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Implementation and Training

It seems fitting that we follow our "CPOE Snapshot" of last month's Inside Edge report with one on the topic of implementation and training—it's all about roll-out, literally and figuratively. While it's a cliché to say technology is the easy part and people the hard part, implementation is really about the interplay between the two. Workflow, of course, is a key piece of that interplay, with education and training providing the lubricant.

In our review of some selected best practices in this area, we found masterful examples of this interplay. While it may be hyperbolic to call them well-oiled machines, the implementation and training case studies we highlight have all been built on the hard-won lessons of almost two decades of effort, especially since 2000. They range from New York City's public health department, which is rolling out EHRs to community physicians, to health systems like Allina, Trinity, Ascension Health and Banner, all well-documented leaders in IT, to an innovative collaborative educational initiative in traditionally progressive Massachusetts.

Bytes for the Big Apple

The New York City Department of Health and Mental Hygiene is the largest local public health department in the country, with a $1.5-billion-dollar annual budget and 6,000 employees serving the seven boroughs of New York City. So the agency's experience implementing EHRs among community physicians can be instructive to say the least.

Launched in 2005 as a mayoral priority with $30 million backing, the goal of the Primary Care Information Project (PCIP) is to help primary care providers in underserved areas of New York. The funding supports deployment of a commercial ambulatory EHR to 2,500 providers—family practitioners, pediatricians, OB-GYNs and other specialists—by the end of 2009. After a 16-month RFP process, PCIP selected Westborough, Mass.-based eClinical Works as the vendor. eClinical Works established a New York satellite office to execute a litany of tasks:

1. Provide a project manager for each physician practice to oversee key milestones;
2. Data migration from the old system to the new;
3. Network checks (connectivity);
4. System configuration assistance;
5. Onsite training and support;
6. Onsite go-live support;
7. Two years of maintenance and support.

Scottsdale Institute Conferences 2008-2010

Spring Conference 2009
April 29-May 1, 2009
Camelback Inn,
Scottsdale, Ariz.

Fall Conference 2009
Hosted by Texas Health Resources
Sept. 24-25, 2009
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Spring Conference 2010
April 14-16
Camelback Inn,
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"We're complementing the vendor's effort with a variety of teams that provide outreach, education, integration, quality improvement and workflow troubleshooting," says Mat Kendall, director of operations for PCIP. There's also an IT team to help address network questions and other IT issues, and teams dedicated to evaluation, quality improvement, interfaces (particularly lab and citywide patient registry) and vendor relations. A total of 55 people from the city agency are part of the teams.

PCIP began rolling out last July and currently has 750 providers using the system. It expects to add 75 to 100 providers a month and reach 1,000 by the end of the year. Providers must supply $10,000 in in-kind contributions, which includes hardware that meets certain specifications and "sweat equity" like in-house training. "We'll pay for all the software. However, some providers just don't have $10,000, so for certain high-volume Medicaid providers we can cover hardware," notes Kendall, whose responsibility includes overseeing outreach and administration, including the important detail of ensuring providers meet the hardware specifications. "People try to cut corners by not buying a fax server, for example, because they don't believe they're important. But those are critical components in the system," he says.

So far the strategy has worked. Of the 121 to go live on the EHR, only one practice has dropped out. While it's still early in the game, that drop-out rate is less than 1 percent of practices, much lower than the 10 percent the program expected and far less than the national average of 15 percent, according to Kendall.

Among the lessons learned is the need to pay particular attention to elements like lab interfaces and billing systems that are especially relevant for community physicians. Under the initiative the vendor has provided a detailed project plan for a practice to go live. Then there's workflow analysis. "Spending extra time on workflow analysis is really important, especially for large practices," he says.

"This is an iterative process. It's really important to get lab interfaces, but there are no national standards. There are also special education issues when it comes to e-prescribing. Providers are so used to whipping out their prescribing pads. The first time they do e-prescribing it takes twice as long. About the third time it starts to get faster. Providers are often not patient enough," Kendall says. "We encourage providers to be thoughtful about this process."

