News Article

E-Health Records: A slow marathon to get online

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Imagine walking into any hospital, clinic or pharmacy in Canada, providing a piece of identity, and within minutes having access to your complete medical history. In 2001, Canada's First Ministers launched a $1.6 billion initiative to make this a possibility all across Canada.[1,2,3] Now, almost thirteen years later, how much closer are we to this reality? While significant progress has been made in establishing an online information technology platform for this national healthcare database, Canada continues to lag behind other Western countries in adopting electronic-health records (EHR). This delay in implementation of EHR by physicians is due, in part, to the immense task of data re-entry, to privacy and political issues, to poor adoption and accessibility, and due to rigidity of the online data collection system, which forces physicians to collect patient data for preset, rather than customizable, fields.

Building on EHR frameworks previously established for primary care in Alberta, population drug information in British Columbia, and regional interoperable health networks in Sault Ste. Marie, Ontario, the federal government mandated the independent not-for-profit corporation Canadian Health Infoway to implement a national system of interoperable EHR from coast to coast.[1] The goal of this initiative was to bolster the quality of healthcare provision, especially in the primary healthcare sector. With numerous key players in primary health care services, such as family physicians, nurse practitioners, clinical laboratory technicians, health information helplines, and pharmacists, it is critical that patient medical records be correct, clear, and complete. Consequently, in 2001, Canada Health Infoway proposed a national healthcare information technology platform and regulated standards for data collection and entry that would link patient and provider registries with regional drug and laboratory databases, as well as with digital imaging centres. Creating this online medical network would simplify and improve the exchange of medical information,[1,4] greatly diminishing the risk of medical errors or loss of medical records.

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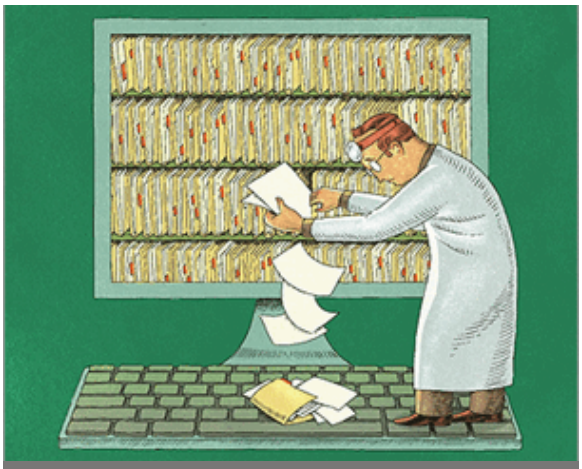

Image source: The Boston Globe (http://www.boston.com/lifestyle/health/articles/2012/04/30/goodbye_paper)

While EHR simplifies medical information collection and sharing, many years' worth of files, information and images need to be transferred from paper into newly organized electronic order sets. Despite having a head start with 17 years' worth of computerized physician order entry patient files, the Calgary Health Region realized that very little was standardized. A large number of patient data sets had to be re-entered into the electronic healthcare information platform by people with a lot of experience. The new standardized system organized information systematically, providing more value to the user. "Previously, allergy information could be found in 42 different places in the chart," revealed Dr. Tom Rosenal, past medical director of clinical informatics for Calgary Health Regions.[5] Now, this information is in one clearly identified place. It is no wonder that in July 2007 the Calgary Health Region became the first ▶

non-U.S. winner of the Association of Medical Directors of Information Systems (AMDIS) award in recognition of their Patient Care Information e-Record System.[4] Belinda Boleantu, the executive director of clinical transformation at the Calgary Health Region, described a strategy whereby each hospital unit had "super-users" who trained 100 physicians and 700 staff members who then disseminated the information to their peers. "It was a 'big bang' at each site in terms of computerized physician order entries and nursing documentation. We really believe clinicians lead, and this was a system by clinicians and for clinicians [...] The uniqueness of what we've done has been the engagement of clinicians."[4]

However, not all provinces were quick to get online. By 2009, only 36% of Canadian physicians were using EHR, as compared with more than 90% of physicians in Australia, the United Kingdom, New Zealand and the Netherlands. By 2012, this number rose to 56%.[3] In a country as large and as diverse as Canada, it is conceivable that specific provincial issues contributed to the lag in adoption. Quebec's EHR plan was only unveiled in 2007 by Quebec's then Health and Social Services Minister, Dr. Philippe Couillard.[6] Dr. Couillard explained that while e-health was a priority during his tenure, which began in 2003, privacy and politics were two of the main reasons it took four years to reveal concrete plans. "Respect for people's privacy is a commitment and responsibility at all times for government. So first we had to adopt the right legal framework – one that would ensure the safety of any data being exchanged between hospitals and their partners beyond hospital walls, such as clinics and community groups [...]. Keeping the data of patients confidential is built right into the foundation of the system." Moreover, in a province known for its resistance to federal initiatives, the second step involved joining the Canadian Institute for Health Information and aligning themselves with Canada Health Infoway. "[...] the previous (separatist) government didn't give these 'Canada' organizations a high priority," explained Dr. Couillard, "without Infoway, however, there would be no EHR project in Quebec and we are deeply grateful for their funds."[6]

