

Critical Care
Strategic Clinical Network™

Transformational Roadmap Executive Summary 2019–2024



A word from our leadership team

We have the great privilege of working with a dedicated network of patients, families, health care professionals, policy-makers and administrators across Alberta who are passionate about our goal: to provide high-quality, evidence-based care for critically ill patients and their families through innovation and collaboration. We are fortunate to have a fertile environment for delivering high-quality intensive care throughout the province. This environment stems from a powerful culture of quality- and evidence-informed care; comprehensive data and analysis; cross-province collaboration; and team-based, patient-centred care. Our people and these assets form the foundation of the Critical Care Strategic Clinical Network™ (CC SCN).

This refreshed Transformational Roadmap (TRM) builds on our network's growth since its inception as an operational clinical network in March 2010, and its subsequent transition to the CC SCN in January 2013. We created this roadmap for the future with you, drawing on your input, ideas, passion and constructive criticism. This roadmap builds on our engagement with operational and medical leaders, and with patients and families. Informed by Alberta-based data and research, our plan leverages the Alberta Health Services (AHS) culture of quality- and evidence-based practices. We are confident that our core committee and its network can collaborate to resolve the challenges facing our critical care community over the next five years.

Thank you for contributing to the development of our new TRM. We look forward to working with all of you to improve patient outcomes, and to improve the experiences of patients, families and healthcare professionals. Through the directions and priorities we've identified together, we can make our healthcare system more effective and sustainable.

Sincerely,



Nancy Fraser
Senior Provincial
Director

Dan Zuege
Senior Medical
Director

Sean Bagshaw
Scientific Director

Patients: the heart of critical care

Patients and their families have lived and breathed critical care, and their perspectives are invaluable. In keeping with our principle of patient- and family-centered care, these groups will play important roles in setting CC SCN™ priorities, co-designing projects and grant applications, and actively contributing on committees.



“A question I ask myself anytime I am involved on any panel or committee in healthcare is: What would the patient want? Working with the CC SCN™ allows a patient perspective to be included during discussions and concept development. Being involved also gives me the opportunity to help medical staff understand procedures from the patient's point of view. If we can make discussions on treatment more of a two-way conversation, that can be beneficial to both patients and medical staff. As we work through the system creating positive change, I know that we can provide safe, high-quality care for all Albertans.”

D'Arcy Duquette, patient advisor, CC SCN™



“Being a family advisor fits with how I was raised—I come from a family where contributing to one's community was just what you did. As a member of the Transitions in Care Working Group and the Critical Care SCN™ Core Committee, I am excited to be able to share my experiences and perspectives in ways that make an impact. Our family has experienced many transitions in and out of ICU and other parts of the healthcare system, so I jumped at the opportunity to join this group and share how transitions could be improved from a parent or family member perspective. As a member of the core committee, I am able to share my personal skill set of seeing the big picture by contributing to strategic planning and system transformation.”

Simone Chalifoux, family advisor, CC SCN™

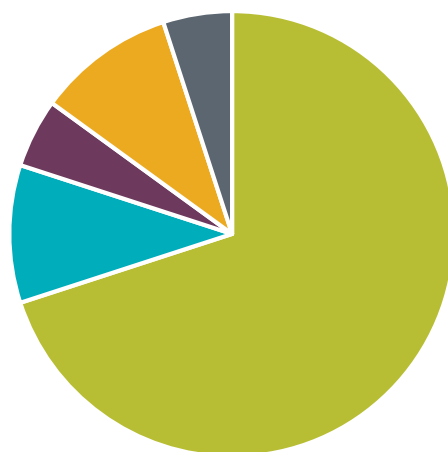
Critical care in Alberta – background

Critical care provides specialized care for patients who have complex, life-threatening medical problems requiring urgent and intensive treatment using life-support technologies and inter-professional collaboration among clinicians. In Alberta, critical care is provided by approximately 2,000 healthcare providers in 20 intensive care units, which operate a total of 295 funded beds across all five health zones.

