomes.

## Support for frontline operations


Over the past year, the SCNs, Provincial Programs and their Scientific Offices have supported Zone Operations in their efforts to improve outcomes and performance in priority areas, including:

- Improving emergency medical services (EMS) response times
- Decreasing emergency department (ED) wait times
- Reducing wait times for surgeries
- Improving patient flow throughout the healthcare continuum

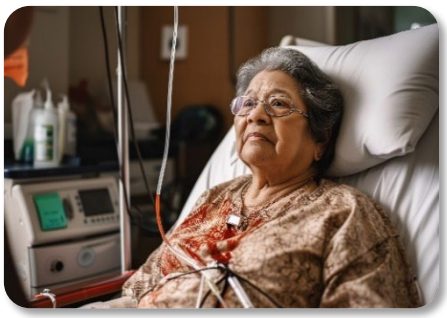
Contributions include:

- Working with key partners, both within and outside AHS, to optimize care, trial practice changes, and provide data and evidence to support capacity planning and cross-sectoral coordination and inform health policy
- Reviewing and synthesizing evidence, conducting health technology assessments, and evaluating practice changes and performance
- Co-developing clinical pathways, dashboards, audit and feedback mechanisms, Connect Care resources, and decision support tools that address the needs of patients and providers
- Creating training modules, toolkits and resources that support pathway and order set adoption by front-line service providers, appropriate use of oxygen therapy, and understanding of acute and chronic pain

These actions have:

- Informed clinical practice and delivery of frontline care
- Helped reduce unwarranted variation across Zones, sites, and healthcare providers
- Supported clinical excellence, quality and outcome improvement, and patient and provider experience

Examples:



- Supported nurses operating to full scope of practice (e.g., RN prescribing for heart failure and COPD in outpatient settings, and fetal health monitoring by LPNs)
- Developed standard orientation materials to support the integration of allied health professionals (social workers, physiotherapists, pharmacists, etc.) into Alberta's 16 busiest EDs to improve patient flow
- Co-developed a toolkit for oncology nurses that focuses on caring for older adults with cancer
- Co-designed clinical support and screening tools for cardiovascular disease, stroke care and stroke clinic referrals. Many of these tools have been embedded into Connect Care and are available provincially.
- Co-designed data dashboards to track key performance indicators for heart failure and COPD, EMS offload times, ED length of stay, care transitions, and patient outcomes.

Example

## ICU discharge delay and capacity strain in Alberta ICUs

Collaboration between the Critical Care SCN, Alberta Health Research and Innovation Branch, and the Institute of Health Economics

Intensive care unit (ICU) discharge delay was identified as a growing concern by Alberta's critical care operational leaders in 2023-2024. ICU discharge delay occurs when a patient is ready to be transferred, but remains in the ICU (resulting in what is known as ICU avoidable time). Delays in transferring discharge-ready patients from the ICU are increasingly common and contribute to strained ICU capacity.

The impacts of ICU avoidable time are numerous and well-documented. It is associated with increased patient adverse events and higher healthcare costs. To address this challenge, AHS is leveraging data available through Connect Care, as well as clinical, research, scientific and analytic expertise, to investigate the current state of capacity strain in Alberta ICUs, review and synthesize evidence on ICU discharge delay, and explore a novel approach for predicting critical care demand using machine learning capabilities.

**Knowledge products that support clinical decision making, improved outcomes and performance**

*Completed*

Over the past year, the Critical Care SCN collaborated with the Alberta eCritical team to provide operational leaders with **unit-specific data** on:

- ICU capacity
- the proportion of patients experiencing discharge delays
- the amount of avoidable ICU time, and
- the accepting inpatient units and services experiencing the highest demand

This information supports data-enabled decision making at a site and unit level.

The SCN Scientific Office also completed a **rigorous evidence review** of high-quality, peer-reviewed studies on:

- the impacts of an increase ICU avoidable time, delayed discharge from ICU, or strained ICU capacity, and
- their association with patient outcomes and health care costs

*In progress*

The SCN has worked with Alberta Health's Research and Innovation Branch on a **Health Evidence Review** focused on optimizing patient flow through ICUs and into inpatient units. The review aims to:

- Identify strategies that have been implemented in other health jurisdictions
- Assess the clinical- & cost-effectiveness of these strategies on patient outcomes, ICU length of stay, delayed ICU discharge, and ICU readmissions
- Identify strategies for optimizing patient flow in Alberta ICUs based on their feasibility, impact on ICU operation, impact on patient outcomes, cost-effectiveness, and health system resource allocation

The SCN has also partnered with AHS Health Evidence and Innovation to evaluate whether ICU capacity can be predicted and subsequently mitigated. The team has been working on developing an **ICU capacity strain alert** using Connect Care data and predictive modelling to forecast critical care demand. This work is underway, with expected completion in 2025.

This decision support tool would enable operational leaders in acute care settings to proactively plan for and manage periods of anticipated ICU capacity strain.

Example

## Using monitoring metrics to support hospital-to-home transitions in care

Developed in conjunction with the H2H2H Transitions Guidelines (2020) by the Primary Health Care Integration Network (PHCIN)

In fall 2023, a significant milestone was achieved with the release of the Primary Health Care Integration Network's inaugural monitoring metrics report for home-to-hospital-to-home transitions in care. These measures reflect a concerted effort to use data to support transitions in care and enhance existing improvement initiatives across the province.

Leveraging Connect Care and administrative data, strategic and outcome metrics were developed to deepen our understanding of critical transitions for patients navigating Alberta's healthcare system. These metrics encompass crucial aspects of hospital-to-home transitions, including:

- confirmation of a primary care provider
- inclusion of the LACE readmission risk index in discharge summaries
- timeliness of discharge summary completion
- follow-up by primary care physicians post-hospital discharge
- unplanned readmissions to hospitals
- emergency department visits following discharge

The report provides data at both a Zone and provincial level and helps build a common understanding among operational leaders and care providers about crucial transitions along the patient journey and opportunities to support these transitions. For example, use of emergency services post-hospital stay may reflect the quality of transitions from hospital to home, whether the patient has timely access to primary care, as well as non-clinical (e.g., socioeconomic) factors.

Putting this information in the hands of operational leaders and frontline clinicians empowers local action and decision making that can improve care delivery, patient transitions, outcomes, and patient and provider experience.

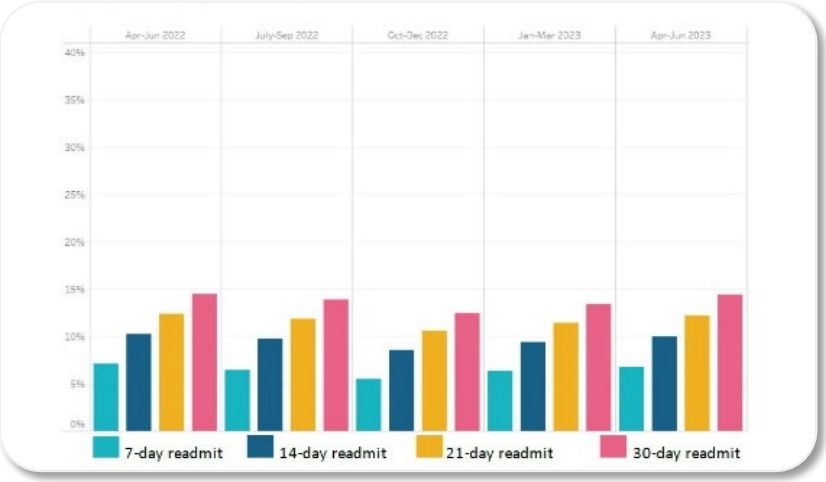



Figure shows the proportion of discharged patients who experienced an ED visit within 7/14/21/30 days of discharge (n=124,723 adult patients). Provincial data, aggregated across all Zones.

Source: Excerpted from the H2H2H Transition Measures Data Report, February 2024; with permission from ARES, Primary Health Care Program.

## Clinical, referral and patient pathways that support high-quality care

The Provincial Pathways Unit (PPU) works with partners across Alberta, including the SCNs and Provincial Programs, to develop of clinical, referral and patient pathways for specific conditions. The team works provincially to standardize pathway development, implementation, and evaluation, promoting collaboration and co-design by primary care providers, specialists, patient advisors, and operations.

In September 2023, the PPU launched Alberta's Pathway Hub, a centralized, online location for all clinical, patient and referral pathways, making them easier for frontline clinicians to find and use. The Hub is a key facilitator of this work, and data shows clinicians are increasingly accessing pathways via the Hub.

### Provincial pathways help ensure consistent, high quality care regardless of location.

They can reduce unwarranted variation, improve quality, safety and health outcomes, and enhance the experience of patients, families, and healthcare providers.

### Pathways support patients, families and healthcare providers

along the patient journey, through transitions in care, and are informed by evidence, research and input from patients and healthcare practitioners. This includes insights from urban and rural settings to reflect local context and feasibility.

### Some pathways support early screening and assessment, or increased appropriateness of referrals.

They can reduce unnecessary diagnostic testing and imaging, improve wait times by directing patients to the most appropriate providers, and enhance patient and provider satisfaction. They help ensure timely, high-quality care and provide primary care providers more resources to support care in the community, with access to specialty advice as needed.


www.albertapathways.ca

**Clinical pathways** provide a set of actions to guide care options for patients with specific health conditions. They include an algorithm of evidence-informed, clinician-recommended options or steps that inform interdisciplinary care in acute care or community (primary care) settings.

**Referral pathways** provide guidance to referring providers (often primary care) on what information, labs and diagnostic imaging are required when referring patients to specialists. These pathways help ensure a smooth process for triaging and referring patients as quickly as possible.

**Patient pathways** provide information to guide patients through their care journey, understand treatment options, and feel confident having the information they need to understand what to expect at all stages of diagnosis, referral and treatment. They list actionable steps patients can take to support their condition and links to resources.

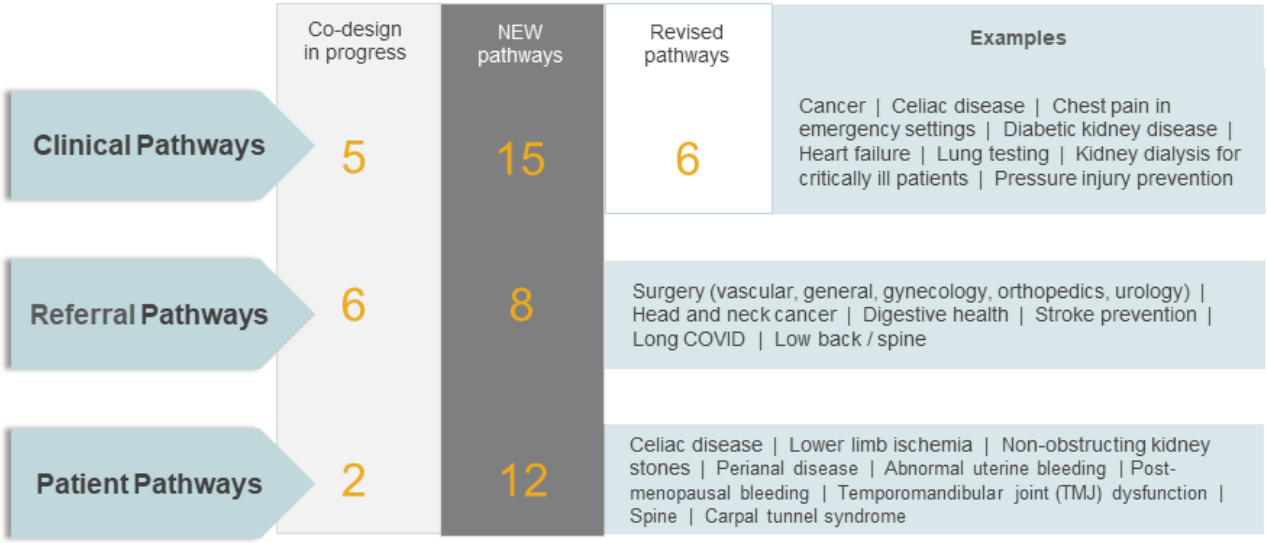
In 2023-2024, the PPU worked with SCNs and key partners across multiple specialties to:

- ✓ co-design, develop and release new pathways
- ✓ update existing pathways
- ✓ support the implementation of prioritized pathways
- ✓ spread and scale them provincially
- ✓ refine and evaluate their uptake

Advanced work on

**54**

clinical, referral and patient pathways




For details on pathway development, see the Other Knowledge Products & Deliverables Summary.

Feedback on patient pathways has been positive, with survey results showing that Albertans value the patient pathways and find them relevant to their contexts and needs. Specifically, survey respondents reported that:

- practical actions were easy to find on the pathway (100% of respondents agreed/strongly agreed)
- patient pathways provide relevant tools and resources to help manage the condition (95% agreed/strongly agreed)
- patient pathways help patients ask meaningful questions when they are with their healthcare provider (95% agreed/strongly agreed)
- patient pathways provided enough information to manage a condition (86% agreed/strongly agreed)
- medical terms are defined, and respondents understand what the terms mean (91% agreed/strongly agreed)
- respondents would value patient pathways being presented in multiple languages

## Clinical practice guidelines, protocols, decision tools and order sets

In addition to pathways, SCNs and Provincial Programs also led or supported the development of new and updated practice guidelines, protocols, decision tools, Connect Care order sets, and reference guides across many areas of health to support implementation and care delivery. These tools draw on best practices and best available evidence, as well as input and guidance from patients, families, clinicians, researchers and operational leaders across Alberta.

| | ***Examples*** |
|---|---|
| **35** clinical practice guidelines | Emergency care (patient assessment / reassessment) |
| **22** protocols & decision support tools | Fracture Liaison Service<br>Rural field consult for stroke patients<br>Emergency care (poisoning, seizure, bleeding) |
| **6** Connect Care order sets | Heart failure, COPD, Stroke, Hip & Knee surgical care path<br>Cardiovascular disease screening and ECG<br>*Staphylococcus aureus* bacteremia (SAB) infection |
| **3** other | Metastatic cancer diagnosis<br>Admission criteria and patient management for heart function clinics<br>Enhanced recovery after surgery (ERAS) clinical support tools |

For more detail, see the Other Knowledge Products & Deliverables Summary in the linked materials.

## Evidence reviews and evaluations that inform decision making

Environmental scans and evidence reviews provide the evidence and information needed to inform decision making, investment, actions and recommendations that directly impact health and care for the people of Alberta. As in past years, SCNs, Provincial Programs and their Scientific Offices have supported evidence gathering and synthesis, often at the request of AHS Executive Leadership and Zone Operations. These knowledge products and evaluations directly support AHS priorities and information needs.

Most reviews are provincial in scope and involve stakeholder engagement, evidence review and synthesis. Some require primary data collection (surveys, focus groups, administrative data) and others involve reviews of published and/or grey literature and current practice in other health jurisdictions.

Information gleaned in these knowledge products provides decision support for provincial health leaders, policy makers, and Zone Operations.

In 2023-24, co-authored or contributed to

69

evidence reviews, jurisdictional scans, evaluations, reports and white papers on priority topics

**Examples / Topics**

### Evidence reviews

- Emergency department overcrowding in Canada and potential solutions
- Optimizing patient flow in intensive care units, avoiding discharge delays and maximizing ICU capacity
- Optimizing adult inpatient flow for neurosurgical care
- Reducing emergency department utilization by patients experiencing addiction and mental health conditions

### Jurisdictional scans

- Understanding the current state of supports for Albertans unattached to a primary care provider/medical home, including vulnerable populations
- Medical traumatic stress in children with medical complexity
- Nation-wide benchmarking survey of kidney transplant programs, care models and data capture

### Reports and evaluations

- First Nations patients' emergency care journey map
- Transitional pain care in Alberta: Lessons and future directions
- Economic evaluation of the Virtual Diabetes Prevention Program
- Evaluation of the Long COVID Inter-professional Outpatient Program
- Substance Use and Addictions Program: Monitoring opioid use and the trajectory of patients' pain-related outcomes by expanding the use of Manage My Pain

For a more complete list by area of health, see the Other Knowledge Products & Deliverables Summary.

## Implementation milestones

SCNs, Provincial Programs and their Scientific Offices have rigorously evaluated health innovations as they've advanced through the innovation pipeline. This process of gathering, synthesizing evidence and refining solutions based on evidence and feedback from patients, healthcare providers, and other key partners directly supports getting evidence into practice to improve quality, outcomes, and value.

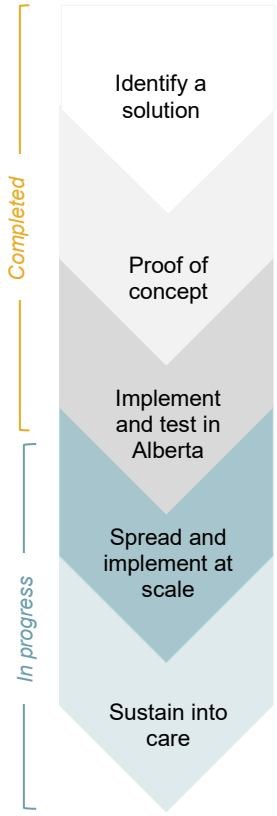
In 2023-2024, teams worked with patients and family advisors, frontline clinicians, and operational leaders in all zones to support provincial spread, scale and sustainment of innovations with demonstrated benefits for the people of Alberta and Alberta's health system. The examples below highlight tangible ways in which evidence is being translated into care, and in which SCNs have supported a learning health system.

## Don’t Misuse My Blood

Don’t Misuse My Blood (DMMB) aims to reduce avoidable blood tests and avoidable blood transfusions in patients admitted to critical care and high-risk surgical units in Alberta.

This work began as an opportunity to improve quality (appropriateness, safety) and value, and align care delivery with evidence and clinical best practice.

It has moved through the Innovation Pipeline from the initial idea, proof of concept and testing phase.




In 2019, the team received a Partnership for Research and Innovation in the Health System (PRIHS 5) grant from Alberta Innovates to pilot the solution and generate the evidence needed to evaluate its clinical and cost effectiveness. This step was completed in 2023, and **work has progressed to support implementation on a provincial scale and optimization that reflects patient and clinician feedback, local needs and adaptations, and opportunities to maximize impact and value.**

Over the past year, the Critical Care SCN Scientific Office completed a health evidence review that informed the creation of Clinical Decision Support Tools that guide the appropriate prescription and use of blood and blood components by frontline providers. The tools identify clinical thresholds—based on patient presentation—and include specific recommendations for pediatric and cardiac patients. **These tools are available online and can be accessed by care teams anywhere in Alberta.**

**Work continues to advance, with DMMB implementation complete or underway in 27 units across Alberta.** These include medical-surgical intensive care units (ICUs), cardiac and cardiac surgical ICUs, high-risk trauma and vascular units, and pediatric ICUs.

Learn more about early outcomes and impacts of this work.

## Alberta Virtual Chronic Pain Program

Pain is the most common reason to seek healthcare services. It's estimated that 1 in 5 people living in Canada suffer from chronic pain[1] (defined as persistent pain that lasts or recurs for more than three months). Those living with pain face a substantial physical, emotion and financial burden. Likewise, there are many indirect costs of pain related to lost function, productivity, sick days, job loss, and reduced quality of life.

Every day, people in Alberta seek help to deal with their pain, through visits to emergency departments, inpatient care, primary care offices, specialists, rehabilitation services, pharmacies, or alternative care providers. And although chronic pain represents a major clinical, social and economic challenge, there are significant care gaps related to resource equity, appropriateness, service coordination, and capacity for managing chronic pain.

Evidence shows that non-pharmacological interventions, such as learning about pain, factors that can cause or worsen pain, and strategies to mitigate those factors, can help people better manage pain in their everyday lives. Given this, work is underway to develop and evaluate an Alberta Virtual Chronic Pain Program (AVCPP). This program represents Phase 1 of the proposed Alberta Virtual Pain Program, **the first provincial program offering pain management support in Canada, and part of a provincial strategy to develop a sustainable, evidence-based, integrated model of care for chronic pain management in Alberta that improves access, outcomes, patient and family experience, and value.**

**How it works**

Services offered by the AVCPP include a centralized, nurse-led patient intake; system navigation support; and a group pain education and self-management support program for adults living with chronic pain. Patients can access the AVCPP by calling Health Link. No formal diagnosis or referral is required to participate.

The group pain education and self-management support program is led by trained clinical facilitators and peer support workers. It is delivered online (via Zoom) and is free and available to people anywhere in Alberta. It includes weekly sessions, learning activities, and peer support. Sessions provide education and practical self-management tools, opportunities to ask questions and connect with other participants, service providers and resources. Learn more

> "It [the session] was eye opening for me. I have recently gone through trauma/grief/devastation. After Tuesday's session it really dawned on me that the level of my pain is most often directly connected to things outside my control…I am curious to find strategies to stop the dominos falling!"
>
> **AVCPP Participant (from post-session survey)**

[1] Schopflocher, D, Taenzer, P, and Jovey, R. (2011). The prevalence of chronic pain in Canada. Pain Research and Management, 16(6):445-450.

Development of the AVCPP began in 2023, with the phone line launching in March 2024 and the group-based program starting in April 2024. In its first 16 weeks, the program received 163 referrals, and registrations include participants from all five zones.

This work is grant funded through the Alberta Ministry of Mental Health and Addiction. Performance indicators and data reporting will be part of ongoing program evaluation.

## Improved use of life-saving therapies with Venting Wisely

Many critical care patients require mechanical ventilation for hypoxemic respiratory failure and Acute Respiratory Distress Syndrome (ARDS). These conditions are associated with particularly high risk of death and prolonged need for ICU care.

Evidence-based, life-saving therapies exist for mechanically ventilated ARDS patients (including lung protective ventilation and prone positioning), but these therapies are variably applied by teams in different acute care facilities.

The Venting Wisely care pathway was developed by a multidisciplinary group of clinicians from across Alberta to reduce practice variation and improve adherence to evidence-based practices. The pathway improves diagnosis and reduces evidence-to-care gaps by emphasizing optimal and appropriate use of life-saving therapies, while de-emphasizing less effective, costly treatments. Learn more

**The 2023-2024 fiscal year marked the completion of full-scale implementation of the Venting Wisely care pathway at all 17 adult intensive care units in Alberta.**

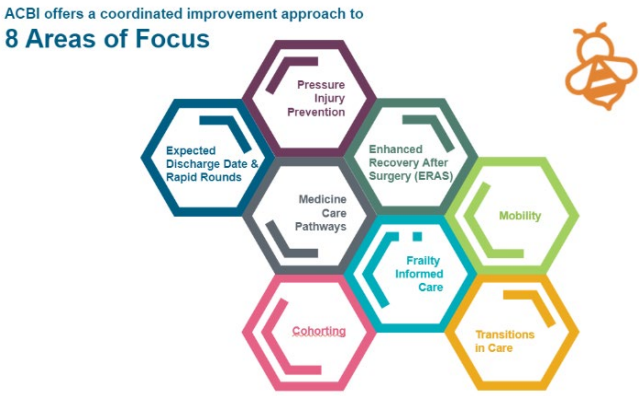
Evaluations completed to date indicate that:

- **The pathway is helping reduce practice variation.** Therapies (including lung protective ventilation, neuromuscular blockade, and prone positioning) are more consistently applied across Alberta following pathway implementation.
- **Clinicians are adhering to the 5 steps of the pathway** (over 80% compliance).
- **The pathway is considered feasible and acceptable by frontline clinicians** (94% of those surveyed indicate that the Venting Wisely pathway is ‘acceptable’ or ‘completely acceptable’).

