

# Nurses of the future must embrace high-tech

November 21 2017, by Kylie Gionet

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Credit: Amina Filkins from Pexels

Picture someone who works in tech. They might fit a stereotype: Heavy-rimmed glasses, hoodie, T-shirt branded with a start-up's logo, male. You probably don't imagine a nurse.

Yet integrated [electronic health records](#), [wearables](#), health-monitoring

apps, artificial intelligence, 3-D printers and [telemedicine](#) are just some of the technologies that have entered the clinical environment.

[Robots](#) are already operating in some hospitals across Canada. The nurses of the future could be the next app developers, data analysts, coders and artificial intelligence experts.

As a young [nurse](#) who entered the field for the human aspect of care, I can see how putting a screen between provider and patient might feel cold. But technology should be looked at collaboratively, and the profession is behind when it comes to embracing [technological change](#).

As technology creeps into more areas of [health care](#) and more kinds of care delivery move online, nurses will have to redefine their roles to remain relevant in their field—and to their increasingly tech-savvy patients.

## **Intimidated by technology**

[Nursing informatics](#) has made a lot of progress since the early 1980s. Most nursing schools across Canada, with the introduction of simulation labs and high-fidelity mannequins —simulated humans that breathe, talk and exhibit a heartbeat and pulse —are teaching with technology. Nursing students are creating websites. Initiatives to [advance clinical data standards](#) in nursing in Canada are in place.

Nursing informatics specialists can be found in most clinical settings. And experts and "techie" nurse types are bringing the spirit of Silicon Valley entrepreneurship into the field.

However, no Canadian nursing schools have incorporated a nursing informatics program into their undergraduate curriculum. A few have elective courses. Many have a few hours of content. I asked [Dr. Lynn](#)

[Nagle](#), an assistant professor in the Lawrence S. Bloomberg Faculty of Nursing at the University of Toronto, about this and she spoke to the heart of the problem:

"There's a lot of intimidation. I think particularly among nursing faculty. In terms of nurse leaders, I don't think there's been *enough* advocacy to get nurses engaged in the whole decision-making process, or actively involved in technology projects that are going on," said Dr. Nagle.

Dr. Nagle points out this is not the case in every organization. And a lot of faculty *do* embrace new technology.

## **Paper charting systems**

Nursing hasn't been the easiest field in which to innovate. Technology in hospitals is often changing. New systems come in under the "guise" of giving more time to nurses, but on the ward and in the operating room it often feels like the opposite. And much of the technology *is* wasting time. In many cases it's outdated, inefficient and regularly malfunctions. Nurses are often charting on modern systems that are run through old equipment.

In some organizations, nurses simply aren't being trained to operate the many technologies that are entering the clinical environment. As a result, we have all this unused technological capability.

Budgets are tight though. It's expensive to update processes and time-consuming to train people. And nurses have a lot of things to do without having to troubleshoot technology or circulate through janky equipment.

Innovation tends to be localized in pockets when what the system needs is a virus. The world is online, and yet [the majority of nurses in Canada are still using paper charting systems](#) in some capacity. In some

hospitals, nurses are prohibited from carrying their cellular devices with them while working —despite the wealth of information they offer.

As a nurse in the field, I can tell you that nothing stifles innovative morale more than an environment that assumes you can't moderate your own behaviour.

Physicians, meanwhile, seem to incorporate technology as a part of their practice. I asked [Dr. Tracie Risling](#), an assistant professor in the University of Saskatchewan's college of nursing, about why the nursing profession is trailing behind their medical peers in this aspect.

"I think part of what has driven the advancement of our medical colleagues in [technology](#) is the fact that many of them have been incentivized to use electronic medical records, or gain access to test results —especially diagnostic testing," said Dr. Risling. "In a lot of areas, diagnostic testing was one of the first things to go digital, and in some instances, in fact (in the earlier days), physicians were the only ones who were given access to these things online."

In particularly prehistoric pockets of the health care system, nurses were —according to Dr. Risling —just getting access to email as recently as five years ago. That is two years after [Google's fleet of self-driving cars](#) had driven their first mile.

## **Robot nurses on the ward?**

So why the nursing profession's lag in embracing technological change?

Innovation in any area of health care is expensive, for one. Secondly, [a lack of nurse input into the development of technology](#) has a lot to do with the dissatisfaction. The tech industry has a [history of undervaluing the female contribution to innovation](#). Nursing is a largely female

workforce.

Nurses also have a long history of having to defend their place within the health-care system. Where cheaper health-care providers have threatened their survival, [now automation does](#). Increasingly [intimate nursing tasks are now being outsourced to bots](#).

In Japan, a greater demand for elder care, along with a nursing shortage, has inspired the development of [nursing-care robots like "Robear."](#) While these robots do not yet care for patients, they might be replacing nurses one day in the not-so-distant future. That's Japan though. And the nursing role is multifaceted, and too complex to be directly replaced by [artificial intelligence](#).

[Robots have arrived in North American health care](#), too. Experts in the field see a place for them in freeing up nurses and doctors from repetitive tasks —like fetching medical supplies and delivering food and drugs.

One Canadian professor, [Dr. Richard Booth](#), is introducing robots into the nursing curriculum at Western University. He told me that he doesn't know any nurses who are developing robots. He believes that if we don't participate in technological advancement, we risk losing our competitive edge as health-care providers.

Elizabeth Mattsson is one nurse who is working with a robot on a regular basis - da Vinci is her robot co-worker. As the robotic nursing coordinator at Toronto General Hospital, Elizabeth's role is to provide training and clinical support to nurses and medical staff in the robotic operating room.

## **Tech-enabled and at the heart of it**

Dystopian feelings aside, nurses are, for the most part, positive about technological change. They should be. Technology in health care inspires creative solutions. In Saskatchewan, for example, [bedside cameras allow families a live view inside their babies' incubators](#) in the neonatal intensive care unit (NICU) of Jim Pattison Children's Hospital.

Advocating for the patient of tomorrow will mean advocating for them on all the platforms where they will be accessing care; meeting them where they are.

Technology is not going away. Neither are nurses. But with the advancement of telehealth and other technologies, the physical presence of a nurse, as we know it, will change. Nurses need to decide where they belong in the health care of the future; that's at the heart of the conversation. It will mean collaborating with the new health-care technologies, giving up tasks that are well-suited to automation and leaving more time for the job of nursing.

In a world that will soon be functioning largely on autopilot, tech-enabled nurses who value innovation *and* the visceral human experience will reveal their own value in the process.

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