The demand for critical care in Alberta is rising, driven by population growth and aging, increasing patient complexity and severity of illness, advances in medical care and technology, and the high expectations of patients and families for effective healthcare. Already resource-intensive and costly to maintain, critical care will become even more so in coming decades.⁵

Alberta ICUs: a snapshot

- **Fourteen** adult mixed general medical/surgical ICUs
- **Two** adult cardiovascular surgical ICUs
- **One** adult neurosurgical ICU
- **Two** pediatric ICUs
- **One** pediatric cardiac ICU



Critical Care: a snapshot



Among ICU admissions, 66% of adult patients and 43% of pediatric patients received invasive mechanical ventilation



Critical care teams helped 89% of critically ill/injured adults and 97.5% of pediatric patients to survive, thanks to their time in ICU



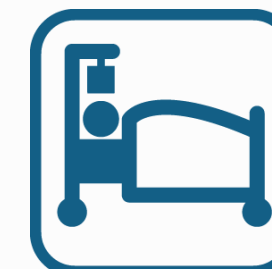
Patients were at times ready to move to a less intense level of care; however, they were unable to do so because ward beds were not available. This occurred for 10.5% and 7.4% of the total ICU patient days for adults and children respectively



Mean age of adult ICU patients: 58 years



Mean age of pediatric ICU patients: 5 years (median 2.4)



The total operational costs for critical care in Alberta were approximately \$300 million

*Based on Alberta statistics from 2018–19

The Critical Care Strategic Clinical Network

The CC SCN™ is a group of experts who are passionate about critical care, including front-line clinicians, operational and medical leaders, patients and families, researchers, eCritical Alberta staff, policy-makers and other stakeholder groups. These experts provide leadership to the critical care community, driving improvement and finding innovative ways to keep Albertans healthy.

Successes to date

Since the launch of the CC SCN™, our goals have focused on the treatment of delirium, fostering public engagement, creating staff training programs, and identifying key performance indicators. Highlights include the following:

Provincial ICU Delirium Initiative: One of our most important accomplishments to date aims at standardizing Alberta's approach to improving care for ICU patients. Results of this initiative include:

- 90 per cent of all adult patients are now screened for delirium every day
- The number of days patients experience delirium has been reduced by 10 per cent
- We've prevented 659 episodes of delirium, and have avoided \$9,684 in costs per episode..

The Delirium Initiative demonstrates the potential to significantly improve the health and well-being of our patients. Over the next five years, we will continue to sustain this important initiative, targeting measurement, auditing and collaborative learning.

Development and Application of Key Performance Indicators

In collaboration with eCritical Alberta, helped establish a standardized provincial suite of key performance indicators (KPIs) that reflect priorities of Alberta's critical care community.

Café Scientifique: These public events facilitate the sharing of experiences between patients and clinicians, and inform the public about CC SCN™ priorities.

Our mission

The CC SCN™, through innovation and collaboration, works to ensure evidence-based, quality care for people in Alberta experiencing critical illness or injury.