## Acute Care Bundle Improvement

Over the past year, the SCNs, Provincial Programs and their Scientific Offices have supported several major initiatives for health system improvement in Alberta, including the Alberta Surgical Initiative, Acute Care Bundle Improvement (ACBI) and Alberta Cancer Diagnosis Program. **These provincial initiatives involve operational partners in all zones and are expected to significantly benefit the people of Alberta by improving health service utilization in surgical, acute care and ambulatory care settings, while enhancing patient care, flow and access to timely assessment, treatment and intervention.**

ACBI is a provincial quality improvement initiative that supports Medicine and Surgery units at Alberta's 14 largest-volume adult acute care sites in implementing a bundle of best practices. Its goal is to support and empower frontline teams to **improve patient outcomes, experience and patient flow; reduce length of stay; and achieve cost savings** by:




- prioritizing and incorporating best practices for every patient, every time
- optimizing Connect Care workflows and documentation
- assessing and reinforcing performance using common metrics across all sites

### Evidence-driven improvement

ACBI uses health data and internal evidence—specific to each site—to support care delivery within a learning health system. It is one of the first major initiatives to fully leverage the power of Connect Care, Alberta's provincially integrated clinical information system (CIS), and aligns with the province's vision for Connect Care of "*Better Health Supported by Better Information*."

### Local decision making

Based on the unique context, needs, resources and baseline data for each site, local improvement teams, site leadership and quality councils define priority areas of focus and develop site-specific action plans that target specific priorities and areas of improvement. This customization is critical to ACBI's success, as is active and ongoing engagement with frontline healthcare providers, physicians, unit leads, site executive and operational leadership. Clear definition of roles, responsibilities, local readiness and resourcing have been an essential part of the exploration, preparation, and activation phases of this work.

### Implementation milestones

Since launching in 2022, ACBI continues to progress through significant implementation milestones. The implementation timeline has depended on two critical events at each site:

**Connect Care launch**

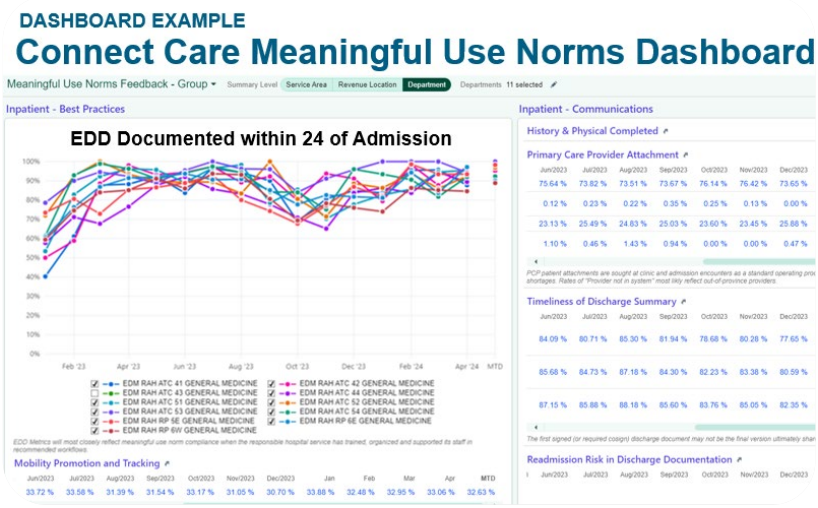
Enabled frontline teams to use the CIS as part of their daily workflow and move from a paper-based operation to a digital data-enabled one.

**Subsequent data dashboard launch**

Enabled teams to extract data from the CIS and use it to monitor performance, outcomes and progress and make timely improvements to daily workflows and patient care.

These events were completed for all 14 in-scope acute care sites by December 2023, clearing the way for full-scale provincial implementation of ACBI.

Through strong support and collaboration with many health partners, including the Connect Care team, AHS Data & Analytics, and frontline teams, a dashboard was successfully developed and tested with frontline input from across the province, and formally launched in December 2023. This dashboard provides teams with near real-time data to support decisions and understand quality improvement efforts are progressing. It includes clinically important information, captured throughout a patient's hospital stay from admission through discharge, and can support transition planning to reduce hospital readmissions once patients return home.




The creation of this dashboard has been celebrated by zone and site leaders, and frontline teams, as it marks a significant advancement in using Connect Care data to improve care, enabling teams to see the impact changes to daily workflows are having while keeping the patients at the centre.

### Supports for frontline teams

To support successful implementation across multiple sites, ACBI has partnered with the Alberta SPOR Support Unit (AbSPORU) Learning Health System, who provides expert guidance and ongoing mentorship and support for local improvement teams. Through this partnership, ACBI has used a framework called EPIS (Exploration, Preparation, Implementation, Sustainment)[2] that describes a phased, cyclical implementation process that occurs across five system levels, ranging from prescribers and frontline providers to units, site operations, zones and provincial/senior health leadership.

To effectively coordinate and implement multiple best practices, the ACBI team has **developed a suite of implementation tools and resources that can be tailored for each site**, designing strategies with local site staff and their leaders to ensure relevance, usability, and effectiveness. It also launched an extensive and **interactive online community of practice** to provide not just ACBI sites, but all AHS staff, a collaborative space to learn, reinforce collective efforts, and build supports. This platform (called 'The Hive') is a rich resource and a place to cross-pollinate ideas and celebrate continuous improvement.

> "From my perspective, the support from ACBI has been helpful because we have access to experts who can support our improvements with evidence."
>
> **Liane Wright, Executive Director, Medicine and Critical Care, Royal Alexandra Hospital**

Agnes Lehman, ACBI Program Manager, has received positive feedback on The Hive from frontline teams who have a strong desire to learn and improve. In her words: "*This community of practice has the potential to act as a living curriculum for practitioners to learn from one another. The desire to connect and leverage the skills of the Learning Health System team at our frontline is greatly expanding*".

[2] Aarons G, Hurlburt, M, and Horwitz, S. Advancing a conceptual model of evidence-based practice implementation in public service sectors. Administration and Policy in Mental Health and Mental Health Services Research, 38:4-23 (2011). doi: 10.1007/s10488-010-0327-7

# Health impacts

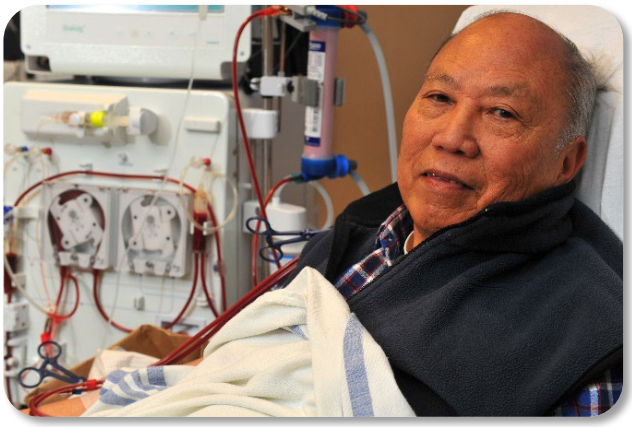
SCNs and Provincial Programs have worked collectively to improve patient and population health outcomes. This work crosses boundaries, spanning health sectors and disciplines. Its impact includes short- and long-term benefits, improvements in health outcomes and patient and provider experience. Although the CAHS impact framework does not define impact measures that are common across all areas of health, key performance indicators typically relate to changes in:

- **Health status** (e.g., mortality, morbidity, disability, mobility, pain, recovery rate, disease progression, disease or injury prevention)
- **Modifiable risk factors** (e.g., exercise, substance use, access to nutritional foods)
- **Other measureable outcomes** (e.g., fewer complications, emergency visits or hospital readmissions, reduced length of stay)
- **Patient-reported outcome measures** (e.g., stress, confidence, satisfaction, quality of life)

These types of outcome measures are rigorously evaluated in randomized controlled trials (RCTs). In dynamic clinical settings, it becomes more difficult to attribute impact and causation, and health systems are sometimes limited in their ability to track outcome measures outside of research studies. The following examples highlight improvements and positive health outcomes from observational studies based on clinical evidence, administrative data, and evaluations conducted over the past year.

## Improved patient experience and quality of life thanks to Dialyzing Wisely, a program that improves the use of acute dialysis therapy in Alberta ICUs

Critical Care SCN



Acute dialysis therapy is one of the most expensive and resource-intensive interventions provided in the ICU. Almost 10% of ICU patients require this therapy, but no standardized mechanism exists to monitor and report on the performance of acute dialysis in Alberta.

The Dialyzing Wisely (DW) program aims to standardize acute dialysis therapy in Alberta's ICUs and involves (1) developing and implementing a care pathway for dialysis initiation in the ICU, and (2) monitoring and reporting on key performance indicators. Learn more

**This evidence-based and stakeholder-informed program aims to transform the quality of therapy across Alberta's ICU and improve patient outcomes. It is anticipated that the DW program will decrease the incidence of dialysis initiations, translating into decreased chronic dialysis dependence, improved patient outcomes and quality of life, and health systems savings.**

Work to date has included engagement with health professionals that provide or deliver any aspect of dialysis therapy, and over the past year, clinical teams in 17 adult and pediatric ICUs across the province have implemented the DW program.

Initial data demonstrates:

- **Improved adherence to evidence-based acute dialysis initiation criteria (from 40% to 52% provincially).**
- **An overall decrease in days of continuous dialysis (from 4,700 days/year to 3,373 days/year) in Alberta ICUs.**
- **Estimated cost avoidance attributable to the Dialyzing Wisely program in the 2023-2024 fiscal year was approximately $1.3 million.**

> "In 52 years as a kidney patient, the last 26 alternating between having a transplant and being on some type of dialysis, it is often my greatest sadness to see new people having to start this journey because of what could have been preventable conditions. When I volunteer as a patient partner… I will always be drawn to those topics with prevention and early detection at their core. Dialyzing Wisely was exactly this type of project…whether it prevents 2, 20, or 200 patients from having to enter the Chronic Kidney Disease pathway through small changes at the ICU bedside, it is absolutely worthwhile to have been a small part of this team and project!!"
>
> **Sean Delaney, Patient and Family Advisor, Dialyzing Wisely**

## Appropriate bronchiolitis care for infants less than 1 year old in hospitals across Alberta

Maternal Newborn Child & Youth SCN

Bronchiolitis, a viral lower respiratory infection, is the leading cause of infant hospitalization in Canada and the top diagnosis for inpatient medical expenditures in young children annually. Bronchiolitis is seasonal and occurs during the winter months (November to March).

Clinical Practice Guidelines do not recommend routine use of certain diagnostic tests and medications to manage bronchiolitis, yet prior studies suggest that these low-value interventions are routinely administered to infants with bronchiolitis in emergency departments (EDs) and those admitted to hospital.

In 2017, the Alberta Children's Hospital (ACH) achieved success in reducing tests and treatments for infants with bronchiolitis in the ED by implementing evidence-based Clinical Guidance for Bronchiolitis

Management. This guidance was extended to ACH inpatients in 2018. In 2020, the MNCY SCN partnered with clinicians, the Improving Health Outcomes Together (IHOT) team, and the Physician Learning Program (PLP) in the Calgary Zone, to spread this practice provincially to 16 sites across Alberta (a total of 16 EDs and 7 inpatient units) by April 30, 2025.

Work has progressed and implementation strategies include audit & feedback, educational resources, and development of Connect Care order sets. **A quality improvement dashboard is now available through Connect Care, enabling clinicians to monitor real-time data and their progress related to bronchiolitis care** (e.g., number of patients with bronchiolitis, order counts, use of parent education material for parents).

Indicators used to measure success include a reduction in chest x-rays and reduction in medications used to treat bronchiolitis, including bronchodilators (salbutamol), steroids, and antibiotics. As of April 30, 2023, data shows significant progress for both outcomes, with participating sites achieving:

- **A reduction in chest x-rays** (14.5% decrease in EDs and 9.4% decrease in inpatient units)
- **A reduction in use of salbutamol, steroids, and antibiotics in hospital** (decrease ranges from 7.5% to 19.8%)
- **Reduced variation: Alberta infants are receiving high-quality care that is consistent with clinical best practice, and that optimizes patient safety, experience and value**

## Reduced burden of disease through upstream prevention of major adverse cardiovascular events

Cardiovascular Health & Stroke (CvHS) SCN

Major Adverse Cardiovascular Events (MACE) are a massive burden on the healthcare system, resulting in high rates of mortality and morbidity. It's estimated that 80% of these events are preventable through positive changes to modifiable risk factors. Given this, it's important to identify at-risk patients and intervene early.

**In 2021, the CvHS SCN secured a Health Innovation Implementation and Spread (HIIS) grant to support the provincial rollout of Enhanced Lipid Reporting (ELR)**, a lab-based screening program for cardiovascular disease (CVD). Learn more about ELR

ELR benefits patients and families, healthcare providers, and Alberta's health system by:

### Providers

- Making it easier for primary care clinicians to screen patients for CVD risk by integrating screening into regular workflows, providing easy access to risk calculations and ensuring those at risk receive guideline-directed treatment.
- Improving continuity of care by sharing CVD risk data via Netcare to the whole healthcare team (acute care, family medicine)
- Improving the appropriateness of specialist referrals by identifying and prioritizing patients at highest risk of MACE.

### Patients

- Identifying patients at-risk of CVD, and enabling earlier intervention to prevent MACE and access to therapies that can reduce modifiable risk factors
- Increasing patient empowerment and health literacy by providing access to their results and to patient educational materials through MyHealth Records.

### Health System

- Helping reduce the healthcare burden and associated costs of CVD and MACE.

Evidence collected to date shows:

- **Strong uptake of ELR by primary care physicians.** As of March 2024, 47% of family physicians have used ELR in their practice since its implementation.
- **33,659 ELR screenings (FRS tests) were ordered between January 2022 and March 2024. Approximately 9,000 of the ELR-screened patients were identified as high risk ("statin indicated").** Statins are a class of medicines that can help lower LDL ('bad') cholesterol, reducing the risk of a heart attack or stroke.
- **An absolute increase in statin prescription fills (approximately 11%) post screening**, for "statin indicated" patients.
- **Improved patient support, awareness and education.** Patients are able to access their test results and patient education materials co-created with CvHS SCN patient and family advisors through MyHealth Records, and data for 2023 shows approximately 4,600 unique page views of the MyHealth CVD screening patient education website. Online patient-focused information on CVD screening has been increasingly accessed since posting (10,695 page views from January 2023 to March 2024, with nearly 6,000 of these in the first quarter of 2024).
- **Economic modelling and ROI calculations are in progress and will be completed in fall 2024**

**Upstream prevention of MACE is critical to alleviate burden on the healthcare system, as well as unnecessary morbidity and mortality. This initiative is a foundational piece of work that will serve as the springboard for future efforts to reduce risk in this identified at-risk population.**

"Through the utilization of the Enhanced Lipid Reporting within my practice, the severe cases of cardiovascular risk disease are much easier to recognize, allowing for my patients that should be offered statin therapy to have that opportunity".

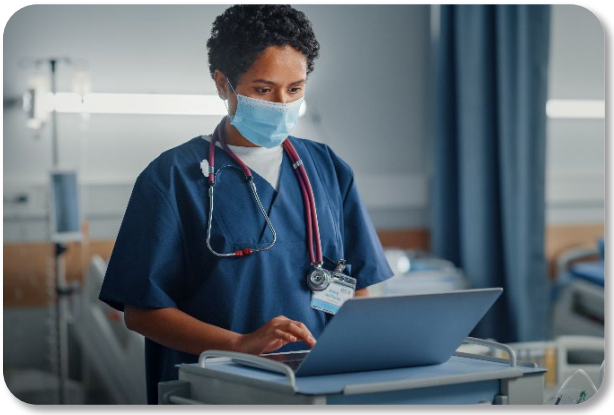
**Dr. James A. Pope, Grande Prairie Primary Care Network (GPPCN)**

"Enhanced Lipid Reporting benefits my practice by saving me time when calculating a patient's Framingham Risk Score (FRS)… ELR is also helpful when counselling patients as it shows the different factors that contribute to their FRS and what they can do to decrease their risk of poor outcomes. For example, I like to use the decision aid to show how their FRS would change if they were to quit smoking. This can be highly motivating for some patients and makes the lab result relevant to the patient rather than just a list of numbers that are meaningless to them."

**Dr. Deanna Funk, Family Physician, Central Peace Health Centre**

## Perioperative glycemic management pathway improves screening, post-operative care and outcomes for patients with diabetes or pre-diabetes

Diabetes, Obesity & Nutrition (DON) SCN



In Alberta, 35% to 40% of surgical patients have high blood sugars following their surgery. Some of these patients have diabetes, some have undiagnosed diabetes, and others have no pre-existing conditions.

A Perioperative Glycemic Management Pathway (PGMP) was developed as a PRIHS-funded research project (led by Drs. Shannon Ruzycki and Anna Cameron), in partnership with the Surgery and DON SCNs, to support patients in Alberta hospitals who are at risk for hyperglycemia (high blood sugar) following surgery. The PGMP project aims to:

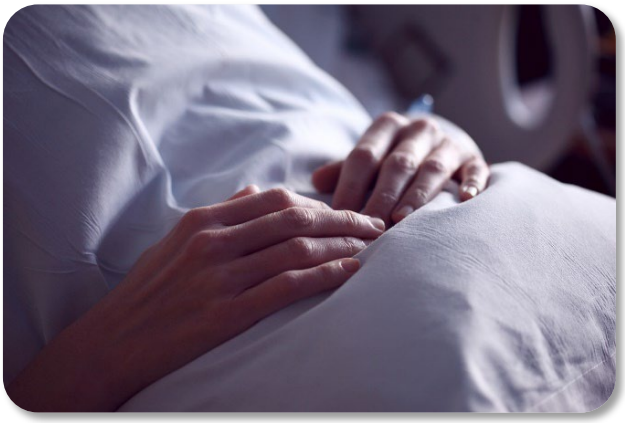
- reduce variation and quality gaps in perioperative glycemic management
- evaluate the relationship between postoperative hyperglycemia and postoperative complications
- assess the cost-effectiveness of comprehensive, multidisciplinary perioperative glycemic management

Patient and family advisors and surgical clinicians with the Enhanced Recovery After Surgery (ERAS) program co-developed an implementation process for the PGMP. The project emphasizes teamwork and role clarity to ensure members of the surgical team are able to screen patients who are at greatest risk of high blood sugar during and, following surgery, to treat high blood sugar when it happens.

Between June 2021 and March 2024, 10 programs across nine surgical sites in Alberta have been working towards implementation. Five programs are midway through implementation, and five are in the pre-implementation phase.

Early results from sites in the implementation phase show:

- **Increased identification of patients who are at high risk of high blood sugars pre-operatively.**
- **Improved post-operative hyperglycemia recognition and treatment.**
- **A decreasing trend in surgical site infections is associated with PGMP implementation, based on preliminary data analysis.**
- **Patients and staff report a positive experience with PGMP implementation.**



## Pressure Injury Prevention (SSKIN+) improves screening, outcomes and experience for patients in Alberta's hospitals

Neurosciences, Rehabilitation & Vision SCN

Pressure injuries cause pain, infection and contribute to disability, resulting in longer hospital stays. Approximately one in six patients in Alberta hospitals has a pressure injury, with over 71% of these injuries developing in hospital.

The causes of pressure injury are multi-factorial, and various strategies may be required to prevent them. SSKIN+ is a novel approach developed, piloted and implemented by the NRV SCN. SSKIN+ is a mnemonic acronym to help staff remember the bundle of interventions that support prevention of pressure injuries in acute settings: Skin assessment, Support surface, Keep moving, Incontinence management, Nutrition & hydration, Risk assessment, Patient and family education, and Engagement.

Pressure injury prevention (PIP) is one of eight areas of focus for the Acute Care Bundle Improvement initiative, introduced at Alberta's 14 largest adult hospital sites. The NRV SCN also seeks to support pressure injury prevention and implementation of PIP/SSKIN+ in all Alberta hospitals, a goal supported by AHS' Quality, Safety & Outcomes Executive Committee. Learn more

Over the past year, one early-adopter site has actively begun working on PIP/SSKIN+, and 6 other acute care sites are in an exploratory phase or preparing to implement. Clinicians at the early-adopter site are focused on ensuring timely skin inspections; placing patients on correct support surface mattress; conducting a risk assessment on admission (and repeating per patient risk); mobilizing and repositioning patients; ensuring skin is clean and dry; ensuring patients have proper nutrition and hydration; and educating patients and families about risk of pressure injury.

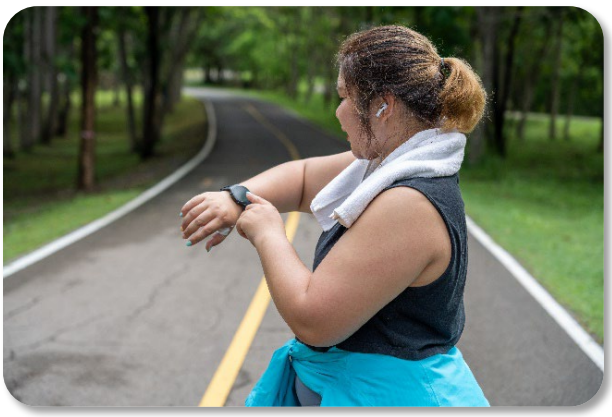
**Results from the early-adopter site show that implementation of SSKIN+ is feasible and can have significant benefits for patient outcomes and clinical efficiencies:**

- **The site that has implemented SSKIN+ has seen a 24% decrease in the incidence of pressure injuries.**
- **This site has also seen a reduction in the number of major trauma patients developing a pressure injury**, from approximately 3% of major trauma patients to 1%.
- **Nursing staff at this site are identifying pressure injuries earlier (and at a less severe stage).** In 2022, 29% of pressure injuries were classified as Stage 1 (versus 54% being classified as Stage 1 in 2023).

