Kaiser's Long and Winding Road

Howard J. Anderson, Executive Editor
Health Data Management Magazine, August 1, 2009

Electronic health records are in the spotlight, thanks to the federal economic stimulus package. Many hospitals and physician groups are scrambling to draft strategies to fully implement EHRs in time to qualify for maximum federal incentive payments. Relatively few have rolled out every component of a truly comprehensive EHR.

But Kaiser Permanente is entering the home stretch in what's turned out to be a seven-year drive to implement comprehensive EHRs, personal health records and related systems at all of its hospitals and clinics. The experiences of the Oakland-Calif.-based not-for-profit organization, which owns 431 medical offices and 35 hospitals plus a large health plan, provide valuable insights for others that aren't as far along.

Key lessons learned along the long and winding road, says Andrew Wiesenthal, M.D., associate executive director of The Permanente Foundation, include:

* Training and related productivity losses represent more than 50% of the total cost involved in a big EHR project.

* Training of clinicians is more effective if it's done "on the job" rather than in classes before the EHR is rolled out.

* Deploying EHRs throughout a hospital in one "big bang" is more effective that phasing it in unit by unit.

* Organizations that own several hospitals can benefit from rolling out EHRs at one organization, studying what works and what doesn't, and then using the same implementation formula at all other hospitals.

But perhaps the biggest lesson of all, Wiesenthal says, is that implementing a clinical system is never really over.

"What we are doing now is going back to everyone who has been trained in the 'get along' phase of system usage and assessing what they know how to do and helping them learn how to do things better," he says. "The 'final' phase is learning how to change how we do things better for patients and transform care. We're just at the threshold of all sorts of wonderful stuff."

That "wonderful stuff" includes, among other things, using clinical data to identify what treatments yield the best results and then alter treatment protocols, Wiesenthal says. He
serves as co-leader of the EHR effort in his role at the foundation, which is the parent
compány of The Permanente Medical Group, the group practice arm of Kaiser.

Kaiser's efforts to alter the practice of medicine by leveraging data in EHRs could provide
a valuable example to other organizations down the road, says Laura Jantos, principal at
ECG Management Consultants, Seattle. Although Kaiser "is so large and so complex"
that its EHR technical strategies may not fit a number of other smaller organizations,
Jantos says Kaiser's efforts to revamp care delivery offer lessons on true health care
reform.

The Timeline

After many false starts on ambitious clinical automation projects, Kaiser announced early
in 2003 plans to spend $1.8 billion over three years to implement a range of applications
from Epic Systems Corp., Verona, Wis. These included EHRs, personal health records,
computerized physician order entry, clinical decision support, scheduling and billing
software for all its inpatient and outpatient settings.

The deal with Epic was groundbreaking. At that point, the company was known for its
ambulatory systems and was still developing its inpatient systems.

The 2003 announcement came after Kaiser's earlier efforts at clinical automation moved
along with limited success. Over the years, it had worked region by region with a number
of other vendors. It also had tried to expand a regional homegrown system to serve other
areas.

The revamped national effort ultimately grew into a seven-year, $4.2 billion project.
Wiesenthal attributes the cost escalation and timeline extension to expansion of the
project's scope. He says original plans called for implementing the Epic applications only
at outpatient settings. But in media accounts of the original announcement and Kaiser
updates, including those on the Health Data Management Web site, Kaiser executives
repeatedly referred to the project as "enterprisewide" and encompassing all facilities.

Wiesenthal says the original three-year timeline "was a very aggressive statement on
behalf of our CEO to get us to put our noses to the grindstone."

One significant source of delays, Wiesenthal notes, is that the state of California
mandated that all hospitals meet rigorous new earthquake-resistance standards. So
Kaiser delayed EHR implementation at many facilities while they were revamped or
replaced.

