

Electronic Medical Records — Creating a System That Is Truly Meaningful

By Chad Kerr

In defining the health care components of the American Recovery and Reinvestment Act (ARRA), the federal government and the Centers for Medicare & Medicaid Services (CMS) have introduced the now ubiquitous idea of "meaningful use" into our collective vernacular. Intended to translate into improved outcomes and decreased health care costs, meaningful use has caused a groundswell of discussion pertaining to Electronic Medical Record (EMR) use, costs versus benefits and the definition of what is truly meaningful.

To put it simply, the government is set to offer financial rewards for performance imperatives of EMR use and will eventually penalize providers who fall short. But for many organizations, it's not that simple, even if the push to use their EMR systems in meaningful ways has been going on for some time now. Many providers are finding themselves scrambling to meet the new measures, and they are utilizing systems that are not yet fully certified.

However, there is good news. For years, health care organizations and EMR users have learned from their often painful experiences that there are components and strategies for EMR use that are universally meaningful. That is, independent of government definitions, there are strategies that will save you both time and money while increasing patient loyalty, including:

- Scanning and chart conversion
- ePrescribing
- Interfaces and interoperability
- Reporting and population management
- Training and preparation

Scanning and Chart Conversion

What produces the largest contribution to EMR success or failure? To the surprise of most people, it's scanning and chart conversion. Although many think chart conversion is in a close race with preparation and project governance (physician willingness), your strategy for converting paper charts and data into an EMR can be even more far-reaching than these typical political hot buttons.

First, the obvious financial implications – the cost of creating, storing, pulling, transporting, preparing and maintaining paper charts is enormous and risky. According to some estimates,¹ the cost for chart pulls per physician is over \$7,000 each year (assuming the physician sees an average of 15 patients per day). And depending on your state's EMR regulations, anything short of a full chart capture and destruction of the paper record could mean that you will be paying for storage of the paper charts for years. You might even be surprised to find that a paper chart is considered the primary legal medical record, even if an electronic record has since replaced it.²

However, even if you were to scan the complete paper chart, you are still not on safe ground. Another critical decision relates to your indexing strategy, which refers to how you identify the individual pages, or groups of pages, once they are scanned. While scanning the entire chart involves a great deal of effort, individually identifying every page of the scanned record can pose an insurmountable hurdle. Indexing every page is usually impossible due to the volume, cost and clinical expertise that would be required, while indexing too little can disenfranchise providers and lead to missed information during patient treatments. Creating the proper balance requires a joint decision between your medical records staff, providers and the chief financial officer. Although this balance will vary by specialty and chart structure, using chart tabs as an indexing guide, with individual allotments for key pages, is usually a good starting point.

Once you have identified what will be scanned and how it will be organized, there is still one key step remaining in the chart conversion process: capturing the clinical data buried in the paper chart. If this information is not captured discretely, it will create an uphill battle in the early days of EMR usage. Every EMR worth its salt includes components that deal specifically with patient medications, allergies and other health problems. This is necessary to deliver the advertised benefits of automation in the billing and documentation processes. If all this data has to be entered on an ad hoc basis for each patient, intake and overall volume can suffer considerably.

To alleviate this pressure, a combination of the following steps is recommended: pre-entry prior to EMR implementation, reducing schedules or extending appointments after the EMR system is implemented to help get over the initial hurdles, and data conversions or interfaces to populate key discrete elements of the record.

Altogether, this diversified strategy for converting paper records will be the pinnacle of coordination among your clinical and administrative staff and will help your organization optimize both finances and patient safety.

ePrescribing

All the components of meaningful use seem to be aligned in the case of ePrescribing. This method of transmitting and receiving prescriptions and renewals electronically is the safest, most efficient and fiscally responsible way to conduct these exchanges. Many EMR systems include this functionality, providing a simple, real-time electronic message exchange between the provider and pharmacy. This effectively absolves your organization of the old style of manual coordination between provider, staff, pharmacy, patient, telephone and fax.

¹ Extrapolating Evidence of Health Information Technology Savings and Costs, RAND, http://www.rand.org/pubs/monographs/2005/RAND_MG410.pdf, accessed April 1, 2010

² <http://healthitlawblog.wordpress.com/2010/02/18/conversion-to-electronic-health-record-and-retention-of-paper-records/>, accessed April 1, 2010

Most ePrescribing systems also include clinical checks to ensure that patient prescriptions do not conflict with known allergies or medications and to verify that all recommendations are followed. No one can argue with the gains in patient safety that can result from reducing medication errors, which are attributed to 7,000 deaths per year. Add to that the 1.5 million who are “merely” harmed, and the financial toll is estimated at an astounding \$3.5 billion per year.³

Unfortunately, with state and federal laws often at odds and the Drug Enforcement Agency and similar organizations weighing in with varying interpretations, the efficiencies and cost-savings from ePrescribing cannot yet be gained across every prescription. Although recent developments that better align these laws are still being implemented, any reduction in medication errors, potential prescription tampering, staff and patient wait times and expensive security papers will be a welcome addition to your EMR repertoire.

Interfaces and Interoperability

More overlap between meaningful use in both the traditional and new government sense is found in the technical realm – interfaces, which feed electronic data into and out of your EMR environment.