## Virtual diabetes prevention program shown to support healthy lifestyle changes while reducing the burden of chronic disease and its associated costs

Diabetes, Obesity & Nutrition (DON) SCN

Given the rapidly rising rates of diabetes and obesity in Alberta, there is a clear need to invest in primary and secondary prevention to reduce downstream health system costs, alleviate the burden on primary care, and change the trajectory of prediabetes and diabetes across the province.



AHS and the DON SCN, in partnership with Alberta Blue Cross and primary care clinics throughout Alberta, evaluated an evidence-based Virtual Diabetes Prevention Program (vDPP) program that aimed to delay and/or prevent progression to Type 2 diabetes mellitus (T2DM) for people with prediabetes.

The program used the US Centers for Disease Control and Prevention (CDC) National Diabetes Prevention Program (DPP) curriculum, which has been shown to reduce the risk of T2DM by 58%. The curriculum was delivered by a CDC-accredited provider (Yes Health) via a smartphone application (app). Participants received individualized 1:1 health coaching, educational resources and support.

The vDPP launched in February 2021, with 177 individuals with prediabetes taking part in the program via a referral from their primary care physician. Recruitment continued until January 2022, when Yes Health unexpectedly closed its operations. As a result, participation in the program ranged from 1 month to 11 months (participants were unable to complete the full 12-month program). Despite these circumstances, the positive outcomes achieved within a relatively short time are quite encouraging.

**An evaluation conducted in 2023-24 showed positive health and economic benefits, including changes in modifiable risk factors and significant cost savings for Alberta's health system.**

Specifically:

- **vDPP effectively supported participants in making healthier lifestyle changes**, particularly related to healthy eating and physical activity (both modifiable risk factors for T2DM).
- **The program was well-received by patients and providers, with participant weight loss exceeding initial forecasts** (n=177; 39.8% of participants achieved 5% weight loss within a median 4 completed months of the 12-month program). This amount of weight loss is shown to be clinically significant in reducing the risk of T2DM.
- **Participants expressed that in-the-moment coaching, resources, food photo logging, and the overall accountability the vDPP provided were key factors contributing to their success.**
- **Providers found vDPP to be a valuable addition to usual patient care**, alleviating the burden on primary care providers by providing an additional way to support their patients with prediabetes.
- **Economic analyses (using microsimulation modeling developed by the Institute of Health Economics) demonstrates that the vDPP is cost-saving**, on average reducing costs by $2,788 per patient over a 25-year time horizon, with an incremental net monetary benefit of $13,066. For every 5,000 participants enrolled in the vDPP, this would correspond to an estimated $12.66 million in long-term cost savings for the healthcare system.

The vDPP pilot was a positive test for implementation in Alberta and demonstrates the potential benefit of this type of program. Implementing a provincial vDPP (particularly one that offers similar accountability, support, accessibility and ease of use), and integrating it into care pathways would be highly beneficial to people living with prediabetes. The applicability of this type of program to the prevention of other chronic diseases is also promising.

## Economic and social benefits

SCNs and Provincial Programs have worked with partners across Alberta to advance health system improvements that improve access, value, clinical utilization, and accountability. Teams have developed business cases and incorporated rigorous evaluation, including return on investment (ROI), into projects and recommendations to health leaders.

The CAHS impact framework outlines some indicators related to well-being, social benefits and commercialization; however, most are not common across all areas of health. And, like health impacts, it is challenging to control variables in dynamic clinical settings and attribute impact and causation. This can limit health systems' ability to quantify broad economic and social benefits and link outcomes to specific research or quality improvement activities. As a result, the Scientific Offices report on economic and social benefits using indicators that relate to:

- **access** (e.g., wait times, coordination of care, availability)
- **quality of care** (e.g., acceptability, accessibility, appropriateness, effectiveness, safety)
- **value and sustainability** (e.g., clinical utilization, cost avoidance, savings, efficiency, waste reduction)
- **patient and provider experience** (e.g., satisfaction, flexibility, supports)
- **equity** (e.g., do services address systemic barriers, support equity, diversity and inclusion, and respond to user needs and expectations?)

The following examples highlight positive impacts in terms of value and health system sustainability, access improvements, and benefits to the people of Alberta.

## Reduced length of stay in emergency departments with nurse-initiated protocols

Emergency SCN

The Emergency SCN has led the development of provincial protocols for use in all Alberta emergency departments (EDs) and urgent care centres (UCCs). These protocols are for times when a physician is not readily available to see an arriving patient because of high patient volumes, patient acuity, or limited on-site physician resources.

Frontline staff can implement a protocol if a patient's presentation meets certain criteria. Protocols may include initiating laboratory testing or treatment for some conditions. **This approach has been shown to improve patient satisfaction with the care they receive and reduce patient wait times**.

Since AHS moved to a single clinical information system (Connect Care), it's now possible to compare use of these protocols across sites. Data from Alberta's 18 highest-volume EDs/UCCs (Oct 2022-Apr 2024) shows:

- **Significant improvements in overall patient flow for patients who have had nurse-initiated protocols implemented.**
- **The overall length of stay for these patients has been shorter (1-2+ hours less than for patients without protocol implementation).** The average monthly length of stay for patients with a protocol implemented is 10.3 hours (versus 12.3 hours for non-protocoled patients; $p<0.001$).

The reduced length of stay is attributed to the fact that standardized testing for common complaints has been completed, with results available, prior to the physician's initial assessment.

Use of nurse-initiated protocols has steadily increased since their initial implementation. To further explore protocol use and its impact on care delivery, the Emergency SCN has been working with Connect Care to build a provincial dashboard that captures real-time data. This will enable Clinical Operations to track trends, conduct in-depth analysis, determine if changes are significant, and identify areas for improvement.

## Improved value and patient safety by reducing avoidable blood transfusions

Critical Care SCN

Patients admitted to critical care and high-risk surgical units are frequently prescribed blood and blood component transfusions. Canadian and international guidelines indicate when a blood component transfusion is appropriate; however, despite such guidance, there remains a significant gap between actual and avoidable blood use. In Alberta, data suggests that up to 60% of these transfusions might be avoidable.

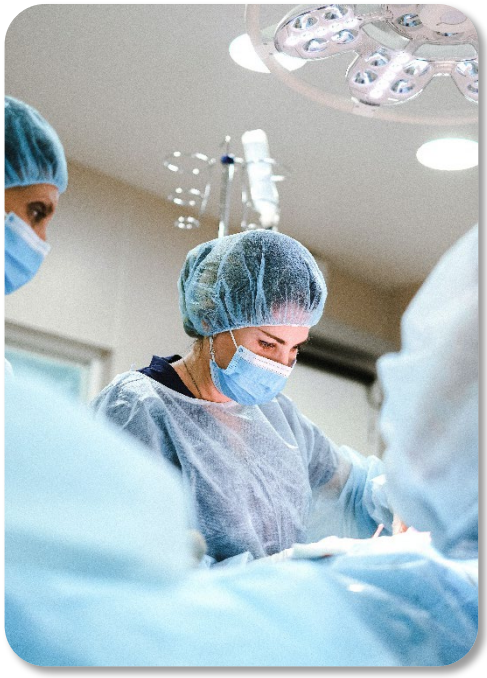
When indicated, blood transfusions are lifesaving. However, they come with risk to patients and substantial healthcare costs. In critical care units and high-risk surgical units combined, avoidable blood transfusions account for $20.5 million in costs to the health care system, and significantly impact Canadian blood shortages.

The Don't Misuse My Blood (DMMB) initiative builds on the success of the RATIONALE project, which reduced the use of low-value albumin fluid replacement. Clinical Decision Support Tools were developed to following a rigorous evidence review and distillation of hundreds of guidelines, medical specialty statements, randomized controlled trials, and stakeholder consensus.

**In the last fiscal year, DMMB has been implemented in 27 units across Alberta's 5 health zones, including adult ICUs, pediatric ICUs, coronary care units, cardiovascular ICUs, and high-risk surgical units.** To support implementation, the Critical Care SCN provided in person and virtual in-services to clinical providers, developed quick reference tools and educational resources, and collaborated with Transfusion Medicine to integrate the Clinical Decision Support Tools into practice.

Evaluations of the DMMB initiative in 2023-2024 show that:

- **Low-value red blood cell transfusions have decreased by 29% in ICUs that have implemented the DMMB initiative.** In the same units, low-value plasma transfusions have decreased by 23%, and low value platelet transfusions have decreased by 28%. Although an economic analysis is not yet available, we anticipate significant cost savings.
- **Owing to the sustainment of the RATIONALE project, the use of low-value albumin has remained over 30% lower than baseline. The decrease in avoidable albumin usage has contributed more than $1.2 million in cost avoidance to date.**



Like the Critical Care SCN, the Bone & Joint Health Provincial Hip and Knee Working Group has actively participated in implementing best practices for blood transfusions for arthroplasty (hip and knee joint replacement surgery) to reduce variation in practice, blood transfusion rates, and utilization of blood products.

Clinicians from sites across Alberta undertook an initiative to determine evidence-informed appropriate rates of transfusion in arthroplasty. Leveraging analytic support through the Alberta Bone and Joint Health Institute (ABJHI), and collaborative processes already in place, baseline transfusion rates were established provincially and for each surgical site.

Site and provincial Balanced Scorecards now include data on blood transfusion rates. This key performance metric helps site and zone operations monitor performance and initiate quality improvement efforts focused on maintaining or improving performance. The improved appropriateness means more blood product availability for other Albertans, while achieve immediate and ongoing cost savings.

To date, evaluations show:

- **Improved appropriateness, with a reduction in blood transfusion rates for hip and knee arthroplasty patients.** Provincially, the transfusion rate was 19.4% at baseline (2009-10), meaning 19.4% of patients undergoing hip and knee arthroplasty received a blood transfusion. By 2015-16, the rate had decreased to 4.6% and in 2023-24, it was 0.8%.

- In addition to patients avoiding exposure to unnecessary blood products, this decrease has **contributed to significant savings for Alberta's health system. In 2023-24, the estimated savings is $1.89 million, with cumulative savings of $16.4 million** (over the past 15 years; FY 2009-10 to 2023-24).

## Improved access, value, safety and patient experience through prudent use of oxygen therapy in hospital

Medicine SCN, Respiratory Health Section

Early and routine use of oxygen therapy in hospital is a common and often unquestioned practice among healthcare providers. However, recent evidence is shifting this culture; we now know that oxygen therapy is not always helpful and too much can sometimes be harmful. In Alberta, healthcare providers are also becoming aware of how advance planning for weaning patients off oxygen therapy can improve timely discharge from hospital and patient comfort.

The Medicine SCN has been working with clinicians on a provincial initiative to treat oxygen as a drug rather than a comfort measure, and begin weaning adult inpatients off oxygen therapy based on target blood oxygen saturation ($SpO_2$) ranges, tailored to the patient's presentation.

To date, this work has involved collaboration with clinical leaders, respiratory therapists, nurses, and professional practice leads to:

- co-develop an online toolkit that provides consistent guidance for prudent use of oxygen at all acute care centres in Alberta
- integrate evidence-based oxygen therapy order sets into Connect Care
- align multiple oxygen safety initiatives
- support local sites and medicine units in identifying implementation strategies and timeframes

Implementation work continues, with positive clinical, patient impact noted. Data from early evaluations at the pilot sites have demonstrated that:

- ➔ **Use of a simple 'huddle and handover' communication strategy has contributed to reduced hospital length of stay** (0.4 to 1.4 fewer days in hospital per patient) **and an associated decrease in hospitalization-related healthcare costs.**
- ➔ **Having a weaning plan for patients receiving oxygen therapy leads to fewer discharge delays.**
- ➔ **Nursing confidence and patient comfort improve.**
- ➔ **This work is easy to adopt and sustain.**

## Improved wound care, chronic wound healing, and value through reduced wound dressing costs and need for interventions

Neurosciences, Rehabilitation & Vision SCN

Chronic skin ulcers are chronic wounds that do not heal as expected. Common examples are diabetic foot ulcers, venous leg ulcers, and pressure injuries, all of which are associated with significant morbidity, increased mortality risk, and increased management needs, costs and resource utilization, burdening patients, their families and the health system. For example, a 2011 study on the burden of illness in Canada estimated annual healthcare costs related to diabetic foot ulcers at $547 million.

The NanoSALV Catalytic Advanced Wound Care Treatment Matrix, from NanoTESS, is a nanostructure cellulose matrix that supports the management of chronic, acute, and minor wounds, burns, skin infections and irritations. NanoSALV promotes healing and offers a broad-spectrum antimicrobial effect.

The NRV SCN, AHS (including the Health Evidence & Innovation team), W21C Research & Innovation Centre, and NanoTESS (funded by CAN Health West) conducted an Alberta-based evaluation trial of NanoSALV that involved four long-term care centres, two outpatient clinics, and one inpatient unit across two urban centres. Using an interrupted time series, the team compared the standard-of-care protocol plus best-in-class dressings (i.e., silver or iodine dressings or other ointments and technologies) to standard-of-care protocols plus NanoSALV treatment (n=25). The Institute of Health Economics then conducted a trial-based economic evaluation to estimate the impact of NanoSALV and standard-of-care protocols on per-patient treatment cost and overall cost-effectiveness. Early evaluations show that:

- **Patients who received NanoSALV plus standard-of-care protocols showed a significant improvement in time to wound closure compared to best-in-class dressings with standard-of-care.** The time to wound closure reduced by about 41% for pressure injuries, 31% for diabetic foot ulcers, and 29% for venous leg ulcers.
- **The estimated total average cost savings per patient (accounting for potential benefits across the entire patient care pathway) is $2,897 for a pressure injury, $1,401 for a diabetic foot ulcer, and $1,747 for a venous leg ulcer.** The maximum total per-patient dressing change cost reduction was 54% (for venous leg ulcers), 48% for diabetic foot ulcers, and 40% for pressure injuries.
- **The forecasted province-wide cost reduction is substantial.**

This initiative has shown promising early-trial results and demonstrated that there is significant therapeutic and economic potential to improve the current dressings and standard-of-care for costly, burdensome chronic wounds in Alberta across diverse care settings. Next steps will be to engage clinical communities and operational leaders within AHS and Continuing Care to share these findings and highlight the potential.

## Improved screening and management of hyperbilirubinemia in the well-newborn while reducing healthcare costs

Maternal Newborn Child & Youth SCN

Hyperbilirubinemia is a common condition for newborn infants. It is caused by a build-up of bilirubin in the blood, causing yellow discoloration of the eyes, skin and body tissue (jaundice). Although low levels of bilirubin are not usually a concern, large amounts can circulate to the brain and may cause seizures and brain damage.

In July 2019, Alberta implemented a provincial Clinical Practice Guideline for hyperbilirubinemia screening, assessment, and treatment for infants ≥35 weeks gestation. Over the past year, the MNCY SCN Scientific Office carried out an evaluation of the guideline and its impacts (i.e., on care delivery, patient outcomes, clinical service utilization and associated costs) with support from a PhD-trained epidemiologist and a PhD-trained health economist from AHS Innovation & Business Intelligence.

Using data from July 2014 to June 2022, the evaluation compared screening and outcomes before and after guideline implementation. The following outcomes were identified post-guideline implementation:

- **Significant increase in the number of infants screened for hyperbilirubinemia within 72 hours of birth**
- **Significant reduction in the incidence of concerning levels of bilirubin**
- **Infants who visited the emergency department did so earlier (at a younger age), with lower bilirubin levels**
- **Infants who required hospital readmission were readmitted earlier (at a younger age)**
- **An overall reduction in risk-adjusted healthcare costs.** This decrease accounts for costs of emergency department visits, hospital readmissions, physician services, laboratory tests, and purchasing of transcutaneous bilirubin meters.

**Implementing this clinical practice guideline provincially—and supporting its uptake and use—has improved health outcomes for some of Alberta's youngest citizens, while reducing overall costs and delivering enhanced value to all Albertans.**

## Increased access to insulin pump therapy, patient education and supports improves care while reducing healthcare utilization

Diabetes, Obesity & Nutrition (DON) SCN

Alberta's Insulin Pump Therapy Program (IPTP) supports people living with type 1 or type 3c diabetes by offering coverage for an insulin pump and diabetes management supplies. The IPTP is administered by Alberta Health, with support from the DON SCN and IPTP clinics across the province. The SCN helps ensure standardized, evidence-based care; supports process and ongoing quality improvement; and collects data to support IPTP clinics in identifying opportunities for improvement.

Over the past year, two additional clinics in Edmonton became authorized IPTP sites (Garneau Endocrinology and Edmonton Diabetes & High Risk Foot Clinic). Expanding the number of IPTP clinics has increased access to insulin pump therapy for patients living in the Edmonton Zone, resulting in reduced wait times for insulin pump start assessment, education, and support.

The IPTP Clinical Advisory Committee (CAC), which includes endocrinologists, clinicians, and operational leaders, advises the Ministry of Health on insulin pump-related matters, including policy changes to the program. Last year, CAC collaborated with the Ministry of Health to update the IPTP Annual Review policy, and members voted unanimously to evolve the annual review to an annual communication sent to all IPTP patients. The next step is to create an implementation plan to operationalize this policy change provincially.

The IPTP continues to enhance quality of care and value for Albertans. Key areas of impact follow:

- **In 2023, 692 individuals were started on an insulin pump in 15 clinics across Alberta.** This represents a 69.6% increase over the previous year.
- **2,357 IPTP clients from 10 clinics were identified via the Pump Documentation Form in Connect Care (as of March 31, 2024).** Having standardized documentation and data reporting embedded within Connect Care improves Alberta's ability to monitor outcomes and system performance.
- **IPTP patients utilize fewer healthcare resources two years following their pump start compared to the year of their pump start, expanding system capacity and reducing healthcare costs.** Specifically:
  - Average annual visits (including visits to general practitioners and specialists) decline from 20.1 (year of pump start) to 17.6 (two years after pump start).
  - Some modest declines are also observed in emergency department (ED) visits, length of stay, and inpatient discharges two years after pump start compared to the year of pump start.
- **In 2023, 90% of IPTP patients had at least A1C blood testing as recommended by the Diabetes Canada Clinical Practice Guidelines. Of those, 72% had at least one A1C test result that was below 8.0.**

## Improved access and quality of care for people experiencing long COVID

Neurosciences, Rehabilitation & Vision SCN

One in nine (nearly 3.5 million) Canadians experience long COVID, representing about 19% of those infected with the virus. Long COVID is defined as new or persisting symptoms that last at least 12 weeks beyond the acute COVID infection. Symptoms vary and can include fatigue, brain fog, cognitive changes, headache, dizziness, palpitations, chest pain, dyspnea, depression and anxiety. Because symptoms often get worse after physical or mental activity, long COVID has significant functional and return-to-work impairments.

The NRV SCN co-led a Provincial Long COVID Council to advance care for Albertans living with long COVID. This work has involved collaboration with partners across all Zones, **consolidating various pathways into a single provincial pathway for long COVID care that ensures Albertans receive the same, high-quality care wherever they live**. The SCN, Zone executive leads, and AHS' Sustainability Program Office have also advocated for funding to develop a sustainable, affordable model of long COVID service delivery that includes **an increased focus on access for patients in rural areas**.

The provincial **Long COVID Inter-Professional Outpatient Program (IPOP)** delivers comprehensive, evidence-informed, multidisciplinary outpatient services for persons with moderate to severe functional impairment due to long COVID. IPOP includes three clinics serving the North and South sector. These clinics offer virtual, phone and in-person appointments.

Working with allied health professionals, the team has delivered education sessions to Service Canada and health insurers to improve knowledge about, and access to, long COVID services in Alberta. It has also connected with rural physicians to increase awareness of long COVID services for rural Albertans.

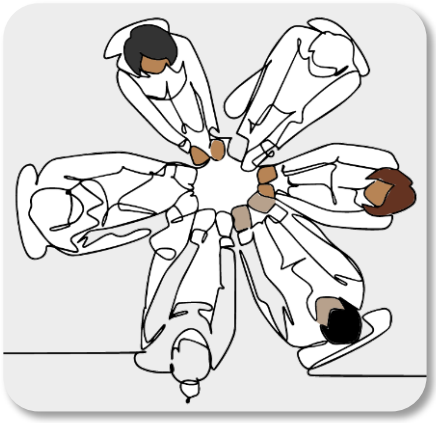
Over the past year, the Provincial Long COVID Steering Committee supported evaluations of the IPOP that show positive outcomes and impact. For example:

- **Between April 1, 2022 and February 29, 2024, the provincial IPOP received 3,159 patient referrals and accepted 2,548.** About 84.5% of IPOP patients had multiple visits to the clinic.
- **Perceived the quality of care increased between patients' initial visit (76%) and follow-up (80%).** Nearly 71% of IPOP patients would recommend the clinic to family and friends.
- **Results of a self-assessed, health-related quality of life questionnaire (EQ-5D) indicate that quality of life improved an average of 4.6 points for patients in the period following their IPOP visit** (n=262 patients; data controlled for patient gender and city).
- The questionnaire measures quality of life on a 5-part scale (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression). **At post-initial visit follow-up, 63% of patients reported at least one EQ-5D domain score higher than baseline.** This equates to a gain of 0.046 quality-adjusted life years per patient/year for patients engaged with the IPOP clinic, which measures as improved quality of life.

**These activities have collectively advanced long COVID care in Alberta, a novel condition that has required health system ingenuity, collaboration and agility**. Resources and programs have been made available provincially to support persons with long COVID and their local care providers. These services have delivered value to the people of Alberta by promoting access and quality of life for persons with long COVID.

## A partnership to improve Indigenous Peoples' experience with critical care, and enhance equitable access and culturally safe care in Alberta ICUs

Critical Care SCN and Indigenous Wellness Core



AHS, the Critical Care SCN, and the Indigenous Wellness Core (IWC) are three years into their partnership, with the goal of building relationships and trust with Indigenous Peoples, closing knowledge gaps in ICU care, and reducing health inequities experienced by Indigenous Peoples. The Indigenous Peoples and Critical Care Advisory Group (IPCCAC), which includes four Indigenous members representing Cree, Anishinaabe, and Métis First Nations, guides and co-designs this large program of work with the SCN and IWC Scientific Offices.

Over the past fiscal year, a systematic review and meta-analysis was published on the incidence and outcomes of critical illness in Indigenous Peoples. See full publication.

The partners also completed an environmental scan looking at Indigenous resources and culturally specific tools across ICUs in Alberta with the goal of identifying gaps and building a forward-looking foundation for organizational learning to lead culturally safe change for Indigenous Peoples. Results of the scan revealed that Alberta currently has limited ICU-specific resources to support Indigenous patients and their families.

