

Who is Using the Internet to Access On-line Health Information?

- Literacy organizations recommend that written information intended for public use be written at a grade 6 reading level. Government health information web sites studied required between 15 and 23 years of education.
- Although accessibility of information contained on health web sites (e.g., use of plain language) was considered important by information providers, in no cases were providers required to deliver information in plain language. Web site developers suggested that plain language was not a deciding factor in content selection, and that it was often too costly to implement. Only one of the sites studied used a font size larger than 10 pt, widely considered to be at a low minimum for anyone who is visually compromised (e.g., requires eyeglasses to read).
- Our data indicate that there is an association between level of education and use of the internet to access health information prior to seeking assistance from a librarian—higher levels of education are associated with greater use of the internet for health information seeking.
- Library patrons who sought help from a librarian to find health information indicated that the internet was their 2nd most trusted source of health information (doctors were the most trusted source of health information).
- 47.7% of librarian assisted health information seekers looked on-line for health information prior to seeking help from a librarian. Of those who sought on-line health information prior to seeking help from a librarian, 80.9% indicated they knew where to find helpful information on the internet; 85.7% agreed they knew how to find helpful information on the internet, 71.4% indicated they knew how to tell high quality resources from low quality resources on the internet.

Policy Implications: In order to ensure that the potential benefits of on-line health information are realized by all Canadians, content should meet a range of accessibility criteria. In addition, future investments should ensure that those Canadians who do not progress beyond high school have access to skill development required for on-line health information seeking. We must continue to invest in human “information intermediaries” such as librarians and other information support personnel who play a critical role in helping people to find the information on-line that they require.

What Issues Arise With Increased Use of Information Technology in Health Sector Workplaces?

- Information technology purchasing decisions in the health sector are frequently based on vendor claims rather than evidence of cost savings, efficiency improvements and improvements in health outcomes. As systems are implemented, gaps between vendor claims and realities emerge.
- The introduction of new information technology into health sector workplaces alters local work practices, which can inadvertently introduce potential sources for error. For example, The delegation of record keeping to computerized systems in the health sector (for example, tracking of unused narcotics by automated drug dispensing machines) can inadvertently lead to breakdowns in human accountability.
- Government reporting requirements for health information are often introduced long after commercial information systems have been purchased and implemented. This causes tension between health authorities who are supporting the purchase of hospital and regional information systems, vendors and provincial governments.

Policy Implications: Pre-purchase assessments and incremental purchasing and implementation of information technology may result in cost avoidance and improve outcomes. A requirement to evaluate implementations and publish less than exemplary results can reduce duplication of costly poor results.

What Legal Issues Are Emerging with Increased Use of Information Technology in the Health Sector?

Electronic Health Records (EHRs) pose a number of legal issues warranting further study:

- **Privacy and Security Issues:** How do the uses and potential uses of EHRs cohere with the laws regarding consent to the release of the information? What will the standard of care for protecting confidential information be?
- **Intellectual Property Issues:** Who owns the electronic health record? What copyright interest does the health care provider have vis-à-vis their contribution to an electronic patient record?
- **Employment Law Issues:** Electronic records enable employers to monitor their employees access to and use of the records. What does the ability to surveil employees do to their privacy rights?
- **Jurisdictional Issues:** EHR systems are sometimes purchased from companies outside of Canada. Are there any liability issues that follow from that? Do EHR systems meet provincially mandated requirements for record keeping?

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Applied Communication Technology: Information Organizations Networks

The Problem: \$1.768 billion federal dollars have been invested in development of the Canadian Health Information Highway since 1997. Yet few resources have been directed towards monitoring whether or not investment in Canada's Health Information Highway is achieving desired results.

Its Importance: Canadians value our health system, and want to ensure that investment in the system delivers quality care while remaining consistent with the values of equity, collective and individual responsibility, efficiency and effectiveness. Canadians like to see their tax dollars spent well.

How our Research Addresses these Issues: Our research investigates the role of technology in the production, consumption and use of health information. We address three specific areas:

- Issues arising for professional and lay users as they consume internet based health information;
- Issues arising as new information technologies such as electronic patient records are introduced into health sector work;
- Ethical and legal issues that arise with increased use of information technology in the health sector.

We identify policy objectives that new information technologies in the health sector are intended to meet. For example,

- That the use of information systems in health care will improve care and lower costs;
- That internet based delivery of health information will lead to patient empowerment and health improvements;
- That computerized information systems such as automated drug dispensing machines will improve patient safety and reduce costs.

We undertake multi-method case studies (e.g., review policy documents and international literature, administrative data about the technology we are studying, observe people using the technology in their natural environments, conduct surveys, interviews and focus groups) **in close collaboration with our partners.**

Our work focuses on the intersection of technical and social issues. Rather than seeing technology as separate from its users, we focus on the interaction of technologies, users and the contexts in which technologies are used. For example, in studying automatic drug dispensing machines in hospitals, we identified issues that were related to technical aspects of integrating multiple computer systems. By watching staff use new machines on the job, we were able to identify how work practices changed with the new machines, and how the new organization of work inadvertently reduced control of drugs.

We answer questions of interest to our partners (e.g., how do automatic drug dispensing systems change nursing practice?) **at the same time that we address broader issues** (e.g., how does standardization required by system integration change health sector work?).

Work Undertaken to Date has included a study of users of a provincial telephone and web based information service, a study of health information seekers in a library setting, a review of selected health information web sites, a study of the health information needs of young women with breast cancer, an implementation of an automatic drug dispensing system in a hospital setting, and an implementation of an electronic patient record system in a community clinic.

Major Project Goals: Our research will present a more realistic perspective of the challenges associated with increased use of information technologies in the health sector. It highlights the role that pre-purchase and pre-implementation research can play in helping to realize stated policy goals associated with use of technology in the health sector. It will bring emergent ethical and legal issues to the attention of policy makers, assist our partners in determining whether or not the goals they are pursuing with the aid of information technology are being met, and will offer suggestions about improving technology-related outcomes in the health sector.

We have partnered with a range of organizations including government departments, health authorities and NGOs, including: AIDS Committee of Newfoundland and Labrador, BC Cancer Agency, Canadian AIDS Treatment Information Exchange, Canadian Health Network, Canadian Policy Research Networks, Community Access Program, Industry Canada, Grey Bruce Huron Perth District Health Council, MacMorrان Community Centre (Newfoundland), Mid-Main Community Health Centre (B.C.), National Research Council of Canada, Planned Parenthood (Newfoundland and Labrador), Smart Choices Society of British Columbia, Vancouver Coastal Health Authority, Vancouver Public Library, Victoria Hospice Society, Ministry of Health Services, Prevention and Wellness Planning Division (British Columbia), Coventry & Warwickshire GP Research Consortium (UK), Hanusch Krankenhaus Hospital (Austria), Lifeline Brisbane (Australia), Northern Primary Care Research Network (UK).



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