To monitor and assess the benefits of PCIP, providers will be required to submit utilization reports that include quality measurements, and non-identifiable data will be shared with the physicians so they can see how they are doing compared to their peers in areas like smoking cessation. "Currently they have no concept," he says.

At this time, data-sharing among the providers and the agency amounts to secure, web-based transactions, but the network

The Scottsdale Institute is proud to announce Community Medical Center based in Missoula, Montana, as a new member.

Community Medical Center, a not-for-profit corporation, is owned by the community of Missoula and is governed by a 15-member Board of Directors. Founded in 1922 and established as a non-profit corporation in 1947, CMC is located on a 45-acre campus in Missoula. Missoula is a community of 90,000 nestled in the Rocky Mountains between Glacier and Yellowstone National Parks.

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is being built according to national health information network standards. “We’re waiting for a RHIO and there are five in New York that are pretty strong,” says Kendall. That group will eventually come under an umbrella RHIO called SHINY, for State Health Information Network of New York, and all will be funded by the $1-billion HEAL NY program. PCIP also plans to hire an economist to analyze Medicaid data from the program, “A lot of the big ROI will take years to assemble,” he says.

Minnesota Big Bang

After launching its Epic EHR in 2004, Minneapolis-based Allina Hospitals and Clinics has implemented it in 25 hospital-based clinics and 50 free-standing clinics and eight of its 11 hospitals. Hospital number nine is going live even as we write; number 10 in February and the final hospital yet to be built in Owatonna, Minn., will roll out the EHR in October 2009.

Susan Heichert, Sr. VP, CIO, Allina, Minneapolis

“Our secret to success is that we sit down and review lessons learned after each facility’s implementation,” says Susan Heichert, Sr. VP, CIO, at Allina. Allina implements the clinics near a hospital first and then the hospital several months later. “We let physicians get used to it in the clinics. And we do a Big Bang, bringing up the revenue cycle and clinical systems all on the same day,” she says.

“It’s been going faster as we go along. In the first year we set up one small hospital, in the second year our largest hospital and a small regional, and in the third two metros and a regional. In 2007 we did another metro and a regional the first half and then started working on a major upgrade to the EHR software. That’s because when we do an upgrade we have to flip the switch all at the same time. Now we’re starting rollouts again,” says Heichert.

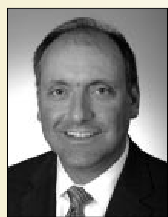
CPOE was held back for the first couple hospitals but is now part of the rollout “so they weren’t living with half a paper chart. Now we just do it all at once,” she says. Software upgrades must be done unilaterally because the health system uses a single database. “We have a single record for everybody. It’s very, very integrated,” says Heichert. The entire project is costing $250 million for the first four years.

Clearly there are some solid lessons learned. “We like to create a structure that ensures success for each site,” she says. There’s a site implementation team—including a site steering committee—that includes a site-based manager for each project, bolstered by a corporate project manager and corporate IT manager. They work together to manage the implementation and make sure milestones are being met.

Welcome New Member continued

Community Medical Center is licensed for 146 acute-care beds including: Medical/Surgical, Medical Surgical-Pediatric, Obstetrics, ICCU, ICCU-Pediatric, Neonate ICU and Rehabilitation. Almost 6,000 inpatients are admitted each year. Over 151,000 outpatient services are provided annually. CMC’s 300 physicians and 57 allied health staff service more than 97,000 visits annually. With an annual payroll of over $38 million, CMC employs over 1,100 people (868 FTEs).

Welcome Steve Carlson, CEO and President, Leigh Thurston, Vice President Information Technology —CIO, and the entire Community Medical Center team.