Additionally, the group developed a partnership with the Métis Nation of Alberta (MNA) with a goal of conducting the first population-based, retrospective cohort study on the incidence of critical illness and associated ICU care experiences among the Métis population in Alberta.

To date, these collaborations show that:

- **There is a narrow and incomplete understanding of Indigenous Peoples' risk of critical illness and their experiences with critical care.**
- **The scope and magnitude of health inequities in accessing ICU support, and outcomes after critical illness, remain poorly described and represent a barrier to action.**

Work remains; however, we anticipate that this work will help close knowledge gaps in ICU care needs of Indigenous Peoples. Direct impacts include advancing knowledge and understanding of Indigenous Peoples' experiences with critical care in Alberta by health care providers and decision makers.

# Advancing knowledge

Alberta is fortunate to have a diverse and highly skilled research community that includes clinical, academic, and community partners. SCNs, Provincial Programs and their Scientific Offices have served as a bridge that integrates academic effort with the needs of the health system, and actively engages clinicians, patients, families, and others in developing solutions in priority areas.

Together, we have generated and synthesized new knowledge through pragmatic trials and studies that involve innovative treatment, therapies, and models of care. We have evaluated outcomes and provided the data and evidence needed to inform decisions and advance a learning health system.

Results are shared with frontline clinicians, health leaders, government, patients and others through publications, reports, and evaluations. Connect Care provides another way to support clinical studies and access real-time data to optimize care delivery. These tools and resources continue to expand, as does our potential to learn and improve together.

## Peer-reviewed publications

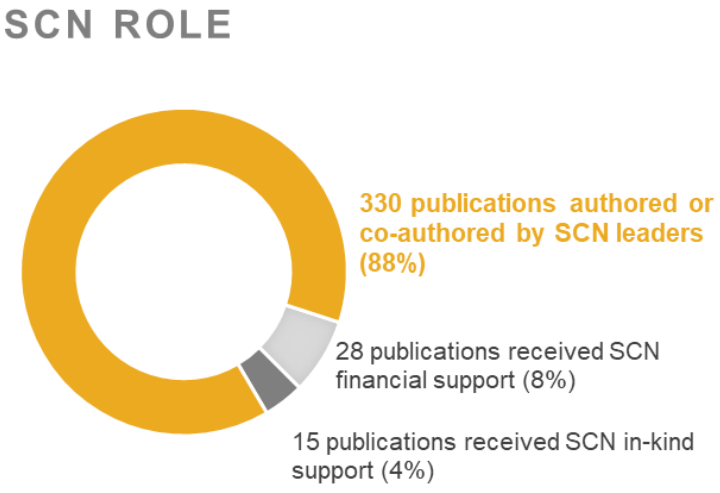
In 2023-24, SCNs and Provincial Programs contributed to:

**434** peer-reviewed manuscripts and scholarly publications[a,b]

**70** submitted or in-press manuscripts[c]

These publications advance knowledge and expand understanding of best practice. They drive accountability and transparency by providing rigorous evaluation, and they inform clinical care and decision making by health leaders. As the knowledge is translated into clinical practice, all Albertans benefit through improved outcomes, care, and value.

For a complete list of publications, see the 2023-2024 Publications Summary.




NOTES:

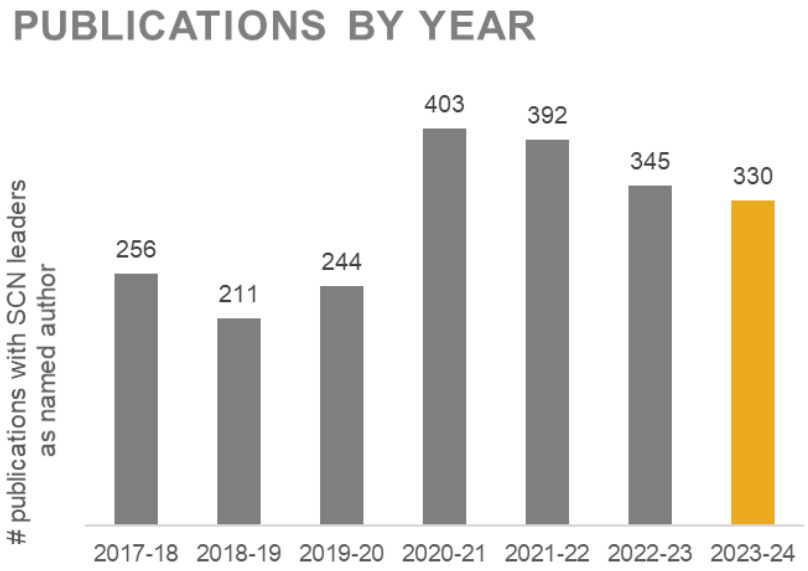
Publication total for 2023-24 reflect data for 15 of 16 SCNs and Provincial Programs.

[a] Co-authored manuscripts are counted only once in summary metrics. Totals include print and e-publications.

[b] 330 published manuscripts have SCN leaders listed as co-authors; those in which SCNs provided in-kind and/or financial support are counted separately.

[c] Reflects publication status as of March 31, 2024. Submitted or in-press manuscripts are excluded from totals for the 2023-24 fiscal year.

For details, see Appendix A.




## Other knowledge products that support quality improvement and a learning health system

In addition to peer-reviewed publications, the SCNs and Provincial Programs have led and/or supported the development of numerous reports, data dashboards, training modules, and other resources and deliverables that support service planning and delivery, policy development, and ongoing evaluation of system performance and outcomes.

These knowledge products enable decision making using timely, best available evidence at a zone, site or provider level. Likewise, public-facing resources and tools support patient education, self-management, communication and health literacy, and empower and support the health and well-being of all Albertans.

Data products

Reports, evaluations

Online resources

Education modules

In 2023-24, SCNs and Provincial Programs contributed to more than 300 knowledge products. For details, see the Other Knowledge Products & Deliverables Summary.

Example

## Decision support pathway and physician-specific feedback to improve care of adults with diabetes and chronic kidney disease

Collaboration between the Medicine SCN (Kidney Health Section), CKD Pathway Team, Endocrinology, General Internal Medicine, Nephrology, Primary Care, Pharmacy, Provincial Pathways Unit, Health Quality Council of Alberta (HQCA), and Physician Learning Program

There is strong evidence to support the use of sodium-glucose cotransporter 2 inhibitors (SGLT2) in treating adults with diabetes and chronic kidney disease (CKD). SGLT2 inhibitors are medications that can help lower blood sugar and substantially reduce the risk of kidney disease progression, hospitalization for heart failure, and major adverse cardiovascular events for this population. However, the prescribing rate of SGLT2s for people with diabetes and CKD was found to be low.

Increasing the number of eligible patients on these medications has the potential to increase quality of life, improve outcomes and reduce health system costs by:

- Reducing all-cause mortality and hospitalizations
- Extending individual's existing kidney function by many years, thereby postponing (or eliminating) the need for costly dialysis for some patients

### Knowledge products that support clinical decision making and high-quality care

#### *Provincial Decision Support Pathway*

Recognizing that most (>90%) Albertans living with CKD are cared for in the community by primary care physicians and pharmacists, the Medicine SCN (Kidney Health Section) led a multidisciplinary group to develop, test and publish an evidence-based decision support tool intended to increase awareness and uptake of SGLT2s in the community. The Provincial Chronic Kidney Disease in Diabetes Mellitus 2 Primary Care Pathway for Optimizing Kidney and Cardiovascular Outcomes was completed and posted to the Alberta Pathways Hub in September 2023.

#### *Individual Audit and Feedback Reports to Nephrologists and Primary Care Physicians*

As part of its annual reports on "Indicators of high-value nephrology care", the Kidney Health Scientific Office compiled and disseminated data on SGLT2 prescription rates to all nephrologists in Alberta, promoting the value of this therapy and highlighting the opportunity to improve care. It also collaborated with HQCA to provide primary care physicians with individualized data on SGLT2 prescribing patterns for patients with CKD and diabetes as part of the annual HQCA Panel Reports. These tools help physicians identify opportunities to improve care and value for their patients.

# Building capacity and capability as a learning health system

In addition to serving as principal investigators and co-investigators, SCN Scientific Offices have supported health research and innovation through collaborations, letters of support, data sharing agreements, access to personnel and funding, training and outreach activities, and by brokering support with operational areas, provincial programs, and local service units.

Alberta's health system benefits from knowledge generated through national and inter-provincial research networks and studies, which provide reciprocal value and opportunities to amplify the impact of health research so the results and benefits reach more people.

## Research endorsement, facilitation and support

Collaboration with Alberta's research community creates opportunities to advance knowledge and apply it to support a learning health system. The scope and type of SCN involvement varies and may include:

- endorsing projects and funding proposals through letters of support (e.g., CIHR, PRIHS)
- providing opportunities for patient and clinician engagement
- facilitating access to clinical environments for pragmatic clinical trials and health research
- collaborating as co-investigators
- brokering access to health system data, clinical participation and interdisciplinary learning
- providing other funding or in-kind support

Examples of current partnerships and active collaborations are included in the Research Collaboration Summary.

**In FY 2023-2024**

Active partnerships and collaborations with

**100+**

research institutes & provincial, national and international health organizations

**180**

letters of support to Alberta researchers in support of funding proposals

**2,700+**

active research network partners

NOTES:

*Letters of support are counted separately from other funding applications.

Metrics for 2023-24 reflect data for 15 of 16 SCNs and Provincial Programs.

## Learning and training opportunities

SCNs and Provincial Programs have supported capacity development of Alberta's health workforce by supervising and mentoring trainees as part of health-related academic study and research fellowships. Over the past year, they provided seed grants and studentships in priority areas of health, opportunities for patient-led research, and co-led collaborative studies with research institutes, communities and other organizations. These include opportunities for CIHR and MITACS* Health Systems Impact Postdoctoral Fellows, graduate and undergraduate students, frontline clinicians and community partners.

**In FY 2023-2024**

**93**
trainees supervised or mentored by SCN leaders

**43**
funded through seed grants and research funding

**25**
research personnel collaborated with SCNs in priority areas

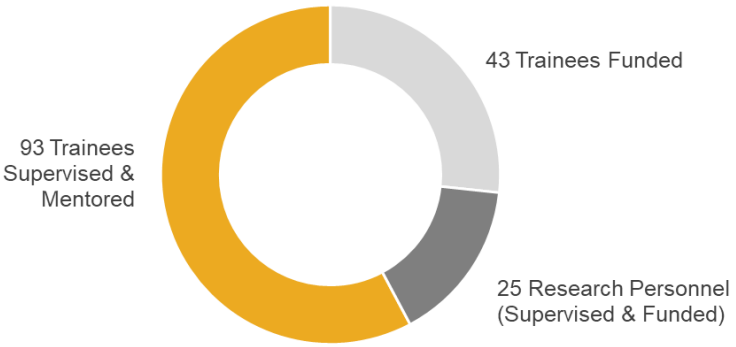
**Over the past 5 years (2019-2024)**

SCNs have supported capacity development by supervising, mentoring and/or funding

**671**
students and trainees

NOTES:
Metrics for 2023-24 reflect data for 15 of 16 SCNs and Provincial Programs.

**TRAINEES SUPPORTED**




These opportunities are a win-win for trainees, Alberta's health system and the people of Alberta. They provide research experience and learning opportunities for trainees in community health sciences, nursing, medicine, public health, informatics and data science, as well as additional capacity and expertise to advance knowledge, evidence-gathering and synthesis in many areas of health that lead to improvements in patient care and outcomes.

For information on recent projects, including outcomes, see the Training & Capacity-Building Summary.

Details on funding support provided by the SCNs and Provincial Programs are included in the Financial Highlights.

*CIHR = Canadian Institutes of Health Research | MITACS = Mathematics of Information Technology & Complex Systems

## Patient-led research and PaCER Training

Once again, SCNs and Provincial Programs have supported patient-led research and Patient and Community Engagement Researchers (PaCERs). The PaCER program is a partnership between:

- Alberta Health Services (through the SCNs)
- The Alberta Strategy for Patient-Oriented Research Support Unit (AbSPORU), Patient Engagement Team
- The University of Calgary, Continuing Education Program

Individuals enrolled in the PaCER program have lived experience in healthcare as patients, caregivers or family members. The program focuses on transforming the role of patients in health care and health culture through engagement and active involvement in health research that addresses patient-identified needs and priorities.

In 2023-2024, the Indigenous Wellness Core supported four PaCER cohorts. Active PaCER projects are underway that explore:

- mental health supports and experiences for children and youth
- healthcare navigation in Alberta

Other PaCER studies, including outcomes of recent PaCER projects on care transitions, chronic pain, and patients' and providers' experiences with musculoskeletal (MSK) care in Alberta, are profiled in the Patient Engagement Summary.

## Knowledge exchange and outreach

In the past year, SCNs and Provincial Programs engaged the patient, clinical and research community through various knowledge exchange events, workshops and outreach activities that target local, provincial, national and international audiences. Scientific directors, assistant scientific directors and trainees participate in research and quality improvement forums, webinars, conferences and other knowledge-sharing and capacity-building activities. These events build awareness, support uptake of practice changes, and create opportunities for collaboration, feedback and alignment.

**In FY 2023-2024**

**521**
virtual and in-person outreach events

**173**
scholarly presentations to local, national or international audiences

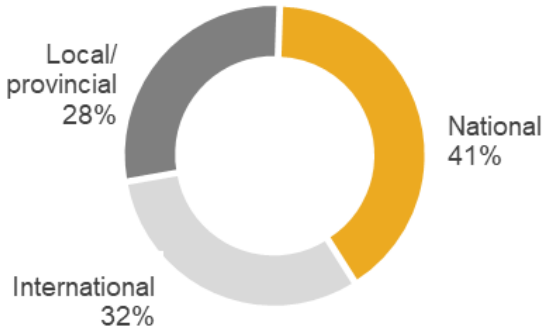
**348**
additional workshops and learning events

NOTES:

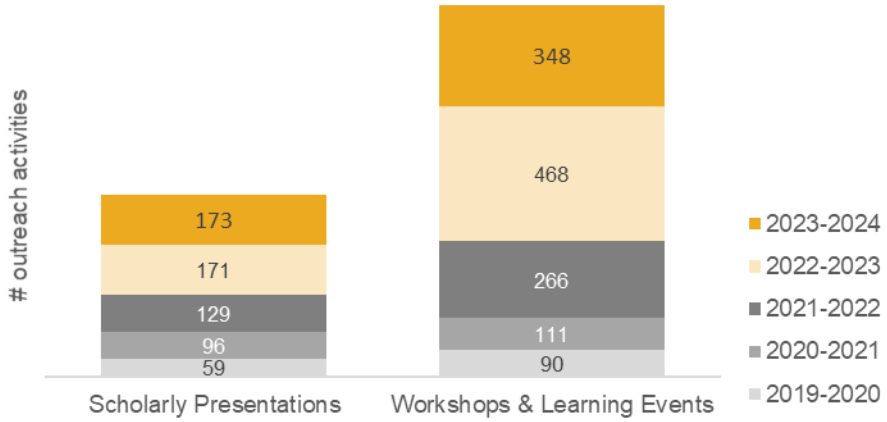
Metrics for 2023-24 reflect data for 15 of 16 SCNs and Provincial Programs.

For details on the types of events included in these counts, see Appendix A.

### SCHOLARLY PRESENTATIONS




### YEAR-OVER-YEAR OUTREACH




For details by SCN or Provincial Program, see the Outreach Summary.

# Financial highlights

The SCN Scientific Offices access grant funding from a variety of sources, bringing in new dollars that directly support health innovation, research and outcomes improvement in Alberta. They also administer and award grants, providing funds that support local research and capacity building through seed grants, studentships and research collaborations with Alberta's universities and with health organizations, leading research institutes and clinician researchers.

These funding opportunities support the Innovation Pipeline, providing the funds needed to test good ideas, adapt them to a local context, and then advance the best innovations—those with greatest potential to positively impact the health and care of Albertans—to provincial implementation and sustainment.

Note: The information that follows is specific to grant funding for health services research. It does not include operational funding Alberta Health Services, SCNs or Provincial Programs receives or funding associated with commercialization of specific products or technologies.

## Grant funding received for health research in Alberta

**$78.1M**
in total grant funding awarded (successful applications)

**86**
successful funding applications

### TOTAL FUNDING BY SOURCE

Sources outside Alberta

$34.5M

(44% of total grant funding awarded in 2023-24)

Sources within Alberta

$43.6M

(56% of total grant funding awarded in 2023-24)

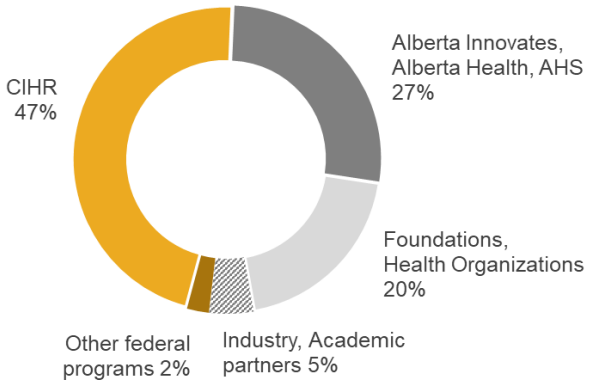
NOTES:

Metrics for 2023-24 reflect data for 15 of 16 SCNs and Provincial Programs.

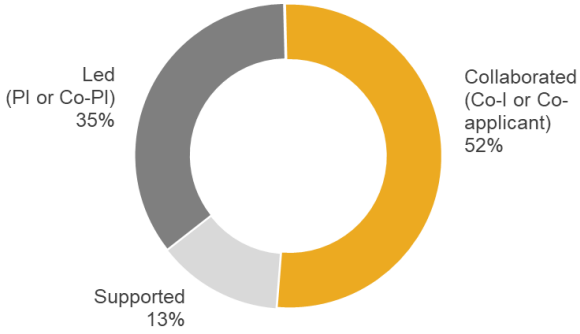
These metrics include work SCNs are leading, collaborating on, or supporting. They do not include funding for work done part of members' other roles, responsibilities or affiliations, nor do they include the 50 additional competitions pending as of March 31, 2023.

All grants that are part of multi-SCN collaborations are counted only once.

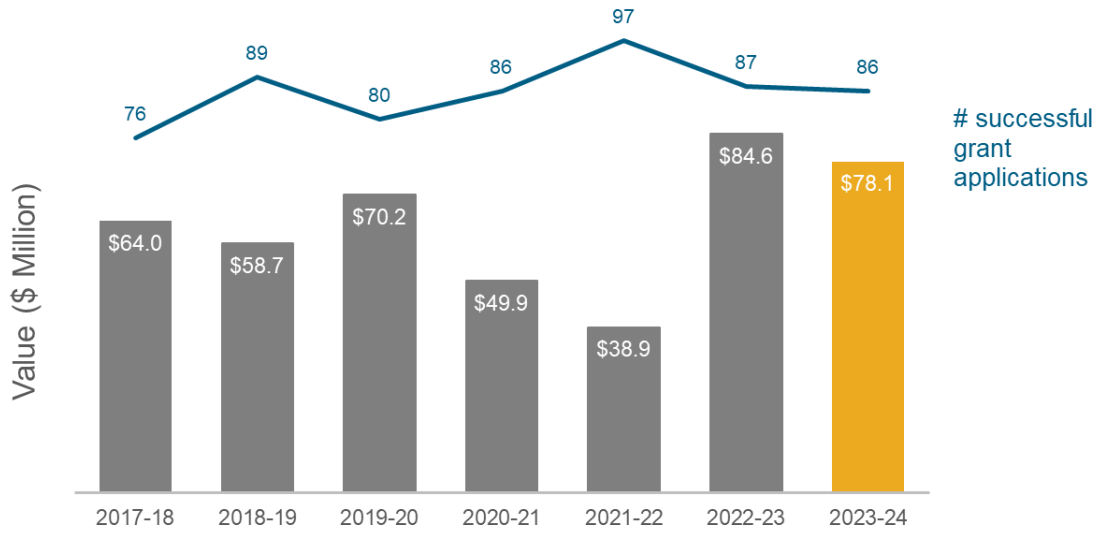
## GRANT SOURCES




## SCN ROLE




## GRANT FUNDING, YEAR OVER YEAR

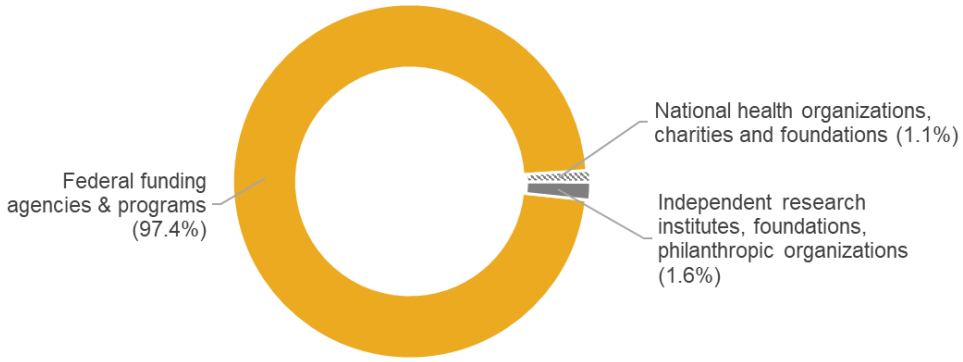



58%

Success rate for grant applications (2023-2024)

Details on these grants, including funders, areas of research and principal investigators, are provided in the Grant Summary
.

## OUT-OF-PROVINCE GRANTS BASED ON VALUE




## SOURCES OF GRANTS FROM OUTSIDE ALBERTA, 2023-24

| | # grants | Total $ |
|---|---|---|
| **Federal research funding agencies**<br>Canadian Institutes for Health Research (CIHR)<br>National Institutes of Health (NIH) - US | 41 | $30.1M |
| **Federal health agencies and programs**<br>New Frontiers in Research Fund (NFRF)<br>Public Health Agency of Canada (PHAC) | 2 | $3.5M |
| **National health organizations, charities and foundations**<br>Heart and Stroke Foundation of Canada<br>The Arthritis Society | 2 | $0.4M |
| **Research institutes, partnerships, independent foundations, and philanthropic organizations**<br>Canadian Partnership Against Cancer<br>Long COVID Web Research Network | 2 | $0.5M |
| **Industry**<br>[None] | 0 | $ - |

Details on these grants, including areas of research and principal investigators, are provided in the Grant Summary.

