A Guide to Electronic Medical Records

Electronic medical records are the inevitable next step in the continued progress of Canadian healthcare. Medicine, perhaps the most information-intensive of all professions, is now ready—after many false starts—to take advantage of the advances in information technology that have transformed our society.

Because an Electronic Medical Record (EMR) directly impacts patient care, making a successful transition to EMR may be the most important project that a medical practice can undertake. EMR’s touch the lives of the physicians, nurses, administrative staff, and the patients themselves. As a result the impact of an EMR implementation is substantial. An unsuccessful project can be frustrating and expensive. A successful EMR project has the potential of improving the clinical and administrative efficiency of medical practices, as well as enhancing overall quality of care.

At Wolf Medical Systems, we have been successfully building and installing electronic medical records systems for medical practices for over 7 years. Success is a logical, systematic process; it does not happen by accident. Based on our experience, we have compiled this Wolf White Paper as a guide to help you successfully plan your EMR project.

Questions to consider before proceeding with your EMR project.

1. WHAT IS AN ELECTRONIC MEDICAL RECORD (EMR)?

An Electronic Medical Record is a secured electronic file of patient history, medical transcription notes, billing information, and all other information necessary to have a complete patient profile. Essentially EMR software allows you to create, store, edit, and retrieve patient charts on a computer. A successful EMR project allows a practice to replace its paper charts with electronic charts. This offers tremendous productivity and efficiency benefits to a practice. By storing all the data you previously recorded in the patient's paper chart, an EMR replaces the racks of chart folders with a computer.

Wolf believes that the successful adoption of an EMR will lead to benefits in 4 main areas:

   A. Improved Patient Care
   B. Improved Efficiency
   C. Improved Effectiveness
   D. Enhanced Enjoyability

A. Improved Patient Care - As physicians this is where it starts for most of us.

An EMR can dramatically improve patient care by:

   • Sharing information easily
   • Accessing and retrieving information quickly and easily
   • Improving office communication
   • Pro-actively managing patient care by using robust follow-up systems and rules engines
   • Facilitating higher quality documentation (legible, organized, complete)
   • Providing built-in protocols and reminders (including health maintenance)
   • Improving medication management
• Using of a comprehensive drug interaction module that cross-references all new prescriptions for drug-to-drug, drug-to-allergy, drug to condition reactions.

B. Improved Efficiency – Saves you time and money
On a cost basis alone, the purchase of an EMR will be the single best investment a physician can make in their practice. However, in addition to cost reduction, an EMR contributes to revenue enhancement and improved administrative efficiency. Listed below is a brief explanation; for a detailed cost benefit analysis please review the Wolf ROI White Paper.

Cost Reduction:
Wolf customers report significant savings in the following areas:
• Reduced labor costs through increased and higher value delegation of duties from physicians to staff
• Reduced transcription costs through the physician use of robust templates
• Reduced internal/external copying through the integration of a fax server

Revenue Enhancement
An EMR can impact the top line of a practice by allowing physicians to invest time savings into seeing more patients. In addition, the robust follow-up system will ensure that patients are being seen appropriately for follow-up.

Improved Administrative Efficiency:
Successful EMR sites are more efficient than traditional offices. As a result, the number of FTEs required to support physicians is lower than at paper-based offices. These improvements can be attributed to the following:
• Fewer chart pulls and less filing
• Universal access to the chart (by more than one person at a time) and less searching for lost charts
• Reduction in phone tag
• Improved internal office communication
• Fewer call-backs from pharmacies
• Easier compliance with chart requests and chart audits

C. Improved Effectiveness
Adoption of an EMR allows you to practice in ways that you cannot with a paper chart:
• Graphing of electronic lab results vs medications
• Creation of powerful rules for reminders – e.g. Diabetic patient that has not had a HbA1c in the past 6 months
• Automatic graphing of growth curves
• Integrated tools for calculation of expected peak flow, mini-mental status, depression scores etc.
• Automatic calculation of cardiac risk
• Automatic Drug Interaction checks for Drug to Drug, Drug to Allergy or Drug to Condition reactions

