

## Between stethoscope and algorithm: is Canadian medical education ready for AI-enabled care?

### Entre stéthoscope et algorithme : la formation médicale canadienne est-elle prête pour des soins assistés par l'IA ?

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In the rural region of Saudi Arabia where I first practised medicine, the sheer volume of patients was staggering. I worked long hours in pathology, often peering through the microscope at skin lesions, learning how diseases are revealed in tissue. Yet what stayed with me was not only the patterns on the slides but the stories of the patients I saw in the wards and in the hallways, sometimes lying on stretchers for hours waiting to be seen.

Years later, as a population-health researcher and medical educator in Saskatchewan, I was struck by an unsettling familiarity. I had walked past patients waiting on stretchers in the hallways of Saskatchewan's largest hospital. Geography may change, but the tragedy of waiting for care remains the same. Travelling to Stanley Mission in the northern region of Saskatchewan by road and then by small aircraft, and finally by float plane, I encountered people whose needs were just as urgent, chronic diabetic wounds left to fester, injuries from dog bites, skin infections, and even firearm-related wounds.

During a recent community engagement at a health promotion event in Stanley Mission, I had a moment of deep listening that shifted my perspective. Patients—the end users of care—were not resistant to technology. They were curious and open.

One community member said plainly,

*We don't have a doctor; we cannot even call our doctor. In our community, we rely on visiting doctors,*

*and they are not always available on a regular basis. We will embrace the use of technology if you educate us on how to use it, and if the doctors are willing to make us aware of the use of such technology.*

Their words underscored what I had come to realize: the potential for progress lies not merely in the technologies themselves, but in the willingness of healthcare providers to recognize that potential, to commit to it, and to teach it, so that patients can benefit.

The very next day, back in Saskatoon, I found myself teaching a group of residents from a variety of specialties. I remember pausing and asking myself: What are we truly preparing them for? Only the world of the stethoscope, or the one that *also* includes algorithms, AI, and virtual-care tools. Too many physicians remain hesitant, neither willing to learn nor to teach AI-driven technologies to their trainees. This reluctance undermines the attitudinal shift necessary to effectively harness emerging tools in care delivery. It felt as if two people were riding different planes to reach the same destination: one still focused on applying a bandage at the bedside, and the other envisioning how that bandage could be placed at the right time and followed up effectively because the wound was triaged and documented at the scene with the help of technology—perhaps using an AI-driven application capable of capturing consistent images of the same wound in comparable environment over time. This is just one example, but it reveals a deeper challenge: the need to align our training with the realities and opportunities of modern care.

The successful launch of telerobotic ultrasound, which began at two rural and remote sites<sup>1</sup> and now serves 11 rural, remote and Indigenous communities across Saskatchewan,<sup>2</sup> has already demonstrated what is possible when innovation is embraced. This program brought high-quality diagnostic imaging closer to patients, demonstrating that the barrier is rarely the tool itself, but rather our willingness to use it. Building on that experience, we are developing Skin Scan, an application that captures wound and skin-lesion images in a standardized and reproducible manner, hence addressing a key gap in initial triaging and follow-up care. Yet its promise will only be realized if healthcare providers accept and advocate for, and use it.

In a recent discussion with colleagues from different medical specialties, many admitted that they still rely on phone photos to share wound images: photos often of poor quality and impossible to reproduce consistently. Skin Scan application aims to fill this gap by supporting, not replacing, clinical judgment. The larger challenge is cultural. We must breach the herd-mentality resistance that too often stalls adoption. Apprehensions about AI, fears of “faked” intelligence or of being outsmarted, too easily become convenient reasons to delay learning. This pattern mirrors the emotional exhaustion referred to as emotional fatigue in clinical training.<sup>3</sup> Yet, in our context, it manifests as educational fatigue: a collective weariness toward adopting and teaching new tools. Over time, that fatigue calcifies into resistance, leaving patients and learners behind.

The insight that Hailey Land shared in *Beyond the exam room: skin health as a window into rural health equity*<sup>4</sup> resonates deeply. Just as Land observed that neglected skin health reflects broader structural neglect, the slow uptake of digital tools reflects a professional culture unwilling to confront its own inertia. Canadian medicine’s struggle to adapt is less about technology’s complexity and more about the unwillingness of physicians to unlearn, relearn, and model curiosity for their students. Medical educators cannot remain neutral in this impasse. If educators continue to exclude AI and virtual-care competencies from curricula, we risk producing clinicians fluent in auscultation but illiterate in algorithmic reasoning. This gap is not simply technical; it is ethical. It signals an abdication of responsibility to prepare the next generation for realities already at the bedside.

Canadian virtual-care experience gives reason for optimism<sup>5</sup> and reaffirms that technology does not diminish

the physician’s role; it reframes it. Our task is to help the next generation see AI and virtual-care tools not as rivals but as instruments that require their judgment, empathy, and ethical stewardship.<sup>6,7</sup> Just as empathy cannot thrive on emotional depletion,<sup>3</sup> innovation cannot thrive on educational inertia.<sup>6</sup> Both require renewal: of spirit in the first case, and of curiosity and courage in the second. As I reflect on my own journey, from pathology labs in tertiary care hospitals to research trips to remote Saskatchewan communities, I am struck by how much progress depends not on the sophistication of the tool but on the readiness of people to learn, teach, and act. Canadian medical education, therefore, seems to now stand between the stethoscope and the algorithm, with better patient care in the balance.

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