



Barriers to the Adoption of EMRs in Medical Clinics

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To the uninformed, it would seem that adoption of Electronic Medical Records (EMRs) by physicians in medical clinics should be purely a business and clinical decision. After all, there is enough anecdotal evidence that EMRs improve the quality of care through automated recall; the ability to receive electronic lab results and a variety of other well documented benefits. The whole world is becoming progressively more electronic – smart phones, anytime access to the Internet, Tablet PCs and more. However EMR adoption still struggles to gain momentum despite all of the perceived benefits. Why is this and what are the barriers to adoption?

There is no simple answer to this question. Rather, there are a number of challenges that together create compelling reasons why many not to adopt EMRs. In order to encourage widespread adoption, it is important that we clearly understand these barriers and develop/implement strategies to overcome them.

In order to separate barriers into understandable elements, I have placed them in the following categories, beginning at a system level and focusing in on challenges at the practice level.

- Policy
- Process
- Privacy
- Professional
- Perception
- Practice

Policy

EMR adoption and use is driven more by policy than any other single influencing factor. Policy decisions

to financially assist practices in their purchase of EMRs have created demand in provinces with established programs such as BC, Alberta and Ontario. Policies developed in the UK to collect performance metrics from general practitioners for a wide range of clinical measures linked to reimbursement have been successful in creating a vibrant EMR industry with adoption and use by 100% of primary care physicians. The United States is embarking upon a long-term strategy to encourage EMR adoption and use by primary care practitioners by providing incentive payments of \$17 Billion from 2011 to 2015 for physicians who are able to demonstrate 'Meaningful Use' of their EMRs based upon increasingly more complex requirements and legislated by law. Physicians can qualify for incentive payments totaling \$44,000 if a percentage of their practice income is generated through Medicare or up to \$63,750 through Medicaid. However, the incentives in the US are accompanied by punitive policies that will result in financial penalties beginning in 2015 if they do not demonstrate meaningful use.

Policies in Canada to encourage adoption of EMRs have evolved primarily at provincial levels. While beneficial to provinces that have gone down this pathway, the lack of sound national policies has negatively impacted the viability of EMR vendors and the EMR industry as a whole.

It is uncertain exactly how many GPs and specialists in Canada would be appropriate users of EMRs in private medical practices, however for the sake of argument, let us assume that this number is in the region

of 45,000 individual practitioners. Less those who have already adopted EMRs (15,000) the remainder is approximately 30,000. Exclusions include hospital-based or emergency room physicians, radiologists and those in administrative positions. On a per capita basis, the majority of physicians are located in Ontario and Quebec with smaller numbers in Alberta, BC and other provinces. For EMR vendors, this is predominantly a case of economics. The federated nature of Canada's EMR programs forces vendors to focus resources on the larger provinces in which they have a greater chance for success vs. smaller provinces in which the entire market may represent less than 2,000 potential customers. It can cost an EMR vendor up to \$1 Million to ensure conformance with provincial certification requirements (clinical and billing/practice management). Unfortunately, the numbers do not always justify a business case for investment in a specific province. The result is a policy that has been partially successful, but has resulted in fragmentation of the market with questionable viability of the industry. If each province requires a specific certification process that must be achieved and maintained or order to keep selling an EMR system in that province, it may be cost prohibitive to enter more than one or two provinces. Anecdotally I have been told by vendors that they have to commit up to 90% of their development resources to achieving and maintaining conformance and have 10% or less available to improve and enhance usability of their products. Vendors are not able to compete within a national market of 30,000 potential customers,

they are limited to smaller markets with a need to develop and maintain multiple proprietary systems.

Process

A significant part of healthcare delivery is about information exchange. A clinical encounter begins with a verbal exchange of information between a physician and patient and frequently ends with an investigation (lab, diagnostic imaging), a prescription or a referral for evaluation or further treatment. To be widely adopted, any technology solution must be able to fulfill these requirements. As these capabilities become more standard within EMRs, the value proposition for adoption goes up.

Countries that have achieved widespread adoption of EMRs have resolved these information exchange challenges. Examples include New Zealand and Denmark. In the United States, more than 25% of office-based prescribers were using e-Prescribing by the end of 2009¹. This number is growing rapidly as e-Prescribing technology becomes widely available through Electronic Medical Records as well as standalone prescribing tools.

