



- JAY LYNCH -

Building health informatics capacity in Canada

Jay Lynch, RN, BAdm, Med, is the e-Health Coordinator at SCO Health Service in Ottawa, Ontario.

"It's better to know some of the questions than all of the answers." James Thurber, Journalist

On the cusp of an expansion?

In the April 2003 issue of this journal, Richard Alvarez, CEO of the Canadian Institute for Health Information wrote, "... we have a window of opportunity to change the way business is done in the health system. If we act now, we can move further than at any time in the past 20 years." The thoughts expressed by Mr. Alvarez were tangible at the May 2003 annual general meeting of COACH where there was a distinct feeling among conference delegates that health informatics (HI) in Canada was on the cusp of an expansion.

Happily, there is other evidence to show that the growth and development in Canada's HI sector is real and not just a warm fuzzy feeling. For example, according to the 2003 Report on Canadian Hospital IT: Top Issues, Applications and Vendors, many hospitals are pondering significant investments in upgrading their IT infrastructure in the near term. The Federal government has also announced several significant investments in Canada's healthcare technology infrastructure - especially in the areas of the electronic health record (EHR), diagnostic imaging and patient safety.

CIHR/MSFHR Health Informatics Phd/Postdoc Strategic Training Program

- Just what the doctor ordered

Contributing to this accelerating momentum is a new and exciting HI research training program lead by Dr. Francis Lau of the University of Victoria (principal investigator) and Dr. Marilynne Hebert of the University of Calgary (co-investigator and Project Director). Funded by the Canadian Institutes of Health Research (CIHR) Strategic Training Program Initiative and the Michael Smith Foundation for Health Research (MSFHR), the goal of the program is to establish a collaborative HI research training program in Canada at the PhD/Postdoc level over the next six years. Through this project, eight Canadian university partners are jointly offering four Research Learning Experiences (or RLE's as they are affectionately called) in HI. The RLEs will be delivered over a 24-month period to 1-2 cohorts of graduate students as part of their PhD/Postdoc training. The eight university team partners are: Victoria, Calgary, Waterloo, McMaster, Toronto, McGill, Sherbrooke, and Dalhousie.

The program focuses on six health domains:

1. Cancer research
2. Healthy aging
3. Public/population health

4. Health policy and services, and
5. Cardiovascular/respiratory health.

The HI thematic areas are:

- Knowledge management
- Intelligent health systems
- Telehealth/telelearning
- Organizational informatics
- e-Health applications
- e-Research applications, and
- Genomics.

Research learning experiences not obtainable from local programs, sharing of leading edge HI research from mentors and stakeholders and building a lifelong virtual learning HI community are what make this curriculum unique. A major advantage of the program is that it allows PhD/postdoc trainees to register in programs offered by one of the eight sponsoring universities, while simultaneously participating in the collaboratively developed RLEs.

The four RLEs are:

1. HI Virtual Community - a team-building RLE intended to create a virtual HI community with a policy-responsive, transdisciplinary and collaborative culture among mentors, trainees and stakeholders.
2. Frontiers of HI Research - a foundation RLE to provide trainees with an in-depth understanding of the directions and status of research in HI and to help them determine their research topics and the areas of breadth and depth of knowledge required.
3. HI Knowledge Transfer - intended to develop and share new insights and knowledge from ongoing research among the research teams and trainees through a formalized group workshop and think-tank setting.
4. HI Onsite Experience - provides short-term exchanges for mentors, trainees and stakeholders who wish to spend brief periods visiting another institution. Exchanges will take place at one of the eight research team locations but can also include visits to other leading HI research institutions elsewhere, for example, the United States.

The RLEs may be counted towards the required credits within the local programs where trainees are registered. An initial intake of 15+ PhD/postdoc trainees over a 24-month period is underway. Depending on funding availability and success of the first intake, a second cohort of students may be admitted.

Why this program?

I'm a Registered Nurse and e-Health Coordinator at the SCO Health Service in Ottawa. The SCO Health Service is a teaching hospital affiliated with University of Ottawa offering rehabilitation, long term care, complex continuing care and palliative care. I work in an interdisciplinary environment and manage projects involving the application of technology to challenges in health care (e.g., telehealth, e-Learning). As many of us who've been in practice for more than a few years know, a career path in HI is not always obvious. This is especially true for health care professionals like myself who have one foot in the clinical world and the other in the HI world. Although we may be true-blue dyed in the wool card-carrying members of a health profession, the fact is that many of us possess no HI credentials from a degree granting agency. The CIHR/MSFHR program appealed to me for two reasons. It would allow me to obtain credentials for what I am called upon to do in my job. Equally important, it would give me access to a community of peers.