Joseph L. DeVenuto, VP, Information Services, and CIO at Norton Healthcare, has been named *Technology Executive of the Year* by Greater Louisville Inc. (GLI). GLI is the Chamber of Commerce and economic development agency for the Louisville and Southern Indiana metropolitan area. Joe was honored for his efforts in advancing the use of technology within Norton Healthcare and preparing managers and next-generation information technology executives. He was also recognized for his generous volunteer contributions to the community.

Norton's Information Services Department under Joe's leadership has won several other awards, most recently placing on the

continued on next page

Heichert says corporate leadership has obviated the need to spend excess resources on overcoming what might have been resistance to the EHR. "Our CEO has made it clear that this is a priority, that we're going to standardize," she says. That said, a handful of physicians at the second hospital to roll out the EHR "didn't want to do CPOE. However, leadership communicated to them the reasons we're doing this. It helped them to understand the value of the implementation. We put a team together to identify issues and created committees of employed and non-employed staff. It wasn't easy. We called it our 'adoption project.'"

The work is ongoing. Chemotherapy orders remain paper-based, for example, because Heichert and her team didn't feel the EHR vendor could handle the specialized protocols. Also, about 20 percent of orders are verbal orders, consistent with pre-CPOE percentages. Clinicians who come to the hospital only rarely—and therefore can't be expected to internalize use of the EHR—are partnered with nurses who assist with entering orders and navigating the online record. In some of the hospitals, medical staff bylaws specify that all other physicians must use the EHR.

Heichert lists some familiar but nevertheless critical guidelines to implementation:

1. Strong leadership. "We set a rule that the facility should not be doing any other project either side of the go-live because we want their full attention and commitment," she says.
2. Commitment of funds. "I've seen a lot of rollouts stop because of lack of money."
3. Optimization. "That's an entirely separate project that begins with and continues after roll-out."
4. Lessons Learned sessions after each roll-out. "Being able to adjust your approach. You have to be very flexible and be creative."
5. Control of scope. "Know when to say no. Stick to a scope you can actually achieve. For example, we didn't do bar code medication administration because we determined we had enough on our plate. You need to focus on what can actually be accomplished," says Heichert.

Allina centralizes training to the point that corporate sometimes sets up a trailer for that purpose onsite at implementations that are not centrally located. "We do quite a bit of eLearning and then some classroom. Our training is mostly at the functional level," she says. Giving local conditions their due, new employees are oriented to the workflow at the particular facility they will work, again, relying heavily on eLearning.

View from two large Catholic health systems

As a CMIO who has moved from one large Catholic health system to another, Alan Snell, MD, has had an opportunity to view EHR and CPOE rollouts from two different management philosophies. For the past 15 months he has been CMIO at St. Vincent Health in Indianapolis, part

of national system Ascension Health, after spending eight years in the same position at St. Joseph Regional Medical Center in South Bend, Ind., part of Novi, Mich.-based Trinity Health.

Alan Snell, MD, CMIO, St. Vincent Health, Indianapolis

The latter is known for its centralized approach to EHR implementation; the former employs a more decentralized approach consistent with its multi-state system. St. Joseph, like the rest of Trinity, uses the Cerner EHR; St. Vincent Health uses Eclipsys and both of the parent organizations have been involved in multi-state, multi-year EHR projects. Trinity's approach starting in 2002 was to move all of its hospitals to a single vendor platform and single data center to support EHR and CPOE. (Trinity has since split its data center into two sites).

"We learned from each implementation in Michigan, Iowa and Indiana, and it didn't take long to achieve a best-practice model," recalls Snell. For one thing, Trinity discovered that it was taking too much time to map current workflows at each site. "So, they developed a nicely structured template for clinical workflows and strong recommendations about training," he says, including utilizing resources like temporary trailers with fully loaded PCs.

