

INSIDE EDGE

Optimization: Clinical Performance Defines a New Era in Healthcare

EXECUTIVE SUMMARY

At first glance, the term ‘optimization’ may suggest post-implementation tweaks to an IT platform in order to derive optimum performance. While that’s an accurate definition on a technical level, optimization is really about the seismic shift occurring today at leading health systems, many Scottsdale Institute members, to an environment defined by clinical outcomes.

To date this environment is obviously inchoate, or imperfectly formed, but the clinical transformation predicted a decade ago is taking root not only on technical, process and knowledge levels but culturally and economically as well. Optimization involves sophisticated new governance structures and management roles that are quietly but rapidly forming a new center of gravity in the healthcare delivery enterprise.

Different aspects of the clinical optimization narrative are being written at many of the academic medical centers and health systems that have graced the pages of the IE report over the years. Two of them, Minneapolis-based Allina Hospitals & Clinics and Phoenix-based Banner Health, are presented here along with SI Corporate Sponsor Deloitte Consulting and IE newcomer Boston Medical Center.

Incentives at work

“Optimization is all being driven and accelerated by Meaningful Use,” says Mitch Morris, MD, principal with Deloitte Consulting. “Organizations are rethinking their timelines and pace in order to access HITECH incentive funds,” he says.

The implications are that, while many organizations have completed implementation of foundational EHR elements such as patient accounting, results reporting and clinical documentation, Morris says, Meaningful Use-driven clinical optimization “requires a whole new level of effort.”

In the past, organizations could get by with an IT focus on the implementation. However, even stage one of Meaningful Use—let alone the later stages—implies new levels of collaboration within hospitals and health systems. It is also further shaping the role of the CMIO and fueling an expansion of the number of CMIO positions across the industry.

Health delivery systems are also paying a lot more attention to governance, including project sponsorship. “Not-for-profits operate on consensus,” Morris says, “but how do you avoid consensus paralysis and achieve ownership of a clinical IT initiative in a timely manner?” That’s a challenge facing most health systems.

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- Robert B. Williams, MD,
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**Mitch Morris, MD,
Principal, Deloitte**

Getting serious about BI

Clinical optimization also requires a steady flow of sophisticated clinical knowledge or content, which demands equally sophisticated management to determine what form the content takes and how it is integrated into workflow as new clinical evidence becomes available. “This must be managed by the clinical side,” he says. Then there are tools like high-powered software-analytics engines that help clinical organizations discern how to act on the data produced by the EHR and stored in data warehouses.

“Many organizations have talked about business intelligence and clinical analytics but few have implemented it. Now we’re seeing significant investment in BI,” Morris says.

“There’s a lot of activity on multiple fronts” in optimization, he says, acknowledging that in the big picture such efforts are going beyond Meaningful Use. However, when it comes to advanced clinical systems today it’s important to match their timing to stages 1, 2 and 3 of Meaningful Use. “Sequence your activities in Core Measures, PHRs, HIEs and CPOE to Meaningful Use deadlines. Most of your thinking needs to be on that framework. Most systems are heading down that path,” he says.

Given the magnitude of the change taking place, it’s not surprising that many traditional approaches and assumptions are being upended in favor of a different order or emphasis. “We’re working with one

academic medical center implementing Epic that found it is better for it to fund what was originally planned as the latter stages of the implementation because this organization gets more HITECH incentive money for their doctors, for the ambulatory side, than for the inpatient component,” says Morris.

Ticking clock

“The clock is ticking. You’ve got to get on board. To achieve advanced clinical systems today you have to view them in the context of Meaningful Use and HITECH requirements,” he says. That’s going to require a higher degree of collaboration. “Organizations are really recognizing that these are clinical projects, not IT projects, and that physicians need to be meaningfully engaged.”

Given the critical role played by CMIOs, a position that requires a rare combination of clinical knowledge, IT expertise and executive leadership, it might seem that clinical optimization is a game reserved for academic medical centers and high-powered health systems. Not so, says Morris.

“The CMIO doesn’t have to be a full-time role. What many community hospitals are doing is convincing selected physicians to cut back on their patient practice to allow them to be part-time CMIOs. It’s easier if you’re a hospitalist or a critical care doctor as opposed to an OB-GYN. We’re seeing hospitals pay physicians to become involved.”

Another aspect of the optimization trend he says is that health systems are becoming increasingly standardized in terms of processes and technology—building a standard for the entire system and rolling it out sequentially, telling even centers of excellence within the enterprise, “This is the way we’re going to do it.”

