

Eleven satellite campuses enter orbit of Canadian medical education

At its core lies the simple proposition that outcome matters more than style.

Of course, some would argue style significantly impacts on outcome and when the end product is supposed to be a physician who's adequately trained to deliver health care, that's not an arcane point. Still others surmise the style might actually yield physicians more suitably trained to deliver care in the wild and wired electronic future.

Such is the pedagogical debate that surrounds the largest experiment in the history of Canadian medical education.

Dubbed the "distributive learning model," by 2009 this experiment will see roughly 250 students annually enrolled in medical undergraduate training at 11 "satellite learning centres" (Table 1) associated with 7 of the nation's 17 established medical schools. Like the dual-sited new Northern Ontario School of Medicine, the satellites will use distributed learning as a core element of their programs, delivering off-site instruction with an emphasis on local needs.

The most advanced in implementing the model is the University of British Columbia, which opened satellite campuses in Victoria and Prince George in 2004. The Université de Montréal opened 24 preparatory spots and 32 first-year spots at Mauricie in 2005. Over the next few years, the rush to open more satellite campuses will be nothing short of furious. This fall, the Université de Sherbrooke will set up shop in Chicoutimi and Moncton. Next year, the University of Toronto will foray into Mississauga; McMaster University to Kitchener and St. Catharines; and Dalhousie University to Saint John. The University of Western Ontario will join the fold in 2008, opening an affiliate in Windsor, and a year later, UBC will add a third satellite in Kelowna.

The justification for creating satellites is many-faceted, starting with the proposition that a physician trained in a more rural or remote environment is more likely to hang up her or his shingle in a smaller community upon licensure.

Moreover, although there's a need to bolster the production of Canadian-trained medical graduates, the capacity of existing medical schools to expand enrolments was limited, both in terms of physical and human infrastructure, while the cost of establishing new free-standing schools is prohibitive, says Association of Faculties of Medicine of Canada President and Chief Executive Officer, Dr. Nick Busing. And with much of the profession already operating at full tilt, "you just can't pack more and more students into certain teaching hospitals."

The UBC Faculty of Medicine's Associate Dean of Admissions, Dr. Joanna Bates, says the provincial government also had a "social accountability agenda," namely, the need to redress the economic ripple effect from a maldistribution of physicians because it's difficult for industrial sectors (particular, resource-based ones) to attract workers if there's a shortage of physicians in a community.

Bates, a key architect in UBC's foray into distributed medicine, says the school examined distributed learning models around the world and concluded the best option was to become the first medical school to completely distribute its undergraduate curriculum, both basic and clinical. Several American and Australian institutions offer hybrids, distributing a component of their programs. For example, the University of Washington's WWAMI (for Washington, Wyoming, Alaska, Montana and Idaho) program, distributes the first year of its undergraduate program to a local state university and then brings all students to its campus in Seattle in year 2 before distributing students again for their clinical education. In another model, the University of Illinois central campus oversees 2 years of basic education at 8 different sites, with each using a different pedagogical approach (e.g.,



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By 2009, some 250 medical students will be enrolled annually at 11 "satellite learning centres" across Canada.

problem-based, discipline-based, organ systems-based, etc.).

UBC opted to distribute the entire package, from basic to clinical, in partnership with the universities of Victoria and Northern BC, using its existing case-based curricula. It required the hiring of some faculty at the home campus and the affiliated sites (including cross-appointing local physicians as clinical faculty and the usual array of grad students and teaching fellows), as well as significant investments in information technologies because roughly half of all courses are delivered online in interactive classrooms by faculty in Vancouver. In their third year, the students will do their clerkships at local facilities in Victoria and Prince George but, ultimately, it's hoped all clinical years can be parceled out to a province-wide network of clinical academic campuses being established in partnership with various regional health authorities.

Thus far into the experiment, Bates wryly notes, students have embraced the requisite technologies far more readily than the instructors, probably

because there's a generational difference in facility with electronics. "They actually prefer the video conference lecture because they feel the best person to teach was teaching all of them and there is continuity in what is being taught and they can feel secure about that."

Arguably, a medical education with a significant electronic component could ultimately yield physicians better equipped to deal with what many believe will be the more electronic form of medicine practised in the future, whether that be collaborative diagnosis and health care delivery made possible by electronic data sharing and telehealth networks, or continuing medical education.