Also contributing to the lag in implementation of EHR are the low adoption rates of older physicians and of physicians located in remote areas of the country. A significant number of well-established physicians simply refuse to part ways with their comfortable and reliable paper-based medical record system; their inexperience with technology forcing them to shy away from EHR. One could expect that with the arrival of a new generation of physicians, EHR adoption rates would be on the rise. However, one would have to consider the volume of existing files needing to be transferred to the online system, and recognize that not all physicians have access to the resources and support, both in personnel and financially, to make this transition. Moreover, many physicians are located in remote or isolated towns; places where a reliable network is not always available.[3] Unfortunately, "[t]he places with the worst public health issues in Canada are the places with the least amount of health information technology. So, remote communities, first nation communities... its [computerizing] not gonna make the water any cleaner," states a respondent in the 2013 qualitative study of health information technology in the Canadian public health system.[4] The priority in these disadvantaged communities remains treating patients over implementing EHR.

In attempts to improve the adoption of EHR, a 2011 Canadian Medical Association Journal study led by McGill University Epidemiologist, Dr. Robyn Tamblyn investigated the successes and failures of the EHR so far. Low rates of adoption were attributed to "lack of meaningful engagement of clinicians; poor alignment of the e-health plan and implementation strategy with the clinical and business needs of clinicians and the healthcare system; lack of flexibility in incorporating change; and a focus on national rather than regional interoperability."[1] Unlike the flexible clinician-centered approach taken by Calgary Health Region, Canada Health Infoway's rigid "top-down" structure left little room to accommodate changes in technology and feedback from implementation experiences. The proposed solution was to provide incentive for the adoption of EHR, not only to increase the number of users, but to also encourage them to discuss and propose changes to the system. Now that a national medical information technology platform is in place, provinces can focus on achieving complete adoption. Across Canada, more clinicians are using EHR, growing by almost 500% between 2006, with approximately 7,600 users, to 2012 with more than 45,000 users.[3] In order to maintain this rate of expansion, in November 2013 Canada Health Infoway announced the e-Connect Impact Challenge of $1 Million in awards and incentives program for clinicians using digital health to connect with patients and peers.[7,8] Richard Alvarez, President and CEO of Canada Health Infoway explains, "The e-Connect Impact Challenge encourages clinicians to accelerate the use of digital health to connect with their patients and their peers, and share how that is improving the quality of care and the patient experience."[7,8] Through this initiative, physicians will help improve the existing platform, while getting online and building their EHR. ▶

The EHR information technology platform established by Canada Health Infoway provides an essential foundation for both local and interprovincial exchange of critical patient information, labs, scans and test results. Immediate access to clear, up-to-date, and comprehensive medical records empowers both primary care workers and patients themselves to make well-informed health care-related decisions. With an increasing number of users providing critical feedback on the EHR information technology platform, and with the help of periodic evaluations, new consultations, and increased incentives, the adoption of EHR is set to increase at a greater rate, thereby allowing Canada to embrace the digital era, bringing single click access electronic medical records to our fingertips. ■

References

1. Rozenblum R, Jang Y, Zimlichman E, Salzberg C, Tamblyn M, Buckeridge D, et al. A qualitative study of Canada's experience with the implementation of electronic health information technology. CMAJ. 2011 Mar 22;183(5):E281-8.
2. Canadian Health Infoway. The path to better, safer, more accessible and more efficient health care for everyone includes effective use of health information technology. [Internet]. Toronto: Canadian Health Infoway; [date of last update unknown]. Available from: https://www.infoway-inforoute.ca/index.php/progress-in-canada
3. Canadian Health Infoway. Annual Report 2012-2013. [Internet] Toronto: Canadian Health Infoway; July 26, 2013 [date of last update unknown]. Available from: https://www.infoway-inforoute.ca/index.php/resources/infoway-corporate/annual-reports
4. Zinszer K, Tamblyn R, Bates DW, and Buckeridge DL. A qualitative study of health information technology in the Canadian public health system. BMC Public Health. 2013 May 25;13:509.
5. Versel, N. Calgary wins U.S. awards for its e-record implementation. [Internet] Ojai, California: Canadian Healthcare Technology; October 2007 [date of last update unknown]. Available from: http://www.canhealth.com/oct07.html#07octstory1
6. Shaw, A. Quebec to launch pilot project in January for province-wide EHR. [Internet] Ojai, California: Canadian Healthcare Technology; October 2007 [date of last update unknown]. Available from: http://www.canhealth.com/oct07.html#07octstory4
7. Canadian Health Infoway. $1 Million in Awards and Incentives for Clinicians Using Digital Health to Connect With Patients and Peers. [Internet] Toronto: Canadian Health Infoway; November 4, 2013 [date of last update unknown]. Available from: https://www.infoway-inforoute.ca/index.php/news-media/2013-news-releases/1-million-in-awards-and-incentives-for-clinicians-using-digital-health-to-connect-with-patients-and-peers
8. Canadian Health Infoway. e-Connect Impact Challenge. [Internet] Toronto: Canadian Health Infoway; November 4, 2013 [date of last update unknown]. Available from: http://imaginenationchallenge.ca/econnect/

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