

# Engaging Physicians in the Use of Electronic Medical Records

---

ALAN BROOKSTONE and CLAY BRAZILLER

**Although this article** could be applied to physicians across all specialties, our focus is on the engagement of Canadian primary care physicians in the use of Electronic Medical Record (EMR) systems. The objective of our article is to suggest a methodology that can be followed in order to assist in the physician's adoption of EMR.

It would be presumptuous to state that we have all the answers when it comes to an issue as complex as the adoption of EMR by physicians; however, there are broad principles that can provide an organized and logical approach towards the implementation of these systems.

Before we begin to describe the methodology, let's have a quick look at where the Canadian healthcare system is when it comes to EMR. Despite Canada being essentially a single-payer system (in contrast to the much more complex U.S. healthcare system), there has been a relatively poor uptake and use of EMR systems in primary care, in contrast to European countries such as The Netherlands and Denmark. Ninety-five percent or more of all primary care physicians in Finland, the Netherlands, Sweden, Germany and the United Kingdom use computers in their practices. (The countries where the largest proportions of general practitioners are using electronic medical records are Sweden

(90%); The Netherlands (88%); Denmark (62%); The United Kingdom (58%); Finland (56%); and Austria (55%).). The average for all 15 EU countries is 80%.

The apathy toward electronic medical record systems in Canada has created a significant challenge. What can be done, and is it the physician or the system that is at fault? The government is starting to do its part as funding is being committed federally and provincially to assist the primary care physician in moving towards electronic medical record systems. This is being done with the hope that the studies, money and talk will enhance the uptake of the technology. However, all the work is overshadowed by a national need for data communication standards and the approval of electronic signatures before wider use of technology becomes more commonplace. Fortunately, the development of standards and legislative approval of electronic signatures is currently taking place at both a provincial and federal level.

Some examples of the funding being committed at federal and provincial levels to support the uptake and increased use of EMR systems by physicians include the POSP project in Alberta and the Ontario Family Health Network. In addition, on a national scale, the

Canada Health Infoway ([www.healthinfoway.ca](http://www.healthinfoway.ca)) presented a business plan in June 2002 with the objective of "Fostering and accelerating the development and adoption of electronic health information systems with compatible standards and communication technologies on a pan-Canadian basis with tangible benefits to Canadians."

The initial strategy in Canada was to fund and support substantial infrastructure projects in large hospitals and healthcare regions. Currently, the attention appears to be shifting toward single or small group family practices (five doctors or less) who deliver the majority of their healthcare at the community level.

This new attention to the primary physician comes just at the right time. Today in Canada, a shortage of primary care physicians, extended hour walk-in clinics and an excessive patient workload are placing additional strains on the healthcare system. As a result there is a reduced desire to implement any change, particularly something as comprehensive and far reaching as EMR. Unfortunately, it is in the full service primary care setting where EMR systems are most needed to manage patients in hospitals and nursing homes with multi-system problems.

The acceptance of EMR in a primary care system is further handicapped by the physician's comfort with paper system processes that are transparent, standardized and interoperable between practices. Even the challenges of illegible handwriting, the difficulty in searching for information and the recent phenomenon of consumer access to healthcare information are not a significant enough force to push the GP to EMR.

Clearly, the Canadian primary care physicians do not see the value of an EMR. What should the government and vendors do to increase its appeal? From our experience as both practitioners and technology consultants we have developed a three-step process to help close the Value Gap.

### **DEFINING THE VALUE GAP**

The Value Gap is the efficiencies gained between using the current level of technology in a specific medical practice and the total cost to make

the next jump in technology. The total cost is the time, financial expense, training, systems change, loss of productivity and pain in implementing a new technology.

The Value Gap works on the concept that every new technology introduced into a practitioner's office will initially reduce efficiencies and increase the costs of running the office. As staff increase their familiarity with the system and work out the bugs, the office costs come down again and efficiencies go up. Prior to EMR systems, technology introduced in a practitioner's office affected only a few people and typically involved only a single computer. The physician could almost calculate in his/her head the gap between the cost of the technology and how long it would take to make a difference in the practice.

EMR systems drastically change the cost curve, as they require the simultaneous integration of many people and technologies. This is creating an almost incalculable Value Gap between costs and productivity gains in the average practitioner's office.

From our experience, closing the Value Gap requires an understanding of three areas:

#### **1. The Workflow of the Family Physician/Small Group Practice**

In a medical practice setting, the EMR should be (Hassey et al. 2001):

- affordable and easy-to-use,
- mobile and reliable,
- fully integrated with billing and scheduling,
- able to integrate tools for disease management and
- able to integrate lab results and radiology images.

