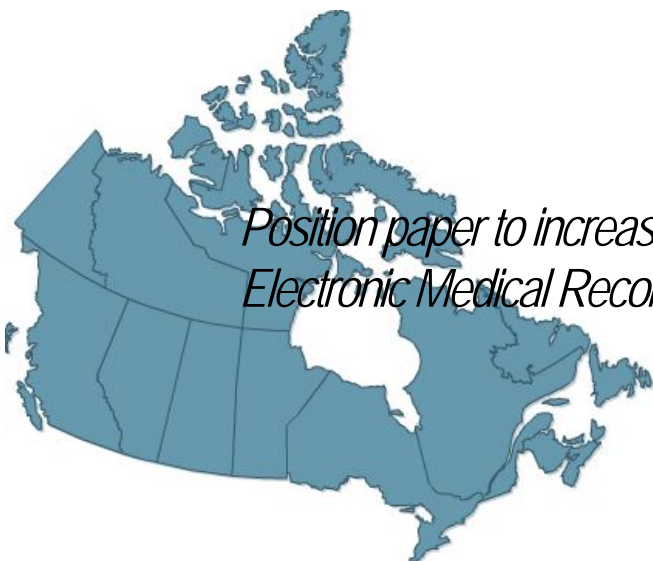




# EMR Implementation in Ontario



*Position paper to increase the deployment of  
Electronic Medical Records in Ontario*

Prepared by

Dr. Karim Keshavjee, MD, MBA  
CEO, InfoClin Inc.

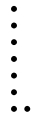


For



Intel of Canada Ltd

July 2007



# EMR Implementation in Ontario

## *Position Paper to Increase the Deployment of Electronic Medical Record Technology in Ontario*

### Issue

Electronic medical record (EMR) use in Ontario needs to catch up with other comparable jurisdictions in Canada and OECD countries. Where other jurisdictions have achieved 60% or greater uptake of EMR use, Ontario's EMR access remains less than 25% despite availability of government funding and programs over the last 8 years to encourage EMR use.

This paper analyzes the reasons for the slow uptake of EMR use in Ontario, and provides recommendations for accelerated access and its greater use.

### Background

The concept of an electronic medical record (EMR) has been around for over 30 years. The benefits of deploying EMR in the health sector have been well researched, understood and articulated for at least two decades. The highly regarded Institute of Medicine published their seminal report recommending use of electronic medical records to improve patient safety and increase productivity of health care providers in 1990.<sup>1</sup> In spite of the many initiatives in North America to roll out EMR on a national scale, EMR access in North America has remained low, with less than 30% of its usage by physicians, as is the case in Ontario.

Recent research portrays many OECD countries having successfully engaged physicians in using EMR.<sup>2</sup> Norway, Denmark, the UK, Australia and the Netherlands enjoy over 90% usage of EMRs in their physician communities. The pathway to success varies – different countries have achieved high rates of use through different mechanisms, but all have had clear policies that drove uptake. In Australia, with a clear policy directive and appropriate incentives, EMR uptake went from 15% to 95% in just over 3 years.

<sup>1</sup> The Computer-Based Patient Record: An Essential Technology for Health Care. <http://www.iom.edu/CMS/3809/22303.aspx> (accessed Mar 23, 2007).

<sup>2</sup> Anderson GF, Frogner BK, Johns RA, Reinhardt UE, Health care spending and use of information technology in OECD countries. *Health Aff (Millwood)*. 2006 May-Jun; 25(3):819-31.

*EMR is already used by 79-98% of doctors in a number of industrialized nations, including Australia, Denmark, and the U.K.*

In Canada, Alberta leads all other provinces with EMR implementation, with over 60% of its physicians computerized within a few years. This has occurred even though their automation programs began 3-4 years after Ontario's.

Access to EMR in Ontario has remained flat despite the allocation of \$150 million for EMR subsidies in 2003. Ontario has over 20,000 physicians; less than 5000 (25%) physicians use an EMR, and less than 2000 (10%) have received subsidies from the funds allocated for this purpose.

