



CRITICAL CARE

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Key Partners

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Major initiatives and achievements, 2022-2023

Critical illness and use of critical care services among Indigenous Peoples in Alberta: partnerships to improve the care experience and enhance culturally safe care.



A collaboration between the Critical Care SCN (CC SCN), Indigenous Wellness Core (IWC) and Indigenous Peoples of Alberta

The CC SCN and IWC continued their journey of health system transformation in 2022-2023, jointly completing a systematic review and meta-analysis that was submitted for publication. The review describes the use of critical care services by Indigenous Peoples in Alberta, and the incidence of critical illness and critical care outcomes among Indigenous Peoples. The [review protocol](#) was published in April 2022. The evidence synthesis strongly implies 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 regarding (i) access to ICU support and (ii) outcomes following critical illness remain poorly described and represent a barrier to action.

These findings are informing a larger program of work with Indigenous Peoples. The goal of this partnership is to co-design this program to better understand Indigenous Peoples' experiences and outcomes with critical care, to identify knowledge and care gaps, and to work towards ensuring a culturally appropriate and safe space. An immediate objective, completed this fiscal year, was to establish an **Indigenous Peoples and Critical Care Advisory Group (IPCCAC)**. The newly-formed IPCCAC includes four Indigenous members representing Cree, Anishinaabe, and Métis First Nations alongside the IWC and CC SCN Scientific Offices.

This program of work is expected to positively impact the health and care of Indigenous Peoples in Alberta by strengthening relationships, advancing knowledge on culturally appropriate and safe care, and improving healthcare providers' understanding of Indigenous Peoples' experiences with ICU settings in Alberta. Indigenous Peoples will benefit from improved knowledge of ICU services and opportunities to directly voice their needs to improve lived experience.

Supporting critical care healthcare workers across Alberta

Developing supports and retaining critical care healthcare professionals (HCPs) is a priority area for AHS. The COVID-19 pandemic has negatively impacted the mental health and psychological wellbeing of critical care HCPs. Many HCPs are experiencing unprecedented levels of exhaustion, burnout, anxiety, depression, stress and moral distress, which has contributed to workforce turnover.

This program of research aims to support health system transformation and HCPs by (i) identifying existing resources to support HCPs' mental health and psychological wellbeing; (ii) identifying factors and barriers that affect the mental health and psychological wellbeing of critical care workers; and (iii) developing comprehensive supports to retain critical care HCPs in Alberta.

Over the past year, the CC SCN began an environmental scan that will identify and synthesize existing resources that support the psychological wellbeing for HCPs working in adult ICUs across Alberta. This work will continue through 2023 with the goal of improving supports for HCPs and positively impacting the work environment and ultimately patient care.

Implementing clinical best practices that improve patient safety, outcomes, quality and value

The CC SCN has continued to advance several quality improvement efforts through various stages of evaluation and implementation with the goal of spreading and sustaining practices that deliver better outcomes, quality and value. Examples include:

DIALYZING WISELY: This PRIHS-funded study led by Dr. Oleksa Rewa (University of Alberta) aims to improve the performance of acute Renal Replacement Therapy (RRT) in ICUs by aligning care with evidence-based best practices. The objective is to reduce the number of patients requiring long-term chronic dialysis, and therefore, improving the quality of life for patients and families, while enhancing health system efficiency and substantially decreasing health care expenditures.

The innovative clinical pathway is a tool to aid prescribers starting RRT in the ICU setting. The pathway includes key performance indicators to measure the quality of dialysis delivery. Implementation of the initiation pathway occurred at the initial pilot site as well as in four other ICUs across the province. Rollout will continue at the remaining sites in 2023-2024.

DON'T MISUSE MY BLOOD – This PRIHS-funded study led by Dr. Daniel Niven (University of Calgary) aims to reduce avoidable blood tests and optimize blood component transfusions, and align practice with current, evidence-based guidelines. The initial phase of this project involves implementing evidence-informed transfusion recommendations (red blood cells, platelets, plasma and fibrinogen) in adult and pediatric ICUs, adult Coronary Care Units (CCUs), and high-risk (cardiac, trauma and vascular) surgical units. Transfusion Guidelines were developed in 2022-2023 through extensive literature and stakeholder review, with implementation beginning in June 2023.

VENTING WISELY– This HHS-funded study led by Dr. Ken Parhar (University of Calgary) involves implementation of a comprehensive, evidence-informed care pathway for mechanically ventilated ICU patients, emphasizing optimal and appropriate use of life saving therapies such as protective ventilation and prone positioning. **In 2022-2023, implementation of the pathway was completed in all adult ICUs in Alberta.** Throughout the implementation, sites improved their overall adherence to the Venting Wisely pathway by up to 72%, translating into improved patient outcomes and enhanced health system sustainability.

REDUCING THE USE OF SEDATION AND ANALGESIC INFUSIONS IN CRITICAL CARE (ROSA) – This work aims to drive appropriate use of sedation and analgesic infusions for adult ICU patients in the Edmonton Zone through a standardized, evidence-based, stakeholder-informed guideline. Patient outcomes include reduced duration of mechanical ventilation, reduced prevalence of delirium, and fewer complications, including deconditioning and weakness. Implementation of the Edmonton Zone guideline occurred in the pilot site as well as one expansion site, with work continuing in 2023-2024.

Impacts on health and care



System transformation, clinical best practices, and supporting our staff aim to positively impact patient and family care in Alberta ICUs and areas upstream and downstream from critical care. Achieved and anticipated impacts focus on:

- ▶ Building relationships with Indigenous Peoples and helping close knowledge gaps in the ICU care needs of Indigenous Peoples
- ▶ Mitigating HCP burnout in the ICU to improve patient, family, and healthcare provider experience and satisfaction
- ▶ Implementing clinical care pathways that improve patient outcomes and enhance health system sustainability
- ▶ Improved accountability and quality of care through use of key performance indicators and audit and feedback

CRITICAL CARE

Grants and Publications



45

Peer-reviewed Publications



51

Workshops & Presentations



\$14.4M

Research Grants



118

Research Members

Outcomes and Impact

Full-scale implementation of clinical best practices for mechanical ventilation (VENTING WISELY) completed at **all adult critical care sites in Alberta.** Frontline clinicians indicate the practice is sustainable and has been **“embedded in unit culture and workflow.”**

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