## Grant funding disbursed by the Scientific Offices

**$2.09M**

in grant funding awarded in FY 2023-2024 to support local research and capacity building

*A 74% increase over 2022-2023*

This includes:

**49**

studentships & seed grants awarded to support health research at Alberta's major research universities

*A 4% increase over 2022-2023*

**16**

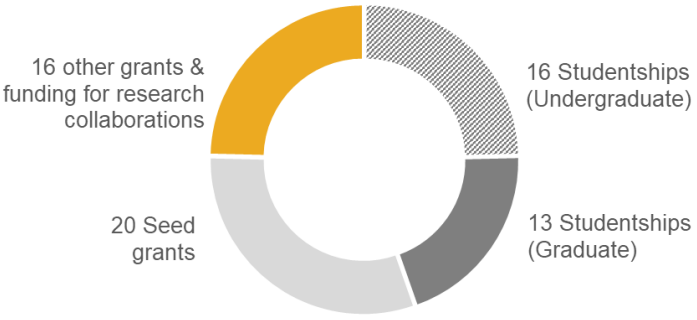
additional grants for research collaborations in priority areas

*A 38% decrease compared to 2022-2023*

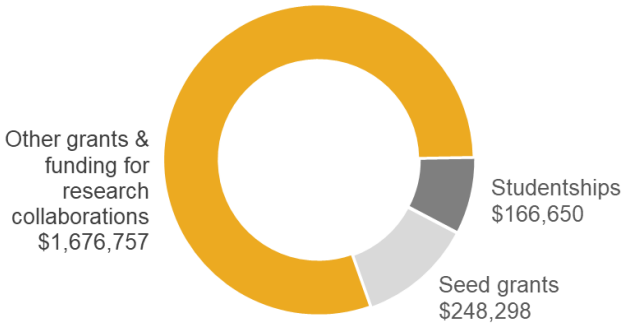
The funding allocation includes

- students and post-doctoral researchers at two Alberta universities
- other recipients (e.g., First Nations members, clinical partners, and CIHR Health System Impact Fellows) participating in health services research in Alberta

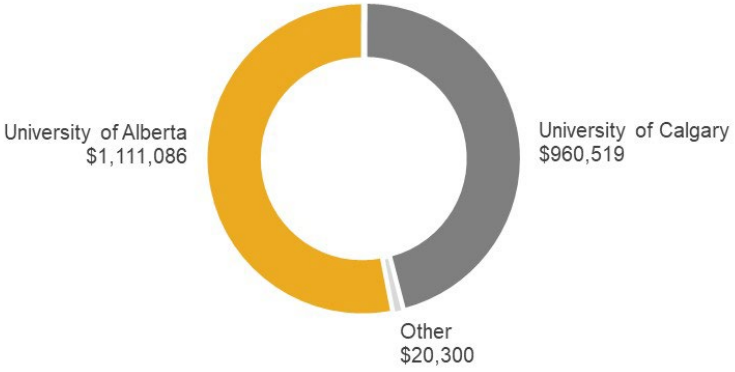
### # OF GRANTS AWARDED, BY TYPE




### FUNDING AWARDED, BY TYPE




### FUNDING BY RECIPIENT AFFILIATION



| | Studentships | | Seed Grants | | Other Grants | |
|---|---|---|---|---|---|---|
| | *N* | *Funds Awarded* | *N* | *Funds Awarded* | *N* | *Funds Awarded* |
| University of Alberta[1] | 14 | $74,510 | 10 | $142,000 | 6 | $894,576 |
| University of Calgary[2] | 11 | $88,000 | 10 | $106,498 | 8 | $766,021 |
| University of Lethbridge | 0 | -- | 0 | – | 0 | – |
| Mount Royal University | 0 | -- | 0 | – | 0 | – |
| Other[3] | 2 | $4,140 | 0 | – | 2 | $16,160 |
| **TOTAL** | **29** | **$166,650** | **20** | **$248,498** | **16** | **$1,676,757** |

NOTES:

[1] Includes students in the Faculty of Medicine & Dentistry (Departments of Medicine and Pediatrics); the Faculty of Nursing; the School of Public Health, and Women and Children's Health Research Institute (WCHRI).

[2] Includes students in the Cumming School of Medicine (Departments of Community Health Sciences, Critical Care Medicine, Medicine, and Psychiatry); and the Faculty of Nursing.

[3] Includes students from Athabasca University, Faculty of Health (Master of Health Studies), First Nation partners and others.

For examples on work these funds have supported, including outcomes, see the Training & Capacity-Building Summary.

# Linked materials

Additional detail for the 2023-2024 fiscal year is provided in supplemental files, linked from this report:

Grants Summary

Publications Summary

Other Outcomes / Deliverables

Outreach Summary

Patient Engagement

Research Collaborations

Faculty Involvement by University

Training & Capacity Building

# Appendices

# Appendix A Methods and metrics

## Measuring our performance

The SCN Scientific Offices and Provincial Programs use a performance measurement framework to assess the impact of their work. There are many approaches for measuring research outcomes, their benefits and direct and indirect impacts, and all methods have strengths and limitations.

SCNs and Provincial Programs have chosen to use a framework that builds on the Canadian Academy of Health Sciences (CAHS) impact framework. This framework is widely used by government, policymakers, funding agencies, academic and research institutions across Canada and uses a 'systems approach' to assess how research activities inform decision making, advance in understanding, and contribute to changes in health, economic and social prosperity. The CAHS framework considers health research impacts in five categories: 1) advancing knowledge, 2) capacity-building, 3) informing decision-making, 4) health impacts, and 5) broad economic and social impacts.

This report summarizes the contributions of SCNs and Provincial Programs in each of these domains. Where possible, common indicators are used to ensure consistent measurement across all networks, programs and time. Health impacts are characterized for the appropriate population and scale (local, provincial) and vary depending on the nature of the project and population focus. Impacts on health policy, and broad economic and social benefits can be challenging to quantify and attribute specific contributions. The report also highlights collective achievements and describes the broad impact of this work.

Note: Data and summary metrics for 2023-2024 include information for 15 of 16 SCNs and Provincial Programs. Visit the PPPH website for information on population and public health.

## Reporting period

Data in this report is for the 2023-2024 AHS fiscal year (April 1, 2023 to March 31, 2024).

NOTE: Metrics reflect the status of grants, publications, and funding awards at the end of the fiscal year. Those listed as 'pending' or 'submitted' as of March 31, 2024 are not counted in summary metrics (even if their status is now known) to avoid double-counting and ensure consistent year-to-year reporting.

## Data sources

Information provided in this report was compiled by the SCN Assistant Scientific Directors, with support from other SCN leaders, staff and the pan-SCN team. All submissions were reviewed for accuracy and completeness prior to publication.

Data used to assess health and broad economic and social impacts was obtained from Alberta Health Services administrative databases, provincial costing information, project reports and published studies.

## Performance indicators

Performance indicators SCN Scientific Offices use to report on impact are listed in the tables below for each CAHS domain. These indicators include quantitative and qualitative measures that reflect the broad health context SCNs operate within and their contributions on a local and provincial scale.

| Advancing knowledge | |
|---|---|
| **Indicator** | **Definition** |
| Grants[1,2,3,4,5] | # of grant proposals led, collaborated or supported by the SCN/Provincial Program and submitted to a single competition, and value (CAN$) of grant award |
| Letters of support[5,6] | # of letters of support provided by SCN/Provincial Program Leaders |
| Research network members[7] | # of researchers who self-identify as members of the SCN research community |
| Peer-reviewed publications[5,8] | # of peer-reviewed publications aligned with SCN/Provincial Programs subject matter, projects, and/or priorities |
| Other knowledge products and deliverables[5,9] | # of non-peer reviewed publications and other deliverables developed at the request of executive leaders, Zone operations, Alberta Health, and others, or to support strategic priorities and mandate of the SCN/Provincial Program. |

Notes: These indicators include measures of research activity, quality and scholarly output.

1. Includes any grant proposals supported by the SCN/Provincial Program and submitted to a single competition. Funding calls that have a letter of interest (LOI) stage and full application stage are only counted once. If an LOI comes with funding, this is considered a separate grant (i.e., LOI is rated as unsuccessful, pending or successful AND full application is rated as unsuccessful, pending or successful).
2. Includes a final count of grants (successful and pending) as well as sub-counts for those in which a) the SD/ASD/Leadership have been named role on the grant application, and b) any grants for which the SD/ASD/Leadership is not a named team member but has provided support (funds or in-kind support such as data liberation, content expertise, methods support). Letters of Support (LOS) are not included as in-kind support. “Led” refers to grants in which SCN leaders are the primary investigator (PI) or Co-PI, and “Collaborated” refers to grants in which SCN leaders are named as a co-investigator (Co-I) or co-applicant.
3. Grant amounts are reported in Canadian dollars. The full value of the grant is included in summary metrics in the year the grant is awarded. Where grant allocations are dispersed by province/region, only the Alberta amount is counted in summary metrics. In the case of multi-SCN collaborations, shared grants are listed under each SCN but counted only counted once in summary metrics.
4. Grant applications submitted are listed as ‘pending’ if the outcome was not known by the end of the fiscal year. These applications are not counted in the summary metrics (even if their status is now known) to avoid double-counting and ensure consistent year-to-year reporting.
5. SCN/Provincial Program Leadership includes the Scientific Director and Assistant Scientific Director(s) well as Senior Medical Director, Senior Program Director or Senior Program Officer, Executive Director, Manager and Research Scientist.
6. Includes letters of support written by any member of the SCN/Provincial Program Leadership team. Letters of support are mutually exclusive from in-kind support in Grant Application Indicators (i.e., letters of support are not counted as in-kind support in Grant indicators).
7. Research network members can include researchers on working groups, SCN projects, or part of the core committee; co-investigators of external competitions; and those who self-identify as members of the SCN research community. Knowledge users on research grants are not included as the focus is on researchers and not the broader network community. Unless researchers request to be removed from the database, they continue to be counted as members of the research network even if the grant, project or working group is over.
8. Publication status (published, in-press/accepted, and submitted) is assigned based on status at the end of the fiscal year. Counts includes totals as well as sub-counts of publications a) with the SD, ASD, or Leadership on the author line, b) those generated with financial support from SCN (e.g. seed grants, commissioned work, workshops), and c) with significant in-kind contributions from SCN (e.g. data pull, data analysis).
9. A summary of Other Knowledge Products & Deliverables is provided, which identifies research outputs, products and deliverables not counted as peer-reviewed publications. This includes provincial policy input and engagement, pathways, grey literature, evidence reviews, taskforce reports, clinical practice guidelines, training tools, data products, and decisions tools that support the work of AHS Executive, Zone Operations, clinicians, patients, policy makers, and others. It also includes awards and formal recognition given for SCN-related work.

| Building capacity | |
|---|---|
| **Indicator** | **Definition** |
| Trainees – supervised / mentored[1,2] | # of trainees supervised or mentored by SCN/Provincial Program Leader(s) and related to an SCN/Provincial Program priority project. Supervision refers to trainees that are supervised as part of a formal academic program. Mentoring refers to trainees that are not supervised as part of a formal academic program. |
| Trainees – funded[1,2] | # of trainees funded by the SCN/Provincial Program but not supervised by SCN/Provincial Program Leadership (e.g., Studentship competitions, SD budget, PRIHS, other SCN-related funding mechanisms) and related to an SCN/Provincial Program priority project. |
| Research personnel – supervised and funded | # of research personnel funded by the SCN/Provincial Program, by grant dollars or other SCN funding mechanisms and supervised by the SD, ASD or SCN/Provincial Program Leadership |
| Additional funding | |
| Summer studentships[3] | # summer studentships awarded (not launched) and total dollar amount in fiscal year |
| Seed grants[3] | # of seed grants awarded (not launched) and total dollar amount in fiscal year |
| Other grants[3] | # of other grants (such as commissioned research) awarded (not launched) and total dollar amount in fiscal year |
| Patient-led research and PaCER training | # of patient volunteers sponsored by SCNs/Provincial Programs in fiscal year to receive PaCER training and # of SCN-supported patient-led or co-led research projects |
| Outreach activities[4] | # of scholarly presentations (lectures, abstracts, posters, conference panelist and moderator) to local, national or international audiences in fiscal year by SCN/Provincial Program Leadership.<br><br># of presentations, workshops, research or quality improvement forums, webinars, learning collaboratives, grand rounds, and similar learning events by SCN/Provincial Program Leaders that support knowledge-sharing and capacity-building. |

Notes:

1. SCN/Provincial Program Leadership includes the Scientific Director and Assistant Scientific Director(s) well as Senior Medical Director, Senior Program Director or Senior Program Officer, Executive Director, Manager and Research Scientist.
2. Includes total count as well as a sub-count for trainees at each level: a) Undergraduate – Summer Student Project Only, b) Undergraduate, c) Master's, d) PhD, e) Resident Research Project, f) Post-Doctoral (PhD) Fellowship, g) Post-Doctoral (MD) Fellowship, and h) Clinicians.
3. Includes total count as well as a sub-count (# and dollars) by university affiliation to which funds were awarded (University of Alberta, University of Calgary, University of Lethbridge, Mount Royal University, Other).
4. Includes sub-count of scholarly presentations and total count of other outreach activities (workshops, meetings and learning events). Totals include both in-person and virtual events. Regular meetings (e.g., core committees), social media posts, interviews/appearances are excluded from total count.

| Informing decisions | |
|---|---|
| **Indicator[1]** | **Definition** |
| Health policy contributions | List of significant contributions to health policy harmonization, practice standardization, access and quality improvement, with release and/or implementation on a provincial scale. |
| Provincial initiatives | Includes SCN- and Provincial Program-led activities, collaboration with other health, community and industry partners, and support for other organizations on work that supports clinical operations, pathway development, administration, and decision making on a provincial scale. The work involves mobilizing research evidence and translating knowledge into action to improve quality of care (clinical effectiveness, safety, acceptability, access, appropriateness, and efficiency), equity, health outcomes, and patient/provider experiences. |

Note:

1. No specific indicators defined but significant contributions are highlighted over past fiscal year. The report considers how SCN and Provincial Program contributions are helping advance care (prevention, diagnosis, treatment), facilitate knowledge transfer and evidence-informed change, and inform health policy, operational and administrative decisions on a provincial scale.

   Work relates to all areas of health-related decision making (e.g., health care, public health, prevention, health-related education/training, etc.). Because decision making inputs, roles of various contributors, and the way research informs decisions are difficult to measure, impacts are described qualitatively. The report highlights major milestones and collective achievements over the past fiscal year.

| Health impacts | |
|---|---|
| **Indicator[1]** | **Definition** |
| Health outcome measures | Include impacts on patient and population health, wellness, disease and injury prevention, patient experience. These may include short-term or long-term impacts on individuals or patient populations. |

Note:

1. No specific indicators defined as outcome measures are network or project-dependent. Indicators may include changes in health status (mortality, morbidity, mobility, disability, well-being) and other outcomes (e.g., reduced complications, emergency department visits or hospital readmissions). They may include quantitative or qualitative measures, patient and population-level impacts, patient-reported experiences or outcome measures. Impact is considered for specific patient populations and on a local, community and provincial scale.

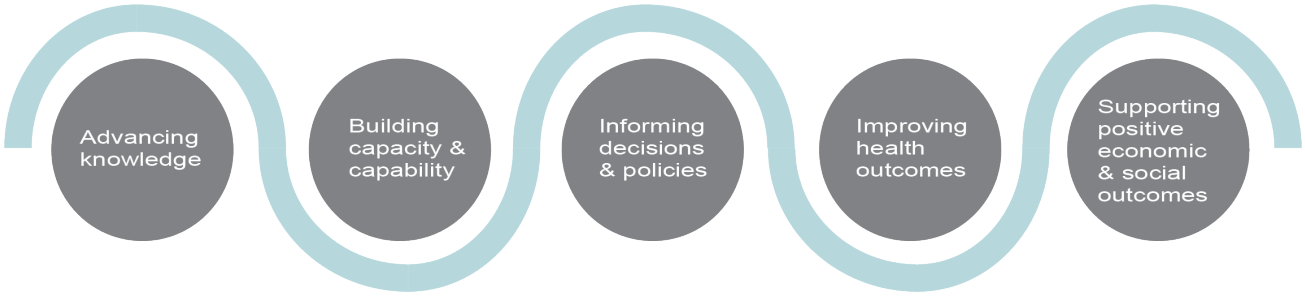
| Economic and social benefits | |
|---|---|
| **Indicator[1]** | **Definition** |
| Economic and social benefits | Includes impacts on health system capacity, value and sustainability. Measures include return on investment, cost savings, cost avoidance, improvements in health system utilization, access and patient, provider and community supports. |

Note:

1. No specific indicators defined but significant contributions are highlighted over past fiscal year. Benefits can be broad and are considered on a patient-, system and provincial level (e.g., LOS, wait times, care in the community, health equity). The report considers monetary and non-monetary benefits.

# Appendix B The CAHS Framework and AHS Innovation Pipeline

The five domains of the CAHS Framework reflect a 'system view' of health research and innovation. Activities in one domain fuel and impact the next by providing knowledge resources, capacity, investment and momentum to advance health system improvements that benefit Albertans and keep pace with emerging evidence and priority needs.




The activities associated with each domain (i.e., systematic inquiry, measurement and evaluation; knowledge generation, management and mobilization; and implementation and sustainment of practice changes) are also reflected in the Innovation Pipeline, shown below.

The Innovation Pipeline is fueled by priority health system challenges and provides a progressive, integrated and system-level approach to health research and innovation. The model identifies the type of evidence needed to inform value-based decision making. Among these are evidence of improved outcomes, quality, and health equity; health and operational impacts; and economic value. The model illustrates how clinicians and researchers support this process and provide the inputs needed to drive quality improvement, health system innovation and transformation.


At each stage, clinical, research and academic partners provide expertise and capacity to support rigorous data collection, analysis, and evaluation. Trials are piloted on a small scale to assess outcomes, gather feedback and refine strategies. As work moves along the pipeline, evidence and knowledge is gathered that is directly applicable to Alberta's health system. If the evidence supports provincial implementation (i.e., positive health, economic and/or social impacts), initiatives are prioritized for further action, operationalization and sustainment on a provincial scale, ensuring more Albertans can benefit from them.

# Appendix C 2023-2024 Highlights by Area of Health

One of the features of this report in past years has been the two-page summaries of each SCN's and Provincial Program's major achievements, initiatives and progress over the past fiscal year. In light of recent announcements and work regarding Alberta's health system refocusing, as well as efforts currently underway to transition existing structures to Program Improvement and Integration Networks (PINs), profiles were not available for all networks and programs at the time of writing.

In the interest of sharing updates that are available, and acknowledging the impact of this work, summaries are included for the networks and programs listed below. Indicators at the end of each profile link to further detail specific to these teams. Information for other SCNs and Provincial Programs can be found on www.ahs.ca/scns/scn.aspx.

## Strategic Clinical Networks

- Bone and Joint Health
- Cancer
- Cardiovascular Health and Stroke
- Critical Care
- Diabetes, Obesity and Nutrition
- Emergency
- Maternal, Newborn, Child and Youth
- Medicine (includes Hospital Medicine, Kidney Health and Respiratory Health)
- Neurosciences, Rehabilitation and Vision

## Provincial Programs

- Addiction and Mental Health Integration Network
- Primary Health Care Integration Network
- Provincial Seniors Health and Continuing Care

# Bone & Joint Health

**Email**

bonejoint.scn@ahs.ca

**Key Partners**

Alberta Bone and Joint Health Institute (ABJHI)

McCaig Institute for Bone and Joint Health

## Major milestones and achievements, 2023-2024

A significant proportion of the Alberta population has experienced or lives with a musculoskeletal (MSK) health problem, and more than 3 million Albertans have visited their primary care provider to seek help for MSK-related concerns[1]. Effective management of MSK conditions requires early, accurate assessment and appropriate treatment, which is often non-surgical. However, many Albertans experience significant challenges accessing the right care at the right time, leading to negative impacts on quality of life and overall health outcomes. The Bone and Joint Health (BJH) Strategic Clinical Network (SCN) has been driving transformation of the MSK health care system in Alberta, with the goal of improving access to MSK assessment and care—for the benefit of patients across the province and healthcare providers working across the system. Progress over the past year is highlighted below.

### Rapid Access Clinics – Implementation of a new model to improve access to and quality of MSK care

Rapid Access Clinics (RACs) are a key component of Alberta's MSK Transformation Program. These specialized clinics offer an access point for patients with MSK conditions. RACs employ a multidisciplinary team model, enabling expert assessment of MSK problems and appropriate referrals and recommendations for needed care. They focus on getting patients assessed quickly and on the right treatment path. Benefits include:

- faster access for patients to receive their initial consult
- efficient, high-quality referrals to surgeons, as appropriate
- earlier initiation of conservative management interventions
- better communication among clinicians and across clinics

Implementation of RACs began in late 2023, with the first cohort of RACs opening their doors in Edmonton, Grande Prairie, and Lethbridge. Work is ongoing to further spread the RAC model of care, with evaluation of the implementation process and effectiveness of the RAC model undertaken in collaboration with the Alberta Bone and Joint Health Institute (ABJHI).

### ARMS UP Study – Bringing shoulder assessment closer to home for rural Albertans

Funded through a CIHR Transforming Health with Integrated Care (THINC) grant and co-led by Drs. Lauren Beaupre and Martin Ferguson-Pell (University of Alberta), ARMS UP aims to test and implement a virtual assessment process for shoulder conditions. The process uses a "hub and spoke" model, applying innovative technologies such as robotics, motion capture, and tele-rehabilitation equipment, and combining it with remote support from specialists to enable virtual shoulder assessments in rural settings (spokes), with close links to the RACs in urban centers (hubs). Its purpose is to improve access to high quality care for rural patients, closer to their homes.

The ARMS UP study enables rigorous evaluation of this virtual approach to care delivery. If results are favourable, this work has potential to further expand the reach of RACs in providing access to high quality MSK care for all Albertans, regardless of where they live. The study involves collaboration between the University of Alberta, the University of Calgary, Alberta Health Services, BJH SCN team members, and community-based health care providers and clinics. Learn more

[1] Source: Alberta Health Physician billing data (FY 2018/19), via ABJHI.

# Impact on health, care, quality or performance

The BJH SCN has been focused on '***Keeping Albertans Moving'*** through focused areas of work that aim to mitigate, maximize and mend problems associated with bones, joints and the MSK system. The SCN is committed to providing access to high quality MSK care to all Albertans, and aims to empower Albertans to self-manage chronic MSK conditions to optimize quality of life.

