Ontario Clinical Education Information Systems

Haig Baronikian, Ph.D., P.Eng.
President and Senior Consultant, eFuel Partners Inc., Canada
haig@efuel.ca

Audrey Danaher, R.N., M.Sc.
Senior Policy Analyst, Office of Health Sciences, Council of Ontario Universities, Canada
adanaher@cou.on.ca

Abstract

This paper describes the motivation, experience, lessons learned and plans regarding two clinical education information systems for Ontario, Canada. The systems (one for nursing programs; the other, for rehabilitation sciences) have been designed for both academic and clinical users. Between them, the two systems: support and enhance clinical placement processes; provide e-orientation for students and e-learning for user training (nursing); and, facilitate the development of local, regional and provincial stakeholder communities. The needs analysis, planning, development and implementation of these systems have been very instructive. We will share insights concerning project structure and stakeholder representation, communication and collaboration, change management, privacy aspects as well as leadership and vision. Our plans for further development and integration of clinical placement processes with e-learning and e-orientation will be discussed.

Introduction and Motivation

This paper describes the motivation, experience, lessons learned and plans regarding two clinical education information systems for Ontario, Canada. The systems (one for nursing programs; the other, for rehabilitation sciences) have been designed for both academic (universities, colleges and students), as well as clinical users (hospitals, long-term care, public health and other health care providers). Between them, the two systems: support and enhance clinical placement processes; provide e-orientation for students and e-learning for user training (nursing); and, facilitate the development of local, regional and provincial stakeholder communities. Through statistical reporting, they offer rich opportunities for gap analysis, policy development and research.

The clinical experience component of health sciences education has been characterized as a critically important aspect of the health sciences curriculum. It is the period of time during which students apply theoretical and scientific concepts to real patients in real settings, learn to work with other members of the health care team, as well as observe and model professional behaviour. Yet clinical education has been an ongoing challenge for health sciences disciplines for some time.

During the needs assessments, stakeholders confirmed that current tools are not sustainable. Existing approaches run the gamut from local, home-grown computer applications and forms to binders and file folders. With the exception of an Ottawa-based system for nursing programs, no existing information systems provide for direct connectivity or collaboration among clinical education partners for nursing or rehabilitations sciences programs. Neither is there any direct access by students to existing placement information systems for these programs.

Nursing

Challenges in nursing practice education have been evident for some time. Cognizant of the expected nursing

shortage and aware of the clinical placement barriers to expanding school enrolments, the nursing leadership in Ontario, represented through the Joint Provincial Nursing Committee, recommended a number of initiatives to improve the state of nursing clinical education in Ontario in May, 2003. Among these was the investigation and implementation of an information system to support and facilitate the clinical placement process.

Financial support was provided by the Ontario Ministry of Health and Long-Term Care to assess the need for and test a clinical placement system, with the objective of improving the ability of all nursing programs to coordinate placements and increase opportunities for nursing students to access quality placements. The project was managed on behalf of the stakeholders by the Council of Ontario Universities (COU). An Advisory Committee provided oversight to the project and eFuel Partners Inc. was engaged as the consultant for all phases of the project, including needs assessment, planning, pilot implementation and evaluation. Following a comprehensive needs assessment, review of available systems and a due diligence process, the decision was made to pilot HSPnet for nursing placements in Ontario.

HSPnet (Health Sciences Placement Network) is a Web-based system developed in British Columbia, Canada, to improve the co-ordination of clinical placements for various health science programs (including nursing, rehabilitation sciences and a multitude of other disciplines). It was launched in April, 2003 by the British Columbia Academic Health Council (BCAHC). HSPnet is operated as a non-profit alliance within Canada, with common costs being shared among the various alliance members. It has become a quasi-national clinical placement system, having been adopted by BC, Alberta, Saskatchewan, Manitoba and Nova Scotia; a pilot is under way in Québec. More information on HSPnet is available at: www.hspcanada.net

HSPnet was piloted in three regions of Ontario during 2006 and was very positively received. A total of five universities, seven community colleges and nearly thirty health care organizations participated. Thousands of student placements were processed during this time, spanning a variety of nursing programs. A new reporting module was also developed, per our requirements, to provide for access by COU for Ontario-wide statistical analysis, policy development and research in support of nursing (and potentially, in future, other) programs. The formal evaluation showed that users, both at academic institutions and clinical placement sites, found that HSPnet supported the placement process in a coordinated, streamlined and effective way. The evaluation also indicated high levels of satisfaction with the associated training, help desk, operations and enhancements-related services.

