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Dalhousie's Bachelor of Informatics (With a Major in Health Informatics) - Students Meet a Real EMR

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What do health informatics students do with their summers? They learn how to talk in a new way, of course. How do students learn about the impact of information standards and terminologies of Electronic Medical Records (EMR) so that the learning is both practical and deep? We believe it is through hands-on experience using a full function EMR with real-world cases.

During the summer 2009 term, third year bachelor's students in Health Informatics at Dalhousie University in Halifax, Nova Scotia, were studying a course on standards and terminologies in Health Informatics. They had a chance to learn about standards and terminologies in the real world by participating in a specially designed webinar provided by an EMIS (Egton Medical Information Systems) representative based in Calgary, Alberta.

At the heart of every successful message is a common language that both the sender and the receiver of the message understand. When we are talking about healthcare and the specific characteristics and health issues of patients, it's many times more important that the health professionals and others involved in the care of patients should understand precisely what the other is communicating, as well as that the return message is clear, unambiguous and understood. Thus, a critical subject of learning for students in health informatics and health information management is "health information standards and terminologies" used in communicating across the health care system about patients and their conditions.

A critical area of EMR implementation is in primary care where most people have their first, and often only, contact with the health care world. In Alberta, the UK and elsewhere, EMIS is a provider of interconnected information systems to handle patient information for enhancing patient care not only in the primary care space, but amongst specialists (secondary care), and allied care providers as well. Through the exploitation of this common language, EMIS is now joining the entire healthcare continuum.

Students enrolled in the HINF 3101 "Health Data Standards and Terminology" course had the opportunity to work with a number of patients' "dummy records and information" for members of the Sopranos cast of characters. Roxanne Hickey, a Calgary-based representative of EMIS provided an interactive seminar by distance, via teleconference and web-based transmission of images. Roxanne set up student accounts with the EMR system and then walked students through the use of patients' records, entering data such that it was standardized, watching how the coding affected the information available to care providers, and learning how this impacted on the clinical decisions being made by the primary care provider. Students learned about the application of information coding using standards and standardized terminologies related to health records forms and system connections. Through this they experience the importance of coding information using SNOMED CT standards for good patient care at the primary care level. They were able to look critically at the elements, related to standards, of effective EMRs for patient care, provider knowledge and system administration.

One indicator from a recent Commonwealth Fund study is the percentage of practices reporting at least 9 of 14 clinical information technology (IT) functions. In a comparison between Canada and the United Kingdom (UK), the Canadian percentage is 14% whereas the United Kingdom percentage is 89% [1]. This illustrates that a UK-based system has the potential to meet all of the 14 functions. These functions are:

1. electronic medical record;
2. electronic prescribing;
3. ordering of tests;
4. electronic access test results;
5. Rx alerts;
6. clinical notes;
7. computerized system for tracking lab tests;
8. guidelines;
9. alerts to provide patients with test results;
10. preventive/follow-up care reminders; and
11. computerized list of patients by diagnosis, and/or
12. Medications; and/or,
13. due for tests; and/or
14. preventive care [2].

It must be noted that while EMIS has the functionality today in its UK installations, the reciprocal part of the system in Canada may not. For example, while the EMR can handle the entire electronic management of labs, most of the lab systems in use in Canada are limited in their capacity to send the data to the EMR, or receive a requisition from the EMR. Greater than 60% of the UK physicians use EMIS solutions. If

89% of the UK indicates it has these 14 indicators in use, then obviously EMIS has those 14 indicators. In the Canadian setting, the EMIS product is the same as that used in the UK with the addition of fee-for-service billing to meet the needs of the Canadian remuneration model.

Canada has a vibrant and growing health information technology sector, and training plays a key role in helping that sector to flourish. By introducing health informatics students to an EMR with advanced electronic health information capacity, Dalhousie's students are empowered to recognize the "art of the possible." As instructors in Dalhousie's Health Informatics program at the masters and bachelors level, Grace Paterson and Naomi Mensink, respond to COACH's rallying call, "Taking Health Informatics Mainstream," by engaging with vendors in the provision of experiential learning experiences for their students. ●

[1] Practices with Advanced Electronic Health Information Capacity (2009). Available at <http://www.commonwealthfund.org/Topics/International-Health-Policy-2009/Table.aspx?ind=291&loc=54&loc=61>

[2] The Commonwealth Fund 2009 International Health Policy Survey of Primary Care Physicians in Eleven Countries; C. Schoen et al., "A Survey of Primary

Care Physicians in Eleven Countries: Perspectives on Care, Costs, and Experiences, 2009." Health Affairs Web Exclusive, Nov. 5, 2009, w1171?w1183

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