Over the past fiscal year, the work of the SCN has positively impacted MSK health and care delivery of MSK services in Alberta by:

- Developing and provincially standardizing evidence-informed, consensus-based clinical guidelines for shoulder, low back and soft tissue knee conditions
- Co-sponsoring Health Evidence Reviews focused on non-physician assessor of MSK conditions
- Improving measurement, evaluation and reporting of key performance indicators for MSK conditions
- Facilitating adoption of digital health solutions and developing patient education materials with evidence-informed information on how to self-manage chronic MSK conditions
- Championing and supporting implementation of Rapid Access Clinics to improve access to orthopedic consultation for Albertans with select MSK conditions
- Improving osteoporosis treatment for patients who experience a hip fracture through provincial implementation of the Fracture Liaison Service (FLS)

## Words from the wise – perspectives from our Patient Advisor

*"I have been a patient advisor to the BJH SCN for 10 years and been involved in many conservative management research studies bringing a collective patient voice to MSK care system research. Most recently the BJH SCN carried out a comprehensive study of MSK care in Alberta. The findings indicate that we continue to experience a fragmented system built more for providers rather than patients, one that takes us on a long and circuitous system journey filled with barriers, and falls short of helping us live with debilitating MSK diseases. Other than surgery, the system does little to support us as we live with chronic progressive illness. As our revised health care system evolves, I worry that conservative (non-surgical) management of MSK conditions will become even further removed from mainstream initiatives. I implore system leaders to not lose sight and act on what patients have been saying for years: remove barriers to accessing providers with MSK expertise, particularly allied health professionals, and provide resources that enable us to self manage our diseases or symptoms, which significantly contributes to our quality of life".*

**Jean Miller, Patient Advisor, PaCER, former nurse, osteoarthritis patient, and qualitative researcher**

## BONE AND JOINT HEALTH SCN

### Publications & Grants

**12**
Peer-reviewed Publications

**$3.8M**
Research Grants

### Engagement

**19**
Workshops & Presentations

**142**
Research Members

### Outcomes and Impact

**2,000+**
patients seen at three new Rapid Access Clinics (Jan-June 2024)

**121**
patients and healthcare providers interviewed to better understand MSK care in Alberta

www.ahs.ca/bjhscn

# Cancer

**Email**

cancer.scn@ahs.ca

**Key Partners**

Cancer Care Alberta (CCA)
Alberta Cancer Foundation (ACF)
Canadian Partnership Against Cancer (CPAC)
Cancer Research Institute of Northern Alberta (University of Alberta)
Arnie Charbonneau Cancer Research Institute (University of Calgary)

## Major milestones and achievements, 2023-2024

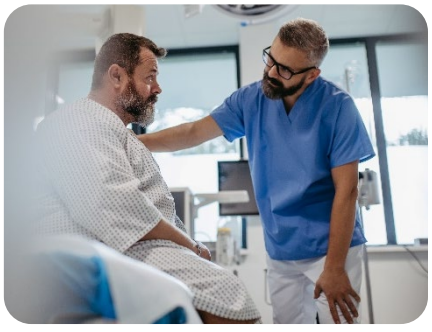
The Cancer SCN advanced several initiatives over the past year that aligned with the strategic directions outlined in our Transformational Roadmap. Our work has focused on improving care across the cancer continuum in Alberta through data, evidence and collaboration.

### Clinical Pathways – Streamlining cancer diagnosis for Albertans

The implementation of cancer diagnosis pathways has demonstrated significant value to patients, providers, and Alberta's healthcare system. Collaboratively, the Cancer SCN, Cancer Care Alberta (CCA), patient and family advisors, and provincial stakeholders, including primary care, have spearheaded two major pathway initiatives this year:

- The Head and Neck Cancer Diagnosis and Referral Pathway, now available via the Provincial Pathway Hub, has been successfully implemented province-wide. The pathway offers clear guidance for primary care providers and dentists regarding appropriate referrals to specialty care. With its focus on minimizing unnecessary testing and improving access to specialized treatment, this pathway aims to enhance patient care while also reducing healthcare costs.
- A clinical practice guideline for oncologists/specialists, the Metastatic Cancer of Unknown Primary Workup, is ready for use. This guideline, developed in partnership with patient advisors, primary care providers, frontline staff, operational leaders, medical oncologists, radiologists, pathologists and representatives from palliative and supportive care, is part of a larger initiative to address the needs of patients with metastatic cancer. The initiative includes developing and validating (i) a Metastatic Cancer Diagnosis Pathway for primary care, and (ii) a program to expedite diagnosis and offer earlier supportive and palliative care.

In addition, we have finalized the design process for the overarching Alberta Cancer Diagnosis (ACD) Initiative and have begun to secure funding for its implementation.



### Perspectives of healthcare providers about cancer diagnosis in Alberta emergency departments (EDs)

In Alberta, many cancer patients receive their cancer diagnosis after visiting an ED. These patients are often at advanced stages of the disease, leading to poorer health outcomes and quality of life. This study, funded by the Alberta Registered Nurses Educational Trust (ARNET), explores how healthcare providers in EDs can better support patients with potential cancer diagnoses. Through interviews with healthcare providers in EDs across Edmonton and Calgary (including physicians and nurses), this study seeks to uncover perspectives and experiences about the cancer diagnosis process. Insights will inform the Alberta Cancer Diagnosis Initiative, which strives to enhance early cancer diagnosis and improve patient and family experiences while achieving better outcomes.

This project is a collaboration between nursing staff at South Health Campus (Calgary) and the Cancer and Emergency SCNs. In addition to strengthening research capacity among frontline nurses and collaboration across health sectors, the study will provide valuable insights that can enhance professional practice, staff recruitment and retention in EDs and hospitals province-wide.

## Impact on health, care, quality or performance

The Cancer SCN is leading transformation to improve care across the cancer continuum in Alberta by developing strong relationships with patients, families, research institutes, clinicians and operational partners. We have worked together with these stakeholders to positively impact cancer care in the province by:

- Implementing patient-centered initiatives and supporting programs tailored to diverse needs
- Supporting evidence-based practices to improve health outcomes
- Optimizing delivery of cancer care services through streamlined processes
- Prioritizing patient voices in decision-making processes
- Establishing mechanisms for continuous improvement to meet evolving needs

Additional work currently underway focuses on Cancer diagnosis models of care, Community assets suporting cancer diagnosis, and Equity in cancer care access for underserved populations.

## Other highlights

### Game Changer Fund supports Alberta-based cancer research and innovation

In 2023, the Alberta Cancer Foundation (ACF) earmarked $5 million raised through its “We Cross Cancer” capital campaign to support the Game Changer Fund, a dynamic research program designed to drive innovation, complement existing funding streams, and foster collaboration across conventional boundaries in cancer research. In partnership with the ACF, CCA Cancer Research & Analytics, and the Cancer Research Institute of Northern Alberta (University of Alberta), and with substantial input from Edmonton’s cancer research community, Dr Paula Robson (Scientific Director, Cancer SCN) co-led the development and implementation of this grant competition as a strategic initiative to bolster local cancer research.

The Game Changer Fund invited research teams in Edmonton to submit proposals addressing significant cancer research questions with fresh perspectives or creative approaches. Following rigorous peer-review that involved patient and family representatives as well as subject matter experts, four teams were awarded $1.25 million each. Fund recipients were announced in February 2024, showcasing the innovative projects poised to make substantial strides in cancer biology and treatment, and reflecting the collaborative and forward-thinking spirit of the Game Changer Fund.

CANCER SCN

| Publications & Grants | | Engagement | | Outcomes and Impact |
|---|---|---|---|---|
| | 25 Peer-reviewed Publications | | 36 Presentations & Workshops | $3.1 cost savings for every $1 invested (Colorectal Cancer Diagnosis Pathway) |
| | 8.7M Research Grants | | 180 Research Members | Reduced maximum wait times by 120 days (Lymphoma Diagnosis Pathway) |

www.ahs.ca/cancerscn

# Cardiovascular Health and Stroke

**Email**

cardiovascularhealthstroke.scn@ahs.ca

**Key Partners**

Campus Alberta Neuroscience

Heart and Stroke Foundation

Hotchkiss Brain Institute [University of Calgary]

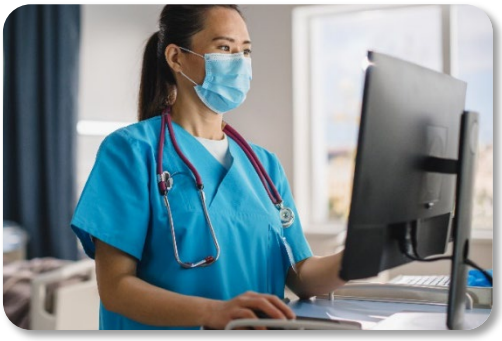
Libin Cardiovascular Institute [University of Calgary]

Cardiovascular Research Institute (CVRI) [University of Alberta]

## Major milestones and achievements, 2023-2024

Over the past year, the Cardiovascular Health and Stroke (CvHS) Strategic Clinical Network (SCN) has advanced several key initiatives that support the health of Albertans through prevention, collaboration, strategic partnerships (Heartway™), research and innovation. Our community outreach and capacity-building initiatives have been instrumental in fostering collaboration and expertise across the province. We are deeply grateful to our frontline clinicians, operational leaders, and patient and family partners who have tirelessly served the cardiovascular and stroke communities. Their dedication has been pivotal in advancing strategic initiatives and programs that continue to improve stroke and cardiovascular care, outcomes and value for the people of Alberta. Together, we have translated evidence from clinical trials into practice, made significant progress in priority areas.

### Provincial Clinical Pathways Support Unit (CPSU) supports uptake of HF/COPD Care Paths



The CPSU team has been integral in designing, testing, implementing, reporting, and evaluating the first Care Paths for Heart Failure (HF) and Chronic Obstructive Pulmonary Disease (COPD). These Care Paths have been integrated into Connect Care and used at 82 sites across Alberta. The network has worked closely with clinical operations to ensure these Care Paths provide evidence-informed guidance on best practices to optimize patient care.

The team has developed key resources to support the uptake and use of these Care Paths, including comprehensive reporting dashboards, educational tools and accredited training modules for physicians, allied health professionals, and nurses, with over 45,000 completions to date. The data dashboards incorporate provincial quality improvement metrics, so clinicians and health leaders can readily monitor, report and optimize performance. Additionally, the CPSU is optimizing Connect Care workflows for cardiac function clinics, enhancing efficiency by standardizing processes and policies, including nurse prescribing.

### Enhanced Lipid Reporting expands screening and prevention for cardiovascular disease

The provincial spread and scale of Enhanced Lipid Reporting (ELR) has been a notable achievement. ELR is a lab-based screening and prevention program that uses the Framingham Risk Score (FRS) to evaluate a patient's risk of cardiovascular disease (CVD). ELR has been integrated into Connect Care and has the potential to create a measurable impact on CVD prevention as its uptake continues to grow. As of March 2024, 33,659 FRS tests have been ordered in Alberta, with 47% of family physicians currently using ELR (nearly doubling our initial implementation target). Approximately 9,000 patients identified as high risk have seen an 11% increase in statin prescriptions.

### High-sensitivity Troponin pathway aims to improve quality of care and outcomes at all acute care sites

Troponin is a protein found in heart muscle that helps the muscle contract. Elevated levels of troponin appears in the blood when heart muscle is damaged, for example, when a patient has had a heart attack (myocardial infarction). The CvHS SCN has been working with clinicians, zone leadership and Alberta Precision Laboratories to develop and adopt a single 2-hour high-sensitivity troponin test for patients who present with chest pain in emergency settings. The aim is to be able to rule out NSTEMI myocardial infarction (a less severe form of heart attack). Over the past year, the team has developed an incorporated a 2-h troponin testing algorithm into Connect Care to ensure workflow standardization and patient equity.

Implementation is underway, and is being staged by zone. Over the past 12 months, the pathway has been rolled out to approximately half the province. This province-wide initiative will see high-sensitivity troponin I (hs-TnI) testing introduced in over 40 rural facilities, enhancing efficiency and care quality for people across Alberta.

## Other highlights

### Evaluation, expansion, and data and service enhancements for provincial stroke initiatives

This year marks the one-year anniversary of the provincial rollout of tenecteplase for acute ischemic stroke treatment. The CvHS SCN Scientific Office continues to evaluate the impact of this practice change. We also continue to evaluate and estimate the impact of expanding the Endovascular Therapy (EVT) treatment window on emergency departments in all zones. This expansion, which aligns Alberta's practice with Canadian Stroke Best Practice Recommendations, ensures equitable access to care, especially for rural patients, and is supported by ongoing collaboration with EMS, STARS air ambulance, and zone stroke partners.

The team has also worked closely with Connect Care partners to migrate data elements and key performance indicators (KPIs) to EPIC, Alberta's provincial clinical information system. This effort will significantly reduce the data collection burden on frontline teams. Builds for reporting "real-time" Door-to-Needle (DTN) times and other KPIs are in the final validation phase, which will allow us to sunset the manual data registry.

In 2023-24, we also engaged stroke leaders and clinicians to map stroke rehabilitation programming in Alberta, identifying gaps and optimizing care delivery. And we reviewed and updated the 2015 Stroke Action Plan Partnership Service Agreement to enhance access, quality, and clinical outcomes for stroke care in 13 rural and small urban centers, again transitioning from manual data collection to using Connect Care for improved efficiency.

## Impact on health, care, quality or performance

Over the past year, the CvHS SCN has led studies and supported a variety of provincial initiatives to achieve our vision of "***Healthy hearts and brains for all Albertans.***" These efforts include:

- Advancing knowledge and health innovation in the area of cardiovascular and stroke care
- Improving access to endovascular therapy (EVT), particularly for rural Albertans.
- Supporting screening and care enhancements, practice change, and outcome improvements for Albertans who experience or are at risk of cardiovascular disease or stroke.
- Developing quality indicators for cardiac and stroke care
- Contributing to the implementation of care paths and clinical pathways for COPD and HF, and refinement and scaling of Acute Care Bundle Improvement, which are expected to improve quality of care by reducing clinical variation, hospital stays, readmissions and emergency visits, and improving patient transitions and value across the system.

### CARDIOVASCULAR HEALTH & STROKE SCN

| Publications & Grants | Engagement | Outcomes and Impact |
|---|---|---|
| **62** Peer-reviewed Publications | **63** Presentations & Workshops | **82 sites** across Alberta have used the Heart Failure & COPD Care Paths |
| **$10.2M** Research Grants | **185** Research Members | **47%** of family physicians in Alberta have used ELR as a screening tool to assess CVD risk in their patients |

www.ahs.ca/cvhsscn

# Critical Care

**Email**

criticalcare.scn@ahs.ca

**Key Partners**

eCritical
Alberta Precision Laboratories
Alberta Health, Research and Innovation Branch
Department of Critical Care Medicine, University of Alberta
Department of Critical Care Medicine, University of Calgary
Métis Nation of Alberta (MNA)
Physician Learning Program

## Major milestones and achievements, 2023-2024

### Reducing avoidable blood transfusions

Patients admitted to critical care and high-risk surgical units are frequently prescribed blood and blood component transfusions. In Alberta, data suggest that up to 60% of these transfusions might be avoidable. When indicated, blood transfusions are lifesaving, but are associated with risk to patients and substantial healthcare costs. Don't Misuse my Blood (DMMB) is an initiative co-led by the Critical Care Strategic Clinical Network (SCN) that involved developing Clinical Decision Support Tools for appropriate blood use. These tools were developed through rigorous review and distillation of hundreds of guidelines, specialty society statements, randomized controlled trials, and stakeholder consensus.

This work has now shifted to the implementation phase. Over the past fiscal year, DMMB has been implemented by teams in 27 units across 5 zones, including adult ICUs, coronary care units, cardiovascular ICUs, high risk surgical units and pediatric ICUs. To support implementation, the network provided in-person and virtual in-services to clinical providers, developed quick reference tools and other educational resources, and collaborated with teams to integrate the tools into clinical workflows.

Evaluations demonstrate that low value red blood cell transfusions decreased by 29% in ICUs that have implemented DMMB. In the same units, low value plasma transfusions have decreased by 23%, and low value platelets have decreased by 28%.

### ICU discharge delay and predicting capacity strain

ICU discharge delay and capacity strain were identified as growing concerns by Alberta's critical care operational and physician leaders in 2023-2024. Intensive care unit (ICU) discharge delay occurs when a patient is considered ready to be discharged, but remains in the ICU. Delays in transferring discharge-ready patients contribute to strained ICU capacity, and are associated with an increased patient risk and avoidable healthcare costs.

Over the past fiscal year, the Critical Care SCN collaborated with Alberta Health's Research and Innovation Branch and the Institute of Health Economics on a Health Evidence Review that focused on optimizing patient flow through ICUs. The network has also partnered with AHS' Health Evidence and Innovation team to investigate whether strained ICU capacity can be predicted and subsequently mitigated using machine learning capabilities and predictive modelling, leveraging data captured through Connect Care.

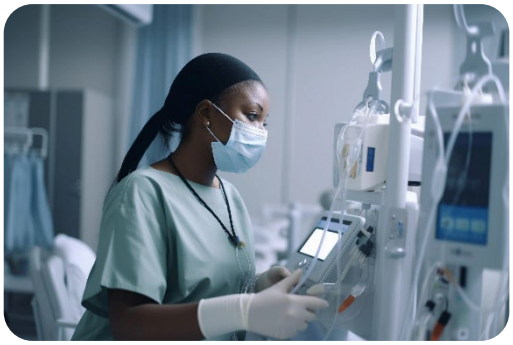
The ability to forecast critical care demand and develop an ICU capacity strain alert, would provide a valuable decision support tool for operational leaders and enable Alberta's acute care system to proactively plan for and manage periods of anticipated strain. Work is ongoing, with expected completion in 2025.

### Clinical appropriateness in ICU care – The LIBERATE study

Hypotension and shock are primary conditions prompting ICU admission. Although clinical practice guidelines exist for the initial management of these conditions, there are no guidelines for weaning patients from medications (vasopressors) commonly used to increase blood pressure. This represents a significant knowledge gap.

The LIBERATE study is a multinational randomized controlled trial (RCT) that includes hospitals from across Canada. The study aims to determine if midodrine therapy will result in earlier vasopressor liberation and reduced ICU length of stay in critically ill patients. ICU length of stay is a key performance indicator and common RCT endpoint for patient-centred and system-centred outcome improvements (e.g., reduced costs and health service utilization). If realized, this study may lead to significant cost savings and more efficient resource allocation in a climate of strained healthcare capacity and funding. LIBERATE has been designed to be readily spread and scaled to any ICU, including in community hospitals.

The trial is currently enrolling participants with any form of shock across medical, surgical, medical/surgical, trauma, neurosciences and cardiovascular ICUs in both academic and community settings. In 2023-2024, the LIBERATE trial enrolled 120 patients from 11 centres, with another 9 centres in Canada planned for early 2025. The study is expected to reach its target recruitment of 1,000 patients by the end of 2026.



## Impact on health, care, quality or performance

Through ***Innovation and Collaboration,*** the Critical Care SCN has worked to ensure evidence-based, quality care for people in Alberta experiencing critical illness or injury. We are committed to improving patient outcomes and health system sustainability through clinical best practices, quality improvement, addressing practitioner burnout, and focusing on patient- and family-centred care.

Over the past fiscal year, the Critical Care SCN has partnered to add value and sustainability to the health system through:

- *Clinical appropriateness* – optimizing care, improving patient safety and outcomes for critically ill patients
- *Capacity building* – for critical care quality, research and infrastructure to address knowledge gaps and foster innovation
- *Clinical pathway development and implementation* – e.g., standardized acute dialysis therapy initiation, avoiding over 1,000 days of dialysis therapy through provincial implementation of the Dialyzing Wisely Care pathway
- *Co-design* – strategies for culturally safe, equitable, high-quality critical care for Indigenous patients, families, and communities
- *Efforts to understand causes and potential interventions to mitigate health care practitioner burnout in the ICU*
- *Interdisciplinary collaboration* – hosted a Quality, Innovation and Research Forum to facilitate knowledge translation and showcase local initiatives and innovations by ICU care teams across Alberta
- *Efforts to reduce unwarranted variation* – e.g., minimizing low-value blood and blood component use (Don't Misuse My Blood)
- *Quality improvements* – including the use of life-saving therapies for ventilated patients with hypoxemic respiratory failure and acute respiratory distress syndrome (Venting Wisely)
- *Support for ICUs* – in sustaining ICU Delirium and Venting Wisely initiative

## CRITICAL CARE SCN

| Publications & Grants | | Engagement | | Outcomes and Impact |
|---|---|---|---|---|
| | **53** Peer-reviewed Publications | | **29** Presentations & Workshops | **44 units** across Alberta have implemented interventions such as Don't Misuse My Blood and Dialyzing Wisely |
| | **$1.0M** Research Grants | | **123** Research Members | **29% decrease** in avoidable blood transfusions in units that have implemented Don't Misuse My Blood |

www.ahs.ca/ccscn

# Diabetes Obesity and Nutrition

**Email**
don.scn@ahs.ca

**Key Partners**
Diabetes Canada
Alberta Obesity Society
Obesity Canada

## Major milestones and achievements, 2023-2024

### Insulin Pump Therapy Program supports Albertans with diabetes and health system efficiency

Insulin pumps can help maintain insulin levels within a target range, and make it easier for patients to manage their diabetes. However, they are expensive and can be cost-prohibitive. The Insulin Pump Therapy Program (IPTP) supports Albertans living with type 1 or type 3c diabetes by offering coverage for an insulin pump and its supplies, and other diabetes management supplies. The IPTP is administered by Alberta Health, with support from the Diabetes, Obesity & Nutrition (DON) Strategic Clinical Network (SCN) and IPTP clinics across the province. The DON SCN has helped ensure standardized, evidence-based care and supported ongoing process and quality improvement efforts. The network has also been responsible for IPTP data collection to support the clinics with quality improvement initiatives.

Over the past fiscal year, two private clinics in Edmonton became authorized IPTP sites (Garneau Endocrinology and the Edmonton Diabetes & High Risk Foot Clinic). More IPTP clinics means increased access to insulin pump therapy for patients living in the Edmonton Zone, and a reduction in wait times for insulin pump starts, assessment, education, and support.

Data from Alberta's IPTP shows strong uptake and positive impacts for patients and Alberta's healthcare system. In 2023, 692 individuals were started on an insulin pump in 15 clinics across Alberta (a 70% increase from 2022). Program evaluation is ongoing; however, early data shows positive impacts. Two years after their pump start, IPTP patients utilize fewer healthcare resources compared to the year of their pump start. Average annual visits to general practitioners and specialists declined, and modest declines were also observed in emergency department visits, length of stay, and inpatient discharges.