This paper addresses some of the issues that have precluded wide spread roll-out of EMRs, and recommends new initiatives for Ontario to catch up, and leap frog to the levels of OECD jurisdictions.

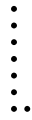
### Benefits of EMR and How They Are Achieved

The Centre for Information Technology Leadership (CITL) has quantified the value of information technology in health care. Its findings indicate that greater value of information technology in health care comes from interoperability between systems: primary care values such as continuity of care, team-based care and communications between disparate health care organizations are facilitated through interoperability between systems.

Electronic medical record systems are like facsimile machines. Their value is only realized when a critical mass of providers and health care organizations use them to communicate and share information *with* each other. When you're the only provider with a fax machine, your investment doesn't yield much value.

*Electronic medical record systems are like facsimile machines. Their value is realized when a critical mass of providers and health care organizations use them to communicate and share information with each other.*

Patient satisfaction and confidence in the system increases when information they provided to a health care practitioner two months, weeks or days ago, is available to the provider they are seeing now. Patients today not only expect their health care providers to communicate with each other, but they expect it to happen in Internet time. When patients have to repeat themselves, they worry that critical information about themselves has not been transferred from previous providers.



The risk of medical error decreases and patient safety improves when information is readily available. Recent research shows that as many as 60% of patient histories taken in hospital miss getting a complete list of medications. An incomplete medication list is *the* primary source of medical error, and can cause significant harm, and even death. Interoperability and sharing of information can improve the accuracy of medication lists.

In addition, the greatest benefits that arise from clinical decision support and evidence-based medicine are only realized when different health care providers can share information using accepted EMR standards.

Wang et al (2003) have quantified the costs and benefits of EMR.<sup>3</sup> They clearly show that the net benefits arise from cost savings due to decreased duplicate lab test ordering, savings in drug expenditures and improved utilization of radiology testing. These benefits are only realized when EMRs are highly networked and when standardized communication protocols are in place.

A Roundtable discussion with Ontario EMR Vendors hosted by Intel in late 2006 provides insight into why EMRs have not been more widely adopted in Ontario.

Focus group discussions held by Intel Corporation with Ontario physicians in the summer of 2006<sup>4</sup> also revealed potential benefits to adoption including accessibility of information, reduction of storage space and filing, the ability to search patient data and coordinate patient referrals, and improved access to patient information by health professionals, increasing the sense of collaboration and interconnectedness across caregivers.

The logistical benefits and convenience of electronic medical records were also stated to be a significant yet unexpected benefit. Physicians appreciated the advantage of accessing patients' charts from home without having to bring the physical paper charts home. The electronic patient chart is also more accessible to other health practitioners who contribute to the same patient record, creating a greater sense of collaboration amongst health care workers. This is particularly relevant in a multidisciplinary practice where patients are seen by a number of practitioners. As stated by one physician:

"Its very good to connect with them because we can access information; they can send it to us. There's interconnectedness."

As one Roundtable attendant responded when asked, "what's in it for them?"

"...it is the way the champions have put up with new problems like having to scan which they didn't before, but the vast majority of them feel very

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<sup>3</sup> Wang SJ, Middleton B, Prosser LA, et al. A cost-benefit analysis of electronic medical records in primary care. *Am J Med.* 2003 Apr 1;114(5):397-403.

<sup>4</sup> Findings from the Roundtable and focus groups are included in this document as quotes.

happy about where they are right now. They've got the benefits to outweigh the disadvantages and that's the message ..."

### Greater Incentives and Support Required for Large Scale Adoption of EMR in Ontario

In order to increase the uptake of EMR in Ontario, the Ontario Ministry of Health and Long Term Care (MOHLTC) needs to revisit its current approach and cast a wider net to provide incentives to a greater range of medical professionals in order to encourage the large-scale adoption of EMR in this Province.

Focus group participants stressed the importance of financial incentives from the Ministry of Health as strong accelerators for adoption.