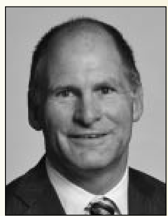
"Trinity had a well-structured, well-tuned project management approach. It was very much a top-down process—and included a rigid timetable that deliberately avoided Joint Commission surveys and construction projects," says Snell, who cites a key lesson the organization learned: use the Big Bang, in which you roll out all financial and clinical software at the same time. "The goal is to get through the turmoil as fast as you can. I think it's becoming more of an industry standard now. The phased-in approach is losing favor. Even vendors are recommending Big Bang. It's too difficult for clinicians to live in a half-paper and half-electronic world."

In contrast, the strategy at St. Vincent Health is driven by Ascension Health's Strategic Direction but is implemented at the local level. Ascension uses four different EHR vendors and has not mandated a single vendor. That's both because of Ascension Health's size—it's the nation's largest not-for-profit health system—and because many of its hospitals have already made major investments in IT. If a hospital has not yet invested in an EHR, Ascension Health will implement a standardized Cerner platform.

St. Vincent is no small fry itself, with 18 acute-care sites, nearly 12,000 associates and an annual budget of $3.1 billion that makes it one of the largest ministries within Ascension Health. When Snell arrived 15 months ago, St. Vincent had already begun rolling out components of Eclipsys, albeit not within a planned implementation for all its 18 sites, which

Congratulations continued

2008 Information Week 500 list of the nation's most innovative users of information technology and *ComputerWorld* list of the 100 best places to work in IT.



Tim Zoph, VP, Information Services, and CIO of Northwestern Memorial Hospital, was awarded *The 2008 CIO of the Year Award* by The Executives' Club of Chicago, in cooperation with The Association of Information Technology Professionals. Tim was chosen for this prestigious award from a list of top technology candidates in the greater Chicago area. The Executives' Club of Chicago is a business forum for thought leadership, education and best business practices.

Tim leads a technology team of 250 with an operating budget of $40 million for IT, communications systems and electronic medical record functions.

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November 12
Are Integrated ED Solutions Overtaking Best of Breed Products?
- Jason Hess, research director, KLAS Enterprises, Orem, Utah

November 14
Impact of Patient Involvement in their Care
- Kathy Pereira-Ogan, RN, director, Service Excellence and Patient Satisfaction, Christiana Care Health System, Wilmington, Del.
- Kristen Lindsey, project leader, Department of Information Services, Christiana Care Health System, Wilmington, Del.

November 19
Using Technology to Improve the Patient Experience
- Bryan Croft, VP, Operations, The Methodist Hospital, Houston

November 20
A Review of the Piedmont Healthcare OIG Audit
- Nadia Fahim-Koster, MBA, CHPS, CISSP, director, Information Security, Piedmont Healthcare, Atlanta,

more events on next page

range from 25 beds to 600. That has now changed. "What we're doing at St. Vincent is building a standard EHR platform with multiple implementations. Everything is moving toward a standardized format and content with a project timeline that includes all the sites," he says. The organization is currently in the middle of its design phase.

"We're moving toward standardizing on Eclipsys and planning on this to be a three-year project," says Snell, who plays a major role in content development.

St. Vincent Health is also investigating a centralized training approach, which has traditionally been left to each site. "We standardized the design-and-build and now want to create standardized training materials, educational approach and ongoing support," he says.

"We have several options and opportunities, including a combination of internal resources and contractors. We are confident there are a number of people very comfortable with the Eclipsys product," says Snell, adding that the vendor provides a training model that can be adapted to individual sites.

Banner rollouts

With 20 hospitals in seven western states—two of which are new, all-digital facilities—Phoenix-based Banner Health is familiar with implementation and training for EHR from the ground up. Now the organization is preparing educational materials for CPOE rollout to its 18 "existing" hospitals, facilities that have already implemented some clinical IT.

