



❖ Northern Health, Nursing Education and Remote Presence Technology

❖ The Challenge

A universal challenge for global health is a shortage of health professionals in rural and remote areas – a challenge faced particularly in northern Canada. The best strategy for developing a rural and remote health workforce is by educating rural and remote students where they live. While distance education has been around for decades, developing clinical skills had to be done in person, on campus. New technologies are now making distributed learning possible for the health sciences.

❖ The Technology

Responding to a request by northern Saskatchewan leaders, the College of Nursing at the University of Saskatchewan began offering the full Bachelor of Science in Nursing (BSN) in two northern Saskatchewan communities in September 2012: La Ronge and Ile-a-la-Crosse. The program is delivered through a blended instructional approach, including long distance learning remote presence (RP) telementoring, a state-of-the-art robotics and technology platform. The Remote Presence Technology system was designed for clinical practice and has been used predominantly in neurosurgery and for establishing Stroke Networks in the United States. The University of Saskatchewan is the first, along with the US military, to extend the application to education in the health sciences. The College uses an RP7i mobile robot at the northern sites, connected over regular broadband internet to a control station, which can be as simple as a laptop computer with a joystick, in Saskatoon.

The RP7i is built with a flat-screen monitor on top and can accommodate a number of medical devices, essential for the clinical skills component of the BSN program (e.g. electronic ECGs, ultrasound, otoscopes, ophthalmoscopes, stethoscopes and other peripherals). A camera serves as the eyes to capture images of the students that are transmitted to the professor. When in use, the professor's face is displayed on the robot's monitor. This allows faculty experts to engage with learners at remote sites to educate and assess clinical competencies.

The Benefit

The benefit of this type of education is that it addresses a number of objectives in Aboriginal and northern health.

First, it makes health education, specifically a nursing degree, much more accessible to northerners, but at a cost that is sustainable for urban institutions. Northern students are able to live and study in or close to their home communities, reducing financial and social barriers to getting a university education and improving their chances for success.

Second, it trains northern and Aboriginal residents in areas with an acute shortage of health care professionals, making it more likely they will practice in those communities, minimizing prospects for turnover and improving the cultural appropriateness of care. In addition, existing local nurses are involved in many aspects of the nursing education, increasing their ownership in and capacity of the local health system and providing new opportunities for local leadership and input.

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Third, incoming practitioners are fully immersed in the use and practice of the remote presence technology. As the Canadian experience with telehealth demonstrates, technology is only as useful as practitioners make it. It is difficult and expensive to train rural and remote nurses in new technologies, as they have limited time to engage in professional development and there are rarely relief nurses to cover their regular work load and demands.

By training nursing students with the remote presence technology, they will be uniquely qualified to practice with it when they become registered nurses. It will also empower northern-trained nurses as they will be at the forefront, not a passive recipient, of developing new uses for this promising technology. Efforts have begun to incorporate remote presence in clinical practice in northern Saskatchewan to connect rural/remote patients with urban specialists, and we are also exploring options to perform oral health assessments remotely with urban dental professionals.

InTouch Health
(manufacturer of the robotics)
intouchhealth.com

U of S College of Nursing
usask.ca/nursing/innovation/remote_presence.php