1. ***Cast a Wider Net for Incentives*** - The MOHLTC has had a long-standing policy to subsidize EMRs only to physicians who join a Patient Enrolment Funding Model (PEM). This policy is restrictive in 3 ways:

- a) Physicians who wish to use EMRs must first reorganize their entire business model so that they can access the funding. Reorganization leads to delays in decision-making around EMR and creates additional complexity for EMR enthusiasts who now need to engage new partners who may not all be enthusiastic about EMRs.

As one focus group participant put it, "...I think there's a big risk in having a doctor change over his practice ... and large because, if it doesn't work, he goes 'oh-oh, I just screwed up my practice.'

To date, the policy of EMR subsidization in Ontario has rested on the premise that automation of medical practices will lead to increased efficiencies. Over 10 years of pursuing this premise has led us to conclude that the current subsidy model in Ontario has not worked and is unlikely to work. The key driver of efficiencies from EMR does not come from office automation, but from interoperability and communications.

- b) Physicians who may not be eligible to be part of primary care reform for whatever reason, are excluded. Not all physicians are able to join primary care reform models for a variety of reasons which are out of their control. Yet, all citizens should enjoy the benefits of the best health care available –regardless of the funding model their doctor works in.

"But, the, the government has made it even tougher lately because for a number of years, they've said, okay, only the doctors who are in our computation programs are eligible for the subsidy."

*The overall policy of requiring physicians to join Primary Care Reform before getting an EMR subsidy serves to delay the wider adoption of EMRs, and hence delays the full realization of benefits from EMR in Ontario.*

- c) Specialists who represent 50% of physicians in Ontario are excluded.

The premise behind the primary care IT subsidy is to allow family physicians to provide cross-coverage during off-hours. Yet, the vast majority of communications between physicians occur between family physicians and specialists, not family physicians and other family physicians.

Specialists are ready to computerize their practices:

“We don’t have a choice, but if there was funding available, we have some incentives, we are ready to jump in and we realize that’s the future.”

Specialists need to communicate with family physicians. Currently, all documentation between specialists and family physicians is transmitted on paper. Generally, specialist consult notes are entered into a computer electronically, printed and mailed to a family physician as a paper document, where it is scanned back to an electronic format and entered into the EMR. This constitutes a significant waste of resources.

- d) Current subsidy models are susceptible to gaming and abuse.

The current subsidy model being administered in Ontario by OntarioMD has a serious flaw. The flow of funds from OntarioMD to physicians does not depend on the ultimate price paid for the systems; physicians who negotiate aggressively with their EMR vendor can end up with a net positive cash flow from their subsidy. This not only undermines the integrity of the subsidy program, but also forces EMR vendors to cut back on needed services, which leads to higher rates of failure in implementations.

2. ***Fund and/or Subsidize Transition Support and Practice Management Services*** – There are two major transitions physicians must make when using technology and they need support in both transitions. The first transition point is the move from paper to electronic technology. This is a major transition, akin to a move from branch-based tellers to automated teller machines in the banking industry. Physicians need a lot of support in making this transition successfully. Alberta has done reasonably well when it comes to helping physicians make the first transition.

When asked about problems that resulted from adoption, focus group participants mentioned that the most significant issues seemed to revolve around the conversion of paper records to electronic format. There seems to be a general consensus that this transition process was the most difficult obstacle in EMR adoption.

The second transition is from a passive use of medical records to a proactive use of records. Physicians have a two thousand year history of responding to patients who seek help for symptoms and illness. Physicians require a radical mind-shift to move toward a proactive stance to manage their patient populations, as required by modern prevention and chronic disease management initiatives.

The Ontario Ministry of Health can support these two major transitions by:

- a. **Encouraging a policy of paying for transition support project management and practice management services.** This has helped accelerate uptake of EMR in Alberta. In Ontario, physicians are not able to use their EMR subsidy funding for project management and practice management services. This policy prevents physicians from gaining the full value of their investment. As a result, many EMR implementations fail, leading to poor uptake by other physicians who see their colleagues struggling. For example, the failure rate of EMRs in the Hamilton area is approximately 35%. This has effectively halted EMR implementations in the area as physicians are waiting to see whether their colleagues can turn their practices around.

