

eBook:

How Technology Enhances the Patient Experience





Hospitals have always striven to provide a good patient experience, educate patients and their families about disease management and achieve desirable health outcomes. But as new healthcare legislation ties Medicare reimbursement to both patient satisfaction and readmission rates, providing quality care is no longer just a moral obligation; it's a business imperative for hospitals.

72%

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Seventy-two percent of healthcare leaders believe patient considerations — such as engagement, satisfaction and quality of care — will have a major impact on their organizations in the coming years.¹

To keep patients happy and healthy, forward-thinking healthcare leaders are using digital technology to improve the patient experience at every step of the hospital stay.



The Business Case for Patient Engagement

The Affordable Care Act has changed much about how hospitals operate and how they get paid. The Centers for Medicare & Medicaid Services (CMS) now base hospital reimbursements for Medicare patients on two key performance metrics:

Readmission rates: Under the Hospital Readmissions Reduction Program, CMS evaluates healthcare providers each year to determine how many patients were readmitted within 30 days after being treated for one of five conditions: heart attack, heart failure, pneumonia, chronic lung problems or elective hip or knee replacements. Hospitals where readmissions are deemed excessive — based on the mix of patients and how the hospital industry performed overall

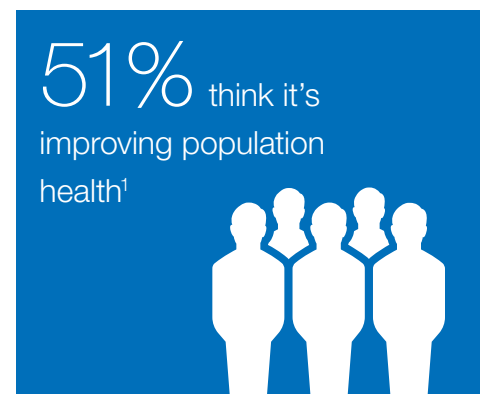
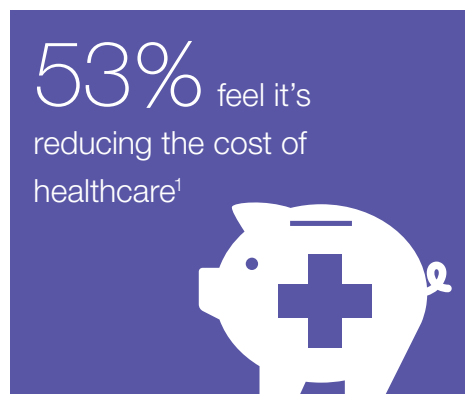
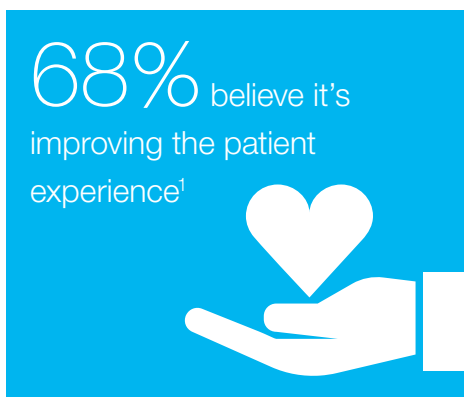
— can be fined up to 3 percent. This means that for the following year, the hospital will receive less reimbursement for all Medicare patients, even those who are not readmitted. In 2016, more than half the nation's eligible hospitals are being penalized, losing a combined \$420 million.²

HCAHPS scores: The Hospital Consumer Assessment of Healthcare Providers and Systems survey (pronounced “H-caps”) is the first national, standardized and publicly reported survey of patients’ perspectives on hospital care. The HCAHPS survey is administered to a random sample of adult patients after they’re discharged from the hospital, asking 27 questions about their recent patient experience.

Under this program, CMS withholds 1 percent of total Medicare reimbursements — approximately \$850 million — from hospitals (that percentage will double in 2017). Each year, only hospitals with high patient-satisfaction scores and a measure of certain basic care standards earn that 1 percent back, and top performers receive bonus funds from the pool.³

With so much at stake, hospital leaders are looking for new ways to improve the patient experience and better engage individuals in their own healthcare. This way, patients leave feeling satisfied with their hospital stay and well-equipped to manage their health conditions when they get back home.