### Perioperative Glycemic Management Pathway (PGMP)

In Alberta, 35-40% of patients who have surgery each year experience hyperglycemia (high blood sugars) after surgery. Some of these patients have diabetes, some have undiagnosed diabetes, and others have no pre-existing conditions. A clinical pathway was developed (led by Drs. Shannon Ruzycki and Anna Cameron) to support patients at risk for hyperglycemia following surgery. This work has now shifted to the implementation phase, with the DON SCN and Surgery SCN partnering with patient and family advisors and surgical clinicians within the Enhanced Recovery After Surgery (ERAS) programs to co-develop an implementation process for the pathway. Between June 2021 and March 2024, 10 programs across nine surgical sites have been working towards implementation. Five are midway through the process, and five are in the pre-implementation phase. Early results show:

- Increased identification of patients who are at high risk of high blood sugars pre-operatively
- Improvement in post-operative hyperglycemia recognition and treatment
- A decreasing trend in surgical site infections is associated with PGMP implementation, based on preliminary data
- Patients and staff report a positive experience with PGMP implementation

# Impact on health, care, quality or performance

The DON SCN's mission focuses on building a patient-centered health care system that prevents the onset and complications of diabetes, obesity, and malnutrition. Over the past year, the network has positively impacted care and outcomes by:

- Embedding the Diabetes Foot Care Clinical Pathway in the vascular pathway to enhance transitions in care between high-risk foot teams and vascular surgery.
- Participating in the Alberta Health Diabetes Working Group as subcommittee members and co-chairing the Indigenous subcommittee reviewing diabetes care in Alberta, identifying gaps and recommending opportunities to improve care for Albertans at risk for and living with diabetes.
- Engaging with patients, researchers, clinicians, and decision-makers from the diabetes and obesity communities.
- Developing programs and strategies to prevent the onset and progression of diabetes, obesity and malnutrition and enable patients and providers to manage these conditions.

# Other highlights

## Virtual Diabetes Prevention Program (vDPP)

Alberta Health Services (AHS) and the DON SCN, in partnership with Alberta Blue Cross (ABC) and primary care clinics across Alberta, implemented an evidence-based virtual Diabetes Prevention Program (vDPP) program. The program, which launched in early 2021, was delivered entirely via a smartphone application and included individual health coaching, educational resources, and 1:1 support. A total of 177 Albertans with prediabetes participated via a referral from their primary care physician.

In 2023-24, the program evaluation was completed, which showed positive health and economic benefits, including changes in modifiable risk factors and significant cost savings for Alberta's health system. The program was well-received by patients and providers, with participant rate of weight loss exceeding what was initially forecasted (39.8% of participants achieved 5% weight loss within a median 4 completed months of the 12-month program). This amount of weight loss is shown to be clinically significant in reducing the risk of type 2 diabetes mellitus (T2DM).

*"Many of my patients were successful in sustained weight loss throughout the program and now following its early completion. They enjoyed the real-time advice on dietary choices and accountability."*

**Provider**

Economic analyses demonstrated that the vDPP is cost-saving, on average reducing costs by $2,788 per patient over a 25-year time horizon, with an incremental net monetary benefit of $13,066. Modelling developed by the Institute of Health Economics suggests that if the vDPP were expanded, for every 5,000 participants enrolled in the vDPP, projected long-term costs savings for the health system would be an estimated $12,6 million. Overall, the vDPP pilot was a positive test for implementation in Alberta and illuminates the potential benefit of such a program for Albertans and the health care system.

## DIABETES, OBESITY & NUTRITION SCN

| Publications & Grants | | Engagement | | Outcomes and Impact |
|---|---|---|---|---|
| 17 | Peer-reviewed Publications | 71 | Presentations & Workshops | 12.4% decrease in average annual medical visits for patients two years after insulin pump start, compared to first year |
| $3.2M | Research Grants | 201 | Research Members | $12.6 million projected long-term cost savings for the healthcare system with vDPP (per 5,000 participants) |

www.ahs.ca/donscn

# Emergency

**Email**

emergency.scn@ahs.ca

**Key Partners**

Academic Departments of Emergency Medicine
Alberta Health Services (AHS) teams, community programs & services
Emergency Medical Services (EMS)
Alberta Health
Alberta First Nations Information Governance Centre (AFNIGC)
Alberta Medical Association
Physician Learning Program

## Major milestones and achievements, 2023-2024

Through its partnerships with patients, clinicians and other key stakeholders, the Emergency Strategic Clinical Network (SCN) has continued to evaluate performance and advance quality improvements, health research and innovation in emergency medicine. It is committed to addressing capacity pressures, improving patient flow, and improving the experience of patients and families who receive care in emergency rooms, urgent care services, as well as the experience of healthcare providers and emergency medical services who deliver emergency care across the province.

Its work aligns with key provincial priorities to reduce emergency department (ED) wait times and improve patient flow in emergency settings. The network has also co-led work focused on advancing anti-racism and equity-oriented care in emergency care and responding to the needs of patients and the health workforce. Some key examples of intiatives from the past year are highlighted below.

### Understanding and reducing ED crowding and access block

The Emergency SCN has partnered as problem solvers, supporting Clinical Operations with priority initiatives focused on reducing ED wait times, improving system flow, and supporting safe and efficient EMS transfer of care.

It has supported the implementation and evaluation of several initiatives aimed at improving patient flow in hospital settings, including the introduction of allied health and pharmacy resources in EDs and the ED-staffed EMS Transfer of Care initiative. As part of this work, the SCN contributed to a Impact and Value Estimation Report evaluating the benefits and challenges of these changes.

The Emergency SCN also requested and sponsored an update to a crucial set of national reports on ED crowding and solutions. The reports, published by the Canadian Agency for Drugs and Technologies in Health (CADTH), compile evidence and provide guidance to inform decisions about evidence-based interventions to address ED overcrowding. See the full report and recommendations
This work has significance to EDs across the country as evidence suggests ED overcrowding is worsening in many jurisdictions.
See the full report series

### Developing data tools and products to enable practice improvement and reduce unwarranted variation

AHS Clinical Departments of Emergency Medicine in the Calgary and Edmonton Zones, and AHS Data and Analytics, facilitated by the ESCN, have developed an Emergency Medicine Practice Improvement Dashboard in Connect Care that includes metrics for adult and pediatric patients using emergency services in Alberta. This tool supports data-enabled decision making at various levels of the healthcare system, and provides the information clinical leaders and frontline providers need to better understand and optimize performance, efficiency and quality of care. Physician lead and former ESCN Senior Medical Director Dr. Brian Holroyd worked with Dr. Douglas Woodhouse and Dr. Jennifer Thull-Freeman to refine and use this dashboard to provide a provincial audit and group feedback intervention.

Over the past year, the Emergency SCN also supported the creation of two AHS Atlas of Healthcare Variation products, including the use of computed tomography for mild traumatic brain injury, and ED lengths of stay. These knowledge products share important information that can be used to improve care and reduce unwarranted variation across regions and sites.

## Impact on health, care, quality, or performance

The Emergency SCN has also positively impacted care through development of provinical protocols to standardize care in all EDs and urgent care centers (UCCs), and through research with First Nations organizations. Over the past year, this work has included:

- Development of nine provincial protocols, such as the Seizure-Adult Protocol and Gastrointestinal Bleeding protocol. When a physician is not readily available to see an arriving patient due to high patient volumes or patient acuity or, in the case of rural settings where there may be limited physician resources, frontline staff can implement a protocol for patients who meet the inclusion criteria. This may include initiating laboratory tests and initial treatment for some patient conditions. Protocols have been shown to improve patient satisfaction with the care they receive and decrease overall length of stay.
- Securing a $1.75M Canadian Institute of Health Research (CIHR) grant to advance an anti-racism and equity-oriented care initiative over the next four years. The initiative was launched with operational partners at three emergency sites and is being completed in partnership with First Nation organizations. Project co-leads are Lea Bill, Executive Director of the AFNIGC, Dr. Esther Tailfeathers; and Patrick McLane, Assistant Scientific Director, ESCN (through Adjunct Associate Professor, Department of Emergency Medicine, University of Alberta). This work builds on nationally recognized research conducted with eight First Nation partner organizations on the quality of emergency care for First Nation members, which showed that 9.4% of all ED visits over 5 years were by First Nations members, while comprising only 4% of the provincial population; First Nations members use EDs almost 3 times as much as non-First Nations members; and First Nation members are triaged as less urgent than comparable non-First Nations members.
- The Emergency SCN was also successful in obtaining funding for two Health Evidence Reviews on (1) strategies to address physician and employee moral distress and burnout and (2) effective approaches to address the care needs of people who frequent the emergency department often. These reviews are expected to inform actions to address these areas of priority.

## Perspectives from our patient advisor

### Supporting innovation in health care

*"As a PFA* [patient and family advisor] *with an equal voice at the table, I worked with the ESCN team to develop a tool to personalize communication between frontline providers and patients. The tool builds on the NOD segment of the collaborative care model and will be revamped to "NOD-ED". The acronym aims to help providers communicate more clearly with patients and families in the busy emergency department environment. Together, we continue to work on this project and expect to roll it out by year end."*

**Gloria Wilkinson, Patient & Family Advisor, Emergency SCN**

## EMERGENCY SCN

| Publications & Grants | | Engagement | | Outcomes and Impact |
|---|---|---|---|---|
| 30 | Peer-reviewed Publications | 21 | Presentations & Workshops | Improved patient satisfaction & reduced overall length of stay with development of nurse-initiated provincial protocols* |
| $1.3M | Research Grants | 89 | Research Members | |

*Based on data from Alberta's 16 highest-volume EDs and UCCs (10/2022-04/2024)

www.ahs.ca/escn

# Maternal Newborn Child & Youth

**Email**

maternalnewbornchildyouth.scn@ahs.ca

**Key Partners**

Alberta Children's Hospital Research Institute (ACHRI), University of Calgary

Women and Children's Health Research Institute (WCHRI), University of Alberta

## Major milestones and achievements, 2023-2024

Over the past year, the Maternal Newborn Child & Youth (MNCY) Strategic Clinical Network (SCN) has continued to collaborate to implement evidence-based improvements that benefit Alberta's maternal, newborn, child, and youth populations, and those who care for them.

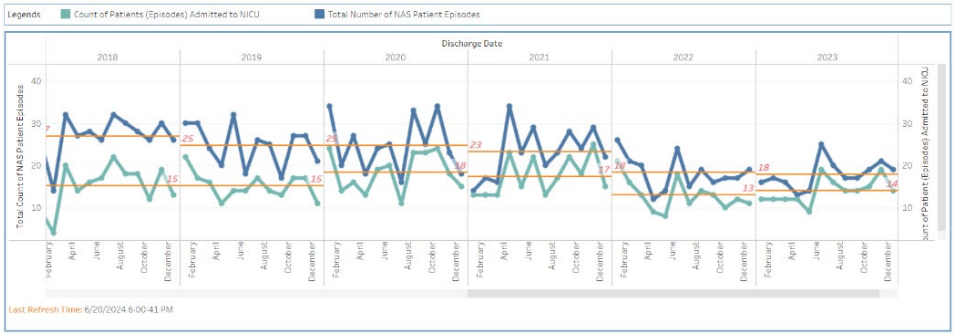
### Implementing rooming-in across Alberta to keep mothers and infants with NAS together

Neonatal Abstinence Syndrome (NAS), a common problem in newborns exposed to substances such as opioids in-utero, is an emerging health concern. Typical models of care routinely separate infants with NAS from their mothers and admit them to the Neonatal Intensive Care Unit (NICU) with lengthy and expensive stays. This separation has a negative effect on mother-infant bonding, reduces breastfeeding, and negatively affects maternal mental health, among other negative impacts. As well, this practice reduces opportunities to engage mothers in Opioid Dependency Programs (ODPs). Research shows a rooming-in approach that keeps mothers and infants together in hospital, with support, is a safe and effective model of care for managing NAS; provides an opportunity for maternal participation in an ODP; and facilitates a supportive transition home with linkages to community 'wraparound' programs/services.

Alberta's Neonatal Abstinence Syndrome Mother-Baby Care ImprovEmeNT (NASCENT) program is a hospital-level NAS rooming-in intervention led by Dr. Matthew Hicks (University of Alberta) and Dr. Deborah McNeil (Scientific Director, MNCY SCN; University of Calgary). The work aligns with the network's strategic priority to "identify and support adoption of models of care that keep mothers and babies (who require higher level of care) together."

With funding from a PRIHS grant and support from the MNCY SCN, the team has been working with clinicians to implement rooming-in care at 8 participating hospital sites across Alberta. Six sites have limited to no experience with the rooming-in model of care. Two sites – Grey Nuns Community Hospital (Covenant Health; Edmonton) and the Red Deer Regional Hospital Centre (AHS) – have existing rooming-in programs and will continue to refine and enhance their programs and support other sites.

Over the past year, the team created a dashboard with AHS Data & Analytics using health system data to monitor NAS rates and patterns across Alberta. To generate evidence of impact on NAS care, the team has been collecting baseline data from the 8 implementation sites and recruiting mothers and infants to be able to monitor health outcomes, including at 6-month follow-up.




A large part of NASCENT is engagement and raising awareness with key partners about Eat Sleep Console (ESC), the rooming-in model of care, and ODP in Alberta. In October 2023, the NASCENT team held a full-day kickoff and education event with experts from Alberta and other jurisdictions sharing their experiences. A training module on ESC will soon be ready to educate and support frontline healthcare providers, and the NASCENT team continues to facilitate connections and collaboration between sites and community services, and foster enthusiasm for rooming-in. Sites are supported in creating implementation teams, designing rooming-in programs, and

implementing or growing their program. NASCENT provides funding for site champions to dedicate time to implementation and education, and to be part of a community of practice via weekly meetings. These sessions, organized and led by NASCENT, provide an opportunity for healthcare providers to learn together and receive support.

The knowledge gained through the stepwise implementation process will be useful for future sites in Alberta and other jurisdictions. The support provided by NASCENT is expected to decrease NICU length of stay and related health system costs, and improve quality of care, health, and social outcomes for mothers and their infants.

### Health Outcomes Improvement Fund targets research and quality improvement focused on Alberta's maternal-child population

In 2023, the MNCY SCN held the third Health Outcomes Improvement Fund (HOIF) competition. This funding opportunity targets research and quality improvement initiatives focused on Alberta's maternal-child populations and helps generate the evidence needed to establish a solution's effectiveness, safety, delivery, and even sustainment in the healthcare system prior to broad implementation. Three grant recipients were announced in December 2023, including researchers from the University of Alberta and the University of Calgary who have partnered with AHS Operational Leaders from the Stollery Children's Hospital (Edmonton) and Alberta Children's Hospital (Calgary). HOIF funding supports priority areas of study that benefit maternal and child health in Alberta. Since 2017, 43 projects have been funded by the HOIF grant (amounts ranged from $18,400 to $398,000), leading to improvements in care and health outcomes.

## Impact on health, care, quality or performance

The MNCY SCN has mobilized people, evidence, and data to achieve the best possible health outcomes for mothers, newborns, children, and families within a sustainable, publicly funded healthcare system. Over the past year, the SCN positively impacted maternal-child health outcomes, care, and health service delivery throughout Alberta; examples are listed here:

- Co-led projects with patient and family advisors that address identified gaps in pediatric and NICU care
- Developed a pediatric referral pathway to guide family physicians and pediatricians in clinical management options for children with symptoms of long Covid
- Developed and implementied a toolkit for postpartum hemorrhage (PPH) that provides nurses, midwives, and physicians with tools to measure and manage PPH and reduce adverse events in intrapartum care
- Collaborated with Neonatology, Midwifery, Obstetrics, and Family Medicine to create an evidence-informed revision of the provincial Cord Clamping Guidance
- Released the "Voices for Indigenous Maternal-Child Health and Wellness" report, highlighting ways in which AHS can support better access for Indigenous mothers and families to maternal-child health and wellness services
- Developed a Connect Care dashboard with AHS Data & Analytics for bronchiolitis quality improvement, supporting 16 participating hospital sites to increase the appropriateness of bronchiolitis care for infants under the age of one

MATERNAL NEWBORN CHILD & YOUTH SCN

| Publications & Grants | | Engagement | | Outcomes and Impact |
|---|---|---|---|---|
|  | **34**<br>Peer-reviewed Publications |  | **13**<br>Presentations & Workshops | **90+ participants**<br>from across Alberta attended the NASCENT kickoff & education event, in-person or virtually |
|  | **$3.2M**<br>Research Grants |  | **102**<br>Research Members | **19% decrease**<br>in inappropriate use of salbutamol (a bronchodilator) for bronchiolitis at participating hospital sites |

www.ahs.ca/mncyscn

# Medicine

## Hospital Medicine, Kidney Health, Respiratory Health

**Email**

medicinescn@ahs.ca

**Key Partners**

Hospital Medicine, Kidney Health, and Respiratory Health Care Providers and Clinical Operations

Primary Care Providers

Academic Institutions

Regulatory and Accreditation Organizations

Provincial, National and Community Organizations

# Major milestones and achievements, 2023-2024

The Medicine Strategic Clinical Network (MSCN) brings several clinical communities together that practice in acute care and ambulatory care settings to advance innovation and health system improvement on a provincial scale.

### Medicine SCN Cross-Cutting Projects

#### Provincial Medicine Services Plan aims to optimize service delivery and efficiency

Working with partners from Alberta Health and AHS, the Medicine SCN has been creating a provincial plan that will inform long-term planning for medicine services in Alberta. The plan will establish key outcomes and priority actions with the goal to achieve high-quality, provincially standardized, and efficient care for medicine patients in hospital settings. The initial phase will involve an evidence review on approaches to patient acuity and resource intensity. Building on the available evidence, the plan aims to identify what kinds of patients are seen in hospital, and how to best care for them to ensure patients receive the right level of care. Scoping and planning work was completed over the past year, with the approach presented to, and endorsed by, the System Capacity Committee and the Clinical Operations Executive Committee.

#### A provincial approach for Point of Care Ultrasonography (POCUS)

POCUS is an ultrasound exam performed at the bedside. It assists healthcare providers in answering specific clinical questions and supports effective, efficient patient care by providing immediate results. This initiative focuses on developing a provincial approach for the safe, effective use of POCUS for clinical assessments and providing bedside procedural guidance for its use on adult patients under the care of general internal medicine and respirology.

Key accomplishments include development of provincial best practice recommendations and online, interactive resources for ultrasound-guided bedside procedures. These are foundational steps to reducing clinical variation and improving diagnostic accuracy and patient safety. Next steps are to promote the consistent standard of care when clinicians use POCUS in a variety of clinical settings and to develop quality indicators and a Connect Care dashboard to capture relevant data for program evaluation, monitoring, and quality improvement.

### Hospital Medicine

#### Optimizing the management of Staphylococcus aureus Bacteremia (SAB) (OPTIMUS-SAB)

Infections caused by SAB are common in hospital settings and associated with significant morbidity and mortality. This infection can be challenging to treat and can benefit from comprehensive and collaborative management. OPTIMUS-SAB is a PRIHS 7-funded initiative that aims to standardize the quality of SAB care across all Alberta hospitals. A newly established care pathway—deployed through Connect Care—uses an automated notification system for SAB-positive blood cultures for all adult patients admitted to an acute care facility. A centralized SAB care team, consisting of a clinical coordinator and rotating infectious disease specialist, receives these notifications, review the patient's chart via Connect Care, and then contacts the attending team to suggest management recommendations according to an evidence-based care bundle. This approach ensures frontline healthcare teams are able to consult with an infectious disease specialist and patients with an SAB infection are readily triaged. It also supports earlier intervention, maximizing the potential benefit to patients.

## Kidney Health

### Successful implementation of a patient-centered approach to dialysis care

The Incremental Dialysis Program is a collaboration between Alberta Kidney Care and the Medicine SCN to improve patient outcomes and quality of life while safely increasing system capacity. New chronic outpatient hemodialysis (HD) starts are assessed and eligible patients receive dialysis 2x/week and titrate up to 3x/week as indicated. Highlights from the final program evaluation:

- More than 90 patients are on incremental dialysis on any given day across Alberta (~400 runs “saved” per month).
- Monthly, the program created space for approximately +24 patients, 3x/week across Alberta.
- The most common benefits mentioned by interview participants were decreased treatment burden and increased quality of life.
- There were no significant differences in health outcomes between incremental and conventional HD patients.
- Incremental HD appears to be safe for patients.
- The program received a Health Quality Council of Alberta 2024 Patient Experience Award, and the program is now in the sustainability phase with Alberta Kidney Care North and South.

## Respiratory Health

### Prudent use of oxygen for adults in acute care

Prudent Use of Oxygen is a provincial initiative to improve evidence-based oxygen therapy for adult inpatients. While early and routine use of oxygen in hospitals has been common practice, it is not always helpful and too much can sometimes be harmful. Through a multi-component, co-designed intervention—including evidence-based oxygen orders in Connect Care, huddle and handover communication strategies, and an online toolkit—healthcare providers are encouraged to wean adult inpatients off oxygen therapy based on target saturation (SpO2) ranges tailored to the patient’s presentation.

Early evaluation at the pilot site indicates that the initiative is easy to adopt and sustain and has led to a decrease in hospital length of stay (0.4 to 1.4 days) for patients on oxygen therapy; associated decrease in hospitalization-related costs; fewer discharge delays; and improvements in nursing confidence and patient comfort.

## MEDICINE SCN

| Publications & Grants | Engagement | Outcomes and Impact |
|---|---|---|
| **58** Peer-reviewed Publications | **37** Presentations & Workshops | **Reduced hospital length of stay by 0.4 to 1.4 days** for patients experiencing prudent use of oxygen therapy |
| **$17.4M** Research Grants | **259** Research Members | **100+** audit & feedback reports disseminated to physicians |

www.ahs.ca/medicinescn

# Neurosciences, Rehabilitation & Vision

**Email**

neurorehabvision.scn@ahs.ca

**Key Partners**

Alberta Multiple Sclerosis Network
Campus Alberta Neuroscience
Eye Institute of Alberta (University of Alberta)
Faculty of Rehabilitation Sciences (University of Alberta)
Neuroscience & Mental Health Institute (University of Alberta)
Hotchkiss Brain Institute (University of Calgary)
Parkinson's Association of Alberta
Praxis Spinal Cord Injury Institute
Spinal Cord Injury Alberta
Vision Loss Rehabilitation Canada

## Major milestones and achievements, 2023-2024

Over the past year, the Neurosciences, Rehabilitation & Vision (NRV) Strategic Clinical Network (SCN) has continued to co-design evidence-based solutions, harness innovation and drive clinical excellence across the care continuum. Our commitment to improving how Albertans see, think, and live and enhancing equitable access to quality care is demonstrated through collaborations and provincial initiatives that span multiple health sectors, highlighted below.