The inability to exchange information between EMRs for the purposes of sending or receiving an electronic referral or submitting a prescription electronically is a deficiency that must be addressed in order to accelerate adoption. These deficiencies are clinical as well as business limitations. Without the ability to exchange information electronically, the financial and human resource costs of running an EMR-based practice increase because of the need to duplicate effort. Referral documents need to be printed and faxed. Consultation reports scanned, catalogued and attached to a patient's record and prescriptions created electronically need to be printed and handed to a patient or faxed to a pharmacy after being manually signed by a physician. These are not just workflow challenges; they are poor business practices limited by deficiencies in EMRs that at the core are a result of fundamental deficiencies in system infrastructure.

Privacy

Physicians have a fundamental understanding of privacy and

confidentiality that comes from managing confidential information for generations. Despite the limitations of the paper chart, it is a known entity. Clinicians and their practice staff understand the explicit and implicit boundaries regarding the sharing of information with a colleague in the form of a referral letter or a 3rd party in the form of a request for information. The circle of care is relatively finite in the paper world. However, a different level of understanding is required in the digital age of EMRs, EHRs and PHRs. Policies and guidelines established by provincial licensing bodies have significant influence over the ways that physicians provide care. In 2010, there are still a number of provincial licensing bodies that have yet to define policies and guidelines pertaining to data stewardship and the management of information in Electronic Medical Records. In addition, policies are not universally consistent across the country and create additional challenges for EMR vendors who have to comply with these policies as well as provincially defined privacy legislation. If a licensing body is ambivalent or develops a policy that is at odds with a provincial EMR strategy, it can be a significant barrier to adoption.

Professional

Approximately 50% of physicians in Canada are specialists who have been under-served as a result of provincial EMR programs specifically focused on EMR adoption by primary care physicians. In addition, the majority of EMR systems that have been provincially certified have been certified for primary care, not specialty practice settings. As a result, it has been difficult for specialists to justify the investment in an EMR. Many provinces have now recognized the importance of supporting adoption of EMRs by specialists as well as primary care physicians, however barriers still exist because of a shortage of EMR systems customizable for specific specialties and sub-specialties.

Perception

Physician perception and peer influence are important barriers to the adoption of EMRs. The most trusted source of guidance in the choice of an

EMR is a colleague. As small/medium enterprises (SMEs), many physicians cannot justify the investment in an EMR that does not support the business case for implementation. Workflows relating to information transfer (referral and consultation) are an integral part of specialist and many GP practices. If the perception exists that EMRs increase workload in this critical area, it will need to be proven wrong before others adopt these systems. There is also a perception amongst physicians that EMRs interfere with the patient physician interaction in the examination room. While this may be true in the early stages of using an EMR, experienced users describe how the use of specific form factors such as Tablet PCs, specialized speech recognition software or pre-defined templates improve clinical documentation and enhance interactions with their patients. This is further enhanced by the ability to easily share graphs, images and clinical data at the point of care.

Practice

The final barriers to adoption of EMRs exist at the practice level. Many of these barriers can be traced back to inadequate preparation amongst clinicians and practice staff as they plan for EMR selection and implementation. Barriers can be divided into a number of broad categories including:

- Goals and vision – Have goals been established prior to implementation of the EMR in terms of what the EMR will help the practice to accomplish? Have all members of the practice 'bought-in' to the practice vision and if not, what steps should be taken to ensure that everyone in the practice is an active participant in the process?
- Expectation setting – Unrealistic expectations are a key reason for dissatisfaction with an EMR once implemented. For example, an expectation that a physician will be able to record clinical notes in exactly the same manner as a paper chart predisposes that individual to a negative experience, particularly if the capture of certain information is required in structured form using templates;

- Practice operations – Are sufficient resources committed to the EMR process in order to ensure success? For example, has an individual who is knowledgeable and enthusiastic agreed to take on the role of practice champion throughout the EMR selection and implementation process?
- Computer skills – Are all clinicians and staff proficient with foundational computer skills such as typing, email, using a word processor and the Internet?
- Practice capacity – Will the practice

be fully staffed during the EMR implementation? A lack of core personnel can increase practice load, slow down implementation and result in duplicated effort when the absent individuals return to the practice.

- Financial considerations – Is the practice able to cope financially with an EMR implementation? In addition to the initial purchase cost of purchasing hardware, do physicians and staff accept the need to decrease patient load for an initial period of 4-6 weeks after the implementation of an EMR?

Each of these barriers to the adoption of Electronic Medical Records has a potential solution. System level barriers require national strategies and policies. Some of the barriers require long-term strategic approaches, while others can be dealt with tactically, particularly at the practice level. However, all are important and require broad, concerted effort in order to achieve a successful outcome.

¹ The 2009 National Progress Report on E-Prescribing. <http://www.surescripts.com/about-e-prescribing/progress-reports/national-progress-reports.aspx>



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