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'SMARTER' COMMUNICATIONS FOR THE REVENUE CYCLE

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In much the same way that mobile technology has changed consumer behavior, recent innovations with devices such as tablets and smartphones are transforming the way healthcare users perform functions within the revenue cycle.

Just as retail consumers demand the ability to access information, schedule services, and pay bills anytime from just about anywhere—including their desktops, laptops, tablets, or smartphones—healthcare consumers and clinical and nonclinical staff are beginning to crave the same. Software providers and healthcare organizations are responding with front- and back-end solutions that streamline processes throughout the revenue cycle, from scheduling appointments and tracking copayments to ensuring charge capture and accessing electronic health records (EHRs).

For patients, the benefit of such innovation is clear: Routine tasks are made that much easier. For hospitals and health systems, the benefits are more far reaching. Greater adoption of mobile technology in revenue cycle functions can lead to improved workflow, increased cash flow, and a better patient experience.

For these reasons, healthcare organizations should understand how and why mobile technology is changing the industry and should prepare now to adopt mobile applications and devices in their revenue cycle operations. Doing so requires careful consideration of several factors particular to a healthcare organization's unique circumstances, including its strategic goals, existing technological infrastructure, and patient demand.

UPSTREAM TRENDS

Advances in handheld computer devices have prompted software providers, and even healthcare organizations, to develop applications (apps) that enable users to more easily access information and complete tasks using mobile technology. Generally, these applications make a website more user friendly by making displays more readable and links easier to access on smaller computers.

"Everything is as immediate as the 12-inch screen of an iPad or the five-inch screen available on a handheld," says Michael Najera, professional services manager for Craneware, an Atlanta-based provider of revenue cycle software solutions.

Apps at the front end of the revenue cycle are generally making it easier for functions traditionally performed in person, on the phone, or via a desktop computer to be instead performed in nontraditional locations by use of a mobile device. With such capabilities, someone commuting to work can schedule a physician appointment or diagnostic test en route.

Also, hospitals and health systems are employing mobile applications that enable patients to pay their bills and view consolidated statements from multiple settings, while on-site for the treatment, making the payment process much more convenient.

MOBILE TECHNOLOGY AS A REVENUE SOURCE?

From patient throughput and bedside collections to workflows of clinical and financial staff, Miami Children's Hospital (MCH) has improved many aspects of its revenue cycle operations through the use of technology such as mobile applications and computer tablets. What's next for the 260-bed independent hospital?

If all goes as planned in the next few years, the hospital will see revenues grow from $250,000 to $300,000 beginning this year to $1 million by 2015 as a result of telemedicine initiatives enabled through mobile technology, according to Mallesh Murugesan, director of business development and emerging strategies for MCH.

The hospital has developed two applications: one designed for providing follow-up care in the home setting and another for remote physician consultation in public settings, such as airports and hotels.

The first application is installed in a robot to provide care for bedridden children following hospital discharge. The robot acts as the eyes and ears of the patient's physician so the physician can obtain an assessment of the child's condition "face-to-face." The robot eliminates the need for an in-person visit, which can be cumbersome for immobile children.

For the second application, the hospital is in discussion with representatives from several airlines and hotel chains to install kiosks, loaded with tablets and video cameras, that will provide remote clinical consultations with MCH physicians. The user enters demographic information into the tablet to gain access to the hospital's telemedicine command center, which consists of communications rooms located at the hospital that are staffed by technicians who forward the request for a physician consultation. The hospital charges a fee for the consultation, which the user can pay by swiping a credit card on a card processing device attached to the tablet. Fees vary depending on whether the consultation is with a primary care physician or a specialist.

"We have really combined the telemedicine and mobile initiatives into one and have tried to come up with some very innovative ways of extending our care beyond the walls of Miami Children's and being able to bring in additional revenue," Murugesan says.

Because 67 percent of the hospital's patient mix consists of Medicaid members, and the state Medicaid program generally does not have a strong telemedicine payment policy, Murugesan says, MCH uses a pay-for-service model for the remote consultants. For example, the hospital charges users a monthly fee to make use of the robot.

The hospital also has developed tablet applications for remote physician-to-physician consultations between primary care physicians and specialists and for remote consultations with patients who are out of the country. The hospital charges a fee for each physician-to-physician consultation; insurance would cover the cost of the patient remote consultation, Murugesan says.