Kaiser's not the first health care organization to encounter an I.T. project delay or cost
overrun. Across the country, many large integrated delivery systems are discovering that
the price tag for enterprisewide adoption of EHRs is higher than they originally
anticipated, says Michael Mytych, principal at Health Information Consulting,
Menomonee Falls, Wis. "It's not unusual to have an organization of this size and
complexity to see a change in the size of their budget," he says.
In moving toward one cohesive, national strategy, Kaiser is building inpatient and outpatient records that populate one unified database, easing the way for doctors to access clinical information.

Kaiser completed implementation of EHRs at all of its 431 medical offices in the spring of 2008. Today, these clinics no longer have records rooms and use document imaging to scan in what little paper remains, Weisenthal says. Doctors at all these sites now place all orders electronically.

All but eight of Kaiser's 35 hospitals have fully implemented EHRs. Of those that have completed implementation, 12 already have been designated as achieving Stage 7 on the HIMSS Analytics scale of EHR implementation, a distinction attained by only one other health system so far (see page 43 for photo essay on NorthShore University HealthSystem, which has three Stage 7 facilities). HIMSS Analytics, a research unit of the Chicago-based Healthcare Information and Management Systems Society, ranks hospitals on a scale of 1 to 7 for clinical automation.

At each of its hospitals, Kaiser is implementing clinical automation in two phases, Wiesenthal says. In the first wave, the hospitals implement a wide range of clinical and financial systems. In phase two, they add computerized physician order entry and clinical documentation by physicians and nurses. Eight hospitals soon will enter phase two.

Documenting Treatment

At both the hospitals and clinics, physicians and nurses document treatment using a number of tools within the Epic software. Physicians often use templates to create notes by pointing and clicking at choices. Some use macro-like shorthand steps that enable them to select blocks of pre-determined type. And in certain cases, they enter free text. Use of dictation or voice recognition is rare, Wiesenthal says.

Kaiser used the records software to create "navigators" that guide the user through routine steps, such as those necessary for admitting a patient, documenting post-op care or transferring a patient from one unit to another.

When a physician enters certain diagnoses into the application, they receive a message alerting them that there is a "best practice order set" available for treating the condition, Wiesenthal explains. "And pediatricians get an entire form for a well-child visit that prompts typical orders," he adds.

Also, when physicians order medications, they receive alerts about potential allergic reactions or adverse drug interactions as well as notifications about how a lab test result should affect a drug order, he explains.

So far, 3 million of the 8.6 million members of the Kaiser health plan are using the My Health Manager personal health record, accessing it via a portal. Members can use the PHR to view a variety of information, including test results, medication histories and treatment summaries. For patients hospitalized at a Kaiser facility that has completely implemented the EHR, My Health Manager also provides a summary of inpatient care.
Kaiser hopes to eventually add to the PHR data automatically uploaded from patient devices, such as blood pressure monitors or glucose meters, Wiesenthal says. For now, patients enter this information on their own.

Benefits so Far
So far, Kaiser's hospitals and clinics have reaped a wide range of large and small benefits from the EHR effort, Wiesenthal says.

Because Kaiser owns a large HMO, it's motivated to keep clinic visits and hospitalizations low to control its costs as well as its members' premiums. So far, EHRs are helping with this goal. The number of ambulatory visits dropped an average of 8% in the 18 months after each EHR implementation project. That eases the need to hire more staff as HMO enrollment grows, Wiesenthal says.

Patients using the portal are making far fewer phone calls, relying on more efficient e-mails instead, he adds. And with lab results available online, Kaiser has eliminated a large volume of mailings of routine results.

Kaiser has been able to shut off a number of information systems that have become obsolete thanks to the clinical automation effort, "savings tens of millions of dollars," Wiesenthal says.

And it's having some early successes in improving outcomes. In one study of 14,000 patients treated after heart attacks, the death rate decreased substantially compared with the rate before the automation effort. That's because clinicians use the data gathered to make sure they follow up with patients on such issues as smoking cessation, control of hypertension and weight loss, among others. "None of this is rocket science," Wiesenthal says. "We pull data before the patient even leaves the hospital and get the patient with a coordinating nurse." Then a clinical team does regular follow-ups to make sure the patient takes appropriate steps.

