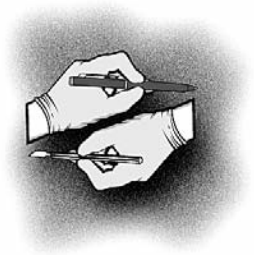

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When a community hospital becomes an academic health centre

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With the burgeoning role of distributed medical education and the increasing use of community hospitals for training purposes, challenges arise for undergraduate and postgraduate programs expanding beyond traditional tertiary care models. It is of vital importance to encourage community hospitals and clinical faculty to embrace their roles in medical education for the 21st century. With no university hospitals in northern Ontario, the Northern Ontario School of Medicine and its educational partner hospitals identified questions of concern and collaborated to implement changes. Several themes emerged that are of relevance to any medical educational program expanding beyond its present location. Critical areas for attention include the institutional culture; human, physical and financial resources; and support for educational activities. It is important to establish and maintain the groundwork necessary for the development of thriving integrated community-engaged medical education. Done in tandem with advocacy for change in funding models, this will allow movement beyond the current educational environment. The ultimate goal is successful integration of university and accreditation ideals with practical hands-on medical care and education in new environments.

Compte tenu du rôle de plus en plus important de l'éducation médicale distribuée et de l'utilisation croissante des hôpitaux communautaire pour la formation, les programmes d'enseignement prédoctoral et postdoctoral ont des défis à relever pour dépasser les modèles traditionnels de soins tertiaires. Il est vital d'encourager les hôpitaux communautaires et les cliniciens enseignants à accepter leurs rôles dans l'éducation médicale au XXI^{e} siècle. Comme il n'y a pas d'hôpitaux universitaires dans le nord de l'Ontario, l'École de médecine du Nord de l'Ontario et ses hôpitaux partenaires en formation ont défini les questions d'intérêt et collaboré pour implanter des changements. Plusieurs thèmes pertinents se sont dégagés, pour tout programme d'éducation en médecine qui s'étend au-delà de son site actuel. Il est crucial d'accorder de l'attention notamment à la culture institutionnelle, aux ressources humaines, matérielles et financières, ainsi qu'à l'appui des activités d'éducation. Il importe d'établir et de maintenir le travail de base nécessaire à l'émergence d'une éducation médicale engagée dans la communauté, intégrée et florissante. Conjugués à la promotion de changements des modèles de financement, ces efforts permettront de dépasser l'environnement éducationnel actuel. On veut en bout de ligne intégrer avec succès les idéaux de l'université et de l'agrément aux soins médicaux pratiques et à l'éducation dans de nouveaux environnements.

The Northern Ontario School of Medicine (NOSM) is Canada's newest medical school — the first in more than 3 decades. Its innovative model, established with a social accountability mandate, presents a challenging and complex, but critically important, new environment for the delivery of undergraduate (MD) and postgraduate (residency) medical education. Based entirely in northern Ontario, NOSM has a campus that spans a vast geographical area of 750 000 km^2. Within this area,

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there are multiple clinical placement locations (> 70) varying from large urban settings to rural, remote and Aboriginal communities. A major challenge has been, and continues to be, the integration of nonacademic clinical faculty and nonacademic hospitals focused almost exclusively on patient care, into new educational and academic roles.

Since 2004, 11 satellite campuses have been introduced for undergraduate training across Canada,[1] affiliated with a number of different universities. These new campuses have opened to accommodate expanding enrolment into medical schools, and will train about 250 students per year at capacity. In the postgraduate system, family medicine has led the way nationally in the steady adoption of distributed medical education. This has developed with a spectrum of models ranging from satellite campuses of larger universities located in a variety of communities (e.g., Prince George, BC, affiliated with the University of British Columbia), which accommodate the full range of training up to the fully distributed community network model found at NOSM. However, training programs accredited by the Royal College of Physicians and Surgeons of Canada (RCPSC) are still firmly entrenched in the tertiary care model. Distribution of selected generalist RCPSC training is underway, led by NOSM; this will undoubtedly expand across the country as expansion pressures on training capacity affect the ability of current tertiary environments to accommodate more postgraduate learners and as medical students in other locations complete their programs.

