

# The Eyes Have It

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As we continue down the path towards digitized medical records, the challenges we face become incrementally harder. Moving from the HIMSS Analytics Stage 0 to Stage 1 where three ancillaries—lab, radiology, pharmacy—are all driven by healthcare information technology systems, is not a difficult jump. Stage 2 includes CDR document imaging and health information exchange capability. Stage 3 covers nursing/clinical documentation. At Stage 4, the adoption curve becomes a bit steeper due to the impact on physicians who now must use computerized provider order entry and clinical decision support systems. Many organizations encounter their first adoption “bump in the road” at Stage 4.

At Stage 5, closed-loop medication management is deployed. At Stage 6, the implementation of physician documentation and a full clinical decision support system—alerts, reminders, guidelines, order sets—again creates significant adoption hurdles to overcome. The top, Stage 7, is mostly a technical challenge as it demands data warehousing and a continuity of care document (CCD) that can be shared electronically (Figure 1).

Once an organization reaches HIMSS Analytics EMR Adoption Model Stage 7, the task of extracting meaningful benefits from digitizing medical records just begins. Although gaining adequate levels of adoption and proper use of the technology among clinicians seems difficult, leveraging the technology to achieve higher quality of care and lower costs proves exceedingly more complex, challenging, and dangerous.

| US EMR Adoption Model <sup>SM</sup> |                                                                                                         |         |         |
|-------------------------------------|---------------------------------------------------------------------------------------------------------|---------|---------|
| Stage                               | Cumulative Capabilities                                                                                 | 2012 Q3 | 2012 Q4 |
| Stage 7                             | Complete EMR; CCD transactions to share data; Data warehousing; Data continuity with ED, ambulatory, OP | 1.8%    | 1.9%    |
| Stage 6                             | Physician documentation (structured templates), full CDSS (variance & compliance), full R-PACS          | 7.3%    | 8.2%    |
| Stage 5                             | Closed loop medication administration                                                                   | 12%     | 14%     |
| Stage 4                             | CPOE, Clinical Decision Support (clinical protocols)                                                    | 14.2%   | 14.2%   |
| Stage 3                             | Nursing/clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology   | 41.3%   | 38.3%   |
| Stage 2                             | CDR, Controlled Medical Vocabulary, CDS, may have Document Imaging; HIE capable                         | 11.2%   | 10.7%   |
| Stage 1                             | Ancillaries - Lab, Rad, Pharmacy - All Installed                                                        | 4.8%    | 4.3%    |
| Stage 0                             | All Three Ancillaries Not Installed                                                                     | 7.4%    | 8.4%    |

Data from HIMSS Analytics Database ©2012 N = 5,319 N = 5,458

Figure 1. Electronic Medical Record (EMR) Adoption Model, United States

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## Clinical Workflow

In previous articles (2012, 2013), I have reviewed the importance of clinical workflow in gaining adoption and the role of well-designed processes to achieve desired outcomes. Yet, available technology dictates the extent to which clinical workflow and its inherent processes are molded and pieced together. Enhanced functionality allows for expanded creativity and more robust solutions. Better integration of technologies leads to an increase in possible technology combinations and

a higher probability of designing impactful workflows.

No matter what technologies are used, the end goals for any organization are adoption and behavior change to achieve desired clinical and financial outcomes. Well-designed workflows that satisfy the needs of users lead to high levels of adoption of information systems. High levels of adoption that do not facilitate behavior change replicate systems and the undesirable outcomes achieved before technology deployment. Therefore, techniques that

encourage behavior change, such as clinical decision support tools and performance scorecards, must also be embedded seamlessly in the clinical workflow to be effective.

The mantra during the late 1990s dot-com boom was “capture the eyeballs” of Internet users. Investors poured millions of dollars into companies with valuations based upon the number of unique viewers visiting a particular website. The dot-com bust that followed soon after proved that business models built upon page views, without a practical, immediate way to turn those views into revenue, positioned companies to fail.

### Dot-Com Lessons

The dot-com era provides important lessons that can be applied today in healthcare. Organizations that implement information technology without understanding what they will do with the “captured clinicians’ eyeballs” repeat the same mistakes of those failed dot-com companies. These organizations lack a viable “business model” to leverage their clinicians’ use of information technology to achieve the goal of high quality and safe care at a reasonable cost. Effective clinical workflow includes processes that facilitate evidenced-based clinical care for each patient at the point of care, while offering clinicians easy access to up-to-date, population-based performance reporting at the same time.

Tools exist for achieving effective clinical workflow, although we continue to learn and refine best practices. Informativists experiment with various alert and reminder schemes as they search for the optimum balance between too many and too few clinician interruptions. Specialty clinicians present significant challenges to designers of clinical decision support tools as the implementation of decision support must match the unique requirements of specialists and the needs of their inherently complex patients. Irrespective of these challenges, behavior, leading to a positive change in clinical and financial outcomes.

## Capturing the attention of clinicians at the point of care offers the opportunity to modify behavior.

Influencing clinician behavior across a population of patients also requires capturing the attention of the clinicians. Throughout the 1990s, payers employed clinician profiling reports or scorecards in an attempt to identify outlier providers and effect change in clinician practice patterns. Few of these efforts proved successful due to problems with data sources and the delivery and content of the scorecards.

Without access to electronic medical records, organizations utilized claims data to generate scorecards. Claims data lacked detailed clinical information and regularly lagged three months or more behind the date of care delivery. Scorecards, intended to influence physician behavior, possessed little credibility due to these limitations. Therefore, clinicians failed to regularly review them or seriously consider their findings.

### Better Data Sources

With the expansion in the use of electronic medical records, the data source for scorecards that can influence clinician behavior moves to a much more robust data source, a data warehouse populated with clinical information gathered from multiple clinical systems. In addition, analytical tools now exist that can easily comb through enormous data sets and generate insightful results presented in attention grabbing, meaningful graphics.

Effectively leveraging these new scorecards, representing the best in clinical business intelligence, requires a method to “capture the eyeballs” of the clinician in a way that influences behavior and modifies outcomes. Health information technology platforms that facilitate effective clinical

workflow, while simultaneously presenting actionable scorecards, offer a path to achieve real breakthroughs in enhancing patient care.

Ongoing advances in our understanding and use of clinical information technology provide opportunities to leverage those advances to impact care delivery. Utilization of healthcare information technology must now grow beyond the simple display and recording of patient information to a system that guides and supplements clinician decision-making to achieve organizational and societal goals. Rapidly increasing sophistication of mobile devices, expansion of interoperability, and advent of desktop roaming technology suggest exciting paths to explore. Ultimately, to effect change, the solution resides in capturing the attention and eyeballs of the clinician. ■

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### REFERENCES

- Chaiken, B. P (2012). Patient-centered workflow. *Patient Safety and Quality Healthcare*, 9(4), 16-17.
- Chaiken, B. P (2013). We know what to do. *Patient Safety and Quality Healthcare*, 10(1), 16-17.
- HIMSS Analytics. <http://himssanalytics.com>.