### Preventing pressure injuries for adult patients in Alberta hospitals

Approximately one in six patients in Alberta hospitals has a pressure injury, with over 71% of these developing in hospital. Pressure injuries cause pain, infection and contribute to disability and longer stays in hospital. SSKIN+ is an acronym to help staff remember the bundle of interventions that can help prevent pressure injuries in acute care settings: Skin assessment, Support surface, Keep moving, Incontinence management, Nutrition & hydration, Risk assessment, Patient and family education and Engagement. Pressure injury prevention is one of the eight areas of focus for the Acute Care Bundle Improvement (ACBI) work introduced at Alberta's 14 largest adult hospitals. The NRV SCN also seeks to support pressure injury prevention and SSKIN+ specifically in all hospitals in Alberta, a goal supported by the Quality, Safety & Outcomes Executive Committee.

Many resources have been co-developed to support SSKIN+ implementation and pressure injury prevention provincially. These include: a clinical pathway that guides key care practices; Connect Care resources, order sets and documentation; algorithms to support frontline staff in selecting therapeutic support surfaces, preventing and managing pressure injuries; and online resources for clinicians including educational videos, an audit guide, and prevention strategies.

During the last fiscal year, one urban site actively began implementing SSKIN+ as part of ACBI. Staff at this early-adopter site focused on ensuring that skin inspections are done; patients are on the correct support surface mattress; conducting risk assessment on admission and repeating per patient risk; mobilizing patients and repositioning; ensuring skin is clean and dry; ensuring patients have proper nutrition and hydration; and educating patients and families about risk of pressure injury. Early results show that implementation of SSKIN+ is feasible and can have significant impacts on patient outcomes. This site has seen a 24% decrease in the incidence of pressure injuries; a downward trend in major trauma patients developing a pressure injury (3% to 1%); 65% of major trauma patients assessed for risk of pressure injuries within 24 hours of admission; and pressure injuries being caught earlier (i.e., a lower stage) by nursing staff.

### Economic impacts of innovations in wound care: Catalytic Advanced Wound Care Treatment Matrix

Chronic skin ulcers are chronic wounds that do not heal as expected and primarily include diabetic foot ulcers (DFUs), venous leg ulcers (VLUs), and pressure injuries (PIs). These wounds are associated with significant morbidity, higher mortality risk, and increased management needs, burdening both patients and the health system. The NanoSALV Catalytic Advanced Wound Care Treatment Matrix developed by NanoTESS is a nanostructure cellulose matrix that supports the management of chronic, acute, and minor wounds, burns, and minor skin infections and irritations. NanoSALV promotes healing and offers a broad-spectrum antimicrobial effect. The NRV SCN, Alberta Health Services (Health Evidence & Innovation, clinical sites), W21C Research & Innovation Centre, and NanoTESS (funded by CAN Health West) pursued an Alberta-based innovation trial of NanoSALV. The trial involved four long-term care centres, two outpatient clinics, and one inpatient unit collectively across two urban centres. An

interrupted time series compared standard-of-care protocol plus best-in-class dressings (i.e., silver or iodine dressings or other ointments and technologies) to standard-of-care protocols plus NanoSALV treatment (n=25). The Institute of Health Economics conducted a trial-based economic evaluation to estimate the impact of NanoSALV and standard-of-care protocols on per-patient treatment cost and overall cost-effectiveness.

Based on early results, patients who received standard-of-care protocols plus NanoSALV showed a significant improvement in time to wound closure compared to standard-of-care with best-in-class dressings. For PI, DFU and VLUs, time to wound closure reduced about 41%, 31%, and 29%, respectively. A forecast of province-wide cost reduction is substantial, and next steps are to engage clinical communities and operational leaders within AHS and Continuing Care to share these findings.

## Impact on health, care, quality or performance

The NRV SCN continues to advance care delivery and innovation of NRV services in Alberta and positively impact the health of individuals affected by neurological and vision conditions, and those with rehabilitation needs. The work has involved extensive collaboration with key partners. For example, over the past year the network:

- Co-led a redesign of the provincial long COVID model of care, consolidated long COVID pathways into a single provincial pathway, and co-sponsored AHS Health Evidence & Innovation to complete an evaluation of the provincial long COVID Inter-professional Outpatient Programs (IPOPs)
- Sponsored and contributed to national evidence reviews focused on using artificial intelligence applications to support patient flow, as well as post-COVID-19 condition treatment and mangement
- Supported a provincial working group to develop recommendations on the diagnosis and treatment of spontaneous intracranial hypotension in Alberta
- Co-led an environmental scan on the care and resources available provincially to support persons multiple sclerosis in Alberta with the Kaye Edmonton Clinic
- Co-led led the completion of a current state review of provincial spinal cord injury (SCI) care in acute care settings and developed recommendations to improve the quality and consistency of SCI care across Alberta

### Supporting innovation in health care through collaboration

*"Working with patient partners, frontline clinicians, academic investigators, patient/advocacy organizations, and funding bodies has been a profoundly fulfilling experience. Together, we have amplified the voices of those impacted by chronic neurological diseases and in need of neuro-rehabilitation, as well as of their clinicians. The NRV SCN has done extensive work to identify and prioritize gaps in care and to bring experts together to address them….Through pursuing common goals with clinicians and interested groups, the NRV SCN has been at the forefront of translating evidence into practice, nurturing innovations, and having a significant impact on patient outcomes."*

**Dr. Elisavet Papathanassoglou, Scientific Director, NRV SCN and Professor, University of Alberta, Faculty of Nursing**

## NEUROSCIENCES, REHABILITATION & VISION SCN

| Publications & Grants | | Engagement | | Outcomes and Impact |
|---|---|---|---|---|
| 29 | Peer-reviewed Publications | 30 | Workshops & Presentations | 24% decrease in the incidence of pressure injuries following adoption of SSKIN+ at an early-adopter site |
| $183K | Research Grants | 281 | Research Members | Improved time to wound closure using standard-of-care protocols with NanoSALV treatment for chronic skin ulcers |

# Addiction and Mental Health Integration Network

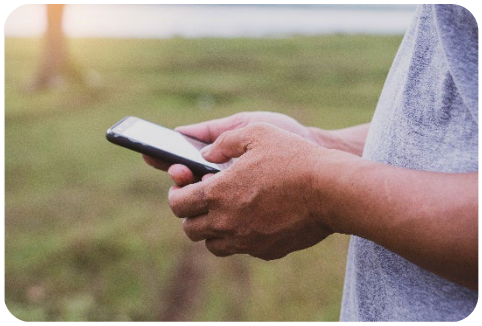
**Email**
amh.researchhub@ahs.ca

**Key Partners**
Mental Health and Addictions Advisory Council
Ministry of Mental Health and Addiction | Alberta.ca

## Major milestones and achievements, 2023-2024

Over the past year, the Addiction and Mental Health Integration Network (AMHIN) has supported efforts to improve the quality of addiction and mental health care in Alberta by bringing together research, evidence, and stakeholders to identify opportunities for transformational change. In November 2023, the Government of Alberta, Ministry of Health and Ministry of Mental Health and Addiction, announced a new Provincial Health Agency, called Recovery Alberta, to provide mental health and addiction services for Albertans. This transition is underway, with responsibility for clinical service delivery expected to fully transition by September 2024.

### Improving equity and access for patients requiring addiction treatment



The opioid epidemic has had a significant impact on Alberta's population and health care system with increased emergency room visits, hospitalizations, and deaths related to opioid poisonings. Alberta's Indigenous population has been disproportionately impacted by this crisis. Virtual care solutions, such as the **Virtual Opioid Dependency Program (VODP)** can offer specialized addiction supports, including access to opioid agonist therapy (OAT) medications, without the need for clients to visit a physical clinic. Learn more

In its first year, Alberta's VODP supported clients in 43 communities through telehealth technology. With the addition of other virtual technology (like Zoom), VODP has supported clients from more than 370 communities throughout Alberta. Since it began in 2017, there have been more than 18,000 admissions to the program.

The AMHIN is working with the VODP to expand the program to First Nations and Métis communities in Alberta, and will evaluate its impact, assessing the barriers and facilitators to implementation, tailoring the program to the local context, and evaluating implementation effectiveness, health outcomes, and client and healthcare provider experience with the program. Over the next three years, the plan is to conduct a prospective cohort study, embedding a multi-method approach involving surveys, interviews, focus groups, and provincial health data. Primary outcomes will include harms (overdoses, mortality), healthcare utilization rates (use of emergency and inpatient services) and 90-day treatment retention rates. Secondary outcomes will include measures of clinical effectiveness, implementation effectiveness, and cost effectiveness.

We anticipate that participation in this project will allow for implementation of the program in a way that is aligned with each community's values and will increase access to services with improved health for community members.

### Using evidence to inform treatments for people with opioid use disorder

Emerging from a question posed by frontline clinicians, the Scientific Office launched a Request for Proposals for a rapid systematic review comparing the safety and effectiveness of medications used for opioid agonist therapy (OAT). This review will synthesize available evidence on risk of harms, including overdose and mortality, for four medications that are routinely used to treat individuals with opioid use disorder. This synthesis will directly inform practice and standards of care in addiction medicine in Alberta.

# Impact on health, care, quality or performance

The Addiction and Mental Health Integration Network is focused on ***'Improving Addiction and Mental Health Together'*** by optimizing our capability as a learning health system, embedding applied research and innovation in workflow, and empowering individuals and communities. Over the past year, the network has positively impacted outcomes and delivery of addiction and mental health services in Alberta by:

- Co-sponsoring a Health Evidence Review on improving access to child and youth mental health services
- Actively supporting the Virtual Opioid Dependency Program to evaluate current practice and champion best evidence
- Improving measurement, evaluation and reporting of key performance indicators for addiction and mental health conditions
- Partnering with the Canadian Research Initiative in Substance Matters (Prairie Node) to enhance data availability and advance innovation in analytics related to substance use
- Collaborating on several initiatives to apply artificial intelligence and machine learning to real-world settings
- Contributing to a review of quality of care measures for substance use disorders
- Networking with addiction and mental health researchers across Alberta and supporting health services research initiatives at Alberta universities
- Exploring opportunities with researchers to link health and other data sources in Alberta

# Other highlights

## Supporting patient engagement in addiction and mental health research

The AMHIN Scientific Office provided funding support to five teams from across Alberta to incorporate meaningful patient engagement in research projects with the goal of improving patient experience. Funded projects covered a wide breadth of topics, including peer support in addiction services and in the post-secondary context; use of cognitive behavioural therapy in people with depressive symptoms receiving dialysis; pharmacogenomic studies in youth with mental health disorders; and family education in psychotic illness. These projects will be conducted over the next year.

## Supporting evidence in decision-making

*"The Applied Research and Innovation team has proven to be an invaluable partner with VODP by supporting our expanding research opportunities, launching new initiatives such as PRIHS, and efficiently completing complex data requests over the past year. They take every opportunity to collaborate and provide comprehensive education to leadership, prescribers and clinicians which is essential in our decision-making processes. We are looking forward to continued connection as we move forward in the coming months."*

**Megan Mielnik, Ongoing Care Manager, Virtual Opioid Dependency Program**

## ADDICTION AND MENTAL HEALTH INTEGRATION NETWORK

| Publications & Grants | | Engagement | | Outcomes and Impact |
|---|---|---|---|---|
| | 8<br>Peer-reviewed Publications | | 2<br>Presentations & Workshops | 18,000+<br>admissions to the VODP since 2017; supported clients in more than 370 Alberta communities |
| | $1.8M<br>Research Grants | | 245<br>Research Members | Collaborated with or provided research support to<br>5 program / service areas<br>within the provincial Mental Health & Addiction portfolio |

www.ahs.ca/info/Page18694.aspx

# Primary Health Care Integration Network

**Email**

PHC.IntegrationNetwork@ahs.ca

**Key Partners**

Alberta Health
Accelerating Change Transformation Team
Alberta Medical Association
Primary Care Network Leadership
Primary Care Network Members
Virtual Patient Engagement Network

## Major milestones and achievements, 2023-2024

Over the past year, the Primary Health Care Integration Network (PHCIN) has continued to make progress on key initiatives relating to improving transitions in care and access to specialty care.

Transitions in Care

### Home to Hospital to Home (H2H2H) Transitions monitoring metrics

The PHCIN undertook foundational work to identify measures and collect data that will enable it to better understand where improvements are needed and to monitor our progress. It released its inaugural monitoring metrics report for H2H2H transitions in fall 2023. Using Connect Care and administrative data, the report presents strategic system and outcome metrics to enable clinicians and health leaders to monitor transitions in care within Alberta's healthcare system. Learn more about H2H2H Transitions

### My Next Steps (MNS)

MNS is a resource co-designed by Patient and Family Advisors to guide adult patients and their support person(s) to be active participants in their transition from hospital to home. MNS patient and clinician resources have been integrated into Connect Care as part of the Safe Discharge Checklist. These resources are designed to support meaningful discharge conversations with every patient, every time and help patients return home with confidence. Learn more about MNS | Patient guide | Provider video

### A DiseAse-inclusive Pathway for Transitions in Care (ADAPT)

ADAPT is a grant-funded implementation initiative for the H2H2H Transitions Guideline. In April 2020, the PHCIN received a t$1.2 million PRIHS grant from Alberta Innovates to improve transitions in care for Albertans with complex chronic conditions such as heart failure, COPD, cirrhosis, end-stage kidney disease. These patients tend to have higher rates of readmissions to hospital. In winter 2024, integrated care teams began implementation work across three components of the H2H2H Transitions Guideline: admit notification, transition planning and follow-up to primary care. Learn more about ADAPT

Specialty Access

### Linking to Specialists and Back – Alberta Surgical Initiative and Specialty Access

In partnership with the Strategic Clinical Networks, work is ongoing to improve access to specialty care, with significant progress made over the past year.

**Provincial Pathways Unit (PPU) -** Clinical and patient pathways are an important resource for primary care providers, providing a set of actions that guide care options for patients with specific health conditions. Pathways help to improve quality of care and patient experience by supporting management of various conditions in a patient's medical home and reducing variation in care practices across the province. Historically, processes for pathway development and implementation have varied, and were not always coordinated or co-designed. The PPU is working to improve collaboration and coordination within this work and has made great strides in standardizing processes for pathway prioritization, development and coordination while building a single access point for pathways aimed at primary care providers in Alberta.

**Alberta's Pathway Hub (www.ahs.ca/pathways) -** An online hub was launched in September 2023, creating a one-stop solution for housing evidence-informed, co-designed pathways. To date, the Hub includes more than 73 clinical and referral pathways for primary care providers and 22 patient pathways. The number of visits to the Hub has continued to increase and feedback consistently shows that users find the site and pathways clear, concise and user friendly. The PPU remains committed to continuously optimizing the Hub and enhancing its resources. Feedback is welcomed and encouraged to improve usability and uptake of the pathways and support the success and continued improvement of this valuable provincial resource.

### Commitment to Co-design

One of the critical success factors in the development and implementation of pathways is facilitating a design process that involves partners from across Alberta who will use and benefit from the pathway. This includes primary and specialty care providers and patients. The PPU's co-design process has been well received, appreciated by partners, and has contributed to the successes of the program to date. Over the last year, nine surgical specialties met with primary care and Patient and Family Advisors to co-design pathways, resulting in the development of twelve new pathways.

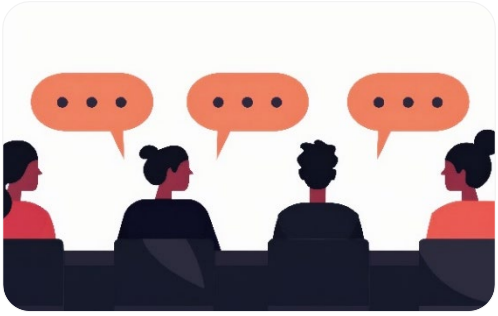
## Impact on health, care, quality or performance

- Improved transitions, especially from home to hospital and back to home
- Better coordinated and faster access to specialized care, when appropriate and informed by evidence-based pathways
- Improved information and care continuity
- Improved health system flow between acure care and primary care

## Other highlights

### Virtual Patient Engagement Network (VPEN)

PHCIN continues to interface and co-design with over 100 patients and partners by including them in working groups associated with priority initiatives, such as the Alberta Surgical Initiative, Provincial and Patient Pathways, and Transitions in Care (H2H2H). The VPEN Year-End Engagement Summary Report recaps patient and family advisor engagement with Primary Health Care and the PHCIN over the 2023-2024 fiscal year.



## PRIMARY HEALTH CARE INTEGRATION NETWORK

| Publications & Grants | | Engagement | Outcomes and Impact |
|---|---|---|---|
| 11 | Peer-reviewed Publications | 36 | Workshops & Presentations | 95 | pathways (clinical, referral and patient) posted online to Alberta's Pathway Hub |
| $1.7M | Research Grants | 115 | Research Members | 1,000+ | total volunteer hours by members of the Primary Health Care VPEN in 2023-24 |

www.ahs.ca/phcin

# Provincial Seniors Health & Continuing Care

**Email**

seniorshealth.scn@ahs.ca

**Key Partners**

Zone Operators
Innovation Evidence Evaluation & Impact
Contracted Care Providers
Research Community Members

## Major activities and achievements, 2023-2024

The mission of Provincial Seniors Health and Continuing Care (PSHCC) is to leverage research, innovation and evidence, and collaboration with our community, to empower Alberta's seniors, continuing care clients, and their partners in care to improve health, wellbeing, and independence. We continue the core actions as an Integrated Provincial Team and work toward the transition to a provincial health agency for Continuing Care in Alberta. Below, we provide a partial report of our activities, highlighting key activities and achievements.

### Addressing quality of life in continuing care

PSHCC, in collaboration with Alberta Health Continuing Care branch, has set out to make improvements to the quality of life (QoL) of individuals in receipt of continuing care services. The Scientific Office has supported this major initiative by providing leadership and content expertise at the project governance and activity levels.

Developmental work included gaining a preliminary understanding of resident QoL using existing health service data and an umbrella review of QoL interventions found to be effective in the literature. These knowledge products helped shape initial thinking on the initiative and may lead to future dissemination opportunities. Working groups, supported by the Scientific Office and PSHCC leaders, were struck and have been tasked with developing an overall framework for approaching an enhancement to QoL for continuing care recipients in Alberta, a robust measurement approach and infrastructure, and a toolkit of resources to support QoL improvement activities.

### Disseminating patient engagement success

PSHCC has continued activities to develop quality indicators aligned with its workplan and objectives. A forthcoming publication will support dissemination of a collated list of quality indicators across a diverse range of focus areas. As part of this work, the Scientific Office collaborated with Imagine Citizens Network to conduct a provincial patient engagement study, which highlighted older adults' and their caregivers' experiences accessing care and services, as well as their encounters with ageism and perceptions of inadequate person-centred care. While some of the major themes identified reflect broad, systemic issues, other themes highlight modifiable factors that can be addressed through practice change and culture shifts. This project was selected to profile as part of the AHS 2023 Patient Experience Showcase, which brought awareness of this work to a larger audience. As PSHCC looks to the future and the launch of the Continuing Care Provincial Health Agency, the Quality Indicator Initiative and its collaboration with Imagine Citizens Network may inform strategic work planning.

### Learning from the pandemic experience: Appropriate use of antipsychotic medications

The Scientific Office has led a qualitative research study exploring factors affecting change in antipsychotic medication use in long-term care (LTC) homes during the COVID-19 pandemic. Participating staff had worked in LTC during the pandemic in management or clinical roles. Forty-one interviews were conducted with 44 participants. Overall, staff responses highlighted the desire for, and actions taken to provide, person-centred care within the policy and practice restrictions aimed at controlling the spread of the virus. While many challenges were cited to sustaining or decreasing antipsychotic medication use, examples of enablers to appropriate use and quality of care were also provided. Findings from this study can inform future outbreak response planning at site, organization, and provincial levels.

# Driving improvements in care and performance

PSHCC is focused on activities within four strategic areas, 1) Living well, 2) Getting well, 3) Palliative approaches to care and end-of-life care, and 4) Supporting partners in care. Led by Clinical Innovation and Practice Support, PSHCC is driving targeted improvements that meet the needs of Alberta's aging population and continuing care residents. For example:

- PSHCC has partnered with the Innovation and Business Intelligence team to develop an Alberta Quality Aging Beachhead™ as part of "envisAGE", a national initiative led by MEDTEQ+ and AGE-WELL to improve quality aging through real-time evaluation of pre-commercial technologies. AHS was officially named the Beachhead™ for Alberta in October 2023, and funding is available through envisAGE to evaluate various technologies with readiness levels in the deployment stage over the next five years.
- Elder Friendly Care (EFC) is a quality improvement initiative that focuses on supporting older adults (65+) in acute care settings who are at risk of (or living with) frailty. EFC implementation is underway as part of the Acute Care Bundle Improvement (ACBI) work at Alberta's 14 largest hospitals. This work integrates evidence-based, patient-centered clinical practices to improve outcomes and deliver a better experience for patients and their families in hospitals. Recently, a frailty assessment metric for older adults has launched in Connect Care and an associated clinical pathway is under development.
- Appropriate Use of Antipsychotics is an operationalized initiative that improves patient safety and quality of the care for older adults living in continuing care homes. From Q1-Q3, 62 sites showed decreases in inappropriate use of antipsychotic medication. These numbers exclude 15 sites that have transitioned to Connect Care.

# Building capacity in health and aging research

## Enabling summer studentship experiences

The Scientific Office has continued to support training and development of new researchers through undergraduate summer studentships. These competitively awarded studentships increase the number of students engaged in health and aging research across Alberta and help advance knowledge in priority areas. In 2023-23, PSHCC awarded six stipends, facilitating high quality projects focused on brain health, risk and management of urologic conditions, impact of recreational facilities on health and wellbeing, and nutritional screening.

## Supporting highly qualified personnel

Former PSHCC post-doctoral researcher, Dr. Mehri Karimi-Dehkordi, participated in a diverse set of applied health research experiences during her time in the portfolio and leveraged these experiences to join the faculty at Keyano College in Fort McMurray, Alberta in spring 2023. Most recently, Dr. Karimi-Dehkordi has been appointed the college's inaugural Research Chair in Health and Community Wellbeing. She credits her experience with PSHCC in this new role, saying "*I received invaluable guidance and support during my time as a post-doctoral researcher; I learned so much during my training and have been able to apply my expertise and leadership skills to my current position.*"

## PROVINCIAL SENIORS HEALTH AND CONTINUING CARE

| Publications & Grants | | Engagement | | Outcomes and Impact |
|---|---|---|---|---|
| 12 | Peer-reviewed Publications | 5 | Workshops & Presentations | Inappropriate use of antipsychotics decreased at 62 care facilities in Alberta (Q1-Q3) |
| $100K | Research Grants | 96 | Research Members | |

www.ahs.ca/seniorshealthscn