Although some skeptics, including UBC faculty, are concerned that the students suffer because there's a qualitative impact that accrues from being trained in a research-intensive academic health centre, Bates believes a distributed education will ultimately prove to have its own value, and that the students now working their way through the system will perform as well as those trained in UBC's tertiary care setting.

To date, the students are doing as well on the core UBC exams as those on-site in Vancouver, and are expected to do the same in national certification exams, she says. When they reach the clinical and post-graduate components of their education, many may also benefit from exposure to a broader range

of patients at smaller regional facilities than those now trained in major acute care facilities in larger centres, which, because of budget cuts, are being forced to shorten average lengths-of-stay. "As soon as someone is well enough to talk, they're discharged. That's a change in the system that may be impacting on our education."

The Northern Ontario School of Medicine (NOSM) Vice-Dean (Academic Activities), Dr. Dan Hunt, is equally confident electronically taught students will score well on exams. NOSM delivers an identical problem-based curriculum to students in Sudbury and Thunder Bay using a whopping dose of electronic gadgetry, with lectures being simultaneously delivered to students at both sites. For one month of their first year, and 2 months of their second year, students are placed in remote and rural Aboriginal communities and get all of their instruction electronically. By their third year, they'll do 9 months in a remote community.

But it's impossible to legitimately assess the effects of distributed learning until the NOSM has a couple of runs of its third year and the newly trained physicians are actually in practice, Hunt concedes. "I would say we don't have an answer to that question yet."

It's simply too early to accurately gauge the effects of satellite e-learning, Busing says. "The question will be

what kind of physicians do we turn out and what are their skills, not only their book learning but what are they like from the humanistic side as well, in terms of delivering care."

"The proof will be in the pudding," adds Medical Council of Canada Executive-Director, Dr. Dale Dauphinee. "Certainly, [the distributed model] is more focused on education, on paper, than it is on research, and technically, that should be able to be done more cheaply. The question is: will it be as good?"

Until that's resolved, Dauphinee doubts there'll be a major expansion of satellite campuses beyond the initial wave.

Moreover, the concept hasn't proven itself in terms of its ultimate objective of attracting doctors to remoter, underserved areas of the country, Dauphinee adds. If students still "prefer to go to the city, then people are going to say, well, on balance, was this the way to do it?"

To the latter end, some jurisdictions have imposed a form of "return-of-service" requirement on students but thus far, none of the satellite sites have contemplated such a measure.

"We think if we do our selection properly and maintain the interest and fit of students with the underserved areas, then we'll get the retention we want without return of service," Bates says. As part of its applications procedure for the 24 annual spots available at each satellite, UBC uses a screening tool called the "rural and remote suitability score" to assess the likelihood that a candidate might ultimately be willing to work in a smaller community. "We've found that we've accessed a different applicant pool by opening up regional campuses." It's clear some students "want a career that will allow them to return to the kind of setting they were raised in."

Hunt says return-of-service arrangements are self-defeating. "Once you start down the path of filling your holes with doctors that don't want to be there, and they're only obligated to be there for 2 or 3 year sentences, you then make it almost impossible to recruit any other physicians who are not in the pay-back situations." — Wayne Kondro, *CMAJ*

Table 1: Canada's new satellite campuses

Location	Affiliate	Launch	No. of students
Victoria	University of British Columbia	Fall 2004	24
Prince George, BC	University of British Columbia	Fall 2004	24
Kelowna, BC	University of British Columbia	Fall 2009	—*
Windsor, Ont.	University of Western Ontario	Fall 2008	14
Kitchener, Ont.	McMaster University	Fall 2007	15
St. Catharines, Ont.	McMaster University	Fall 2007	15
Mississauga, Ont.	University of Toronto	Fall 2007	26
Mauricie, Que.	Université de Montréal	Fall 2005	56
Chicoutimi, Que	Université de Sherbrooke	Fall 2006	24
Moncton, NB (French)	Université de Sherbrooke	Fall 2006	22
Saint John, NB	Dalhousie University	Fall 2007	30
Total			250

Source: Medical Council of Canada and Association of Faculties of Medicine of Canada.

*To be determined.

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