The new educational model of distributed community-engaged learning[2] under development at NOSM germinated from the following clinical and academic components: completely independent, regional tertiary care hospitals in Thunder Bay, Ont., and Sudbury, Ont., with no academic mandate and no affiliations with any medical school or university; a variety of regional and rural community hospitals; community clinics operated with a *smorgasbord* of practice arrangements; physicians with mainly patient care responsibilities and 2 universities with no prior medical faculty and very limited medical research. Gravitating toward even loose affiliations as NOSM developed, with early agreements on integration of medical education opportunities, unearthed a multitude of areas requiring close attention. These emerged as vital, time-critical issues, because of the NOSM curriculum, as the clock ticked on from the start-up of NOSM through the acceptance of the charter medical school class, to the class's graduation (2009). In the meantime, NOSM's residency programs continue to grow and develop.

The redesignation of 2 major regional hospitals in northern Ontario as academic health centres (AHCs) affiliated with NOSM was of particular importance in the evolution of this new model. Close collaboration of all 3 institutions is required to promote the essential changes needed for the hospitals to adopt their burgeoning role in medical education. The findings and recommendations from NOSM's experiences with this collaboration are presented in this article and are applicable to any setting in which medical education occurs.

DEFINING ACADEMIC HEALTH CENTRES

Defining what is meant by the term "academic health centre" is challenging; it varies depending on the country, location and context, and a wide variety of organizational models exists.[3] These range from full integration of administration and governance to the far end of the spectrum of loose affiliations based on perceived or actual needs. All AHCs, however, embrace the academic, clinical and research components necessary to further medical education, and gain status, credibility and accreditation (in Canada) through university affiliations. In Ontario the definition is highly specific as outlined by the Council of Academic Hospitals of Ontario (CAHO) (Box 1.)[4] A working group established by NOSM's founding dean, Roger Strasser, was given the task to

> Develop principles and provide best advice to the Chief Executive Officers of Thunder Bay Regional Health Science Centre and Hôpital Regional Sudbury Regional Hospital on issues

Box 1. Criteria that must be met to become a member hospital of the Council of Academic Hospitals of Ontario

First criterion — 1 or more of the following:

- University representation on hospital board of directors
- "Full" affiliation with a medical or health sciences school
- A significant proportion of geographic full-time faculty among medical staff

Second criterion — 1 or more of the following:

- Research enterprise
- Annual research revenues ≥ $10 million

Third criterion — 1 or more of the following:

- Fellow days exceed 1000/yr and resident trainee days exceed 3000/yr
- Evidence of significant multidisciplinary teaching of senior trainees across health professions

Adapted from the *Council of Academic Hospitals of Ontario Newsletter*.[4]

pertaining to the development of undergraduate (MD) and postgraduate (post-MD residency) programs and services to become fully operational teaching hospitals. — Roger Strasser (unpublished observations, 2007)

This early step was aimed at identifying key areas for collaboration, integration and joint planning. This set the stage for the evolution of organizational structures embracing the new relationships necessary for educational and clinical placement requirements of the medical school and the growing academic and research missions of the hospitals. With reference to the McKinsey 7-S model,[5] we placed more emphasis on the "soft S" elements (style/culture, staff, skills and shared values), although the "hard S" components (strategy, structure and systems) are also of great import. Truly functional integration is only possible when there are shared visions and missions, or at least those which are not in conflict with the priorities of other partners.

The following major themes emerged from a literature review and the process of the task force, including consultations and interviews:

- the culture shift
- human resources
  - in-hospital staff
  - physicians
- supports for accredited educational activities
- physical resources
- financial resources

THE CULTURE SHIFT

The community hospitals' vision, mission and values statements may emphasize patient care, research, community support and networks.[6,7] Although strategic plans[8] may include a discussion of a role in provision of medical education, when compared with the vision, mission and values statements of more established AHCs[9,10] the educational component is not yet explicit. A Council of University Teaching Hospitals paper in 1999[11] provides a good overview of the complexities inherent in developing the relationships necessary for the promotion of a robust academic health science network. These may include development of shared values and complementary missions, clearly defined roles and relationships, a social contract with the patient population served, and adequate financial resources organized to leverage funding and provide incentives where possible. The culture shift from a hospital that teaches to a teaching hospital with continuous assignment of learners requires much work.

