



Photo: Frank Poggio

## It's All About Workflow

### **A misplaced focus on automating transactions will never bring about the healthcare system everyone seeks**

by Frank Poggio

Today, many healthcare facilities are aggressively pursuing new EMR and CPOE systems to extend their already installed core HIS systems. The new federal ARRA program is promoting adoption of these new systems in an effort to reduce healthcare costs. ARRA will reward or penalize facilities that do not achieve “meaningful use” of new systems. In fact, just recently the Obama administration was able to get hospital trade associations to agree to cut healthcare payments by some \$200 billion over the next decade, thereby implying that they will be able to cut costs by at least that amount. With \$200 billion as the savings goal, more than new EMRs and CPOEs will be needed. Health organizations will have to find ways to do more with less labor and capital resources. HIS, CPOE and EMR alone will not, and cannot, achieve this goal.

What will be needed is in-depth workflow and process re-engineering systems and tools to support these efforts. Some health providers who are pursuing new EMRs and CPOEs believe that the vendor systems they plan to purchase will include all the capabilities necessary to address workflow; in fact, some vendors market their systems on that basis. What many providers do not understand is the day and night difference between an HIS/CPOE/EMR and a system designed to analyze, and support workflow improvements.

In January, the National Academy of Sciences, Institute of Medicine issued a new report entitled, Computational Technology for Effective Health Care: Immediate Steps and Strategic Directions. In the report, they stated the following:

*The tasks and workflow of health care.*

*Health care decisions often require reasoning under high degrees of uncertainty about the patient's medical state and the effectiveness of past and future treatments for the particular patient. In addition, medical workflows are often complex and non-transparent and are characterized by many interruptions, inadequately defined roles and responsibilities, poorly kept and managed schedules, and little documentation of steps, expectations, and outcomes.”*

*Current implementations of health care IT*

*Many health care institutions do spend considerable money on IT, but the IT is often implemented in systems in a monolithic fashion that makes even small changes hard to introduce. Furthermore, IT applications appear designed largely to automate tasks or business processes. They are often designed in ways that simply mimic existing paper-based forms and provide little support for the cognitive tasks of clinicians or the workflow of the people who must actually use the system”.*

From the IOM point of view, “meaningful use” goes beyond CPOE and EMR. They want information processing to take on more proactive workflow tasks.

Now let's look at some of the differences.

## **HIS/EMR/CPOE**

These systems, many of which go back 20 years or more, are designed to support data transactions. They are focused on data elements - capturing them, transmitting them, storing them, and reporting on them. The classic orders and results system in your HIS is a good example. Clearly, administrative systems do this extremely well. They are good at aggregating data, doing historical analyses, and generating passive reports.

What the CPOE and EMR add to the HIS system is a more sophisticated front-end and a back-end. When you look at a CPOE, what you really have is a very good tool for source data capturing designed to speed communication by eliminating human rekeying, related errors and the delays that are inevitable.

On the other end, we have the EMR, which is a giant data repository designed to store everything historical about the patient. It can rapidly retrieve a patient medical history. But even the images that are stored in the EMR are static data.

Both the CPOE and the EMR are primarily reactive systems. When there are proactive elements in the CPOE, they tend to be limited to very specific activities and rarely cross functional or department lines. For example, drug to drug interaction is proactive, but clearly limited in focus. They are rich in validity checks such as incomplete order, order requires secondary consult, etc. Within these systems, if workflow is addressed at all, it rarely goes beyond the next clinical step; for example, requested procedure will require prep work-up. And when we consider non-clinical patient related tasks, the CPOE and the EMR are totally lacking.

As further stated in the previously mentioned NAS IOM report:

*“The health care IT systems of today tend to squeeze all cognitive support for the clinician through the lens of health care transactions and the related raw data, without an underlying representation of a conceptual model for the patient showing how data fit together and which are important or unimportant”.*

Therefore, if we want to reduce operational and clinical costs, we need to look seriously at all patient related processes and workflows, both clinical and non-clinical.

## **Workflow and process improvement systems**

Systems and tools designed around process improvement and workflow simplification are focused on addressing the following critical questions:

- What is the next critical task that needs to be completed?
- Who is responsible for the task?
- What resources are needed to complete it?
- When does it need to be completed by?
- What is the current status of the task?
- If it's running late, what impact will it have on other tasks, and what are alternatives?

As you can see, these questions are proactive and transcend both clinical and non-clinical activities. For example, in order to discharge a patient at a targeted time, say 11 a.m., we need to make sure the usual ancillary tests are completed and related results are available to the physician doing rounds. In addition, and more often overlooked, are many non-medical services that must be completed at an appropriate time, or the target time will be missed. Operational services such as transportation, patient education, referral requests and service approvals (rehab, hospice, nursing home, etc.), finance, social services, nutrition consults, and others cannot be ignored.

There are many other patient centric examples such as chronic disease management, enterprise access, case management, and sometimes just routine daily care where a patient needs to be seen by multiple ancillary and other care givers and workflow coordination is critical.

A single workflow failure causing a delay of service - such as a rescheduled surgery resulting from an antibiotic medication not administered because the patient was delayed in radiology - can result in unhappy physicians and patient dissatisfaction, both of which will negatively impact revenues.

Systems designed around workflow and patient processes use the data from an EMR and HIS as needed, and usually employ at least the following tools:

- Workflow documentation tools
- Workflow analysis and simplification tools
- Data extraction / integration tools
- Process re-engineering tools
- Intelligent forms
- Document imaging and storage
- Simulation / modeling optimization tools
- Work Portals

Commercial industry has applied these concepts and tools for decades. They are incorporated in management programs as Six Sigma and Lean. Healthcare has seriously lagged behind in this effort. Maybe it's because we have tried to adopt classic HIS tools when we should have been using more workflow systems tools.

ARRA has mandated that we must achieve 'meaningful use' of our systems. In summary, workflow systems focus on the future (what should be happening now and next), while the EMR tells us what happened yesterday. Which is more meaningful? Both will be needed if we are to cut our operating budgets by \$200 billion.

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