D. Enhanced Enjoyability
With the move to an EMR most physicians notice a definite decrease in stress as they become confident that their EMR will prompt them with appropriate reminders for patient care – they no longer need to hold everything in their heads! Along with this, the ease of access to the system from the home, hospital or office allows physicians to go home after their last patient leaves the office and finish up any remaining work from home as needed. Finally many offices note a real improvement in office morale due to the improvement in communication that results from the adoption of an EMR.
2. WHAT IS THE TYPICAL EMR CONFIGURATION?

The most common configuration of an EMR is to have PCs in the exam rooms, doctors’ offices, nurses’ stations, and at the front desk. These are networked together and linked to a common server. This configuration gives both administrative and clinical staff easy access to workstations and the EMR. Another, increasingly more common configuration includes the use of wireless laptops. These are typically used solely by the physician in conjunction with networked PCs. Wireless technology allows a practice to purchase fewer PCs. However, this is offset by additional investment in wireless networks.

3. HOW WILL IT IMPACT THE DAY-TO-DAY WORK FLOW OF MY OFFICE?

Since an EMR provides universal access to patient charts, it can vastly improve the workflow in your office by eliminating the time-consuming process of creating, finding, and re-filing paper charts. This makes many of the day-to-day activities of the practice, such as prescription refills or refill authorizations, patient callbacks, and outside requests for charts, much easier. The patient can move smoothly from the check-in process to the nurses’ station for vital signs and into the exam room without a staff member ever having to carry a paper chart. Administrative staff, such as billing clerks and transcriptionists, also benefit from universal access to charts.

4. HOW MUCH INTERACTION DO PHYSICIANS ACTUALLY HAVE WITH THE EMR, AND HOW MUCH KEYBOARD AND DATA ENTRY ACTIVITY IS REQUIRED?

Once the EMR is established in the clinic, it becomes the focal point of all clinical documentation and will be the most commonly used computer application by physicians during their normal workday. The amount of keyboard and data entry activity required is variable according to the EMR software vendor and physician preference. Wolf Clinical is designed to minimize the need for keyboard interaction, if that is the preference of the physician. At a minimum, physicians will be required to directly use the computer to open and view patient charts and to write prescriptions. In both cases, only basic computer or typing skills are required.

5. HOW ARE PROGRESS NOTES CREATED?

Again, this is variable according to the software vendor. Wolf Clinical allows progress notes to be created in the following ways:

- **Clinical Templates:** These represent preformatted progress notes that provide a standard protocol for documenting specific conditions. They allow for “point and click” entry or keyboard entry based on possible conditions that might be observed for a given patient. Templates represent a direct entry mode in which data is entered directly by the physician into the computer. Most Wolf Medical Suite customers use templates in conjunction with Autoreplace, which allows for commonly used clinical phrases that can be dropped into a progress note with minimal text entry. Additionally, Wolf Clinical includes Smart Tags that automatically pull data from other parts of the chart (i.e. medication list, allergies, social & family history, problem list, etc.) into the current progress note. Wolf’s design philosophy allows physicians to focus on data selection as opposed to data creation.
• **Dictation:** Some Wolf Medical Suite physicians, even after successful transition to the EMR, continue to prefer the familiarity of dictation as a means of creating progress notes. The benefit of transcription is that it allows physicians who are reluctant or uncomfortable with direct entry to fully embrace the EMR.