How Healthcare Leaders View IT



(Source: HIMSS)

Enter Digital Technology

Keeping patients satisfied and out of the hospital requires better communication, better disease management education and a better overall patient experience.

Simply put: Healthcare organizations are looking to ensure patients get the right information, at the right time, in the right format. And that increasingly means via the interactive, digital devices they already love and use every day.

This eBook looks at how innovative hospitals are using digital technology to deliver a smart, comfortable and interactive experience — from registration all the way to the patient's bedside.



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Chapter 1: Patient Check-In

“It’s all about how quickly, through mobility, we can get you through to see a doctor. We want to make this thoroughly mobile, paperless and convenient.”

Nader Mherabi, CIO, NYU Langone Medical Center

Benefits of Digital Patient Check-In:

Reduced check-in time and patient frustration

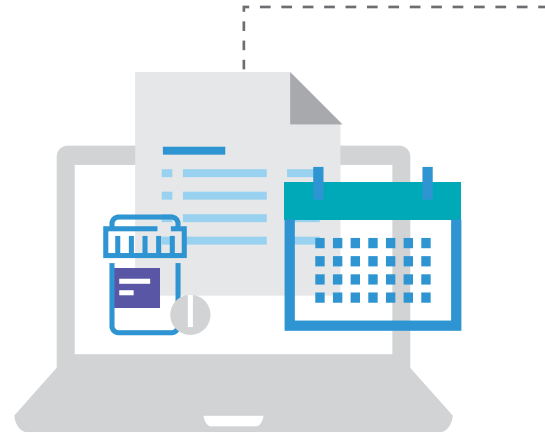
Fewer opportunities for human error during data input

Real-time patient information access for physicians

Reduced administration costs

Registering at hospitals can be a laborious and frustrating task for sick patients, who already feel anxious and unwell, and want to see a doctor as quickly as possible. After providing identification and their insurance cards, they’re handed stacks of registration forms, medical history questionnaires, HIPAA privacy notices, medical and surgical consent forms, and other pieces of paper that require the same information again and again. Especially for returning patients, who’ve filled out many of these forms during previous visits, the process seems unnecessarily long and complicated.

Patients give completed forms back to registrars, who must manually enter the data into the computer. This creates opportunities for human error and delays the information from reaching care providers. Patients must either wait for their paperwork to be processed before being treated, or repeat the information they’ve just written down to their physicians.



With digital patient check-in, everything changes. Rather than being handed paper registration packets, patients receive tablets loaded with only the necessary forms. Known information — such as the patient’s name, date of birth and medical history — is already pre-populated into the forms.

Check-in takes less time, and patients don’t repeatedly answer the same questions. Information goes immediately into the hospital’s secure electronic health records system (EHR), reducing opportunities for human error and providing care teams with instant access to vital patient data.

Connecting Patients and Physicians With Ease

Patients at NYU Langone Medical Center no longer have to worry about paper-based registration. Thanks to a \$5 million gift from insurance company AIG, and a partnership with OnBase by Hyland and Samsung, the academic hospital system rolled out a tablet-based registration process last year.

“Robert Benmosche, former CEO of AIG, was a patient at NYU Langone,” explains Stacey Less, healthcare business consultant for OnBase by Hyland. “He was battling cancer for some time, so he would continually go into the hospital, and he was frustrated by all the forms. He says, ‘I’m already dealing with this sickness. Why do I have to keep filling out all these forms, and why are you asking me for information you already know?’”

Before passing away last February, Benmosche and his former employer funded the creation of the digital registration software that NYU Langone and several other hospitals now use to streamline the check-in process for patients.

Using software from OnBase by Hyland, patients now fill out only necessary, pre-populated forms on a Samsung Galaxy tablet. As a result, NYU has reduced patient wait time from 11 to four minutes.

