Applying Mobile Data Capture Technology to Improve the Patient Experience

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Introduction

It’s no secret that the healthcare industry is undergoing seismic changes—among them the Affordable Care Act, value-based pricing and the expected shift to pay-for-performance initiatives such as accountable care organizations. This changing landscape is applying new pressures on healthcare organizations to transform the way they do business.

One of the biggest changes in healthcare is that patients are becoming consumers. Because patients can now more easily shop for healthcare, hospitals must respond by becoming more competitive not just in pricing and quality of care, but also in customer service. As a result, a positive patient experience is increasingly viewed as a differentiator. Furthermore, there is now a direct financial incentive as well. As of October 2012, Medicare reimbursements have been tied to customer satisfaction metrics. Not surprisingly, this has led to an emphasis on positive patient experiences. In fact, many major healthcare organizations have recently created executive positions with creative titles such as Chief Experience Officer, Director of First Impressions and Patient Experience Manager.

At the same time, patients—influenced by the continually improving service quality they receive from companies in other industries—are demanding more from hospitals. Healthcare organizations are now looking to improve patient satisfaction in all facets of the hospital experience, especially at key customer touch points.

Technology can play an important role in bettering the patient experience. Mobile technology is now ubiquitous. Apple reported in January 2013 that its sale of iOS devices (iPhones, iPads and iPods) had surpassed the 500 million mark. In addition, a recent report from the Pew Research Center found that 24 percent of American adults now own a tablet computer. This, combined with the explosive growth of Internet shopping and the use of electronic signature, has dramatically changed expectations. People are now accustomed to completing forms and signatures electronically, and many patients, particularly younger people, expect the same from their healthcare providers.

According to a new forecast from the International Data Corporation, tablet shipments are expected to grow 58.7% year over year in 2013 reaching 229.3 million units, up from 144.5 million units last year. IDC now predicts tablet shipments will exceed those of portable PCs this year, as the slumping PC market is expected to see negative growth for the second consecutive year. In addition, IDC expects tablet shipments to outpace the entire PC market (portables and desktops combined) by 2015.

In addition to meeting burgeoning customer expectations, mobile technology can help capture discrete data and consents electronically throughout the continuum of care and immediately pass this vital data to downstream systems. It begins at admission/registration where eliminating paper can dramatically improve the customer experience right from the start. Then, as the patient proceeds throughout the episode of care, mobile technology can help foster better communications among patients and physicians for interactions such as informed consents, patient charting and discharge instructions.
Keeping the Customer Satisfied

The patient experience has not always been a high priority, but that is changing fast. According to a survey of healthcare leaders by HealthLeaders Media Intelligence Unit:

- Seventy-two percent of respondents said the patient experience has become a higher priority in the past year.
- Seventy percent use the HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) survey to measure the successes and failures of patient experience initiatives.\(^3\)

How are healthcare organizations doing in meeting this imperative? According to the American Customer Satisfaction Index (ACSI), the only independent national benchmark of customer satisfaction available in the United States, patients are more satisfied with the care they received at hospitals this year. The ACSI National Index, which measures the performance across 43 industries and 10 sectors, is 76.6. Hospitals have an ACSI benchmark of 78, slightly above the national index and an improvement of 2.6 percent since 2012. ERs, on the other hand, have a much lower patient satisfaction score at 70, although that is up from an ACSI benchmark of 66 a year ago.\(^4\)

Although healthcare organizations are making progress in raising patient satisfaction, opportunities for further improvements still remain.

The Financial Impetus for Greater Patient Satisfaction

A positive patient experience can have significant impact on the bottom-line. How?

It attracts patients

A significant amount of patient satisfaction information is now available online. From HCAHPS survey results to Yelp reports to social media, prospective patients are using the Internet to make better decisions. For example, “Hospital Compare,” available from medicare.gov, compares facilities against state and national averages on ten important quality topics based on HCAHPS survey results. This makes it easy for patients and their families to quantitatively compare competing facilities.

It creates loyalty

A positive experience will increase the likelihood of future treatment at the same institution. According to Press Ganey, a performance improvement firm that partners with more than 10,000 healthcare organizations globally, “Numerous studies confirm that satisfied patients are loyal patients. They are more likely to return to the same provider for future medical care and to refer other patients. Leading providers who have recognized the lifetime value of a satisfied patient are finding enhanced profitability to be among the resulting outcomes.”\(^5\)

It affects Medicare payments

In 2012, as part of the new healthcare law, Medicare began tying some of the hospitals’ payments to patient satisfaction rankings. As part of the Value Based Purchasing initiative, hospitals can receive bonuses from Medicare if their patients give them a positive review and lose money if they do not. For 2012, Medicare rewarded 1,557 hospitals with more money and reduced payments to 1,427 others, according to a Kaiser Health News analysis of records released by the Centers for Medicare & Medicaid Services. The maximum amount any hospital risked was 1 percent of its regular Medicare payments. The bonus pool will increase to 2 percent in 2016.
Leveraging Technology to Make a Good First Impression

Healthcare institutions are reengineering hospital processes to improve the patient-care experience. According to Anil Swami of Accenture: “Meeting the basic needs of patients/customers requires improving established modes of working. To create a customer-centric service experience, different departments need to collaborate and share information in new ways. Processes must be in place to protect confidential information, of course, but ultimately the goal is to make it easier for patients to get the care and support they need.”