Says Morris: “With the financial challenges we face in our industry you can’t afford to build it 12 times. Just do it once.”

Analytics at Allina

“It is important to acknowledge,” says Michael Shrift, MD, MBA, CMIO and VP of knowledge management at Allina Hospitals & Clinics, “that we are not doing this alone. It takes a village to solve this complexity. As the focus changes from data and EHR to data, EHR and human factors, we’re learning from many wonderful systems, Intermountain, Kaiser, Cleveland Clinic and Geisinger among them, and from the local and national Epic community.”



Michael Shrift, MD, CMIO, Allina Hospitals & Clinics



Allina is an 11 hospital, 80-plus clinic not-for-profit with a robust hospice and homecare division.

For instance, many Allina clinical leaders are attending the Advanced Training Program at Salt Lake City-based Intermountain Healthcare to learn how to improve care processes. Those classes are taught by Brent James, MD, chief quality officer at Intermountain and executive director of the Institute for Health Care Delivery Research. James is a featured speaker at SI’s Fall 2010 Forum, Sept. 30-Oct. 1, hosted by Intermountain in Snowbird, Utah.

Shrift highlights three key areas of human-factors optimization that directly relate to clinicians:

1. Proficiency training—how well a person uses the EHR;
2. Improved user interface—number of clicks it takes;

3. Workflow—the human tasks during the patient encounter.

“Any one of these can add extra minutes to a user’s day and take the focus off the patient,” says Shrift. “Our experience in having a nearly paperless environment is that the basic system does help clinicians reach high plateaus of quality and safety. Today, for example, with the exception of rare users, all 5,000 of Allina’s partnering physicians enter orders online. However, to get to that next level requires an added focus on the human factors.”

Oakland, Calif.-based Kaiser Permanente has taught Allina about their optimization efforts. Douglas Eastman, PhD, head of Kaiser’s office of technology adoption, referred the Allina team to a program called “Pathways to Proficiency,” which many Allina clinicians will undergo as a pilot in the next few months.

“We’ve learned a great deal from Kaiser. We started a pilot program of off-site intensives for our providers based on our own internal data. Through data gathering we’ve developed a learning prescription for providers to help them become more proficient at the EHR,” says Shrift. Allina informaticists mine data to develop a picture of how specific physicians use the EHR.

Data-driven CareTeams

For example, a tool within the organization’s Epic EHR creates reports on “in-basket” functionality, which tracks a user’s steps in the EHR. The medical informatics team confirms that data with “at-the-elbow” evaluations of those providers—and follows up with post-session measurements to determine how to improve the program. “We hope to roll it out beyond physicians to other clinicians across the enterprise,” he says.

To gauge how far Allina is on its way to becoming an analytics-based culture

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- Eric Finocchiaro, consulting specialist leader, Deloitte, LLP
- Mitchell Morris, MD, principal, Deloitte Consulting, LLP

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- Joe Boyce, MD, CMIO, Heartland Health

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- Sirajuddin Anwar, M.B.B.S, M.S, CPHIMS, clinical informaticist, CDS, Memorial Hermann Healthcare System

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- James P. Keller, Jr., M.S., VP, Health Technology Evaluation and Safety, ECRI Institute

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The idea is to program the click strokes to make it easier for the physician to make the right choice or step in a particular patient's care (guardrails) and harder to make the wrong choice (cattle prods).

that supports clinical optimization, you need only look at its highly data-driven CareTeam pilots in its clinic division. The extensive pilot assigned two physician assistants per doctor—twice what other health systems typically provide—who break down the total patient workflow and reassign work to allow the physician to focus on care. Allina is now rolling the program out more broadly.

“CareTeams allow the physicians to work at the top of their licenses. We can assign other critical and workflow tasks to the assistant. The end result is that the physician's attention is much less on the computer and much more with the patient. Our doctors are more productive and happier and so are our patients. It's been a win for the triple aim of cost, quality and patient satisfaction,” says Shrift. “These are ways to give time back to physicians. And no docs want to go back to paper.”

Guardrails and cattle prods

Another key optimization initiative at Allina combines the areas of clinical workflow and the EHR user interface. A 40-person clinical decision support (CDS) team—physicians, nurses, librarians, pharmacists and other informatics-related disciplines—is tackling the conceptually simple yet complex-to-carry-out strategy of making it easy for clinicians to do the right thing and difficult to do the wrong thing by hardwiring best-practice workflow.

“We're doing very good work now for many service lines such as cardiovascular, orthopedics and OB-GYN,” he says. Shrift describes the user interface as basically the “click strokes” required on a computer screen and uses the analogy of websites to clarify the challenge. “There are some lousy websites and some great websites and we're trying to emulate the good ones.”