Kaiser recently worked with the U.S. Department of Veteran Affairs to test the exchange of clinical data between the two organization's huge records systems. Later this year, it will begin the live exchange of actual patient data using the emerging structure of the National Health Information Network. Kaiser and the VA "hope to set the technical standard for how to do this in an easy way," Wiesenthal says.

Lessons Learned
Kaiser has learned a number of important lessons along the long and winding road to EHR implementation.

Training and related productivity losses represent more than 50% of the total cost involved in a big EHR project, Kaiser determined. Wiesenthal's advice to other providers? "If you think you're spending mainly on software and hardware, you're really wrong." Kaiser cut physicians' workloads at clinics by 50% during training and hired doctors to temporarily fill in the gaps.
Having such a big chunk of an EHR budget devoted to training and productivity losses is unusual, says Mytych, the consultant. But because Kaiser took a "big bang" approach to implementing EHRs in all departments at once at each hospital, that likely escalated these costs, he says. Nevertheless, it's money well spent, he argues, because it enables hospitals to more quickly achieve their goals, including reaping a return on investment.

Another early lesson, Wiesenthal says, is that training of clinicians is more effective if it's done "on the job" rather than in classes before the EHR is rolled out. The organization originally provided 15 to 18 hours of classroom training to doctors and nurses before a go-live. Kaiser substantially cut that advance training.

"It's a waste to do so much upfront training," Wiesenthal says. "Adults don't remember things without directly linking it to their experience." So doctors and nurses who are experts at using the new applications help their peers learn how to use them.

Many other organizations have come to the same conclusion, says Jantos, the consultant. "Traditionally, many thought that it was better to use the classroom setting where users would not be distracted by their day-to-day responsibilities," Jantos says. "But although there is still a role for that on a small scale, users learn best while on the job."

Deploying EHRs throughout a hospital in one "big bang" is more effective that phasing it in unit by unit, Wiesenthal stresses. Having some departments of a hospital live on a records system while others are still using paper "is a recipe for unsafe things going on," the physician says. So Kaiser used the big bang approach after running into difficulties gradually phasing in EHRs at just one initial hospital site.

The big bang approach also "builds energy" among the hospital staff and "helps them get over the pain a lot faster," Wiesenthal adds.

Kaiser implemented the new systems at two hospitals and then spent six months analyzing what went right and what went wrong. Then it created a rollout formula that is used at all the rest of the hospitals. "So now it's become like a space shuttle launch," the physician says. "It's a big event, but nobody pays much attention to it."

Jantos, the consultant, says a similar approach could work well for other integrated delivery systems and hospital chains, as long as the organization selects a good pilot site with willing users.

Another important lesson from the Kaiser experience is that it pays to have rank-and-file physicians, not just those who are tech-savvy, involved in leading the project, adds John Borleske, a project manager for Epic who participated in the project.

Kaiser announced in March that it was outsourcing management of its data center to IBM Corp., Armonk, N.Y. Wiesenthal claims this is another example of Kaiser attempting to focus its internal efforts on what it does best. Just as it dropped efforts to develop its own records application, it determined that others could manage its data center better, he says.
Kaiser Permanente at a glance
HQ: Oakland, Calif.
2008 Operating Revenue: $40.3 billion
Kaiser Foundation Health Plan Inc.
* 8.6 million health plan members
The Permanente Medical Groups
* 14,641 employed physicians
* 431 medical offices in nine states
Kaiser Foundation Hospitals
* 35 hospitals in California and Hawaii

Electronic health records project
* Total cost: $4.2 billion
* Implemented in every medical office
* Fully implemented in 27 hospitals; partially implemented at eight
* Hospital implementation complete by Q1 2010
* 12 California hospitals have achieved HIMSS Analytics Stage 7 recognition
Source: Kaiser Permanente

(c) 2009 Health Data Management and SourceMedia, Inc. All Rights Reserved.

For more information on related topics, visit the following channels:
  • Business Intelligence
  • Electronic Health Records
  • Revenue Cycle Management
  • Hospitals
  • Group Practices