• **Voice Recognition:** Voice recognition offers the promise of reducing the need for keyboard entry while providing a cost effective alternative to traditional transcription. Recent advances make voice recognition a viable means of data entry for certain practitioners. For a detailed case study on how practices are using voice recognition, see our White Paper: “Wolf and Voice Recognition”

6. **HOW SECURE IS THE EMR?**

Wolf meets or exceeds all security standards as set by the Ontario ePhysician conformance process as well as the Vendor Conformance and Usability Requirements in Alberta. EMR security is ensured by network access limitations and EMR access levels once individuals are logged on. All EMR systems should offer highly granular security, allowing system administrators to define access and privileges according to the respective roles of the office staff. For instance, the Wolf Medical Suite provides very detailed security and privilege levels, defining specific viewing, data entry, editing, and a myriad of other rights on an individual by individual basis.

7. **IS THE RECORD LEGALLY VALID?**

Yes, the Wolf Medical Suite EMR offers a complete, medically legal record with an audit trail, allowing practices to track all changes to any textual record (progress notes and other clinical documents). This ensures document integrity within the organization and validates the record for medical legal purposes.

8. **WHAT HAPPENS IF THE SYSTEM GOES DOWN?**

With all Wolf installations we will help you come up with a disaster recovery plan that includes a systems backup and system restore plan. A standard part of any EMR installation should be a system backup. This involves copying the patient charts to a specialized storage medium such as DAT (digital archive tape) that is then stored offsite. In the event there is a system downtime that results in loss of data, patient information can be restored from the tape backup. In addition Wolf offers an online backup and disaster recovery service that allows for data to be backed up (encrypted) across the internet on an hourly basis. Should something happen to your server – Wolf can restore your system on a remote server and have your clinic up and running within 30 minutes.

9. **WHAT ABOUT OPEN SOURCE EMR’S – AREN’T THEY FREE?**

While the software for open source EMR projects may be free – the setup, training, support and ongoing development are not. The major differences between the Wolf Medical Suite and Open Source are that Wolf has:

• no hidden costs
• unlimited support at no additional charge
• a 100% money-back guarantee
• a guarantee that the Wolf software will meet all provincial standards without any additional cost
• upgrades at no additional cost
• no ongoing development costs
• an exportable non-proprietary open standard database format
Making your EMR Implementation a success

Defining the goals of an EMR implementation and preparing a plan to achieve the goals are critical to the success of the project. What is the appropriate method of measuring the success of an EMR project? The success of an EMR is directly correlated to the ability of a practice to effectively transition the majority of their clinical documentation from paper-based systems to electronic systems while still maintaining physician productivity. At Wolf, our most successful sites have completely eliminated paper-based recordkeeping. These sites, which we call “chartless”, derive the greatest economic benefit from the EMR, since they have dramatically reduced the time, labor, and overhead associated with maintaining paper-based charts. The least efficient means of deploying an EMR is to run dual systems, that is, maintaining an EMR and a paper chart. Dual systems actually require additional labor, since two separate charts must be maintained.

How do I go chartless?

Going chartless is a step-by-step process that involves the following elements:

- **Utilizing the EMR as the primary means of clinical documentation.**
  - Progress notes, prescriptions, vital signs, nurses’ notes, and all other handwritten or transcribed documentation should be entered into the EMR.

- **Establishing interfaces (particularly lab).**
  - Interfaces allow information from either clinical or administrative sources to be loaded directly into the electronic medical record. This eliminates the need for manual entry of these values.

- **Establishing scanning protocols.**
  - Some relevant clinical documentation will arrive via paper. These documents can be scanned linked into the chart.

- **Retiring your existing charts in a steady and methodical fashion.**
  - It is not necessary or practical to eliminate your paper charts from day one. Successful Wolf customers have tackled the transition by:
    - **summarizing** the salient points of the paper chart for entry into the EMR. This typically includes problem lists, allergies, current medications, selective lab results, and the most recent progress note. These summaries can either be transcribed and then downloaded into the chart or entered into the chart directly as you summarize.
    - **being selective** about which charts to summarize. Some Wolf clinics will summarize the paper charts as patients make appointments. Others will select their high frequency patients. In either case, it is a methodical process accomplished over a period of 6 to 12 months, depending on patient volume. The summarized paper charts are then typically archived off site.