The idea is to program the click strokes to make it easier for the physician to make the right choice or step in a particular patient's care (guardrails) and harder to make the wrong choice (cattle prods). For example, successful compliance with CHF core measures has been measurably improved by guardrail and cattle-prod tools, he says. “If you're doing the right thing you don't get bugged. If you're doing the wrong thing the idea is we bug you until you do the right thing. Of course, this requires a lot of collaboration among clinicians, IS and our Excellian (Epic) team to refine. Through hard work we have a whole suite of online tools that allow us to bring up the right tool at the right time.”

Banner of consensus

If building a culture of collaboration is a key element of clinical optimization both inside and outside the organization, Phoenix-based Banner Health offers an instructive lesson in the former. Banner has just completed implementation of CPOE at the 10th of its 23 hospitals, which are located in seven western states.

Evidence of its progress in clinical optimization is that earlier this year Banner was named as a Top 10 Health System in the country based on clinical performance. As recently as three years ago, the organization was not even ranked in the top 60.

“We decided the only way we could really develop evidence-based practices was to develop clinical consensus groups,” says John Hensing, MD, executive VP and CMO at Banner. These teams include physicians, nurses and therapists representing nearly all specialties: pharmacy, ED, critical care, surgery, cardiac surgery, neurosciences, hospital medicine, cardiology and obstetrics.

Banner uses both internally derived data and guidance from those multidisciplinary

groups to arrive at what the standard of practice is for treating various disease states and conditions. That guidance is then used by medical informaticists to develop order sets and alerts for the health system's EHR.



**John Hensing, MD,
CMO, Banner Health**



Banner Health*

"I'm sure we're not unique," says Hensing, noting that Banner pays clinicians to be involved in the process, but that fact is incidental to the real value of having teams of each discipline be accountable for content design. Also, because the work of the teams is conducted on the corporate and not on the hospital level, their standards become the rule for the entire enterprise.

After the consensus teams have identified the best practices, their recommendations go to Banner's care management council, comprised of the CMO, CNO, leaders of finance, risk management, informatics and members of senior management. Hensing leads this 70-person group which is able to meet no more than quarterly "because we've done a lot of the work ahead of time." He is responsible for forwarding the final recommendations to the senior team, including recommendations for capital investment and standardization across the company.

Then the design and implementation is handed over to the respective clinical service line. Four project managers support the consensus groups by providing organizational support, keeping minutes of meetings and maintaining the momentum of various initiatives.

Literally hundreds of people from all facets of Banner are engaged in clinical optimization. "We did a count two years ago and found that 500 people were involved in either functional teams or supporting roles in optimization. We have 3,500 employees, so that's a healthy fraction of people who are involved in continually improving clinical practice," says Hensing.

Like operating an aircraft carrier

"The real challenging piece is being able to achieve consensus," he says. "Years ago I didn't think you could get to consensus among clinicians." One strategy that's helped is splitting informatics from the technical IT operation, a move that has allowed five physician informaticists to more freely design order sets and, in the larger sense, oversee clinical effectiveness. Still, they ultimately turn those order sets over to the technical IT people for conversion into code.

That such a massive effort of such sophistication is undertaken at all is a clear break from even the recent past for healthcare delivery organizations. "It is complex but it is not undoable," says Hensing. "You have to teach yourself that this is actually achievable. If the U.S. Navy can operate an aircraft carrier, we can do this."

The culture is as important as anything. "If you have people questioning the value of standardization it's a non-starter. Organizations need to develop consistent messaging that we're going to do it the same way everywhere we operate," he says.

Achieving that goal has involved a journey.

"The culture we now have we didn't have five years ago," says Hensing. "We've made major progress as a company. It's top-down-driven from a single board of directors—not separate boards for 23 different hospitals. All the hospital CMOs report to

New CDS Collaborative

Scottsdale Institute is again supporting a broad-based collaborative to develop and disseminate best practices for improving care outcomes with clinical decision support. Building on two prior successful guidebooks for CDS implementers, this initiative is updating and enhancing guidance for successful organizational CDS programs and CDS interventions targeted at specific objectives. Find out more about the effort and sign up to participate here: himssclinicaldecision-support.wiki.pbworks.com/CDS-Guidebook-Update

me and there's a single corporate CFO. We have a management matrix that operates as a single entity."