Most importantly, the EMR system should be able to tie together the other providers in the healthcare system, including nurses, nurse practitioners, transcriptionists, administration staff and others. In the Canadian setting significant differences in workflow exist between the primary care physician's office and the hospital or health region.

For example, consider the management of paper documents that are generated outside of the primary care practitioner's office (specialist reports, external test results, imaging reports,

etc.) If there is no EMR system in place, paper generated outside of an office is collected and placed on the physician's desk prior to the beginning of the workday. The physician, when time permits, analyzes incoming reports, calls for patient records to review prior history and acts upon relevant information by requesting further investigation. These investigations can include referring the patient to additional specialists, calling the patient in for a follow-up visit or simply having the report filed in the chart.

That, at least, is our way of handling reports and referrals. The point is that each family practitioner is a little different from others in his or her workflow pattern, and a workflow study is required to implement any EMR system, no matter how small the office. The effectiveness of the study is the key to unlocking the productivity gains and narrowing the Value Gap.

The following scenario more clearly demonstrates the need for a workflow study, even in small offices. In an EMR-based practice, external reports can be managed in a number of different ways. The traditional method can be maintained, with the physician reviewing all reports prior to their being scanned and stored in the EMR. This may achieve some efficiency in that the physician is able to review all reports and selectively determine those that need to be scanned. Information scanned into the EMR is therefore more focused and relevant.

However, the physician has the potential to become the bottleneck if reports are not efficiently reviewed or allowed to accumulate. In this scenario, as long as the physician is able to maintain an efficient stream of reports to the front office, the workflow process requires a minimum amount of change.

As a second method, all external reports could be non-selectively scanned into the patient's EMR prior to review by the physician. This would require greater staff resources at the front desk, to sort, scan and attach documents into the EMR prior to review by the physician. This would solve the physician bottleneck problem, but could increase cost due to the greater human resource needs and the fact that all documents scanned may not be relevant to the patient record.

## 2. Managing the Cascade Effect of Technology Implementation

Each implementation of technology in a medical practice results in a cascade of change that impacts all individuals working in that setting. This cascade involves changes in workflow, communication and efficiency resulting in a continuous process of practice re-engineering. The cascade also requires that individuals working in that environment accept the process of change. The result is that through each cascade, there is an increased likelihood of frustration felt by healthcare providers with the resultant disruption in service delivery to patients.

To manage the continual cascades, we've had to adopt an attitude that once we have an EMR system in place, we will be in a constant state of change. Managing the change is the key to managing the disruptiveness of the technology cascades. This involves the ongoing collection and dissemination of a wide range of best practices within the entire practice.

Today, the two biggest cascades are being created by security and redundancy. While there are a number of EMR systems in place, there is already legislation affecting privacy, and pending legislation on security. Changes in privacy or security policies often require significant workflow revisions and change in office policies and practices. In some extreme cases, if the architecture of the system was not designed to conform to a privacy policy that became law, the EMR system could become immediately redundant. These issues alone are large enough to limit the uptake of EMR systems.

## 3. Making the Electronics as Transparent as Paper

The difficulty that many physicians have when viewing an electronic medical record is a lack of transparency in the tool. Transparency is the difference in time it takes to view and understand the information. The more transparent a delivery system is, the less time it takes. Highly transparent systems are those that are intuitive and are instantly recognizable and understandable.

A paper chart is completely transparent to look at. However, because of a lack of standardization in viewing the EMR, from the

perspective of the clinical user interface, it is not yet possible to sit in front of a computer and see a transparent solution. Although many of the features appear standard, each application differs in layout and workflow and requires a training period in order to begin using the system even if one is familiar with other EMR systems.

The challenge of the clinical encounter is that there are so many possible variables in each interaction that it is very difficult to predict which tools or information may be necessary to deal with the problem at hand. When put into a 10- to 12-minute time frame, the difficulty becomes significantly greater (Brookstone 2002). Morgan provides a powerful argument against the creation of stand-alone physician order entry (POE) solutions that are not integrated with EMR applications. Although these solutions can assist in decreasing errors related to transcription, they cannot take advantage of the wealth of EPR data to provide real-time clinical alerting such as drug-lab, drug-drug and drug-condition interaction checking (Morgan 2002). Development of non-integrated applications requires that the physician will need to double-task during the clinical encounter, transferring data manually, or decision-making outside of the standard EMR and mixing traditional practice patterns with the EMR. Ultimately, this reduces the usefulness of the EMR and lowers efficiency.

## **HOW TO ACHIEVE RECOGNIZABLE PROGRESS OR "CLOSING THE VALUE GAP"**

Achieving any recognizable progress will require narrowing the Value Gap.