"Yet again, we're changing their workflow," says Judy Van Norman, Banner's senior director of care transformation, in reference to the next roll-out phase for those hospitals, which earlier implemented ancillary and nursing systems: lab, pharmacy, radiology, surgery and ICU. "Now we're adding physician ordering. The next phase takes them from the electronic/paper hybrid to all electronic," she says.

Judy Van Norman, Senior Director, Care Transformation, Banner Health, Phoenix

"Physicians have been retrieving results electronically but haven't been able to input orders or do documentation. So, we have a partial paper record for those pieces that are paper-based," says Van Norman, adding, "It's difficult in the hybrid environment." A few hospitals have spent as long as two years in that in-between state; others have been less than a year. The CPOE implementation schedule incorporates the design and build for order sets and results-reporting modules for all 18 hospitals in seven states. The first facility will roll out CPOE in July of 2009 and the last in July 2011.

"One lesson learned from the journey with nursing and our first training materials is that it needs to be more than merely how you navigate the computer. We've learned that you need to cover change management, workflow change *and* how to

navigate the computer system. Training needs to be much more comprehensive," she says. CPOE education will follow that rule, especially because clinician workflow varies by role. "Physician workflow is very different for an ED physician than a hospitalist. So just telling a physician how to navigate the computer screen is not nearly as important as, 'How do I as a hospitalist round on my new patients?'"

Education materials include online modules tailored for all comers, from someone starting at a basic level—there's one called "Managing the Mouse"—to quite specialized "at the elbow" training with an informatics support person doing rounds. Banner has developed all its training modules in-house with a centralized training staff who deliver the bulk of pre-implementation training. As a highly matrixed organization, training has dual reporting to care transformation and nursing leadership. The training team includes six FTEs, all nurse educators, and the plan for CPOE is to add three more, including one content developer and two trainers.

In addition to a dedicated training staff, Banner brings in corporate resources for its implementation and training. Key training components and their departmental supports include:

- Change management work (organizational development staff from HR);
- Communications (PR staff);
- Clinical standards definition (care management team);
- Workflow redesign (jointly done by front-line caregivers, management engineers and nursing informatics staff).

It's been an enormous effort. Since design work was begun in 2003, Van Norman estimates that Banner's care-transformation initiative has implemented more than 400 clinical-application implementations across 20 facilities.

CPOE U

You might call Massachusetts the CPOE Commonwealth. As noted in last month's IE, the state legislature has stipulated that hospitals must have implemented CPOE by 2012 as a condition of licensure and that Blue Cross Blue Shield of Massachusetts has adopted the same requirement and deadline for hospitals to participate in its quality incentive programs. Even before those landmark decisions, a collaboration of healthcare stakeholders, including the New England Healthcare Institute, Massachusetts Technology Collaborative, Massachusetts Hospital Association, Massachusetts Council of Community Hospitals and various payers launched the Massachusetts Hospital CPOE Initiative to accelerate adoption of CPOE in acute care hospitals in Massachusetts.

That means reaching out to hospitals and community physicians. Massachusetts Technology Collaborative, based in Westborough, as part of the MA Health Care Reform Bill received $5.5 million from the state to support a statewide initiative to adopt CPOE as well as other significant technologies. A portion of those funds were to provide outreach

Upcoming Events continued

December 2
CPOE Simulator at Northwestern Memorial Hospital
- Tim Zoph, VP and CIO, Northwestern Memorial Healthcare, Chicago
- David C. Classen, MD, M.S., CMO, CSC, Falls Church, Va.

December 18
Is Medication Administration Technology Creating a Win/Win at the Bedside?
- Jason Hess, research director, KLAS Enterprises, Orem, Utah

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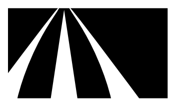
"There's an entire group of emerging physician leaders stepping into clinical IT leadership roles without any formal background or training and they are being asked to lead these enormous clinical IT initiatives in their hospitals."

and implementation support services. The result: several statewide educational conferences, national research on best practices and the creation of CPOE University. Two-and-a-half years ago, MTC hired Bethany Gilboard, a 20-year hospital-industry veteran, to lead that collaborative effort as director of health technologies. "The CPOE Initiative is a sea-change opportunity," she says.