Because patient registration information immediately goes into the EHR, NYU has also reduced the workload for staff, and patients get medical attention more quickly.

“NYU used to have a courier service pick up those forms and take them to a third party to be scanned and indexed,” explains Less. “Now, as soon as the patient submits forms on that tablet, they’re immediately sent to the EHR. So not only are you eliminating the potential of losing that piece of paper or having data entered incorrectly, you’re also eliminating the need to wait for forms to get processed.”

NYU Langone is reporting high patient and staff satisfaction with the new system, which is already live in 1,098 registration departments across the health system. “It’s all about how quickly, through mobility, we can get you through to see a doctor,” CIO Nader Mherabi told Healthcare Informatics. “We want to make this thoroughly mobile, paperless and convenient.”⁴



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Chapter 2: Navigating the Hospital

“Patients can walk into their rooms, and the Samsung digital signage display on the wall already knows who they are, what type of television content they enjoy, how they like their food prepared and what room temperature they prefer — all based on data stored in their smartphones.”

Neil Willis, CEO, Hypersign

Benefits of Digital Signage in Hospitals:

Interactive wayfinding tools

Clear, up-to-date information via “digital bulletin boards”

Triggered, personalized content via patient and visitor smartphones

Hospitals can be overwhelming places for sick patients and their families. With labyrinthine hallways, wings that only connect via tunnels or breezeways and elevators that only go to certain floors, the modern medical complex can seem more like a maze than a healthcare facility.

To navigate these tricky floor plans, patients and visitors have traditionally relied on interspersed static maps with “you are here” stickers, or asked someone wearing scrubs for directions. Not only is this frustrating for patients, but helping lost visitors find their way also distracts hospital staff from their real job — caring for patients. These wayfinding interruptions cost hospitals approximately \$220,000 per year.⁵

Along with confusing layouts, poorly executed signage also increases patients’ anxiety during an already stressful situation. In addition to walking directions, healthcare providers must display information about patient safety, workplace safety, wellness awareness,

mass emergencies and hospital security policies. Posting all this information on bulletin boards, along hallways or on elevator walls creates clutter that only adds to the confusion and can quickly become outdated.

Hospital leaders know they have a design problem. So, to ensure visitors get all the information they need and get where they need to go, forward-thinking decision makers are investing in digital signage with wayfinding capabilities.

Digital Signage: The Next Generation

Digital signage is going through a radical transformation, according to Neil Willis, CEO of Hypersign, a digital signage software provider for both the healthcare and education industries.

“In the beginning, digital signage was just a way to display up-to-date information, such as, ‘We’ve got BBQ sandwiches in the cafeteria for lunch today,’” explains Willis. “Then it



became a way to share more relevant, interactive content like wayfinding. Now it's becoming more dynamic and personalized for individuals."

To deliver personalized content, new digital signage interacts with patients' smartphones via low-energy Bluetooth devices such as beacons. "Patients can walk into their rooms, and the Samsung digital signage display on the wall already knows who they are, what type of television content they enjoy, how they like their food prepared and what room temperature they prefer — all based on the beacon connecting with their smartphone. It can also access the hospital EHR and display the patient information."

The communication goes both ways, as new digital signage can also communicate with patients' and visitors' smartphones. For example, Hypersign is currently rolling out interactive Samsung displays at Emory University Hospital in Atlanta, Georgia. Visitors approach the digital signage and are prompted to download a wayfinding tool to their smartphones. The app triangulates their positions and provides step-by-step directions to wherever they need to go. If there's an intruder alert or fire alarm, connected smartphones are immediately notified and directed to the nearest exit. And if a visitor is on the way to the cafeteria, digital signage can trigger content to the user's smartphone, displaying the full menu for the day.

Hospitals can also use digital signage to bring attention to important information about hospital policies, procedures and events. For example, Bon Secours, a 19-hospital health system on the East Coast, used digital signage from Hypersign and Samsung to increase participation in its annual blood drive by 95 percent. "To a hospital, blood is life," says Willis. "Bon Secours' director of marketing told us this alone justified the expense of putting the network in place."

