

Electronic Medical Records in Primary Care: Are we There Yet?

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ABSTRACT

Though the number of physicians using electronic medical records (EMR) is rising, not all physicians in Canada are readily adopting the technology. Recent data suggests that EMR are making a difference for physicians, patients, and the health care system by increasing efficiency, decreasing mistakes, and improving patient safety. Despite these benefits, significant barriers remain. As technological innovations in health care continue to evolve, increased adoption of EMR systems could become a key factor in improving the quality of health care delivery and producing better outcomes for patients in Canada.

KEYWORDS: *electronic medical records, primary care, health information technology*

As information technology advances and becomes more refined, its role in medical practice will continually increase. This is already being seen in many primary care offices across the country, with practitioners starting to switch from the traditional paper-based system of record keeping to electronic medical records (EMR).

As of June 2013, changes to British Columbia's Limitation Act and subsequent amendment of the Health Professions Act mean that physicians now have to store and retain patient medical records for a minimum period of sixteen years, an increase from the previous requirement of six years.¹⁻³ This increase means that physicians still using paper-based record keeping methods will have to find physical storage space for all that paper, unless they make the switch to EMR.

According to the 2013 National Physician Survey, 63.8% of Canadian primary care practitioners currently report using EMR.⁴ Though this is a substantial increase from 27% in 2009, there remain a substantial number of physicians who have not adopted this technology.⁵ In contrast, physicians in the United Kingdom, Norway, New Zealand, and Netherlands all report over 97 per cent use of EMR technology.⁶

What makes EMR so great?

Numerous theoretical benefits of EMR technology for primary care physicians have been touted: digital storage of records, improved documentation, clinical tools and calculators, automated reminders, electronic messaging, computerized order entry, enhanced scheduling, and several others.^{7,8} Taken as a whole, it is hoped these benefits will translate into increased productivity, increased efficiency, and

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improved patient care; but does the evidence support these benefits?

Recent data suggest that EMR actually have been making a difference for physicians, patients, and the health care system. A systematic review on the impact of EMR on physician practice in office settings found the greatest improvements occurring in the areas of preventive care, work practice, and patient safety.⁹ Furthermore, by reducing staff time spent on paper-focused tasks, EMR are able to provide greater efficiency. An example of this is seen through the 48 to 96 per cent reductions in the number of paper chart retrievals in physician offices with EMR.¹⁰ A study conducted in 2009 shows further support, finding that implementation of EMR results in clinicians and office staff spending less time distributing charts, which allows clinicians to spend more time examining and accompanying patients.¹¹ EMR have also been shown to increase efficiency by reducing the time spent sorting and organizing laboratory and diagnostic test reports, saving approximately 15 minutes per report.¹⁰

Beyond individual physician offices, EMR benefit the health care system as well. Implementation of EMR can reduce adverse drug events, both improving patient safety and saving health care system resources.¹⁰ By using this technology,

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physicians can reduce problems caused by illegible handwriting and incomplete prescriptions, and will be alerted to potential errors including drug interactions and patient allergies. A study comparing the use of a computerized decision support program with a control found that those using the computerized support system wrote significantly fewer inappropriate prescriptions ([RR]: 0.82 [CI]: 0.69-0.98).¹² It is estimated that two thirds of preventable adverse drug events could be avoided through the widespread use of computerized prescription entry programs by physicians.⁸ Simply stated, better technology means fewer mistakes and improved patient safety.

Given these benefits, why is it that 36.2% of Canadian physicians are not using EMR?

Numerous studies have looked into identifying barriers to the adoption of EMR.^{10,13-15} Financial concerns, time constraints, technical competency, limitations of current EMR systems, and lack of customizability have all been suggested as contributing factors.^{10,13-15} In British Columbia, the top two reasons preventing physicians from setting up EMR systems are the time required and the financial costs associated with implementation and maintenance.¹³ Some physicians do not believe switching to EMR is worth the hassle, and are comfortable with the way their practices operate currently, while others who are considering adopting EMR state they simply do not know how to get started.¹³ Nevertheless, opportunities do exist to aid physicians who want to make the switch. Technical, financial, and peer support can all help physicians effectively implement EMR into their practices.^{9,10,13} The Physician Information Technology Office (PITO), which provides guidance for physicians in British Columbia with regard to information technology, aims to provide this type of support and help physicians address the barriers to EMR implementation. The PITO program includes a funding initiative to help physicians offset the initial monetary cost involved with switching to the new technology, as well as programs for transition planning and peer support. Several similar programs have been established in other provinces as well, including Alberta, Saskatchewan, Manitoba, Ontario, and Nova Scotia.