Individual physicians in nonacademic hospitals may occasionally accept residents and students for a rotation spent entirely with them. At an AHC learners are attached to the hospital, to a particular service or unit, supervised by the attending physician of the day or shift. For the hospital, this creates a need to understand the hospital's legal liability; the nuances of supervision of learners; and, in particular, the role of residents with respect to responsibilities for patient care, writing of orders and completion of medical records. For physicians, there is a need to modify day-to-day work activities (e.g., to accommodate patient care review and hand-over with learners).

In-hospital staff requires education around learner roles, whom to call first and the hierarchy of supervision. Comfort levels develop as a result of close working relationships in smaller centres resulting in staff calling specific individuals. Addressing this in a clear and sensitive manner with provision of coaching regarding redirection of calls, when appropriate, will ensure learners are not "left out of the loop." All staff, from switchboard staff to nurse managers, must be aware of and engaged in this process.

HUMAN RESOURCES

In-hospital staff

The addition of medical learners into a hospital environment has a large impact on personnel. This includes, but is not limited to, those in the medical staff office; clinical care areas; information technology, laboratory and diagnostic services; and supplies.

Increased requirements for staff translate into substantial financial costs in terms of salaries and benefits. Overtime requests occur when operating rooms and clinics run past designated times. Contributing factors may include larger numbers of patients booked to accommodate learner activities and the slower pace of clinical pursuits when tied to educational activities. Processing of patients may be reduced resulting in longer wait times.

Hospitals must provide credentialing, on-site orientation, workplace safety training and medical records access on multiple occasions throughout the year as learners come and go. An administrative staff member at the hospital designated as the liaison between the hospital and the medical school is invaluable.

Physicians

The 16 medical schools in Canada, before the advent of NOSM, had, as their educational mainstay, physicians with geographic full-time (GFT) faculty appointments.[12] This arrangement supports educational and research activities through reduction of clinical load. Physicians in nonuniversity settings are, in general, primarily clinicians who consider patient care as their priority and add educational and research activities to this when possible. A wide range of payment mechanisms are in place for non-GFT physicians, few of which include recognition for educational and/or administrative activities. Involvement in clinical education results in a considerable impact on availability for patient care and subsequent remuneration, particularly in a fee-for-service based system or one based on target clinical volumes to achieve patient care deliverables.

Distributed models with little or no protected or financially supported educational time must be sensitive to the scheduling pressures on physicians. Extensive discussions with hospitals, local physician groups, provincial/state organizations and/or other funding agencies about alternative methods of support, remuneration and delivery of educational services may be needed. Rae[13] identified that funding models must change so that patient care dollars no longer subsidize education. NOSM's clinical faculty has organized into a clinical teaching association and is in the process of negotiating an alternate funding plan with the Ontario Medical Association and the Ministry of Health and Long-term Care. Hospitals must consider recruiting additional physicians for patient care services. This serves to support the time required of physicians involved in education.

A common refrain encountered is that physicians have moved to community hospitals to practise clinical medicine and get away from being involved in education and research. Certain concerns are prevalent when physicians are asked to teach and feel ill prepared to do so (e.g., "I don't have time to teach," "I don't know how to teach," "I don't know how to assess learners," "my patients won't accept learners"). Frequent contact, combined with well-timed faculty development activities, is required in nonuniversity settings to encourage buy-in from busy practitioners to participate in teaching activities.

Physicians may need to upgrade educational and technical skill requirements, to meet specialty program–specific standards. Additional paperwork is required to comply with faculty appointments, mandated by the accrediting colleges, along with subsequent annual reviews and updates. Physician participation is required to present and facilitate enhanced hospital education rounds as the AHC mandate expands, and also for medical education committee work, accreditation review activities and more.

With a hospital's adoption of a key role in educational programming, a strategic focus and shared value must be placed on joint recruitment efforts between the hospital and its affiliated educational institution. The educational role of the medical staff must garner attention with modification of the focus of recruitment efforts to include and recognize provision of education in tandem with clinical care services.