Rehabilitation Sciences

Similarly, the leadership of university rehabilitation sciences programs in Ontario recognized the need to address challenges in clinical education for audiology, occupational therapy, physical therapy and speech-language pathology. All five Ontario universities with rehabilitation sciences programs, encompassing a total of fifteen such programs, participated in the project. The project was, again, managed on behalf of the stakeholders by COU and funded by the Ontario Ministry of Health and Long-Term Care. An Advisory Committee provided oversight to the project and eFuel Partners Inc. was engaged as the consultant for needs assessment, design, prototyping, software development and user testing.

Given the distinct needs of this stakeholder community, a system was designed and developed focusing on data collection and statistical reporting (rather than placement coordination per se), where the data is derived from *clinical experience descriptions* submitted online by students at the conclusion of each placement. The result is the Web-based 'Ontario Rehabilitation Sciences Clinical Education Information System', which offers a suite of services for academic coordinators, students and provider coordinators in the practice setting. It also provides for access by COU for Ontario-wide statistical analysis, policy development and research in support of these programs. User testing with several academic institutions, health care providers and students has been completed.

e-Learning/e-Orientation

A new, yet integral component of clinical placement systems, given our needs and experience in Ontario, is e-learning/e-orientation. As just one example of this, students may undertake online orientation modules regarding

infection control, safety, patient confidentiality and site-specific information. Experience elsewhere with such an approach suggests that consistency and compliance for students increases while resource demands (staff, presentation rooms and logistics at the placement site) decrease. Placement coordinators and instructors can track orientation compliance against prerequisites and address any gaps as appropriate. This also presents opportunities to collaborate and reuse content across sites, regions, the entire province or multiple jurisdictions, thus reducing costs, promoting the sharing of best practices and utilization of the highest quality learning materials.

Integrating Moodle as a commonly used, open source learning management system, HSPnet developed and then piloted these capabilities in BC during the autumn, 2006 and winter, 2007 terms. Students from nursing and pharmacy programs participated (with expected applicability to other health sciences disciplines). The design provides for appropriate e-orientation modules to be directly linked to each student placement and associated requirements. The student is notified via e-mail of the pending modules. The functionality also incorporates content authoring, deployment and management tools to support those who would be responsible for the e-orientation content.

The participating stakeholders from the pilot have recommended implementation of the e-orientation functionality. The findings and recommendations from the pilot, including the prioritization of topics and identification of resources for content development, are now being pursued by the BCAHC. Though the focus to date has been the use of e-orientation at placement sites, some HSPnet alliance members have already identified opportunities to utilize this capability for academic coordinators.

Based on the positive outcomes from the BC pilot, it is expected that these new e-learning/e-orientation capabilities would be very beneficial for students and other stakeholders in Ontario (subject to funding). Further, there is a substantial, ongoing training requirement for coordinators or other users of HSPnet, both to support new coordinators as well as to provide training on new features. Ontario would thus be interested in extending these e-learning capabilities, on a selective basis, toward user training to ensure timely and productive application of HSPnet.

Vision

A significant outcome and benefit, anticipated and starting to be realized, from the use of these systems was the strengthening of connections between stakeholders, particularly between academic institutions and health care providers. Students, too, may now become more active participants in the placement process. The systems demonstrated the need to view clinical placements in the broad context of practice education. While we began with nursing and rehabilitations sciences programs, it is clear that this context can include all health sciences disciplines. This work has informed a new vision for the management of clinical education in Ontario, enabled through an appropriately designed information system and aimed at:

Establishing and fostering a networked community of stakeholders with a direct interest in student clinical placements and clinical education that encompasses and accounts for the needs of:

- Academic coordinators, clinical site coordinators, unit managers, professional practice leaders, clinical education leaders, preceptors, instructors and faculty;
- All health sciences students across Ontario; and,
- Leaders at the academic institutions and clinical partner organizations.

In order to:

- Coordinate and manage clinical placements, locally/regionally for group placements and provincially for preceptored placements;
- Optimize the use of available capacity and help open new placement possibilities;
- Promote sharing and collaboration toward orientation content, practice guidelines, affiliation agreements

and, generally, best practices; and,

- Facilitate integrated communications, workflow and clinical education among *all* the stakeholders toward the growth of health human resources across Ontario.

