

## Canadian medical schools slow to integrate health informatics into curriculum

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In a world where Canada will spend billions to computerize all health records by 2016, it seems almost simple minded to ask if Canadian medical schools have begun training their students in how to create, understand and make best use of that data.

Simple minded in theory, but when a quartet of researchers at Dalhousie University in Halifax, Nova Scotia, surveyed 16 of Canada's 17 medical schools, they discovered that none have included what is formally known as health informatics into their core curriculum. And while three schools reported offering health informatics as an elective course, it was unclear whether any students were actually enrolled in these courses.

One school had formed an informatics advisory committee in 2007 aimed at looking into how to integrate the subject into its undergraduate curriculum, but three years later, its work was still in "developmental stages."

"It's like the motorcar has just been invented and medical educators are imagining that instead of doctors needing to learn how to drive, doctors are going to have chauffeurs to do the driving for them," says Dr. Brett Taylor, associate professor of emergency medicine, pediatrics and medical education at Dalhousie.

Even more perplexing was the group's discovery that other nations were actively integrating informatics into core curricula. "A recent study in the US [United States] found that 52% of pre-clerkship and 32% of clerkship students received medical informatics training," says Taylor, who presented the study's initial findings at the National Institutes of Health Informatics first annual conference in Waterloo, Ontario, in April.

At the top of the pack lay the University of Arizona's College of Medi-



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Some medical educators say that students absorb technologies informally, so there isn't a need for instruction.

cine in Phoenix, which has an informatics curriculum that spans the undergraduate medical curriculum and includes 90 hours of instruction. The unpublished Dalhousie study also points to formal health informatics training at two French medical schools, as well as at a consortium of universities from Amsterdam, Netherlands, Heidelberg and Heilbronn, Germany, Innsbruck, Austria, and Minnesota and Utah in the US.

The paper pointed to two reasons for the reluctance of Canadian schools to incorporate health informatics. The first is a lack of understanding by medical school professors as to what medical informatics is and the second is the densely packed medical school curriculum.

But others say the obstacles include a presumption that there is a generational gap when it comes to electronic capabilities. Nicola Shaw, former research chair in health informatics at the University of Alberta in Edmonton, says that when she pushed for inclusion of health informatics in the medical school's core curriculum, she was told: "We don't need a formal program; students know how to use a computer."

At McMaster University in Hamilton, Ontario, there is a sense that integrating health informatics skills is occurring informally, says Dr. Anthony Levinson, director of e-learning innovation and John R. Evans Chair in Health Sciences Educational Research and Instructional Develop-

ment. The informal mechanisms include health information literacy efforts that show doctors-in-training how to use computers to arrive at evidence-based medical decisions.

It's also believed students learn on the job, Levinson adds. During hospital rotations, they can't avoid being exposed to electronic record systems. "People around the (curriculum redesign) table thought that teaching people the theory of electronic health records was probably less useful than using the actual hands-on platforms that are there in the hospitals."

The lack of formal health informatics training begs the questions as to whether future doctors will understand

the full capabilities of electronic platforms and technologies, and whether they will know to evaluate and integrate them into their practices.

Another worry, says Kendall Ho, director of e-health strategy at the University of British Columbia in Vancouver, is that future doctors will learn professional health information principles from industry if medical schools don't provide the courses. "Do we, as a profession, want the industry to dictate the HI [health informatics] agenda?"

Ho is working on a curriculum redesign at UBC that includes e-health education as a central component. The school now provides a formal lecture on electronic health information but is

experimenting with such pedagogic innovations as a one-week course in which students learn about health informatics as a component of diagnosis.

But it's still uncertain exactly what, and when, health informatics should be taught, admits Ho.

Shaw hopes an embryonic research consortium will resolve such conundrums. It hopes to find evidence to support the question of the day: What's the most efficient way of teaching doctors — particularly family doctors — how to make best use of the anticipated flood of electronic health and medical records? — Stephen Strauss, Toronto, Ont.

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