SUPPORTS FOR ACCREDITED EDUCATIONAL ACTIVITIES

Explicit requirements are laid out in the Standards for Accreditation of Residency Training Programs by the College of Family Physicians of Canada (CFPC)[14] and in the RCPSC document, General Standards of Accreditation.[15] Of particular importance are standards A2 and A3: sites for postgraduate education, and liaison between the university and participating sites.[15]

These must be reviewed in detail with the hospital and arrangements made to ensure the requirements are met. Some of the critical areas covered under these sections and which mesh easily with the "S" concepts of *systems* and *shared values* include ensuring that

- affiliation agreements are in place with universities;
- clinical services are arranged to support education;
- medical records are accurate and complete;
- formal ongoing quality assurance programs are in effect;
- appropriate on-site policies and procedures are in place to assure resident safety;
- appropriate supervision of learners is in place;
- staff involved in teaching have appointments with both the hospital and the university.

There must be instruction in the process of accreditation to prepare hospitals and staff for visits by the CFPC and/or RCPSC. Dialogue between the postgraduate dean and the accrediting committees may obviate the need for multiple, costly external site visits. This requires development of a robust site review process by NOSM itself, which may

translate into a resource for other locations developing distributed medical education.

Clinical leaders and the hospital administration must endorse educational activities. This can be demonstrated through the promotion, support and development of committees such as a medical education committee. There must be frequent and clear communication between the individuals responsible for the educational program and the physicians on site. Specific details require emphasis including responsibilities for core content education, learner evaluation, rotation evaluation and feedback to clinical teachers. For certain residency programs, internal medicine for example, facilitation of team-based care may necessitate significant reorganization of patient care services; both the Hôpital Regional Sudbury Regional Hospital and the Thunder Bay Regional Health Science Centre have put significant resources into supporting teaching services for internal medicine.

PHYSICAL RESOURCES

Educational activities, both scheduled and informal, require classroom space adjacent to clinical care locations. With the dispersed nature of many training sites, ready access to videoconference and online computer facilities is necessary. Northern Ontario, in common with many distributed environments, has been an enthusiastic adopter of Telehealth. This uses advanced videoconference facilities within its hospitals and community clinic settings. Videoconferencing is used regularly and frequently for patient care activities; scheduling educational events at required times may be challenging. Ensuring trouble-free connections is a paper unto itself!

With respect to physical facilities, in Canada there are specific resident contract requirements[4] that are the hospital's responsibility. These may vary somewhat from province to province since each contract is negotiated independently, but they include provision of private, secure dedicated on-call rooms; lockers; safety and other equipment as needed at work; and possibly a requirement for meal service outside of regular hours.

In Ontario, all academic hospitals and their affiliates are signatories to the Professional Association of Internes and Residents of Ontario (PAIRO)–CAHO agreement.[16] The reality of regularly scheduled use by residents and students puts a considerable strain on physical facilities previously designed to allow for intermittent use by staff or learners. Regardless of general staff arrangements of providing call from home, it is extremely important from an educational perspective that students and residents be available on site in the hospital. This allows them to provide first coverage for emergent and urgent situations and to observe the natural course of events.

Community hospitals have limited space for outpatient and ambulatory clinics; these are major areas for educational activities, frequently identified as discipline-specific requirements by the RCPSC.[17] These services are of great import and are in keeping with increasing moves to provide day services and care not requiring admission. These physical resources may require updating or modification to accommodate additional staff and learners.

Desk space, computers and library facilities are required. Even when small numbers of students and residents are attached to a unit, space may already be at a premium for health care staff working there. Firewall and security systems within hospitals present challenges for learners. Educational opportunities using library and Web resources are accessed rapidly online, often at the point of care. On-site use of personal laptops, personal digital assistants and other electronic media is becoming commonplace. Modifications to security systems may be required allowing use of personal equipment without compromising the security of health information. Collaboration between NOSM's Informatics Unit and hospital informatics departments has allowed significant progress with this.

FINANCIAL RESOURCES

Funding for hospitals in Canada is provided by provincial governments involving highly complex formulas beyond the scope of this article. Broadly, community hospitals are funded at lower levels than university-affiliated teaching hospitals, but the magnitude of the gap is hard to quantify.

When a hospital is recategorized from a regional community hospital to an AHC, supplementary funding is anticipated by the hospital administration. The level of this additional funding may be disappointing. This is then identified as a substantial concern when the hospital is asked to support educational activities and extra operational expenses with a limited budget, when their priorities are seen as patient care. Hospitals that remain at their previous designation may not receive any further funds in support of educational activities for residents and students. This is a major factor as distributed medical education becomes commonplace. Intensive

lobbying with funding agencies is in order to highlight the significant financial impact hospitals are asked to absorb, particularly when a balanced budget is mandatory. Regardless of the funding source, medical education comes with a substantial price tag for the supporting institutions.