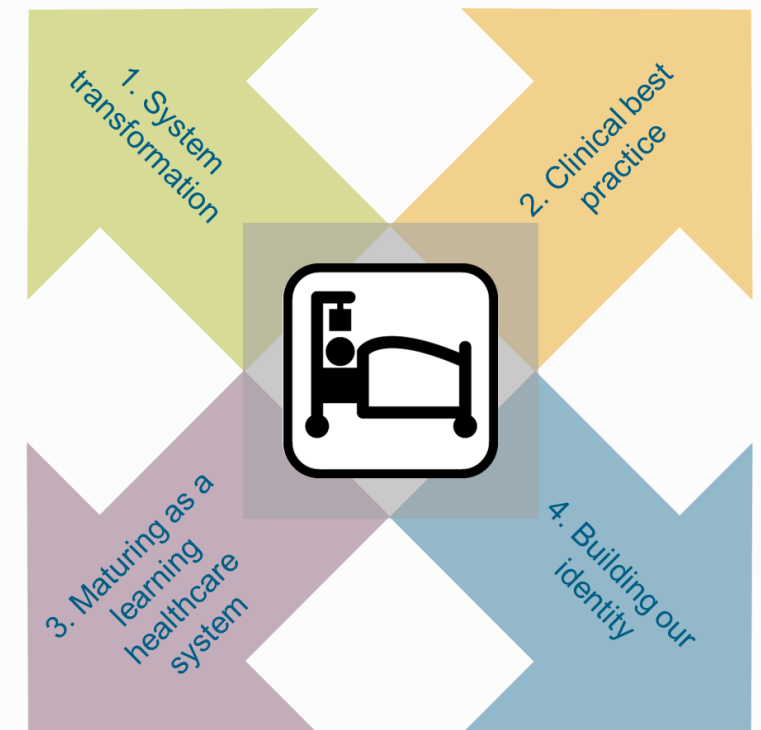
Adding long-term value

The CC SCN™ and the critical care community adds value and sustainability to our health system by:

- **Improving** the **health outcomes** for the people of Alberta
- **Improving** the **experience and satisfaction** of patients, families and healthcare professionals
- **Increasing efficiencies**, adding capacity and **reducing costs**.

Strategic directions

Through the four directions below, our goal is to improve patient outcomes, patient and family experiences, healthcare professional satisfaction, and the value and sustainability of critical care in Alberta's healthcare system over the next 5 years.



Strategic direction #1: System transformation



Objective: Undertake profound changes that orient healthcare in an entirely new direction and level of effectiveness. Our main focus includes:

Transitions in Care (TIC)

Why it's important: Transitions are risky, especially for patients recovering from critical illness or injury given their care involves multiple providers. Smooth transitions close care gaps and improve patient and family experiences and outcomes.

Plans: After gathering data, we will collaboratively develop innovative TIC bundles of tools and practices addressing discharge planning, medication safety, team coordination, patient and family empowerment, and follow-up care.

Indicators of success:

- Developed, implemented and evaluated TIC bundles
- Enhanced patient/family experience
- Improved communication with patients/families
- Decreased preventable adverse events during transitions
- Decreased readmissions to ICU
- Decreased ED visits
- Improved relationships between providers
- Improved practitioner experience/reduced burnout.

On the horizon:

Additional potential system transformation strategies that will be explored further over time include:

Advance Care Planning (ACP)

Ensuring patients with critical illnesses, along with their families, are empowered to make informed treatment choices based on the nature and implications of advanced life support intervention and the likelihood of its benefits.

ICU capacity and throughput

Clarify the predictors of ICU capacity strain and testing strategies to increase throughput.

Post-ICU care

Tailor existing interventions and test novel support interventions to improve the quality of life of patients and their families as patients recover—both mentally and physically—from their time in ICU.

Supporting our staff

Build staff resiliency and mitigate burnout and turnover for critical care teams working in high-stress environments.

Strategic direction #2: Clinical best practices



Objective: Continue to foster a collaborative culture of improvement by focusing on improving care processes where there is good evidence for best practice, and where practice varies significantly across the province.

Why it's important: Adherence to best practice evidence improves patient outcomes and experiences, and reduce costs.

Current focuses:

- Optimize use of blood products and blood testing in critically ill patients and high-risk surgical patients
- Optimize ventilation strategies for patients with hypoxemic respiratory failure
- Optimize use of oxygen therapy in mechanically ventilated patients
- Optimize use of continuous renal replacement therapy in patients with kidney injury and failure.
- Continue to respond to new and evolving evidence, and improve care practices.

Indicators of success:

- Reduced number of inappropriate (guideline-incongruent) transfusions of albumin, red blood cells, platelets and fresh-frozen plasma
- Reduced number of blood tests ordered
- Reduced variation between ICUs in blood test ordering practices
- Increased proportion of patients with hypoxemic respiratory failure receiving optimal strategies for mechanical ventilation

Indicators of success cont.

- Reduced exposure to hyperoxia in mechanically ventilated patients
- Increased proportion of patients receiving CRRT under optimal conditions
- Increased testing of knowledge translation and implementation strategies
- Increased and more rigorous measurement, use of audit and feedback and leveraging of analytics (eCritical/Connect Care)
- Increased grant support through academic partnership.