The hospital invested about $1.5 million in the telemedicine center, which includes seven glassed-in pods equipped with telemedicine equipment, such as high-definition monitors and cameras, sophisticated audio systems, and super-high speed Internet connections, he says. In addition to the technicians, a coordinator and an analyst, who provides technical support, staff the center.

"We made it look really nice and equipped it with technology that won't be outdated in the next year or so," Murugesan says.

Currently, when there is a call for a remote consultation, physicians travel from their departments to the command center. Murugesan says the goal is to have the center staffed full time by one or two physicians once demand warrants the need, which is expected by the end of this year.

"Things are moving at a very quick pace," he says.

Use of the tablet eliminates the need to take the patient's personal information out of the room, which helps protect the patient's information and improves the patient's experience.

Simplifying such processes benefits not only patients, but also hospitals and health systems, says Aaron Garinger, vice president of product development for MedSynergies, Inc., an Irving, Texas-based provider of practice solutions, including revenue cycle management.

Mobile scheduling applications, for example, simplify the process for physician office staff who use tablets to schedule patient appointments with specialists, Garinger says. This convenience allows health systems to keep patients within the hospital network, because patients who make appointments themselves may choose a specialist outside the network. Keeping the patient in network, in turn, reduces the cost of acquisition for a new "customer," and keeps ambulatory and downstream revenue—such as with diagnostics and procedures—in the network.

"That's a whole other way to create both a good patient experience and stickiness to your health system as a brand," Garinger says.

TRENDS IN THE HOSPITAL SETTING

Use of mobile technology by patients and clinicians also is beginning to appear in the hospital setting. About a year ago, Miami Children's Hospital, a 260-bed not-for-profit organization with several outpatient centers, began using mobile technology in high-volume areas such as patient access and the emergency department (ED). (For MCH's future mobile plans, see the sidebar on page 137.)

During a test pilot period, patients have been using a kiosk—a tablet situated on a stand—for self-registration. The process is similar to using a kiosk to obtain a boarding pass at an airport, says Mallesh Murugesan, director of business development and emerging strategies for MCH.

The hospital's patient management system is uploaded with the data of patients scheduled for a service on that particular day and transmits data to the tablet through an interface developed internally at MCH. Patients enter their last name and date of birth into the tablet. The system then prompts patients with questions that verify personal demographics, insurance information, and the reason for the hospital visit, Murugesan explains. A notification of the registration is automatically sent to registration staff, who then direct patients to the appropriate department. Full implementation of the kiosk is scheduled for April.

Patients will soon be able to make payments for copays and other out-of-pocket costs using the tablet by swiping a credit card through a processor device attached to the tablet.

The hospital's clinicians and patient access staff also use tablets to collect, capture, and access patient financial, clinical, and general information. Nurses and admitting clerks use the tablet at bedside to confirm and input patient demographic and insurance information and collect copays. The hospital has converted patient consent forms to electronic versions, so patients can read and sign the form using the tablet. This has improved workflow tremendously. Rather than using paper charts, clinicians also take medical histories using tablets and access data stored on the hospital's EHR using the mobile devices, Murugesan says.

Aside from being more convenient, mobile technology has enabled the hospital to reallocate revenue cycle staff to more strategic positions, also creating efficiencies in workflow.

TEXT MESSAGES EMERGING AS PATIENT-FRIENDLY

A cardiology practice sent patients a simple text message: "We have an issue to speak with you about."

This short text was sufficient enough to get many patients with unpaid bills to call the practice—giving billing staff an opportunity to speak with these patients before their accounts were sent to collections, says Ray Peloquin, a consultant hired to reduce a large accounts receivable backlog for the Springfield, Mo.-based cardiology practice.

"We let the patients know that they had outstanding balances and asked if they would like to go ahead and pay those today," Peloquin said in an article in HFMA's **PATIENT FRIENDLY BILLING®** e-bulletin. "The very first day, I collected more than $4,000."

Like other new patient financial technologies, text messaging has to be handled carefully to avoid breaking privacy, trade, and communications laws. But some healthcare providers are finding texting to be a useful tool that helps increase collections, improve patient compliance with physician orders, and reduce the appointment no-show rate.

Peloquin says new technologies need to be considered because the standard protocol used for collecting patient balances has proved to be ineffective—and a hazard to provider-patient rapport. "You send out three statements, and then you send the patients to a collection agency," he says. "This is not the best way to build lasting relationships with patients. It does not build goodwill, and it is not patient friendly."