As one focus group participant put it, "The subsidy that has been designed is poor. The fact that there is lack of consistency across the provinces, is costly. Obviously then the fact that there is lack of consistency among the subsidies across the province is maddening."

- b. **Continuing to provide preventive care and chronic disease bonuses and incentives.** These pay for performance models provide an on-going incentive for physicians to adopt technology to help them track and recall their patients for important preventive and chronic disease care.
- c. **Encouraging a policy of physician self-help and sharing of best practices** for use of EMR and in realizing the benefits of information technology for improved patient care. This policy can be furthered by working closely with organizations that have the mandate to provide continuing medical education to physicians.

"Consider getting training from peers who have used the software and understand issues with the EHR product. A vendor doesn't know the practicalities of your day to day office life. If possible, ask for live, in-person training instead of independent tutorial CDs that you have to go through on your own."

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*It is well documented in multiple industries that the value of information technology (IT) is only fully realized when workflow and business process are redesigned to take advantage of the organizing capability of IT. The need for practice management services is even more crucial in the high speed, high stakes environment of health care.*

Many physicians hesitate to move to EMR due to the cost and complexity of implementing a system.

Physicians who participated in the focus groups commented that training and support expenses are as important as the cost of purchasing the product.

3. ***Engage Key Medical Policy Players – OCFP and CPSO.*** Although the MOHLTC has engaged the Ontario Medical Association (OMA) in its drive to implement EMRs, two key medical policy players have been left out of the picture. The Ontario College of Family Practice (OCFP) is the major moral force for change in clinical practice. The OCFP is the organization that sets the clinical compass for the primary care physicians of Ontario, setting the agenda for what are the important clinical goals to be achieved and what clinical training physicians require to achieve clinical goals. Where the OMA physicians provide political leadership, OCFP physicians provide clinical leadership. In Ontario, the clinical leadership has not been engaged in discussing and promoting EMR. A recent roundtable facilitated by Intel elicited this lack of clinical engagement experienced by EMR vendors who are finding it difficult to legitimize the whole EMR concept with rank and file physicians.

The other key organization left out is the College of Physicians and Surgeons of Ontario (CPSO). The CPSO is the physician self-regulatory body, which enforces the standard of care in Ontario and sets policies for medical record keeping, and services that need to be provided to patients. The CPSO's recent policy for medical record keeping is quite ambivalent toward EMRs. Ambivalence toward EMR from this organization, which has tremendous influence over physicians, is another factor in the poor uptake of EMRs in Ontario.

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One physician who works with the College discussed the implications of incomplete patient records if the College audited the practice during the transition period. He stated: "The College has not been very forgiving."

4. ***Smart Systems for Health Agency (SSHA) to Improve Orientation, IT Services and Networking to Physicians*** - The SSHA has a poor track record of delivering useful services to physicians. Many physicians have struggled for years to obtain basic IT services that are readily available on the market. SSHA has a poor service orientation, and has not been focused on helping clinicians achieve benefits. One clear deficiency is the lack of clinical informatics leadership on the SSHA Executive Team. Most large organizations which deliver services to physicians have a medical director.

*An organization which is tasked with servicing the needs of 22,000 physicians who in turn serve 12,000,000 patients, needs to have somebody who has a clear understanding of clinical requirements. A medical director for SSHA is a necessity.*

Physicians who have purchased hosted solutions, feel a dependency on their Internet service provider for access to their patient charts and consequently, experience frustration when the service is unreliable or inconsistent. One physician stated: "We were down three hours and almost died."

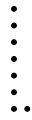
A second deficiency at SSHA is the desire to roll-out standard functionality on a province-wide basis. Since e-health is such a new area, there are no established standards of functionality. Attempting to roll out standards where none exist creates chaos and lost opportunities.

5. ***Good Interoperability Standards Required*** --For technology to be useful, systems need to connect with other systems. The premise and the promise of the Internet are based on connectivity. Without connections to hospitals, laboratories and other health care organizations, physicians don't realize the full potential value of their investments.

The Provincial Government, in conjunction with the Medical governing bodies, will have to introduce basic standards in order for the following communications to be effective in the Medical Community.