On the horizon:

Additional potential clinical practices that can be explored further include:

- Appropriate use of common diagnostic imaging tests
- Identification and management of critically ill patients with sepsis
- Frequency and content of patient and family communication around treatments and procedures
- Improvement of oral hygiene practices for patients
- Strategies to help patients sleep as long and as soundly as possible
- Optimal prophylaxis against gastrointestinal bleeding events
- Management and prevention of pressure ulcers
- Temperature management in post-cardiac arrest patients.

Strategic direction #3: Maturing as a learning healthcare system



Objective: Continue to evolve a culture of continuous learning and improvement by engaging all network members and stakeholders as change agents. Embed clinical research and innovation into daily practice so that care is continually informed by the best internal and external information.

Why it's important: Healthcare systems that integrate internal data and experience with external evidence can rapidly implement positive change. The result is improved patient outcomes and experiences, and added value.

Plans:

Increase our knowledge and expertise

- Better leverage data, analytics, inquiry, value assessment and culture to make improvements sustainable
- Build awareness about existing resources and their potential
- Assess the ever-changing evidence base for critical care practice and evaluate local variations in care
- Create a multi-modal analytics resource library
- Showcase Alberta projects that incorporate LHS principles
- Invite external experts to offer advice and share knowledge
- Incorporate education sessions into CC SCN™ meetings.

Ensure regular use of existing data and clinical analytics reporting tools

- Create awareness of these resources
- Create data dictionaries (working with eCritical Alberta)
- Build analytical capacity, including data literacy/use.

Plans Cont.:

Deploy analytics demonstration projects

- Showcase recent projects incorporating province-wide analytics
- Implement “Did You Know” projects, emphasizing practice variation or performance
- Work with research and informatics partners to implement test cases that use LHS methods to answer questions on critical care
- Seek seed grant funding to facilitate this work.

Incorporate LHS goals and objectives into CC SCN™ projects and partnered research grants.

Indicators of success:

- Critical care medical and operational leaders and quality improvement consultants routinely use eCritical analytics reports to evaluate ICUs. Data gathered from eCritical informs decisions, policies and planning.
- Improved understanding of variations in care
- Reduced modifiable variations through quality improvement projects
- LHS principles are used to answer care questions about critical care
- More clinician scientists and researchers leverage our informatics infrastructure (eCritical Alberta) for research projects and quality improvement
- Increased number of grants awarded that leverage our informatics infrastructure (eCritical Alberta)
- More peer-reviewed publications leverage our informatics infrastructure (eCritical Alberta).

Strategic direction #4: Building our identity



Objective: Increase awareness of the SCN's role in critical care, and build a more cohesive team within the CC SCN™. Ensure the general public, health administration and government understand the integral role of critical care in Albertans' wellness journeys.

Why it's important: Critical care teams help patients through some of their most vulnerable moments, when the line is fine between life and death. Critical care must be positioned to meet current needs and future demands.

Plans:

- Position ourselves as leaders in research, innovation and quality
- Advocate the value of the CC SCN™ and its community as partners in pan-SCN and cross-sectoral initiatives
- Increase awareness of our value among current and alternate funders
- Build public awareness, informing audiences about patient populations, informatics, quality improvement and success stories.
- Create relevant publications, infographics and social media campaigns.

Indicators of success:

- Magnitude and value of critical care in Alberta are more widely recognized internally and externally
- More patients, families and frontline professionals engage in network activities
- Critical care community increases success rates for grant and funding award applications, including funding from alternative sources
- Increased community and internal exposure through conference presentations, abstracts, publications and virtual town halls.

Down the road

In its short but dynamic history, the CC SCN™ has made significant progress in resolving issues that affect critically ill patients across the province, and we are proud to contribute to a more sustainable healthcare system. Over the next five years, our network will continue to put patients first, driving quality improvement and creating innovative solutions for the people of Alberta who need our services. Armed with this Transformational Roadmap, we will accompany the people of Alberta through some of the most important moments of their health journeys.



**Alberta Health
Services**

**Inspiring solutions.
Together.**

Critical Care Strategic
Clinical Network™