Text messaging is particularly useful for communicating with patients who are willing to pay their bills, but tend to ignore mailed billing statements, Peloquin says. "These patients really appreciate the fact that they aren't getting a statement, or they aren't being sent to collections," he says. "Texting allows for interactive communication, and it can be quite a positive process."

Changing the Nature of Health Care

Many patients are ready to use their cellphones and smartphones to interact with healthcare providers, according to a report by

PwC Health Research Institute (*Healthcare Unwired: New Business Models Delivering Care Anywhere*, November 2010). Although researchers did not specifically ask about patient financial communications, their survey of 2,000 consumers found that mobile devices "are changing the nature of health care, making it possible to deliver care anywhere in ways that are proving to reduce healthcare costs and keep people healthier."

Among their findings:

- Twenty-seven percent of consumers said they would find medication reminders sent via text message to be helpful.
- Forty percent of respondents said they would be willing to pay a monthly fee for a mobile phone application that would send text and e-mail reminders to take medications, refill prescriptions, or access their medical records.

Text messaging may be particularly useful for communicating with Medicaid patients, according to the PwC report. Almost 80 percent of Medicaid respondents who own mobile phones said they text regularly, and 58 percent send or receive more than six text messages per day.

Improving Patience Compliance with Text Reminders

Delaware Physicians Care, Inc. (DPCI), a Medicaid health plan in Newark, Del., piloted a text messaging program in 2006 that targeted patients with type 2 diabetes. The goal was to increase the number of diabetes patients getting recommended hemoglobin A1c laboratory tests—by sending text message reminders to the patients. All members receive a standard message: "Hello, this is a reminder that you may be due for a diabetes A1c test. Please call your doctor's office to arrange for the test to be done. Thank you. DPCI."

The percentage of participants who obtained these blood glucose tests rose to 70.5 percent (from 52.3 percent) over a six-month period. The compliance rate for a control group was only 45.4 percent.

In addition to appointment reminders, DPCI regularly texts "congratulations" messages to patients for completing glucose tests, as well as personalized diet and exercise tips, says Stanley Lynch, MD, chief medical officer for DPCI. "The idea is to use these texts

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as a way to enter into a dialogue with patients and get them engaged," Lynch says.

Based on the diabetes initiative's success, DPCI has expanded the use of text messaging. The health plan is now also text-reminding pregnant women and new mothers about prenatal and postnatal visits, and communicating with patients about well-child visits and childhood immunizations.

Texting for Financial Communications

In the case of the Missouri cardiology practice, Peloquin extracted the name and cellphone number of every patient with an account balance 31 days or more overdue. He uploaded these names/numbers into a web-based text messaging service. In one minute, 250 patients were contacted via text message. Not only is the chance of reaching patients much higher than trying to contact them by telephone, the text message is less disruptive—and the sender can receive a report verifying that the message has been received, Peloquin says.

Getting Around the Challenges

"Everything is going mobile, and we're all looking for ways to be more productive: to lower costs, to communicate more effectively, and to take better care of our patients," says George Rousis, compliance officer, Halifax Health, Daytona Beach, Fla.

But laws ranging from the Health Insurance Portability and Accountability Act (HIPAA) to the Telephone Consumer Protection Act (TCPA) require that healthcare providers be extra careful before they start texting.

HIPAA. "You certainly need to be much more cautious as to what you say in a text because you never know who is using a patient's cellphone," says Peloquin, explaining why the cardiology practices' text messages did not include any specific information and only asked patients to contact the physician's office.

Organizationwide policies about texting and communicating electronically with patients can provide staff with some guidelines about protecting patient privacy. Halifax Health has

adopted policies that specifically address the use of cellphones, smartphones, and other portable devices. Its standards prohibit employees from transmitting a patient's personal health information on any device—either corporate or personal—without encryption or other safeguards.

The two-hospital Halifax Health is not yet using text messaging for patient financial communications. "We don't want to shut down a communications channel that might be less costly and very helpful," Rousis says. "But we're trying to get our arms around the issues."

TCPA and CAN-SPAM Act. Federal trade and communication regulations also need to be heeded when texting patients. TCPA rules prohibit sending unwanted text messages to wireless phone numbers if the messages are sent using an autodialer, according to a Federal Communications Commission Guide, *Spam: Unwanted Text Messages and Email* (www.fcc.gov/guides/spam-unwanted-text-messages-and-email).