- a. For EMR to EMR communication
- b. For hospital to EMR communications
- c. For Laboratory to EMR communications
- d. For medical device to EMR communications

"So I think it's by bringing the standards...that gives reassurance that two years from now, or five years from now, even if the guy who is selling it is not there, at least all the information is there. So



standardization is very important thing. You have to understand this.”

Many of these standards have already been developed in other provinces or by Canada Health Infoway. Much of the work has already been done. Making a commitment to standards will help set the stage for long term growth and sustainability of information technology.

### Policy Options to Increase EMR Uptake in Ontario

Policy solutions available to government to allow greater use/access of EMR in Ontario

1. ***Open up EMR subsidies to all physicians who wish to computerize.*** OntarioMD has a large pool of funds which have not been utilized for over 4 years. The expenditure of these funds should be accelerated. A larger pool of physicians applying for subsidies means faster growth of the EMR industry in Ontario, which will lead to increased economies of scale and decreased costs. Over time, the subsidies required to get physicians on-board will decrease. **Subsidies should be provided on a ‘percent of cost’ sharing basis with a cost ceiling rather than a fixed sum subsidy.**

A percent of cost sharing model allows subsidies to vary over time (and even decrease as economies of scale and technological innovation drive down price) without creating feelings of inequities or resentment. The current fixed sum subsidies give physicians and vendors the option of cutting corners and forcing vendors to bring down their prices to the level of the subsidy and allowing physicians to shirk their part of the payment.

Physicians need some incentive to incur the time and energy to actually implement an EMR in their practice. Incentives can be built into the subsidy model by providing a graded subsidy based on utilization of the system. For example, physicians who take the step of purchasing an EMR may automatically get 50% of their costs reimbursed at the end of each year. However, if they are using it for documenting all their patients, they could get 60% of costs reimbursed. Those who are actually capturing data and are able to maintain electronic patient summaries should have 75% of their costs reimbursed. In no case should physicians be able to get more than they paid for an EMR.

In addition to utilization incentives, providing incentives for patient care can also help improve adoption of technology. The current policy of providing pay for performance incentives and bonuses has already created a pent-up demand for EMR amongst physicians in Ontario. Many are waiting for the subsidy to be extended to them so they can adopt the technology.

2. ***Allow subsidies to be used for change management, practice management and project management support.*** This support should not be optional, as many physicians do not understand the need for it; yet it is crucial in increasing the rate of success of EMR implementations. The National Coordinator for Health IT in the United States has identified the high rates of failure as an important deterrent to widespread EMR rollout. This money should not be given to EMR vendors, as their track-record for providing this service is quite poor.

The best way to provide this service, is to set standards for project management, change management and practice management and get service companies to deliver to that standard.

3. ***Include the OCFP*** – ask them to provide large-scale education to clinicians about EMR technology and the potential benefits to them and their patients. EMR technology is much more complex than most medications, yet education on EMR is much less available to physicians. The MOH needs to provide the funding to the OCFP to make this happen.
4. ***Include the CPSO*** – ask them to update their medical records policies to promote the benefits of EMR and to support its uptake by physicians. CPSO ambivalence toward EMR is a significant deterrent to EMR use.
5. ***Establish and deploy communications standards faster and e-enable more communications between disparate systems.*** SSHA and OntarioMD have been reviewing and developing standards for many years. Very few have been deployed. Two things will help them move ahead faster. First is to engage clinician health informatics expertise and key opinion leaders in the key interoperability projects. Second is to roll out the standards in small projects with key benefits that can be realized in a short period of time –3-6 months. Then aggressively roll out the standards to additional volunteer sites as soon as they are stabilized.

Physicians who regularly use EMR become accustomed to the reward of instantaneous access to information and the flexibility of accessing it from any location, which affords doctors more of the mobility that other professions have been embracing.

6. ***Establish e-prescribing for all medications for all people in Ontario.*** The single most important driver of EMR uptake in the UK and Australia was the requirement for all physicians to use it for prescribing. This policy change will have three major benefits with little extra work on the part of physicians:
  - i. It will lead to widespread EMR uptake, as there will be a more compelling need for having one.
  - ii. Clinicians will have better information about existing medication-use amongst their patients –leading to improved prescribing and increased patient safety.