Excellent opportunity for blended learning

In spring of 2003, I had the good fortune to be among an initial cohort of trainees admitted to the CIHR program and in June, the privilege of traveling to beautiful Victoria, BC as part of a face-to-face session for the Frontiers in Research RLE. Together with 14 others, I listened to fascinating presentations from our mentors - leading practitioners and academics in HI from the eight sponsoring universities. The topics were diverse and included e-homecare, chronic disease management, decision making, intelligent health systems and extraction of metadata from medical records to name a few. At the early stage of the meeting, Dr. Francis Lau of the University of Victoria challenged trainees and mentors with these questions:

- Are we solving the right problems?
- Are we solving the problems right?
- What advice do we (i.e., the mentors) have for our HI trainees?
- What advice do trainees have for us?
- What advice do practitioners have for HI?
- What do we have to do to remain relevant?

Better questions could not be asked at this stage in the development lifecycle of HI in Canada.

Personal Reflections

An experience like that evokes thought... I have included some of my personal reflections...

Is there unity in diversity?

A stronger HI community appears to be forming in Canada. However, it looks like there are several hurdles still ahead. For example, HI has embraced the best that other fields have to offer (cognitive psychology, computer science and business etc). Hence, diversity is one of our strengths. But is it also a weakness? In its current incarnation, do others, especially outsiders, consider HI a discipline or a profession unto itself? Currently, HI has no professional college regulating the practice of its members, hence I am left to conclude that it is a discipline. This leads me to another question.



Dr. Francis Lau and Dr. Marilynne Hebert at the podium in Victoria

Should HI become a profession in its own right? Would it make any difference?

Most professions, for example medicine, have their own ontology. "According to Tom Gruber, an AI specialist at Stanford University, ontology is 'the specification of conceptualizations, used to help programs and humans share knowledge.'" 3 HI definitely lacks its own ontology. And, as stated earlier, to become a recognized profession, the HI community probably would have to jump through several hoops not the least of which are establishing competency requirements, a certification process and professional college to regulate the practice of its members. Currently defined, HI is a rather broad field. And technology is changing so fast that it's nearly impossible for any practitioner to keep up - let alone be proficient in all areas. Attempting to become a recognized profession may demand a good deal of time and energy. Based on my twenty years in health care, I've also noticed that membership in a profession can actually lead to the creation of artificial barriers and fragmentation. Is becoming a profession what's needed most at this stage? Hard to say.

Are some of our mutual tacit assumptions about HI undermining forward progress?

Are our mutual tacit assumptions about what may or may not be included in the box called "HI" preventing forward progress? Perhaps. There does seem to be a lingering debate about whether the discipline should be called medical informatics or health informatics. Is this debate even worth having? Perhaps at this stage in the development of the profession, time spent trying to pin down HI or neatly place it in a "box" may be better spent on areas that yield a greater return on investment. For example, educating decision-makers about what HI can do to help address healthcare's most urgent problems. One needs only think of severe acute respiratory syndrome.

Should we go after the easy problems or try to solve the hard ones?

There appears to be a disconnect between some of the précis mathematical problem-solving that dominate certain areas of HI, for example knowledge representation or artificial intelligence, and the oft-times messy reality of healthcare delivery. Take HL7 for example - formalism meets chaos? Some of the seasoned 'action-oriented' healthcare managers and clinicians that I know are leery of anything that sounds overly academic. Should HI remain focused on solving immediate practical problems in health care or, should it pursue the academic road? Perhaps it's not an either/or proposition.

Do we need to become better storytellers?

HI appears to be either unknown or misunderstood by key decision makers not only externally, but also within healthcare. That's worrisome. Communication, for lack of a better word, "marketing" of the discipline appears to be a neglected area. Used effectively, storytelling can be a valuable teaching tool and facilitator of change. Peter Senge says that one of the most effective means of spreading ideas is through stories. "Academic books that lay out sound theories usually have less short-term impact than a compelling story told informally over and over. Even more powerful is a reinforcing pattern of stories that gradually starts to build an idea in people's heads." Perhaps we need to become better story-tellers?