Utilizing:

- Principles of planned change.

Such a networked community, using consistent processes and tools, would not only be able to address the original challenges of coordinating clinical placements but would also deliver an entirely new suite of services to enhance clinical education for all stakeholders.

Lessons Learned

Our experience and reflection on these two clinical education information systems for Ontario has uncovered or reinforced a number of important lessons. Decisions regarding the design, acquisition and implementation of technology have been important. As with most large, multi-stakeholder projects, however, the most important factors for success have been project structure and governance, communications, change management and adoption as well as leadership and vision:

- *Broad, Strong Representation* – Guidance and oversight for the nursing project included a well-engaged Advisory Committee consisting of academic representatives from universities and colleges, health care provider representatives from a range of facilities and, importantly, students. Students are often not afforded this level of participation in governance. This inclusiveness not only helped ensure effective review of plans and outcomes, but also a broad range of constructive input. Students were also involved in needs assessment consultations. In the rehabilitation sciences project, given a number of constraints, only academic institutions were represented in the oversight committee. Health care provider and student representatives, however, did participate in design reviews and user testing of the system. Clearly, the stronger, more frequent and more empowered the participation of all stakeholders, the greater the likelihood of success in adoption of the information system.

- *Communication and Collaboration* – The value of active listening, frequent updates (verbal and written) and consultations cannot be overemphasized in establishing a sense of trust, goodwill and a collaborative spirit among participants. Stakeholders should feel that they have a voice and can influence decisions. All of this is especially true for substantial, geographically dispersed, multi-stakeholder projects. It is crucial to plan and budget for a high level of communications, including the use of audio and Web conferencing as well travel for in-person discussions. The nursing system development and piloting, in particular, benefited from this kind of investment. Collaboration also extended to, and highlighted the benefits of, establishing regional (and ultimately, provincial) structures that create a forum for stakeholders to engage in not only clinical placement issues, but also the broader set of issues and opportunities related to practice education.

- *Change Management and Adoption* – The experience with both these projects has illustrated, once again, that different individuals and organizations accept change and adopt new information systems (which often bring about process transformations) in different ways and at a different pace. Such pressures are often a significant source of anxiety for both stakeholders and the project team alike. It is essential for the project team to, first, understand such differences and, second, to *create the space, acceptability and support* for various stakeholders to proceed in the way and pace that most suits their ability to absorb change. In doing so, the expected benefits from the project can be fully realized.

- *Privacy Aspects* – Privacy and confidentiality are a given for any system. The highest standards need to be followed to protect groups such as students (e.g. systems may only be used for placement coordination and not for recruitment, unless there is explicit student consent). Both projects were sensitive to these requirements and included appropriate policies and features to support and reinforce privacy provisions.

Governance for the nursing system also called for the institution of a Privacy Officer as well as a Data Stewardship Committee (the latter ensuring that data collected is used only in appropriate ways). The development and implementation of privacy and confidentiality policies, consent processes, appropriate system features and governance elements must be included in the planning of these kinds of projects and will typically affect the project schedule, skills requirements and budget.

- *Leadership and Vision* – It is essential, especially on projects with a large number of independent, geographically dispersed stakeholders (academic institutions; health care providers), to work toward a shared vision. The inclusion of students and their leadership as stakeholders is also invaluable. A vision guides the work at hand, builds commitment, opens up possibilities for creating or strengthening partnerships and encourages innovative approaches. At a strategic level, it also helps to forge links with other initiatives for long-term success. Leadership to develop such a vision and to achieve project momentum can and should come both from the stakeholders as well as the project team. In our case, the vision that has emerged is one of a *networked community for clinical placements and practice education*.

Conclusion

Clinical education is a cornerstone of health science education and impacts every aspect of health services delivery. The link between education and practice can be significantly strengthened and enriched through a well-designed and well-supported placement information system, fulfilling the vision of a new networked stakeholder community. An effective system for clinical placements would contribute positively to a successful health human resource strategy by facilitating new placement capacity, enabling interprofessional education as well as supporting emergency planning such as for a pandemic. Employing the lessons learned from these early phases, enlarging our scope to all health sciences disciplines across Ontario and incorporating e-learning/e-orientation will create a truly coordinated, comprehensive provincial system with economies of scale and a multitude of benefits for all stakeholders.