Clinical Mobility:

Increasing the ROI of EHRs and empowering patients

As of September 2013, more than 424,000 eligible professionals, eligible hospitals and critical access hospitals were actively registered in the Medicare and Medicaid EHR Incentive Programs, according to the Centers for Medicare and Medicaid Services (CMS). More than 80 percent of eligible hospitals and 50 percent of eligible professionals have adopted electronic health records (EHRs) and received meaningful use incentive payments. Beyond meeting meaningful use criteria, however, healthcare organizations are seeking to validate their EHR deployments in terms of return on investment (ROI) and outcomes. While studies over time will likely confirm the positive impact EHRs have on improving quality of care, healthcare providers must justify their technology investments today as the industry continues its rapid and vast transformation under healthcare reform.

Healthcare providers can enhance their EHR deployment by leveraging mobile technology. Given the ubiquity of mobile technology among consumers and clinicians, integrating clinical mobility into EHRs can deliver immediate and tangible benefits. Hospitals, health systems and physician practices are integrating mobile technology with their EHRs or electronic medical records (EMRs), with the goal of improving workflow and thus driving greater adoption of their electronic patient record's full capabilities. They are also leveraging mobile technology to help facilitate patient engagement and empowerment, which contribute to better self-management and thus better health outcomes. In the February 2013 issue of Health Affairs, a number of studies revealed that more informed and empowered patients who are engaged with their providers in care decision-making have better health outcomes. Indeed, one study showed a correlation between lower patient activation levels and higher costs compared to higher patient activation levels.

Methodist Hospital for Surgery

Enabling seamless clinical workflow

When physician-owned, Addison, TX-based Methodist Hospital for Surgery opened in November 2010, mobile tablets were already integrated with its EHR system. "The push in the beginning [for mobile technology] was to have a mobile workflow-type setting where the information is going with the patient all the way through the patient's hospital stay," said President Chris Shoup. Mobile tablets allow clinicians to capture and access the most immediate, relevant data at the bedside for real-time assessment of the patient across departments. "It's [mobile devices] helping us be more efficient with clinical workflow because clinicians are not stopping and going to a desktop to retrieve patient information," he said. "We're all about efficiency and quality of care. The quicker we can have access to information, the better the quality of care is going to be for the patient."

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> ~ Josephine Young, MD, COO, Pediatric Associates

Top to bottom: Redmond Ridge, Sammamish, Totem Lake

Pediatricians at Pediatric Associates in Bellevue, WA, have been able to access patient information from their EHR via mobile devices since the EHR was implemented in 2010. With no terminals in the exam rooms, patient information is available to the pediatricians wherever they go, whether they are in clinics, doing hospital rounds or off site. With pediatricians already equipped with Intel Windows 8 devices and Greenway Medical’s PrimeMOBILE EMR for Windows 8, Pediatric Associates is in the process of incorporating these devices into the medical assistants’ workflow to help save time when patients are brought to the exam rooms. “Technology should not dictate your workflow; you use it to support your workflow,” said Josephine Young, MD, COO.

The Cleveland Clinic’s rapid response team leverages mobile devices to readily access clinical information en route or at the bedside as it makes patient rounds in the hospital. Mobile technology enhances the team’s workflow by providing clinical decision support that enables it to proactively stratify patients who may be at risk as a result of, for example, a new permutation in their vital signs. Data that the team captures is then assimilated and synthesized with the Clinic’s EMR data in order to create actionable knowledge.

“Visualization is very important,” said Will Morris, MD, Associate CMIO. Given the small footprint of mobile devices, data must be efficiently displayed. Cleveland Clinic clinicians have been helping to design, prioritize and iterate the user interface to ensure that the right information is being seen by the right user at the right time. Whereas information in a patient’s EMR may be several clicks away or in a tab, data elements that are going to be the most important for the rapid response team’s clinical workflow are prominently presented on the mobile device.

Enabling care coordination

Access to data and the ability to share it in real time also enhances coordination of care. At the Cleveland Clinic, all information collected in mobile devices goes into the EMR. “We are fervent believers in the single source of truth,” Morris said. All patient information generated by clinicians needs to be aggregated into the patient’s electronic medical record. If the information generated on a mobile device cannot be accessed by another clinician on the care team or incorporated into the patient’s record, the mobile device is not delivering value. “The clinical value add [of mobile technology] . . . is to enrich our data environment – it needs to make the patient’s medical record better,” he said.

Getting to the data “takes the guesswork out of medicine,” according to Young. When on-call pediatricians care for their colleagues’ patients or when pediatricians field pharmacy calls after hours, they can access the patient’s complete chart from the EHR on their mobile devices. If, for example, a patient is allergic to the prescribed medicine or is having difficulty taking the medicine, the pediatrician can immediately determine the appropriate and safe next steps. “You can make a decision on the spot,” Young said. “Even though the office is closed, it really isn’t.”