Despite the barriers, EMR are capable of having a tremendously positive impact on the medical system. Overall, the implementation of EMR in Canadian physician offices

has been suggested to have had an estimated benefit of over \$1.3 billion between the years 2006 and 2012.¹⁰ The recent data suggests that primary care practitioners are trending in the right direction with regard to the adoption of electronic medical records, and British Columbian physicians are faring better than the national average.⁴ But, with one in four primary care practitioners in the province still not using the technology, there is still considerable room for improvement.⁴ As technological innovations in health care continue to evolve, increased adoption of EMR could become a key factor that propels primary care physicians toward more efficient practices that produce better outcomes for patients. 

REFERENCES

1. Limitation Act, SBC 2012, c 13 [Internet]. [cited 2014 Mar 10]. Available from: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_12013_01
2. Health Professions Act, RSBC 1996, c 183 [Internet]. [cited 2014 Mar 10]. Available from: http://www.bclaws.ca/Recon/document/ID/freeside/00_96183_01
3. College of Physicians and Surgeons of British Columbia. Bylaws. June 1, 2009 (revised Jan 1 2014). [cited 2014 Mar 10]. Available from: <https://www.cpsbc.ca/files/pdf/HPA-Bylaws.pdf>
4. College of Family Physicians of Canada, Canadian Medical Association, Royal College of Physicians and Surgeons of Canada. 2013 National Physician Survey [homepage on the internet]. [Internet]. 2013 [cited 2013 Mar 8]. Available from: www.nationalphysiciansurvey.ca
5. College of Family Physicians of Canada, Canadian Medical Association, Royal College of Physicians and Surgeons of Canada. 2009 National Physician Survey [homepage on the internet]. [Internet]. 2013 [cited 2013 Mar 8]. Available from: www.nationalphysiciansurvey.ca
6. Schoen C, Osborn R, Squires D, Doty M, Rasmussen P, Pierson R, et al. A Survey Of Primary Care Doctors In Ten Countries Shows Progress In Use Of Health Information Technology, Less In Other Areas. *Health Aff (Millwood)*. 2012 Dec 1;31(12):2805-16.
7. Booz Allen Hamilton. Canada Health Infoway's 10-Year Investment Strategy: Pan-Canadian electronic health record. Toronto: Canada Health Infoway; 2005 [cited 2014 Mar 11]. Available: <http://www.infoway-inforoute.ca/>
8. Hillestad R, Bigelow J, Bower A, Girosi F, Meili R, Scoville R, et al. Can Electronic Medical Record Systems Transform Health Care? Potential Health Benefits, Savings, And Costs. *Health Aff (Millwood)*. 2005 Sep 1;24(5):1103-17.
9. Lau F, Price M, Boyd J, Partridge C, Bell H, Raworth R. Impact of electronic medical record on physician practice in office settings: a systematic review. *BMC Med Inform Decis Mak*. 2012;12(1):10.
10. Canada Health Infoway. The emerging benefits of electronic medical record use in community-based care. Toronto, Canada: Canada Health Infoway; 2013.
11. Carayon P, Smith P, Hundt AS, Kuruchittham V, Li Q. Implementation of an Electronic Health Records System in a Small Clinic: The Viewpoint of Clinic Staff. *Behav Inf Technol*. 2009 Jan;28(1):5-20.
12. Tamblin R, Huang A, Perreault R, Jacques A, Roy D, Hanley J, et al. The medical office of the 21st century (MOXXI): effectiveness of computerized decision-making support in reducing inappropriate prescribing in primary care. *Can Med Assoc J*. 2003 Sep 16;169(6):549-56.
13. Physician Information Technology Office. EMR Adoption Study [Internet]. Vancouver, British Columbia: Physician Information Technology Office. 2013 Jan [cited 10 Mar 2014]. Available from: <https://www.infoway-inforoute.ca/>
14. Boonstra A, Broekhuis M. Barriers to the acceptance of electronic medical records by physicians from systematic review to taxonomy and interventions. *BMC Health Serv Res*. 2010 Aug 6;10:231.
15. Ludwick DA, Doucette J. Adopting electronic medical records in primary care: lessons learned from health information systems implementation experience in seven countries. *Int J Med Inf*. 2009 Jan;78(1):22-31.

*Editor's note: PITO has given a September 30, 2014 deadline to indicate a desire to participate in post-implementation support. See <http://www.pito.bc.ca/2014/08/final-opportunity-for-emr-post-implementation-support-mu3>