### **1. Workflow and Best Practices**

- There needs to be an accurate and relevant inventory of physician needs, both internally and in the community, in order to determine the priorities for the implementation of EMR. For example, in one community physicians may predominantly consider the integration of private lab results as the chief priority for that region. In a similar community, the availability of a standardized discharge summary may be the top priority. There is no one-size-fits-all in this game.
- Physician champions need to be identified in communities and in specific practices to lead

the process of adoption.

- An easily searchable national and provincial database of EMR systems and best practices needs to be made available to physicians in order to make evidence-based decisions on workflow changes.
- Physicians need to be actively engaged in the process in order to identify a list of requirements for EMR that are relevant to that community before proceeding along the pathway.

### **2. Managing the Cascades**

- Support needs to be provided to EMR users at multiple levels once the adoption and implementation of EMR has taken place. This would include:
  - ongoing educational sessions for physicians
  - user groups in maintaining physician involvement
  - presenting a model and methodology (taking into account personal experience) in getting physicians to adopt the EMR
  - coaching on how to manage the process of change
  - government commitment to agree upon standards

### **3. Creating Transparency**

- This is perhaps the most difficult task of all, as multiple types of EMR systems will continue to exist, each providing a slightly different user interface and clinical workflow pattern.
- Data needs to be transferable between different EMR systems in order to ensure transparency of the data and remove fears of redundancy and loss of information if EMR systems need to be changed.
- New hardware tools need to be continually evaluated to determine whether they are more suited to a clinical practice setting; for example, the new Microsoft Tablet PC platform.
- Work needs to be done to standardize the presentation of data in differing EMR systems.

## **QUICK SUMMARY OF A PRACTICAL APPROACH TOWARD THE ADOPTION OF EMR IN A MEDICAL PRACTICE**

1. Document your transactions, interactions and processes.

2. Document the workflow of the people who are in your office. What is already electronic? Where do staff members spend their time?
3. Choose a vendor whose software most closely resembles what you have learned above and can integrate your present systems.
4. Meet regularly with physicians and staff to discuss the cascades being caused by the changes in office process and workflow.
5. Plan how to deal with bottlenecks, especially those affecting people. Perhaps additional training can be provided.

In moving forward we need to be brutally honest in recognizing that the implementation and ongoing adoption of the EMR is a very painful process requiring a financial commitment, a change in philosophy and ongoing workflow adjustments. In addition, we need to recognize that the Value Gap exists. It is not just the engagement of the physician, but the ongoing need to create a value proposition that encourages more widespread adoption of the technology. By working together to successfully narrow the Value Gap we will begin to see greater acceptance of EMR systems. **e**

#### About the Authors

**Alan Brookstone, MD**, is a founding partner of Centis Technologies. Alan.Brookstone@centis.com.

**Clay Braziller, MBA, BEng**, is Vice-President Marketing and New Business Development, Centis Technologies.

#### References

Taylor, H. and R. Leitman (eds.). 2002. "European Physicians Especially in Sweden, Netherlands and Denmark, Lead U.S. in Use of Electronic Medical Records." *Health Care News* 2(16).

Hassey, A, D. Gerrett and A. Wilson. 2001. "A Survey of the Validity and Utility of Electronic Patient Records in General Practice." *British Medical Journal* (Clinical research ed.)322:1401-05.

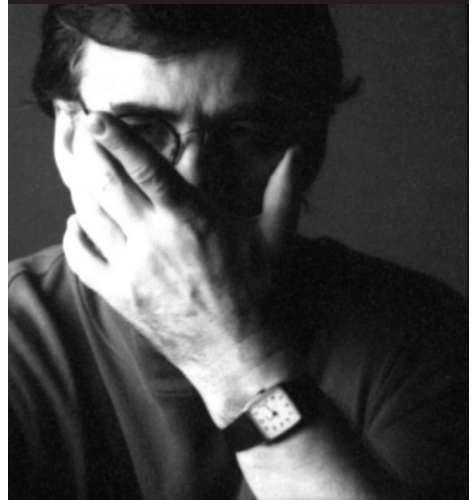
Brookstone, A. 2002. "Bumps on the Cyber-office Highway." *Medical Post Online* 38(26). <<http://www.medicalpost.com/mpcontent/article.jsp?content=/content/EXTRACT/RAWART/3826/35A.html>>.

Morgan, M. 2002. "Physician Order Entry: The Wave that Never Breaks." *ElectronicHealthcare*, 1(3): 50-53.

## CIOs and IT Vendors

The editors and publishers of **ElectronicHealthcare** need your feedback on a new intelligence initiative. If you would like to hear more just send me an email saying: "Tell me more."

Anton Hart  
Publisher  
[ahart@longwoods.com](mailto:ahart@longwoods.com)



**ElectronicHealthcare**