DISCUSSION

Expansion of medical education into community locations is a growth area for many programs. For NOSM and its multiple affiliated hospitals, the important themes identified in the article came into sharp relief and have proven invaluable as a guide for discussions and program development. Program directors contemplating or in the early stages of community engagement can benefit from the knowledge gained by the early adopters. Sharing of information and resources allows stronger models to emerge.

Distributed medical education is no longer regarded as unusual nor as second rate; studies show outcomes on examinations to be at least as good as those of the standard tertiary care university environment.[18,19] Current expansion of undergraduate and, by necessity, postgraduate learner numbers is reaching levels that place significant stress on existing teaching resources. This is placing the spotlight further on distributed models, encouraging educational leaders to think outside the box, explore development of rural, regional and satellite campuses and examine the overall educational milieu. Importantly, there is a move toward identifying potential training sites as educational or not versus core and distributed, highlighting the realization that delivery of medical education has entered a new era in Canada. This has not happened to any significant degree since Flexner[20] set the course for university-based medical education in 1910.

Most patients are treated outside of tertiary care settings as demonstrated in the model of distribution shown initially by White and colleagues[21] in 1961. This was validated by Green and coauthors[22] in 2001. Current approaches to medical learning still encompass training for the most part in tertiary care environments at large teaching hospitals affiliated with university centres. However, there is growing awareness that the case mix in these tertiary centres is not entirely suitable for medical students or for certain residency programs. The move to community hospital–based distributed medical education will have a profound impact on the functioning of traditional university AHCs. Students and residents will increasingly be trained elsewhere, in environments that provide them access to the most appropriate clinical conditions and acuity of patients required for their education.[23] The transition will be much easier if the multiple partner organizations and communities focus on collaborative strategic planning and can develop a shared vision. This will be further enhanced if the business practices and funding models are made as open and transparent as possible. This will minimize the potential competition for scarce resources.

Current funding arrangements for both hospitals and clinicians are complex and intricate; changes to these have significant impacts on educational programs. Originating in large part as a legacy from Flexner,[20] current trends will force a major overhaul; separation of funding for patient care, teaching and research with recognition of the importance of each is paramount. Expansion of medical education comes with a large price tag, which presently must be negotiated piecemeal. Physical resources, capital expansion, operating dollars and changing human resource requirements are all vital components and highly relevant to a successful outcome.

Careful attention must be paid to educational initiatives for hospital staff, both administrative and within the range of health care services. Skill development for an expanded team-based environment; an emphasis on shared models and resources; and communications explaining rationales, necessities, and contractual and accreditation requirements are a few necessary steps. Collaboration and partnerships between the hospitals and educational institutions are key to realizing these goals.

A useful tool is a checklist highlighting items to explore with each hospital identifying areas of priority in moving forward with an educational program. Good starting points are the RCPSC, CFPC, PAIRO and CAHO documents, which are very explicit in terms of accreditation requirements. In many ways, these requirements are the easy aspects — they must be done if a program is to be accredited.

Barrett[3] identified the concept of distributed models as a "hedge against groupthink" whereupon challenges may come forward about the expected way of doing things and healthy debate results in better decision-making. This can pose difficulties in its early stages, appearing to be overly confrontational while in fact allowing creativity and the emergence of robust processes.

The importance of repeated site visits, personal contacts, regular exchanges and updates cannot

be emphasized enough. These are highly time-consuming and resource-intensive but mandatory to ensure success. Once programs are established, regular contact must be maintained with opportunities for ongoing education and innovation.

CONCLUSION

A sea change is upon us; just as Flexner changed the world of medical education at the turn of the 20th century, distributed medical education is changing the structure in this millennium. Much work remains, particularly in the postgraduate arena, to support, validate and accept that distributed medical education is at least as good as present models. An emphasis on new, distributed AHC models embracing functional integration, fuelled by collaborative strategic planning and shared vision will maximize effectiveness.

As we explore the new, exciting realm of untapped and underused resources in the form of distributed medical education, care is needed to establish and maintain the groundwork for successful integration of university, academic and accreditation ideals with practical, hands-on front-line medical care and education — for the future of our system.

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