

## Practice Fusion Whitepaper

### Creating an IT budget for EMR adoption

Robert Rowley, MD  
Chief Medical Officer  
December, 2008

#### Introduction

The decision to move from a paper-based medical office to one based on an Electronic Medical Record (EMR) system can be onerous and intimidating. Numerous studies describe how the cost of these systems remains the biggest barrier to adoption, and one wants to make sure that, if there is to be significant expenditure for such a system, that one derives similarly-significant value from it.

The EMR decision is made even more difficult by the fact that literally hundreds of different vendors populate the market, each with different cost structures, feature sets and ability to interoperate down the road in a more-connected future. This review will try to describe the various elements of total EMR systems costs and also look to some emerging technologies that might change the entire paradigm in the future.

#### Elements of IT cost

The cost of an EMR system is not simply the cost of the software itself – the necessary hosting system and ongoing IT support are also factors which add to the cost of creating an e-office. Deciding upon what kind of software system – hosted vs. in-house – you want to implement can be perhaps the most significant determinant of the overall cost.

## EMR software itself

Literally hundreds of different systems can be found in the EMR space. Some of them have limited functionality – chart creation only, for example. Others are so feature-filled that they overwhelm the user and get in their own way, slowing the physician down rather than helping speed the process along. An accrediting agency, CCHIT (Certification Commission for Healthcare Information Technology), has put forward a set of features (functionality, security and interoperability) that has resulted in a few dozen systems being CCHIT-certified.

A practice in a particular specialty may want a specific EMR that is tailor-made for that specialty. In oncology, for example, there are several unique workflows that oncologists undertake which might best be addressed by an oncology-specific EMR, rather than adapting a general-purpose system.

Traditionally, EMR software has been developed as client-server Enterprise software – meaning, that you purchase the software from the vendor, install it on your own machines, and upgrade it as new versions are released. There is an up-front cost (typically in the \$8000 - \$16,000 per-physician range for a CCHIT-certified system), and an annual update/service ongoing cost in the 18%-of-original-cost per year range.

Some systems are hosted, and are priced as a “lease” – several hundred dollars per physician per month, possibly with an initial set-up fee. These Software-as-a-Service (SaaS) systems are emerging as more favored approach for several reasons – lower up-front software costs, lowered local hardware needs, and more potential for clinical data sharing between subscribing physicians.

## Hosting platform

If you have made a decision to implement a more traditional Enterprise system, then you will also need to consider what kind of hardware system is needed to run the software. You will need a server and a local area network (LAN). You will need data backup (onsite and offsite) for your locally-hosted data. Depending on the way the software is written, you might not be able to access your system from outside your LAN, which means you would need to enable special security portals (Virtual Private Network, or VPN connections) in order to access your EMR from outside your office, which adds an additional element of cost.

If you have decided on a SaaS-based system, your hardware needs are much reduced. All you will need is a collection of internet-connected machines in your office. Performance, of course, will be a function of your internet connection speed – however, broadband connectivity is pretty much ubiquitous these days. Nevertheless, broadband internet connectivity is a cost element that must be factored into the overall IT budget.

## IT service

Implementing a full-fledged LAN, with data backups, ongoing security patches and upgrades, is something most medical offices do not have the skillset to carry out. Large group practices or staff-model or hospital-supported systems might be able to hire an IT professional; smaller practices must generally hire outside IT vendors to act as consultants. In either case, one must rely on IT vendors/professionals for network support, as well as vendors for EMR software support. These may or may not be the same vendors.

## Transition costs and strategies

Once a decision has been made to deploy an EMR, actually transitioning the workflows from paper to e-tools is daunting, confusing and disruptive. Apart from costs, the second-most-important barrier to EMR adoption is exactly this: disruption in core workflows, and therefore a transient drop in revenue stream as productivity dips during the learning-curve of the transition.

EMR design plays a big part here. If the system chosen is cumbersome, the interfaces are overly cluttered and “stiff”, then the effect will be to slow one down. Physicians should be spending their time primarily interacting with patients, not interacting with the EMR system. If the EMR system is designed in a way that matches the workflows a physician experiences in the office or hospital, then the learning curve is quick; if the system expects the physician to change his/her workflows to conform to the software-flow, then the software is “in the way” and a net-negative.