In addition, unwanted commercial email messages—i.e., to advertise or promote a commercial product—to wireless devices are banned under the Controlling the Assault of Non-Solicited Pornography and Marketing (CAN-SPAM) Act. However, CAN-SPAM does not cover "transactional or relationship" messages, or notices to facilitate a transaction consumers have already agreed to.

Even when text messages are legal, they may be unwanted. Here are a few ways to implement a text-message strategy that avoid irritating patients who may not wish to receive texts:

- During registration, ask patients to indicate their communication preference (i.e., text, e-mail, phone).
- Send text messages "free to end users" so patients without text service on their cell phones avoid unwanted charges.
- Include an opt-out option on text messages for patients who do not want to receive future texts.
- Be sure to consult with legal council to avoid violating HIPAA, TCPA, and other federal and state regulations.

Mobile applications enable charge compliance information that is already available via websites to be accessible "on the go" via a tablet or smartphone.

Several FTEs in patient access were transferred to back-office functions, such as collections, Murugesan says. "It's helped us tremendously with workflow efficiency as well, especially in the ED where our volumes are extremely high."

Previously, to collect copays at bedside in the ED and other departments, nurses or admitting clerks would have to physically transport a patient's identification and credit cards to registration, where the patient's payment could be processed. Use of the tablet eliminates the need to take the patient's personal information out of the room, which helps protect the patient's information and improves the patient's experience, Murugesan says.

The self-service tablets also have helped to improve patient waiting time in the ED, which has decreased considerably, as has the number of patien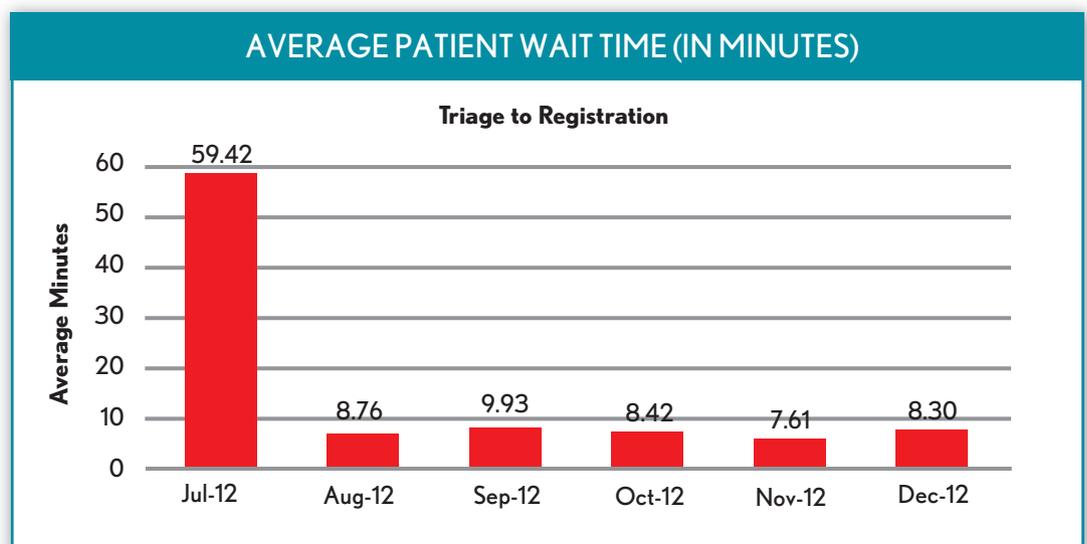ts who leave the ED without being seen by a care provider, Murugesan says. The average time from triage to registration, for example, decreased from nearly one hour in July 2012 to eight and a half minutes in December 2012. (See the exhibit below.)

TRENDS IN THE BACK OFFICE

Mobile technology is also transforming back-office functions of the revenue cycle. The same patient, financial, and clinical data that hospital staff can more easily input using a tablet are also more easily accessed the same way.

For revenue cycle staff, mobile applications enable charge compliance information—current coding, pricing, regulatory, and eligibility determination—that is already available via websites to be accessible "on the go" via a tablet or smartphone. Coding compliance questions, for example, can be more easily answered outside the traditional office, phone, or desktop setting because the information is, in effect, mobile.

"If there is a side conversation in the hallway, the answers are almost immediate because you have direct and instant access to the rules and regulations," says Najera of Craneware. "Even if one question leads to another, it's very simple to continue the data stream until you get the answer."