Bethany Gilboard, Director, Health Technologies, Massachusetts Technology Collaborative, Westborough, Mass.

"Frankly, inpatient CPOE requires that physicians use the system to enter orders, but most of the financial benefit accrues to the hospital because of less-costly drug use and fewer drug errors coupled with improved quality and safety for the patient. The payer also benefits. So, docs go into it asking 'What's in it for me?'" she says.

It took a lot of convening to get to the final product. Gilboard began by pulling together hospital CIOs, physician IT champs who were either in the beginning of CPOE implementation or far along helping to identify lessons learned, which resulted in creation of focused roundtables for the physicians. Other research addressed key questions: Is it necessary to pay physicians? How do you do workflow redesign? How do you measure the effectiveness of your CPOE system?

"CIOs loved the collaborative environment. We're seen as a neutral convener. We don't take sides—we create collaborative learning and peer networking among the physicians and hospitals," she says. Ultimately the effort led to the realization that doctors needed to be the drivers of this clinical IT initiative and had to be involved across the state, prompting Gilboard to create a database of physicians involved in clinical IT, VPs for medical affairs as well as "plain old community physicians. These physicians were unfamiliar with the skills necessary to become effective communicators and sponsors of a CPOE initiative," Gilboard says.

"They primarily wanted a venue," she says. "Most hospitals have moved toward hospitalists. So the ability to coalesce a medical staff in some ways is waning. As we began to have these meetings, we realized there's this black hole in Massachusetts. There's an entire group of emerging physician leaders stepping into clinical IT leadership roles without any formal background or training and they are being asked to lead these enormous clinical IT initiatives in their hospitals. These physicians were falling through the cracks. The greatest service we could provide was peer learning and implementation-support services focused on physicians."

Some of the topics CPOE University covers include:

1. What is CPOE from a physician perspective?

2. How to Become a Physician Sponsor/ Champion for CPOE
3. Communication strategies
4. Clinical workflow redesign
5. How do you serve/direct on a Physician Advisory Committee?

Offered free of charge, the first semester is for physicians and includes five seminars, four hours each, and two full day courses. "From what we have learned, you can never have too much clinical workflow analysis and process redesign. We vetted the course curriculum with the Massachusetts Medical Society, the Massachusetts Hospital Association and other stakeholders," says Gilboard.

The first of three sessions was held on Oct. 21 at eastern, southern and western locations in the commonwealth. MTC is developing a second semester for nurses, pharmacists and other non-clinicians. "What we've found in Massachusetts is that a majority of vendors don't do a good job of implementation and training of physicians, and Massachusetts hospitals don't have the resources to do it themselves. At the end of day, everybody's going to have to have CPOE—and it's not a question of just having it up but does the system also have robust clinical decision support to effectively prevent ADEs, reduce formulary costs and improve quality of care," she says.

Conclusion

The healthcare industry has built a wonderful body of best practices for rolling out EHRs and CPOE. As the body of knowledge grows, health systems are getting faster and more efficient at EHR rollouts. However, there are still unexpected roadblocks. "We would have been done in 2007, but took the EHR software upgrade," which set the initiative back a year, says Allina's Heichert. "You get more and more efficient as you go."

And, as both New York's and Massachusetts' experiences illustrate, the EHR (and by extension, CPOE) is becoming more and more "democratized" as it penetrates the physician community outside the hospital walls. Perhaps the decades-old prediction about the electronic medical record being only 10 years away is finally coming true.

"At the end of day, everybody's going to have to have CPOE—and it's not a question of just having it up but does the system also have robust clinical decision support to effectively prevent ADEs, reduce formulary costs and improve quality of care."

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Registration begins in January 2009

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