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> ~ Chris Shoup
> President, Methodist Hospital
> for Surgery

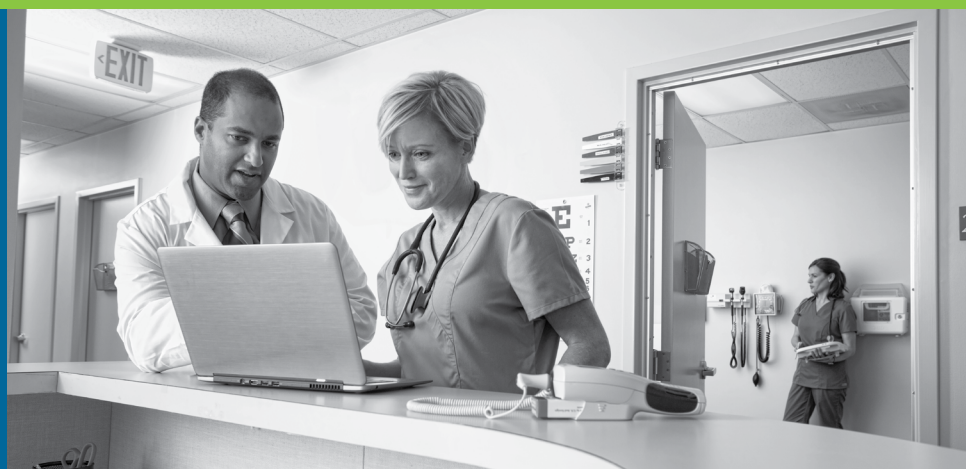
Driving patient engagement, empowerment and satisfaction

With federal mandates and consumerism highlighting the importance of patient engagement, empowerment and satisfaction, healthcare providers are looking to technology as a scalable way to achieve these goals. Pediatric Associates wanted to address the major complaint of clinicians focusing more on the technology than the patient in the exam room. "Our initial fear was that an EHR would limit patient contact," Young said. Pediatric Associates held a communication workshop, which included peer review of videotaped patient interactions, to determine how to increase patient engagement. The practice found that the smaller the device, the less room it takes up in the exam room, the easier it is to use and the more patient engagement occurs. "You're simply using technology as a tool, which is what you want to treat technology as," she said. The smaller form factor of tablets and surface devices makes them easy to carry and allows clinicians to engage more freely with patients, according to Young.

By capturing and accessing data in real time wherever and whenever, Methodist clinicians are able to anticipate and address patient needs, which can impact patient satisfaction. "Our mobile devices are helping to drive satisfaction because we can react to things in a positive or proactive versus reactive manner," Shoup said. "When patients rate their hospital for their perception of care, doing things proactively, in and of itself, is going to help drive your patient satisfaction scores and help HCAHPS [Hospital Consumer Assessment of Healthcare Providers and Systems survey] scores."

A Cleveland Clinic wellness app, which was developed in partnership with Michael Roizen, MD, chief wellness officer, and David Longworth, MD, chairman of the Medicine Institute, includes a wellness questionnaire on exercise, nutrition, sleep, stress and smoking. The patient-entered data, which is automatically tabulated to produce a risk score, is incorporated with EMR data, such as blood pressure or lab value. Clinical decision support is layered over the clinical prediction score, and clinicians can act on recommended orders that the EMR automatically generates, which Morris points out is the value of an EMR system.

The value proposition for patients is three-fold: They have a meaningful dialogue about their wellness with their physician, the information they are entering is electronically secure and tracked over time, and they can see how, for example, dietary changes are impacting their blood pressure and weight and act on that information. Patient surveys have shown an "overwhelmingly positive" response for them to have a process and a system that supports wellness questions. "This is going to be one of our core foundation blocks, which is that all patients should have a baseline and a yearly follow-up on those five domains," Morris said.



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Quantifying ROI and next steps

For providers that are already leveraging mobile technology with their electronic patient records, the next step is to quantify the value for providers and patients. A 2014 directive by Methodist's board of directors will focus on quantifying how all the technology initiatives undertaken – including mobility – are driving better outcomes. "We want to be able to present data that this hospital is a destination medical center providing the best care possible," Shoup said.

Pediatric Associates looked at use cases for the mobile devices in which outcomes could be improved as a result of clinicians having ready access to patient information. One such case is when pediatricians see newborns in the hospital. Now the practice is looking at the likely ROI from incorporating mobile devices in those use cases. It is also currently doing time-motion studies to determine the time savings of outfitting medical assistants with surface devices for gathering vital signs and other patient information in the exam rooms. "Any amount of time that we save allows for increased patient engagement and getting to the next patient sooner," Young said. "It will give us more time to focus on what's more important – asking those questions and getting more in-depth information from the patient."

One of the Cleveland Clinic's key strategies going forward is to support distance or pervasive health by leveraging mobile technology to engage and empower its patients and thus help them track and manage their chronic diseases. "Basically, we're looking for ultimate value of managing care," Morris said. "Mobile tools and enabling patients with data and decision support are going to be essential to that transformation."