AVERAGE PATIENT WAIT TIME (IN MINUTES)

Triage to Registration

Month	Average Minutes
Jul-12	59.42
Aug-12	8.76
Sep-12	9.93
Oct-12	8.42
Nov-12	7.61
Dec-12	8.30

The mobile technology trend also is revealing the inherent connection between financial and clinical functions in areas such as patient engagement and disease management, which are becoming more efficient through the use of mobile devices.

Such technology has the potential to improve charge accuracy and reduce denials because information can be updated instantly to clinicians' tablets and smartphones. In 2010, the American Medical Association estimated that improving compliance accuracy by just 1 percent can reduce unnecessary administrative costs by $777 million across the industry.

Najera says technology is the mechanism for improved collaboration between financial and clinical staff, which results in more accurate charge capture and, in turn, more accurate claims. "The traditional silos that used to exist in the healthcare industry are quickly being eliminated through increased connectivity, increased communication, and improved access," he says.

The mobile technology trend also is revealing the inherent connection between financial and clinical functions in areas such as patient engagement and disease management, which are becoming more efficient through the use of mobile devices. As providers take on more risk in performance-based contracts for better managing a patient population, they are employing mobile tools to engage patients in their health care in efforts to reduce costs, says Steve Nudd, vice president of revenue cycle solutions, Siemens Healthcare, Health Services Business Unit, Malvern, Pa.

For example, providers may issue scheduling reminders—say for annual mammograms or physicals—to patients via text messaging. At first glance, these may seem like clinical care activities, Nudd says. But such reminders also have a revenue cycle impact. "From a revenue cycle perspective, those activities are geared toward monitoring patient health and keeping the patient out of the hospital, so you're effectively managing cost of care," Nudd says. "It's a strategy very much driven out of the executive suite, with significant influence from the CFO."

WHAT'S DRIVING MOBILE TRENDS?

Several factors are driving the adoption of mobile technology throughout the revenue cycle. Advancements in hardware and the smaller tablets and touch screens on smartphones mean the devices are easier to use, making them ubiquitous. The federal government, likewise, is advocating greater use of technology through the Affordable Care Act, which offers incentives for the use of EHR systems and other technologies. Organizations are also implementing wireless networks, enabling mobile devices to be used in more settings. In addition, applications for tablets and smartphones can also be developed quickly, often by hospitals themselves.

Clearly, however, the underlying driver of the use of mobile technology is consumer demand. Over a 12-month period ending June 2012, use of smartphones increased by 34 percent, while tablet adoption rose 400 percent, according to consumer research by The Nielsen Company. More and more, consumers are expecting an equivalent "mobile" experience across the settings they routinely navigate, whether that's an airport, a restaurant, a physician's office, or a hospital waiting room.

"It's just the general cultural shift of going from interest through expectation to demand," says David Hammer, senior vice president of revenue cycle advisory solutions for MedAssets, Alpharetta, Ga. Simply put: Consumers will go elsewhere if such conveniences are not available, Hammer says.

Likewise, as healthcare organizations face this demand in the midst of market competition, they also desire innovative applications and devices that will please their customers (patients), their users (administrative and clinical staff), and their bottom lines.

"That's the way technology is going, that's the way the industry is going. Either you keep up or people don't see you as a viable solution anymore," says Craneware's Najera.

This consumerism coincides with health reform as a driver of the mobile technology trend, says Siemens' Nudd. One goal of reform is improving patient care by engaging patients in their care, something that mobile technology does well.

"Healthcare reform is driving providers to want to be more proactive in managing the overall health, as opposed to the episodic care, of the patient population," Nudd says. "The trend of consumerism is causing people to want to be more directly engaged with their providers. Whether that's accessing a provider's portal or leveraging their smartphones to communicate with their providers, there's good synergy. Both sides want to be more directly connected."

In the back office, the need for greater efficiency, especially on the ambulatory side, is driving the trend. Although there are more physician-office-based than hospital-based services, the transaction size is lower, so improvements to workflow in the revenue cycle that reduce costs have an even greater affect on overall performance, says MedSynergies' Garinger. And financial leaders are increasingly looking to the revenue cycle for improvements through greater charge accuracy and a better patient experience.

"More than ever, the revenue cycle has to support more [performance-based] initiatives and

As with any far-reaching initiative, adopting mobile technology effectively begins at the top. There must be a clear understanding of the benefits such technology can offer, especially with patient experience.

be more efficient," Garinger says. "That drives innovation and cost reduction."

PREPARING FOR THE MORE CONNECTED WORLD

With so many areas to cover across the revenue cycle, developing a strategic approach to adopting mobile technology can be difficult.

