

Practice Makes Perfect at McGill Lab

Medical education is changing dramatically, with simulation centres becoming more common - and more necessary

**By KAREN SEIDMAN, The Gazette
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"Do you have an extra pelvis?"

A McGill University instructor at Blema Steinberg Medical Simulation Centre asks this as she is rushing in to teach a group of medical residents the finer points of breech and abnormal births.

It is not such an unusual question in the context of the high-tech, \$10-million lab that is increasingly used by the university to teach medical students, residents, nurses, physiotherapists and occupational therapists the intricacies of everything from

putting in IVs to endoscopy to delivering babies.

In its backroom, the 1,700-square-metre centre in the bowels of the former La Cité complex actually has a stash of pelvises, arms, legs, joints and private parts that are used for all kinds of medical training. This somewhat gruesome collection, referred to as trainers, helps provide students and health professionals with a safe learning environment to master new techniques.

Safe because no one is going to die.

Unlike in a real clinical setting, this is where it's OK to make mistakes because it's all part of the learning. Cameras are recording your every move and students are debriefed after everything they've done to learn where they could have made improvements.

Such as, you might want to lose the nervous laugh while you're giving a patient a cancer diagnosis. (In other words, the worst that could happen here is that someone dies of embarrassment.)

Medical education and training is changing and centres such as this one are becoming more common - and more necessary. The Royal College of Physicians and Surgeons of Canada, at its International Conference on Residency Education in Quebec City this week, debated the best ways to meet the challenges in medical education.

One of those ways said Dr. Jason Frank, chairperson of the conference, is the increasing use of simulation labs for medical students and residents.

"We'll be using simulation in a far bigger way than we have before," Frank said. Hence the Royal College's Simulation Summit this November in Montreal, where the latest tools, tips and research to enhance the integration of simulation into health care environments will be explored.

McGill's lab, built in 2006, was the biggest in the country until recently, when the University of Ottawa Skills and Simulation Centre opened as one of the largest in North America. But the McGill lab's use has gone from 6,000 learner visits its first year to 13,000 last year. And it is expected to grow, especially since residents will be restricted to 16-hour shifts next year, which may boost the need for simulation.

McGill's sprawling "sim" centre has a room with high fidelity mannequins (these guys even speak!) that can be adapted to replicate an emergency room, the ICU or just about anything that is needed. A booth behind the room uses computers to control the fabricated environment.

A procedure will be carefully mapped out and practised before the learners ever set foot in it, said centre associate director Linda Crelinsten; the patient's symptoms and reaction to treatment must be precisely controlled for the lesson to be properly learned.

Beyond that room is a maze of small examining rooms that can be used in many ways, but are often used to hone communication skills, with live actors who may try to throw a wrench into things by refusing life-saving treatments.

And at the back is a huge operating room with 16 stations, where all kinds of procedures are taught; it could be intubation, neonatal resuscitation or inserting a catheter.

You need to practise a lumbar puncture? No problem. But you might need to do it on an elderly person, so there's a trainer for that. Then it's different for an obese person, so there's a trainer for that. And, if you need to practise on an elderly obese person, they've got you covered.

Simulation has been identified as a valuable method of improving patient safety, as it

provides opportunities to rehearse procedures and emergency management in a patient-and learner-safe environment.

It is something that is becoming more in vogue now in all medical schools, according to Dr. Samuel Benaroya, interim dean for the faculty of medicine at McGill. He said the debriefing technique used at the centre, whether for communication or technical skills, is a powerful tool.

"You can't always get that experience in a hospital," he said. "It enables you to teach concepts that are difficult to teach at bedside."

The idea, said Crelinsten, is to augment one's education.

"Here, we're focused on the learner, but in a clinic you're focused on the patient," she said.

"Here you have the opportunity to reflect and think about why your delivery of the bad news didn't go so well."

Kids, don't try this at home. Dr. Ann Rothman has her hand inserted in the trainer's vagina to try to pull down the fake infant's legs in a breech birth without breaking any bones. Even in a simulated setting, the intricacy and delicacy of this manoeuvre are most evident and makes you want to scream for a C-section for the poor pelvis.

But it's something that must be taught to the group of first-year family-medicine residents who are keenly observing Rothman's skilled technique.

"Teaching the basics is much better in this environment," said Rothman, a family physician at the Jewish General Hospital. The students concur.

"There are many procedures we'd never get to do in real life," said Dr. Adrian Carpenter, one of the residents observing Rothman.

As the residents practise intubation on a newborn mannequin, Crelinsten sums up the purpose of the sim centre:

"As a mother, you would be happy to know that the resident intubating your baby had the opportunity to practise here."