Is a pan-Canadian EHR feasible?

Although all eyes seem to be on the prize of an integrated pan-Canadian electronic health record (EHR), many HI practitioners appear lukewarm to the idea. At the 2003 e-health conference I sensed skepticism about interoperability issues as one moves across geographic regions in Canada. At the workshop in Victoria, others appeared disenchanted with the process being employed to develop the pan-Canadian EHR. In my own area of long-term care, there is a palpable uncertainty about the pan-Canadian EHR - especially if it's going to be a solution applied from acute care. The reason for this doubt is that the structures, processes and outcomes of workflow and knowledge management in long-term care differ significantly from those of acute care. Following the recent power disruptions in Ontario and northeastern United States, one also wonders about the risks associated with integrating networks. Are these things merely change management issues or will they come back to bite us? Time will tell I guess.

Are we truly interdisciplinary?

Like the weather, everyone seems to talk about "interdisciplinary team work" but few seem to be really doing much about it. Perhaps that's because interdisciplinarity is easier to say than do. One reason why it is a challenge may be that many of us don't speak the same language. The language that I use as a nurse may be meaningful to my colleagues in health care but not software engineers. The reverse is also true. But just because it's hard doesn't mean it isn't worth "doing". The problem is, I don't see collaboration happening on the scale that it needs to. A common dialogue between developers, vendors, HI practitioners, academics and clinicians is urgently needed on a system wide scale. Perhaps one solution to the lack of forward progress on this front is to integrate more content on HI in to the undergraduate curriculum of the health disciplines (e.g., pharmacy, nursing, medicine, social work etc.)? Maybe I need to go to more software developer conferences?

Randomized control trial or qualitative research? Why not both?

The debate about whether qualitative methodologies being as good as randomized control trials (RCTs) appears to be alive and well. Health care professionals seem especially susceptible to adopting the view that an RCT is the sine qua non of research. I guess it must be our training that biases us in this way. While few HI professionals would argue that there is a need for more rigor in our work, the problem is that rigor is possible outside RCTs. HI is generating new and promising qualitative research methodologies and approaches. Rather than continuing to debate whether RCTs are better than qualitative research designs wouldn't it be better if health care professionals allow the HI community to continue developing new qualitative research methodologies and integrating them with the quantitative ones that have served us so well?

Introducing technology without human resources?

Last but not least, I worry about some of the decisions being made at the executive level in health care and government about implementing information technologies. Although the study cited earlier in this paper reported that many hospitals are planning extensive investment in a wide variety of computerized solutions over the next 12 months, nearly a third of the IT directors polled in that survey doubt that the necessary human resources will be available to implement the new technologies. The view from the ground is that many decision makers believe that buying the equipment is enough and somehow the technology will successfully deploy itself. How many more failures must we experience in adoption and uptake of new technologies before certain decision makers realize that it has always been about people first, technology second.

Where to from here?

As a practitioner getting "long in the tooth" I was pleased to see young people enrolled in the program and in Victoria. A profession like HI needs to renew itself with fresh faces and ideas. Young minds help those of us who have been around for awhile to challenge our "taken for granted." They also provide the energy, enthusiasm and insights to move the discipline forward. Dare I say it, "From these failing hands we pass this torch."

It was a sunny and very comfortable 22 degree Celsius in Victoria when I boarded the aircraft for my flight home. As I stepped off the plane and was slapped with a blast of sticky hot air (not a rare thing in Ottawa mind you), I couldn't help but think, where to from here? What if this whole momentum thing "fizzles" out? I want to bet on a winning horse not one headed for the glue factory. One thing does seem certain - if we are going to get from here to "there" (wherever "there" is), it's essential that we continue developing our expertise in change management.

And despite my reservations about the future, the trip to Victoria was a wonderful opportunity to learn from very competent and knowledgeable people. The window of opportunity that Richard Alvarez spoke of in his editorial does seem open. Like my own profession of palliative care which experienced similar growing pains, perhaps the question has become: Now that HI has come in from the desert, where to from here? Only time will tell I guess.

The truth waits for eyes unclouded by longing.

— BUDDHIST SAYING

For more information about the program visit:
<http://www.ucalgary.ca/~chpstp>

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