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Chapter 3: The Patient Room of the Future

In most hospitals, patient rooms feature small, corner-mounted TVs with limited programming options and hard-to-hear pillow speakers. Then there are the dry-erase boards with basic information, such as care provider names and patients' daily goals, which may or may not be updated after the patient is first admitted. All other information is communicated via paper or in-person interactions with physicians and hospital staff.

By equipping rooms with these smart TVs, hospitals help patients beat boredom while becoming more engaged in their own care. The results of these rooms of the future include increased patient satisfaction, better health outcomes and decreased hospital readmissions.

But in the patient room of the future, a TV is more than just a TV. It's a window to the outside world, with a plethora of entertainment options, internet access,

meal-ordering options and messaging features that let patients interact directly with care teams. It's a digital whiteboard, with real-time information about patients' medical conditions, test results, treatment and medication schedules and care provider profiles. It's a treasure trove of educational resources, with easy-to-comprehend videos explaining everything patients need to know about managing their diseases. And in smart patient rooms, it's even a way to operate blinds, lights and temperature controls without getting out of bed.

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Benefits of Smart TVs in Healthcare:

Distract patients from pain and anxiety

Facilitate communication between patients and care teams

Provide personalized, real-time patient information

Share easy-to-comprehend disease management education via video tutorials



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“Part of the scary thing about a hospital stay is the apprehension around what’s going to happen next. The digital whiteboard pulls data from the EHR and presents it on bedside television in a very simple user interface that lets patients know exactly what’s happening.”

Matt Barker, vice president of marketing and interactive sales, TeleHealth



Now Showing in Patient Rooms Near You

Visual communications company TeleHealth Services has been providing hospitals with television services for decades, but those solutions have evolved in recent years with the introduction of healthcare TVs from Samsung.

From a patient experience perspective, these TVs offer more robust, interactive entertainment options, which help distract from the pain, discomfort and anxiety most hospital inpatients feel.

Matt Barker, vice president of marketing and interactive sales at TeleHealth, says that the smart healthcare TV functionality also puts patients at ease. “Part of the scary thing about a hospital stay is the apprehension around what’s going to happen next. The smart healthcare TV pulls data from

the EHR and presents it on bedside television in a very simple user interface that lets patients know exactly what’s happening.”

Hospitals can also better engage patients with educational materials by putting information where patients are most likely to see it — on the screens they’ll stare at for most of their hospital stay.

“At home, the average consumer has the TV on between six to eight hours a day,” Barker explains. “In the hospital, that number jumps to 11 to 13 hours.”

Rather than handing patients educational packets to read, and never knowing if they actually read them, care providers can serve up specific educational videos and then see exactly what content patients actually viewed.

TeleHealth customers report impressive results from this solution. For example,

Kaiser Permanente Panorama City Hospital in southern California, after partnering with TeleHealth, has reduced cardiac and pneumonia readmission rates by more than 12 percent, boosted hospital satisfaction ratings by around 12 percent and increased the number of patients who “understand their condition” by around 8 percent.⁶

Meanwhile, at Elmhurst Hospital Center in New York City, patient education through video has increased by 93 percent, patient satisfaction levels have increased by double digits year after year, and the likelihood of a patient recommending the hospital increased 27 percent in the first 18 months after the solution was introduced.⁷

In the patient room of the future, hospitals can produce smarter patients, driving costs down and patient satisfaction scores up.

Chapter 4: High-Touch Bedside Care

Spending time in a hospital can be overwhelming. Between being shuffled around for diagnostic tests, talking to various care providers and being handed packets full of disease management education, patients receive a lot of information in a short time.

On the one hand, the more information they have, the more engaged and empowered they feel. But the sheer volume can make it challenging to understand and retain information that's vital to healing.

That's why cutting-edge hospitals are using mobile technology to provide patients with access to their own electronic health records. Patients and family members can view medical records and test results, see daily treatment schedules and send messages to care providers.

They can also receive disease management education in whatever format best fits their learning style. For example, younger patients might prefer to watch educational videos instead of reading paper packets, while patients with vision problems, or who are simply auditory learners, can listen to content via MP3 files.