Boston Med

Boston Medical Center is the Rodney Dangerfield of healthcare systems in the city of Boston. It doesn't get the national visibility of Brigham & Women's, Massachusetts General or even Boston Children's Hospital, all featured on ABC's summer reality drama, "Boston Med," whose title alone should have earned BMC a role.

Maybe BMC is just too busy to care. A 639-bed tertiary care center that serves as the teaching hospital for Boston University Medical School, BMC is the largest safety net hospital in New England and the nexus for its own network of 15 community clinics in Greater Boston. Its ED treated 131,288 patients last year.

That's why BMC, which serves as Boston's public hospital, provides a good proving ground for clinical optimization on a community level.

It already had a head start when Joel Vengco arrived three years ago as BMC's chief applications officer. "BMC was largely already digitized," he says. "The EHR was already implemented at its 16 organizations, including the hospital and clinics."

He believes that BMC's IT situation reflects the country as a whole. "Many of us have some kind of EHR, yet we're not able to share information. We essentially put records into a computer but still needed to fax stuff to doctors." Physicians would end up using two records a day—the electronic one and a paper copy. Like many people, Vengco longed for the equivalent of the banking system, in which all transactions, no matter where they occurred, would show up in the system.



Joel Vengco, Chief Applications Officer, Boston Medical Center



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"We didn't have that. We had medication lists or diagnoses fragmented in three different places. I wanted to figure out, since we had our records digitized, how we could share information using our own local EHR without having to create hundreds of point-to-point interfaces. We came up with the Clinical Information Exchange, which is an HIE," he says.

Vengco says BMC underwent the same progression described by National HIT Coordinator David Blumenthal, MD: 1) Deploy an EHR; 2) Make that EHR interoperable with other EHRs.

"That's what we did with CIE, which allows the comprehensive digital record to follow a patient who sees a physician in clinic in the afternoon and ends up at the ED in the evening," he says.

Besides providing the most accurate and timely information for a clinician caring for that patient, the CIE streamlines workflow by eliminating unnecessary calls and faxes and eliminates the need for those costly point-to-point interfaces. In contrast, interfaces would have become exorbitantly costly taking into account 16 sites multiplied by the number of labs and other nodes required to feed the EHR.

Instead the CIE uses a software "broker" that effectively says, 'Here's information regarding a patient from the lab or other data source that you can request be sent to you.'

"It's more of an on-call services model. I just ping the information exchange to get

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the information and through its ability to manage the patient's identification it will pull from the different repositories and push back to you the user," says Vengco.

This model is how many RHIOs—now HIEs—have been built and what the National Health Information Network (NHIN) is moving toward, he notes.

Liberating the data

BMC co-developed the CIE technology with GE, which was interested in developing record-locator-service software to position itself in the market for HITECH and Meaningful Use. "That gave me the leverage to increase the scope of the project," says Vengco. When he came on board in the fall of 2007, the humble goal was merely to be able to exchange lab results. With GE's weight behind the initiative, the CIE also added medications, problem lists, allergies, immunizations and consult notes. Current works in progress are ED and radiology notes and discharge summaries.

"We're now at the point at which the data is liberated," he says, meaning codified and standardized according to national standards such as SNOMED and LOINC. "Now it's not subject to proprietary codes and can therefore be used for computation, analysis and true interoperability. It's semantic interoperability at its best," says Vengco, whose background is medical informatics. The effort required BMC to hire pharmacy and other types of informaticists to develop the required software codes.

"You really need those individuals to vet the standards." He's thankful for the collaboration and government initiatives

that have made it possible for health systems like BMC to arrive at this point in clinical optimization. "Without HITECH and the push by the Feds and standards bodies, the vendor community would never have accommodated interoperability. Why would they want to? That's what certification is all about. It forces them to abide."

With the CIE in place, BMC has enlisted SI Corporate Sponsor Carefx to develop applications for the CIE platform that solve business problems or functional requirements. One example is referral-management software that allows the patient data to automatically flow from the primary care physician to the specialist at the time of referral. That has already helped BMC recoup a whopping \$6 million to \$7 million a year in better referral management.

Conclusion

Clinical optimization is a complex, all-encompassing movement that requires new governance structures built around evidence-based best practices, new leadership built around physician executives like the CMO and CMIO, and a collaborative team-based culture driven by data analytics. Like a blacksmith's bellows, HITECH and Meaningful Use are heating the elements into a new alloy of improved patient safety, quality of care and efficiency.

If it all sounds incredibly daunting, it is.

Says Allina's Shrift: "You have to be ready to be humbled not every day but every hour. But if you can get past that it's very gratifying because we are making a huge difference for our providers and patients. I can't stress that enough."

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