

# A Spotlight on Critical Care

## *Quality improvement amidst challenge and change*

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While the pandemic has placed enormous pressure on Alberta Health Services' (AHS) Intensive Care Units (ICUs), our ICU teams have tirelessly risen to countless challenges while maintaining their passion for quality improvement.

“**RATIONALE: Critical Care Optimization of Albumin Ordering**” is a provincial quality improvement initiative and a prime example of ICU team dedication and ingenuity. Led by Dr. Daniel Niven in collaboration with the Physician Learning Program (PLP) and the [Critical Care Strategic Clinical Network \(SCN\)](#) with grant funding by the Canadian Institutes of Health Research, RATIONALE's goal is to align albumin fluid replacement practice with current science.

The initiative focuses on optimizing fluid replacement by reducing unnecessary use of albumin in Alberta ICUs – especially when there is a lack of benefit to the patient.



*When loved ones are critically ill, Albertans can be assured the team is striving to give the best care.*

Albumin is a protein made by the liver, and voluntarily donated by members of the public (blood product). It may be given intravenously to patients suffering from low body fluid levels such as in severe infection or burn. It also helps keep fluid in the bloodstream so it doesn't leak into other tissues, and also carries various substances throughout your body, including hormones, vitamins, and enzymes. Low albumin levels can indicate a problem with the liver or kidneys.

Strong evidence indicates that for most patients, albumin fluid replacement is not beneficial,

and alternative choices, such as normal saline or ringer's lactate, can be used with less risk to the patient and less cost to the healthcare system while producing similar outcomes.



### Rollout and results to date


- RATIONALE was implemented in 16 adult ICUs across Alberta between November 2019 and January 2021.
- To date, it has achieved a 39% decrease in unnecessary albumin usage – sparing 678 patients from unnecessary exposure to a blood product, and albumin resources being protected for those who require them.
- Approximately 100 kg of medical material (from administering albumin) has also been saved from incineration.

### Key deliverables, challenges and champions

The initiative involved increasing staff awareness through education and engagement; creation of a new albumin order set; development of an [Adult Critical Care Albumin for Resuscitation Decision Support Tool](#); and setting up audit and feedback reports to track progress of each ICU.

While implementation of RATIONALE across the province's similar, yet distinctive ICUs during a pandemic was not without its challenges, the strong stakeholder engagement and commitment to quality of care by each Zone and ICU was key in advancing this work amidst the challenging and changing realities of COVID-19.

Marilyn Bartoszyk, South Zone Director for Cardiac Sciences, Respiratory Health, and Critical Care, recognizes the provincial critical care community's commitment to this initiative, despite the challenges of navigating a pandemic.



*“The important quality work never stops and this is testimony to the dedication, resilience, passion, and compassion of a very special group of people who, despite what may be one of the most challenging times of their lives and their careers, are unwavering in their chosen profession to be the best and to give their best. I think this is really something to celebrate.”*

Despite caring for large volumes of critically ill patients in unprecedented times, heavy workloads, and many units also navigating implementation of Connect Care, all participating ICUs embraced the opportunity to take part in RATIONALE and decrease unnecessary albumin utilization.

RATIONALE is currently in its sustainability phase. Audit and feedback is ongoing and efforts are underway to sustain the change in practice.

The synergistic relationship between AHS' SCNs and clinical operations provides a unique opportunity for spread and scale of quality across Alberta. The success of RATIONALE highlights this collaborative power between scientists and operations, and the strength of having SCNs embedded within the healthcare system.