Patients still receive the necessary face-to-face interaction with doctors and nurses. But tablet-based EHR access supplements these conversations with rich information and education, all of which patients can review at their own pace for optimal understanding and retention.

Looping Patients in to the Healthcare Conversation

As patients become more engaged in their own healthcare, their patient experience improves. Just as importantly, they have the tools and information needed to manage their diseases when they get back home, which leads to better health outcomes and decreases their chances of coming back to the hospital. In fact, patients with a clear understanding of their after-hospital care instructions are 30 percent less likely to be readmitted or visit the ER.⁸

To make patients part of the healthcare conversation, one well-respected teaching hospital in the Midwest provides them with 10-inch Samsung Galaxy tablets that come loaded with the Epic MyChart Bedside application. The solution has led to higher HCAHPS scores, increased patient engagement and better patient care.

During the 2014 pilot at this hospital, the organization compared HCAHPS scores from test users to those from patients in the same unit without tablets. Hospital leaders expected communication-related measures — such as doctor/patient interactions and care team responsiveness — to be higher among tablet users. But they were surprised to find that every measure improved, including those which seemed unrelated to tablet use, such as room cleanliness and unit quietness.

The organization attributes this “halo effect” to the fact that patients and families appreciate the hospital's efforts to meet their needs and deliver the information they want, which in turn makes everything about the patient experience seem better.



Benefits of Tablet-Based EHR Access

Increased patient education and knowledge retention

Better patient engagement

Improved patient satisfaction

Decreased readmissions

Patients with a clear understanding of their after-hospital care instructions are 30 percent less likely to be readmitted or visit the ER.⁸

Conclusion: Extending the Digital Patient Experience From the Hospital to the Home

Engaging hospital inpatients with cutting-edge technology is a great way to boost patient satisfaction and improve health outcomes. But the digital patient experience doesn't have to end there.

For chronically ill patients or those recovering from major surgery, hospitalization is only one stop on the road to healing. To keep patients healthy at home, modern hospitals and physicians are using the same mobile technology that enhances patients' hospital stays to continue engaging, educating and monitoring them after discharge.

Two-thirds of hospitals and health systems have now deployed remote patient monitoring solutions.⁹ Many of these sophisticated solutions are tablet-

based, enabling patients to report how they're feeling and to use wearables or Bluetooth-enabled biometric devices to capture important data and transmit it to care providers. This way, home health providers and physicians can spot potential problems in real time and intervene quickly, decreasing the likelihood of patients ending up back in the hospital.

Tablets also let patients have video consultations with physicians and nurse practitioners, and enable home health aides to input patient data directly into the EHR where care providers can view and act on it quickly.

These are just a few of the ways mobile technology is transforming post-acute patient care and chronic disease management.



Two-thirds of hospitals and health systems have now deployed remote patient monitoring solutions.

To learn more about how Samsung helps healthcare providers engage patients in the hospital and in the home, click here: samsung.com/healthcare

Sources

1. "26th Annual HIMSS Leadership Survey Reveals Top Priorities for Healthcare Leaders," *HIMSS*, April 2015.
2. "Half of Nation's Hospitals Fail Again to Escape Medicare's Readmission Penalties," *Kaiser Health Network*, August 2015.
3. "The Problem with Satisfied Patients," *The Atlantic*, April 2015.
4. "NYU Langone's CIO on Becoming Paperless One Application at a Time," *Healthcare Informatics*, June 2015.
5. "Wayfinding in Healthcare Facilities: Contributions from Environmental Psychology," *Behavioral Sciences*, December 2014.
6. "Case Study: Kaiser Panorama City Hospital," *TeleHealth*.
7. "Case Study: Elmhurst Hospital Center," *TeleHealth*.
8. "A Reengineered Hospital Discharge Program to Decrease Rehospitalization: A Randomized Trial," *Annals of Internal Medicine*, February 2009.
9. "New Study is Bullish on Remote Patient Monitoring," *mHealthIntelligence*, November 2015.

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