- iii. It will provide greater transparency about medication prescribing which will lead to better policy decisions about drug benefits coverage.
7. ***Engage patients in use of EMR*** – Patient engagement will pressure physicians to join; patient empowerment is required for improvement to health care. Patients with chronic diseases are particularly interested in having access to information about themselves, and want to participate in their own care. Patient advocacy groups such as the Heart and Stroke Foundation and the Canadian Diabetes Association can help with empowering patients to seek out information about themselves. MOHLTC should make patient data in their databases accessible to patients. Once patients get access to some data, they will start to ask for more, and pressure their physicians to make more available.

Patient empowerment programs such as the Dossia<sup>5</sup> program in the US have been very successful in engaging patients in self-care and self-management.

**Patient empowerment is required for improvement to health care.**

8. ***Encourage the uptake of interoperability standards for medical devices.*** With very little effort on the part of clinicians, interoperability with medical devices will make available immediately a significant amount of patient data which already exists. This will improve patient care significantly and will help realize the value of the data patients collect everyday.

Many patients collect data about their blood pressure and blood sugar. This information ends up being ignored in many cases because it is difficult to view and analyze without information technology.

In addition to blood pressure and blood sugar data, there are an increasing number of devices which can measure weight, ECG and other patient physiological variables and can report this information remotely. These devices are making remote monitoring of patients an increasing reality. Being able to monitor and take care of patients in their home can decrease costs for the health care system while simultaneously increasing quality and patient safety.

**Conclusion**

The slow uptake of EMRs in Ontario can be traced to a few policy decisions made in the late 1990s and early 2000s. These policy decisions include providing a fixed subsidy for EMR, not subsidizing the cost of change management and project management and not implementing interoperability early on. The non-inclusion of the

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<sup>5</sup> <http://www.dossia.org/home>

Ontario College of Family Practice and the College of Physicians and Surgeons of Ontario were also important oversights.

It is not too late to turn the tide of EMR implementation in Ontario. Careful redesign of subsidy programs, engagement of key stakeholders and provision of important services can lead to more successful EMR implementations and a virtuous cycle of end user engagement and adoption of EMR technology.

## Appendix

### Recommendations for MOHLTC

- Cast a wider net on the Medical Community to capture greater intake
- Change policies on EMR incentives
- Fund/Subsidize Transition Support Projects and Practice Management Services
- Continue to provide pay for performance incentives for preventive care and chronic disease management. Consider expanding these incentives to additional chronic diseases and preventive care categories.
- Engage key physician associations such as the Ontario College of Family Practice and the College of Physicians and Surgeons of Ontario in its efforts to roll out EMR.
- Generate patient interest and support by advertising the benefits of e-health through various media – print - medical journals, newspapers; conferences, radio, TV, etc.
- Legislate the practice of E-Prescriptions as in Australia and the UK.

### Recommendations to SSHA

- SSHA should hire clinician informatics expertise and engage key opinion leaders in their e-health roll out efforts.
- SSHA needs to create sufficient expertise to support the demand that legislation of E-Prescriptions will generate
- SSHA needs to improve orientation packages and make them more useful and user-friendly to the medical community.
- SSHA needs to improve its services, and provide timely and consistent ongoing assistance to the medical community.
- SSHA needs to roll out projects on an iterative and incremental basis, testing as it goes along. Pioneering physicians should be given the utmost support to make their implementations work.
- Once pioneer physician implementations are working, SSHA should analyze the experience to improve productivity, lower costs and generalize the solutions.

## Recommendations to OntarioMD

- OntarioMD needs to change its funding model to include project management, practice management and change management consulting as part of the EMR subsidy.
- OntarioMD needs to change its funding model to a `percentage of cost` model instead of a fixed sum model. The current model encourages cutting corners and leads to increased risk of failure.
- OntarioMD should provide physicians with more vendor-specific information and allow physicians to share information about vendor experience.