How do I build support from the doctors in the practice who are reluctant to use an EMR?

We believe that the best way to increase acceptance among physicians is to minimize the amount of change required in daily work flow patterns. For instance, physicians that are hesitant to use the keyboard to directly enter notes should be allowed to continue to use dictation as a means of data entry. For those who are going to utilize direct entry, the EMR system is flexible to accommodate the physician’s personal documentation style, without requiring extensive or complex programming. With the Wolf Medical Suite, this is accomplished through the use of structured clinical templates or Autoreplace macros that can be readily modified using basic word processing skills.
PREPARING YOUR CLINIC FOR EMR
There are many things that can be done before one decides to implement an EMR. Both the office and the staff must be prepared for the transition to a new system. The following are a few steps you can take to help assure your organization of the smoothest possible transition to the EMR.

1. What will I need to purchase?
Deploying an EMR involves purchase of the following items:

   • **EMR Software and related accessories.** As a multi-user, networked application, some EMRs are sold on a per seat basis, with a seat representing a user logged on to the system. For these systems one should allocate roughly 3 to 5 seats per physician, depending on the specific configuration of the site. The Wolf Medical Suite is licensed on a per physician basis. This allows clinics to organize themselves as they see appropriate without the economic penalty of per seat licensing. In addition, EMRs may also offer software accessories such as Drug Interaction Modules - these are typically sold on a subscription basis since the information is dynamic and is routinely updated.

   • **Hardware and Networks.** An EMR requires a computer network in order to function. A network consists of the individual PC workstations or thin client computers; a server, which is the main computer for storing patient data and allowing communication between the PCs; the operating systems, such as Windows 2003 Server necessary to run the network; and the various hubs, network cards, and wiring that connect everything together. In addition, the practice will purchase printers, scanners, and backup devices.

   • **Services.** An EMR represents a capital improvement project that will require the assistance of experts. Most EMRs require implementation and training services, consisting of project planning, customization, and education on the application to prepare the office for the new software. These services are offered by the EMR vendor. In addition, hardware and network services are required to ensure the successful deployment of the network.

   • **Support.** You will need to maintain technical support contracts for both hardware and software. Support for software is sold and renewed in on an annual basis. For most EMR vendors, the support contract provides the help desk function — the ability to call the vendor’s technical experts — and software updates, which are new versions of the software that provide improved performance and additional features. Not all software support contracts include all updates to the software. The Wolf Medical Suite contract includes unlimited telephone support and all updates to the software including major version updates.

2. How long does it take from signing the contracts to going live with the EMR?
An EMR project is a cooperative effort between the software and hardware vendors and the practice. It requires the completion of the following tasks:

   • mobilization of clinical and administrative staff
   • acquisition and installation of hardware and network
   • configuration of the EMR to meet the individual practice’s needs
   • completion of special interface projects
   • on-site training

The amount of time required will vary depending on the EMR application, the size of the practice, and the quality of the project management by both the vendor and the practice. Wolf Medical Suite sites are typically deployed within 6-8 weeks, depending on the size of the installation.

3. What organizational leadership is required to make it successful?
For an EMR project to be successful, physician leadership is required. For a multi-physician group, this typically requires a physician leader/advocate who can effectively communicate the goals of the project and be a liaison to the group on technical or user issues.
4. What additional staff is needed to support the EMR?
You do not need to make additions to your staff to support the EMR, but it is necessary to allocate the responsibility for basic system administration. An EMR system requires routine maintenance, backups, and someone to troubleshoot problems as they occur. These tasks will ensure the smooth running of the EMR on a daily basis.

SUMMARY

The excitement and benefits of converting to an electronic medical record need not be overshadowed by unanswered questions surrounding the selection and implementation of this technology. If a deliberate path is outlined from the project’s inception based on the clear goal of a chartless office, then success will surely be yours for the taking. In the end, your practice will be more efficient, effective and enjoyable.