Good EMR design should allow step-wise adoption of the e-tools. There are multiple workflows encountered in an ambulatory practice: (1) scheduling and check-in, (2) billing, (3) charting, including generating de-novo prescriptions, (4) management of refill requests for patients not being seen today, (5) immunization management, (6) review and management of lab test results, (7) review and management of outside correspondence and documents (usually paper), (8) internal messaging within the practice, including handling phone calls from/to patients. These are the day-to-day tasks, not counting population-management reporting, review of disease registries, scheduling patients needing disease-management or wellness interventions who have been lost to follow-up, etc. A good EMR system should allow a practice to adopt transition to the e-workflows in whatever sequence makes sense to the individual practice, so the overall transition is less disruptive.

## Partnerships and payment relationships

Because of the costs and burdens of e-transition, adoption of EMRs by practicing physicians has remained low, to the frustration of many. Not surprisingly, EMR adoption has largely taken place in group practices, staff-model clinics and hospital-supported

organizations; small and solo practices, which is where >50% of physicians are deployed in the U.S. today, have had very low rates of EMR adoption.

Numerous strategies have emerged here-and-there to address these concerns. Government encouragement, largely based on the presumptions that EMRs are Enterprise (and not SaaS) solutions, is ongoing. Local networks and IPAs (Independent Physicians Associations) have tried banding together to underwrite some of the costs involved in EMR purchase and implementation (hardware, software and support), which has been met with variable success. Hospitals have invested in and hosted ambulatory systems, with local connections to favored local physicians – a top-down approach, again with variable success. The fact that multiple types of assistance efforts have taken place would suggest that there is no one-size-fits-all, especially when implementing traditional Enterprise-type systems. Physicians should therefore look at the “lay of the land” in their local communities to see what local opportunities might be available.

### **Emergence of EMR 2.0**

One can think of the traditional Enterprise-type EMR systems as “EMR 1.0” – and the newer generation of systems that are more SaaS-based as “EMR 2.0.” Not only are the newer generation of EMR systems less costly to implement (no local LAN system is needed, no servers, no data backups, etc), they are less costly to maintain – local IT consultants may not even be needed if a full-fledged LAN with servers-needing-maintenance is not needed.

“EMR 2.0” systems also have the significant structural advantage of having hosted data – which means that multiple practitioners taking care of a given patient can share relevant clinical information much more easily. One of the most challenging issues, even with high-end, costly, CCHIT-certified “EMR 1.0” systems is sharing clinical data with colleagues – each practice has its own local database (the e-equivalent of each practice having its own paper chart rack), and transmitting clinical information between consultants remains challenging. With hosted systems, the concept of “one patient, one chart” becomes possible.

The final intrinsic strength of “EMR 2.0” systems that are just now emerging is the potential for novel business models. Some of the SaaS systems have a very low monthly service fee. Practice Fusion, for example, is a hosted EMR that is actually free of charge to physician end-users, being supported by advertising in the product. It has been claimed in the literature that only about 11% of the benefits in cost savings to the system resulting from EMR use is reaped by the physicians themselves – the rest is reaped by insurers and others who avoid unnecessary or duplicated procedures and tests, not to mention improved patient safety due to legibility and better adoption of evidence-based guidelines and standards. However, it is the physician who has typically borne the burden of the costs. With “EMR 2.0,” there are emerging novel ways to move the costs of EMR adoption away from the end-user physician and more into the hands of those who ultimately benefit from it.

Technology is emerging quickly. The decision of what kind of EMR system to adopt is influenced by local factors, types of support, and long-term view. With the emergence of SaaS-based EMR systems, it is possible to foresee a significant change in paradigm in the EMR world, and much more widespread adoption (especially by smaller practices) can finally be achieved.

**For more information contact**  
**Practice Fusion**  
**415.346.7700**  
[info@practicefusion.com](mailto:info@practicefusion.com)  
[www.practicefusion.com](http://www.practicefusion.com)