CASE STUDY 5

Creating Virtual Access to ICU Care

for Patients and Rural Emergency Medicine Teams in Kootenay Boundary, BC

Emergency physicians in rural and remote communities can often feel isolated when providing critical care for patients. Care teams in these areas are often small – sometimes with a single physician and/or nurse, with extremely long distances to transport critically ill patients for care. Supporting rural and remote practitioners to provide critical care in real time often makes the difference between life and death outcomes for patients in these situations.

The Kootenay Boundary region in the interior of BC has 12 small communities linked to one regional ICU site in Trail. In the small ERs around the region, it was clear that a virtual solution to connect clinicians for critical patient care would both support clinicians with the difficulties posed by the rural settings such as access to consultation and mentorship, while improving patient outcomes and reducing need for transportation.

The chosen solution to create a virtual ICU tapped into existing mobile video carts in six locations, either Cisco or Polycom systems, with standards-based video conferencing software – in this case Polycom Real Presence. The mobile carts are moved to the trauma rooms and specialists remotely connect through a desktop version of the software on their desktop, laptop, or phone. The system was chosen after a stakeholder working group reviewed various options for hardware, including the VGO robot, Polycom carts, and tablets and finalized their preferred technology through a vigorous rating of each. The Interior Health Authority IT team provides support for the project developed through the Kootenay Boundary Division of Family Practice with funding from Shared Care at the Doctors of BC.

The overarching goal of the project was to provide tele-mentoring decision support for critical care cases, provide access to specialist care, and build collaborative care teams. The project had core objectives for patients and providers: 1) Patients: early access to specialized care that can make a significant difference to their outcomes including survival; 2) ER providers: early and

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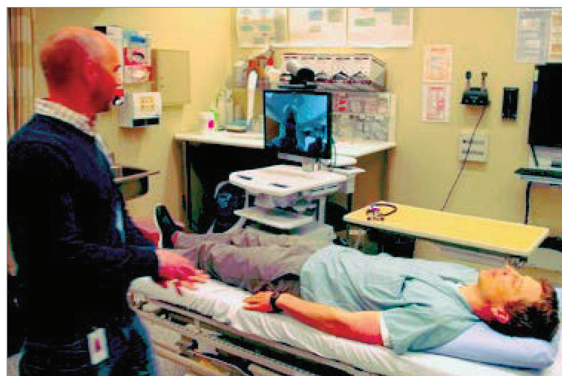
more thorough access to a specialist opinion, support for recruitment and retention, and improved confidence for rural ER physicians; and 3) Specialists: earlier access to initiate care for a patient and efficiency for patient care on arrival in the ICU. The project team has several KPIs linked to these goals including volume of use, quality of systems, ease of use, improvements to patient outcomes, and barriers / enablers to use of technology.

So far, the virtual ICU model has allowed for tele-mentorship, recruitment and retention support of rural family physicians, skills enhancement for future cases by creating a virtual multi-disciplinary team, and collaborative care planning for patients between primary and specialist care teams. While the volume of use is currently low, the system provides care that cannot always be valued by quantity alone. Value has already been realized in the form of avoiding procedures that would otherwise have been carried out but not for the video consultation.

"For us, success would be the regular integration of the system into the workflow so it is commonly used so technical aspects don't get in the way and we can support our ER colleagues to develop skills through collaborative care planning," said Dr. Scot Mountain, internal medicine and critical care intensivist, at Kootenay Boundary Regional Hospital.

"For rural physicians, virtual care is the state of things to come. In some form it will be a standard of practice to leverage technology to give patients access to a higher level of support. I feel it will eventually be something we do every day," added Dr. Mountain.

The project team continues to provide simulation training and multi-disciplinary stakeholder engagement to build utility beyond critical care to other specialties to add benefit to the system uptake. Following up with a patient in ICU, Dr. Mountain talked to them about their experience, "I asked how the patient felt about the use of the technology and the patient said, 'I just thought that was the way you always do it.', Ideally this statement will be the future for Kootenay Boundary."



Dr. Nick Sparrow talks with Dr. Scot Mountain by video about his "patient", Dr. Kyle Merritt, at Kootenay Lake Hospital in Nelson, BC.