One example is a set of interfaces that feeds electronic patient order data out of the system and electronic results data into the system, allowing for full-cycle reconciliation of outstanding orders and their corresponding results. This also allows for a consolidation of results data across disparate vendors, which provides the opportunity for better clinical decision-making.

But the primary goal should be creating interfaces that contribute to a more complete patient record, without all the requirements and staffing of paper conversions. Having a lower threshold for initial data entry requirements earns your organization both time and money (through appointment volume, for example), and this type of sharing facilitates better care. With that in mind, it is important to consider the following components when creating your EMR interfaces: hospital data, imaging, devices, a picture archiving and communication system (PACS) and another industry buzzword of late - clinical exchange documents (CED). CEDs are meant to allow the import/export of key summary information in a patient’s record, such as medications and diagnosis history. Building and investing in an infrastructure that allows for the easy exchange of this information will also qualify you for meaningful use in the eyes of government standards. This also provides you with the ability to trade immunization information with state or federal repositories, collaborate on disease registries, and exchange summaries with other patient providers and the patients themselves.

And perhaps best of all, you can start the process of devising and developing your interfaces early in the process, allowing for data (and synergies) to collect even before you begin using your EMR.

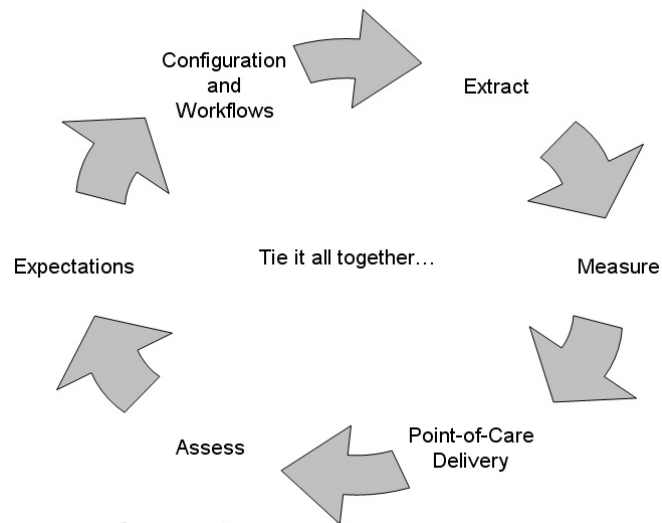
Reporting and Population Management

Pushing for a complete record that includes converted paper, ePrescribing and data from external vendors and providers is a great start. To take this to the finish line, however, you must be able to see and analyze your data. For all the buzzwords and sound bites being tossed around in this discussion, there is one that is most critical, and that is “outcomes”.

For health care to truly evolve, we need to emphasize those things that have previously demonstrated a positive outcome. With this in mind, more meaning is found with an infrastructure and workflow built around the discovery and delivery of important data. This can be as simple as reports to show how well your diabetic patients are adhering to their annual exams or as complex as a full business intelligence solution that provides real-time dashboard data to physicians at the point-of-care.

³ <http://health.dailynewscentral.com/content/view/0002352/53/>, accessed April 2, 2010

The following diagram shows the ideal flow of an EMR system:



As you can see, it is not enough to simply use the EMR system or have only a general idea of what you hope to accomplish. In order to maximize its value, you must support specific expectations pertaining to system configuration and workflows that emphasize appropriate measures. Obviously the buck stops there unless you can extract outcomes data and put the proof in the hands of the clinical decision-makers when it matters, so they can better assess which course of action to take.

In other words, successfully using your EMR is only part of the path to truly meaningful use. It is also imperative to confirm that your organization can incorporate improvements as needed. This is only possible if you have a solution that takes advantage of the rich data gathered through use of the EMR.

Training and Preparation

Just as many of your patients are inundated with health information from a glitzy array of television advertisements, your staff can feel similarly overwhelmed by all of the available tools in your EMR system. Staff training needs to be shaped with guidance on how and when these tools can be used best. All of these tools will lose their luster if your staff is not fully prepared to take advantage of them.

When your organization starts down the path to meaningful EMR use, it should include many preparatory steps, including the key step of avid communication. To begin, you should have a marketing campaign to advise users of the pending change, potential benefits AND risks, along with the plan and timeline. You should also form committees for decision-making, feedback, steering, and to socialize functionality and weigh risks and benefits of the various configurations and workflows.

Most importantly, users need to be adequately trained. I've grown fond of the old analogy – an ounce of prevention is worth a pound of cure – but have modified it to my own version – four hours now or forty hours later. You need to ensure not only that you have allocated sufficient time to train users, but also that you have tackled the issue of different learning styles. This issue can be addressed by providing written materials, web-based training or eLearning, traditional classroom training and on-the-job support during the first phases of usage.

Though it can also be difficult to make sure all of your EMR users receive training, it's an effort that will pay off in the long run. There's no substitute for well-prepared users. It's the foundation for any advanced EMR benefit and provides the cornerstone for meaningful use.

Truly Meaningful

The government has indeed set rigorous standards to define meaningful use of EMRs, and we should expect no less if our own dollars are going to be the rewards. However, there is more to meaningful use than just the measures set forth in ARRA, and in fact some measures will result in better care and increased cost savings.

Managing your chart conversion strategy, sharing of electronic data, and properly equipping your users are just a few of the areas that you can focus on today, all of which will lead to improved patient satisfaction and safety. And there's not much that's more meaningful than that.