One approach is to prioritize goals: Is cash flow low compared with industry standards? Do

patient satisfaction survey scores need improvement? Does workflow need to be more efficient?

The next step is to match desired outcomes with the mobile capabilities of current technology partners. "I always try to see if my existing partnerships have the desired capability versus going out and having to search the market," Garinger says.

One plus of mobile technology is it often can be deployed quickly. However, that can be a minus, as well. "I've seen entities make decisions to put something out there because it was a new technology or had some sizzle," Garinger says. "But it didn't really hit the benefit point the consumer was looking for."

Garinger says healthcare organizations should evaluate demand specific to their patient populations to determine potential buy-in before fully adopting an application or device. Customer demand can be evaluated through market research or the use of patient focus groups. Organizations also should test a device or application first before rolling it out to an entire department or the organization and gauge results through vehicles such as patient satisfaction surveys, he says.

"Don't be afraid to pilot and seek feedback from your customers," Garinger says. "Ask your patients what they're feeling about it. Are they using it? Are they not using it?"

Additionally, the new tool should be marketed to the community. "I've seen a lot of health systems create capabilities, and then fail to alert patients that the capabilities are available. So the health system is not really able to gain the advantage from that investment because it wasn't able to get the message out to its patients," Garinger says.

As an example of good marketing, an urgent care center in the Dallas-Forth Worth area used outdoor billboards to announce the availability of a web-based rather than in-person check-in

process, he says. Healthcare organizations should use a similar approach with their mobile strategies. "Whatever they're going to invest in from a mobile technology perspective," he notes, "put some marketing dollars together as part of that plan."

One fundamental step in adopting mobile technology is evaluating an organization's current technical infrastructure, says Siemens' Nudd. Mobile applications have to communicate with hospital information systems.

"Think about the capabilities and openness that you need in your core health information systems," Nudd says. "You have to exchange information and have access to business logic that enables effective use of the mobile technology."

Otherwise, the application will not provide much value to the user and, in fact, may even be a source of frustration. The patient, for example, may schedule a care visit using an application through his or her smartphone, but if the application doesn't interface with the hospital's clinical and financial systems, the patient may not be informed of prerequisites that must be completed prior to the visit. When the patient discovers these requirements have not been met upon arriving at the care location, he or she may become angry and frustrated, resulting in a poor experience.

"Portal and smartphone technologies are well-established in the market," says Nudd. "But the apps that run on them are only as good as the data and business logic they have access to. You have to think about how you are going to coordinate all the activity that has to happen across your entire enterprise for that one patient who is trying to interact with your health system. If you can't effectively exchange information from your core clinical and revenue cycle systems, then you limit the effectiveness of the subsequent apps, regardless of how they are accessed."

The fast pace of advances in mobile technology—in retail environments, especially—portends their future use in health care.

Of course, as with any far-reaching initiative, adopting mobile technology effectively begins at the top. There must be an organizationwide commitment to using mobile applications and tablets across revenue cycle operations and a clear understanding of the benefits such technology can offer, especially with patient experience. Financial leaders, in other words, have to be aware of how consumerism is affecting how patients choose where to get their health care and how mobile technology could affect that choice.

"If a patient can get a much more up-to-date, high-tech, high-touch experience at one place versus another, then that will factor into the patient's decision of where to receive care and the patient's overall satisfaction with the provider," MedAssets' Hammer says.

FUTURE TRENDS

The fast pace of advances in mobile technology, in retail environments especially, portends its future use in health care. For example, just as consumers are paying for their retail transactions using their fingerprint for identification or with smartphone technology, so, too, will they be able to do so in health care.

"If your taxi driver can let you sign your bill with your fingerprint and send an e-receipt back to your phone, then you're going to see the hospital do that," Hammer says.

Wayfinding applications will help patients navigate through departments and corridors of large health systems through their smartphones—which can improve patient throughput and experience if they are able to find their way around the hospital faster, Hammer says.

Traditionally, the healthcare industry has been slow to adopt technological innovations that other industries, such as retail and banking, readily employ. "It was a generation before hospitals had e-signature. Now, patient registration is readily making use of the same kind of signature pad that has long been deployed at Home Depot," Hammer says.

Overall, the use of mobile technology in heath care is going to accelerate quickly. Healthcare organizations may not pioneer such technology, "but you're going to see much, much faster adoption," Hammer says. "The trend is going to be much more willingness to rapidly adopt anything new that comes down the pipe because customers adopt it so quickly." ∎

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