One area where technology can be cost-effectively leveraged to improve efficiency and the patient experience is at the start of it all: admissions and registration. By eliminating paper and implementing tablet computers as part of the process, healthcare organizations can improve the patient experience by:

- Simplifying the admission process by automatically providing patient history and demographic information
- Getting patients to clinical care faster by improving operational efficiency
- Removing manual and repetitive efforts by the patient
- Eliminating the re-entry of information already collected
- Creating the perception of efficiency and modernity (“being on the leading edge”) that can extend to the rest of the enterprise
- Eliminating the need to contact the patient later to re-collect missing or incorrect information
- Reducing billing mix-ups and mistakes

In addition to improving the patient experience, registration automation delivers significant operational and financial benefits to the organization, including increased productivity, improved patient throughput, faster and more accurate billing and coding, and enhanced revenue opportunities.

Mobile Technology Now Registers with Patients

In the past, admissions and registration departments lagged when it came to technology because:

- The process is paper-intensive.
- A number of documents and consent forms need to be completed and signed, including advance beneficiary notices, patient privacy forms, and Medicare and insurance forms.
- Older technology solutions make direct patient interaction cumbersome.

Mobile technology has now completely transformed our personal and business lives. Smartphones, iPads and other mobile devices are ubiquitous and common in our everyday experience. By seamlessly integrating mobile devices with function-tailored data capture capabilities, electronic signature and interfaces to hospital electronic health record (EHR) and billing systems, you can dramatically improve the registration process and the patient experience.

When patients arrive at admissions, they can use a tablet computer that leverages pre-existing patient information and guides them through the registration and consent process—saving time, improving accuracy and reflecting positively on the hospital’s reputation.
Enhancing the Patient Experience at Griffin Hospital

When Griffin Hospital in Derby, Connecticut, opened its new state-of-the-art cancer center, one of its goals was to provide patient-centered care in a paperless environment. Bottomline Technologies—Logical Ink® solution helped them achieve this by leveraging tablet computers, digital ink and a pen-based interface to provide a simple and intuitive registration and patient consent experience. In addition to improving efficiency and effectively capturing discrete data, the Bottomline solution has materially improved patient and staff satisfaction.

It works like this:

• Once the patient is pre-registered or an appointment is scheduled, the patient’s demographic information is transferred to the tablet computer and the correct form packet is ready to be completed.
• For each form, much of the information is already pre-populated and the rest is gathered from the patient and entered into the tablet computer as part of the registration process.
• With the assistance of registration personnel, the patient reviews all the information to ensure that it is correct and then signs the e-form on the tablet.
• All areas that require either a patient’s signature or initials are highlighted in color on the screen.
• After completion, the forms are immediately sent to the electronic medical record system and electronically filed in the patient’s record.

“The patients really like the system. Even older patients, who may not typically use computers, get very excited,” said Susan Anderson, Griffin’s director of registration. “Bottomline is also a big hit with our staff. It is definitely quicker, since most of the information is pre-populated.”

In addition to delivering better patient and staff satisfaction, the Bottomline solution delivers significant additional results for Griffin Hospital. It:

• Saves money by eliminating paper, printing, scanning and storage costs
• Improves staff productivity
• Ensures that patient consent requirements are complete and accurate
• Validates patient data at registration
Employing Tablet Computers to Improve Patient Engagement

At a recent hearing before the Senate Finance Committee titled “Health Information Technology: Using IT to Improve Care,” participants discussed the upcoming implementation of Meaningful Use (MU) Stage Two. One point highlighted during the hearing was that the implementation of MU-based EHR systems regularly hampered patient engagement. Workflows were often based on MU guidelines with little regard to usability and the natural clinical workflow. As a result, clinicians are often saddled with forced workflows and complex data entry requirements that take time and attention away from patients. In addition, physicians have little opportunity to enter unstructured notes, which are often key to clarifying the patient encounter.

Mobile technology can play a vital role in helping physicians and other caregivers better engage patients as they proceed through the continuum of care. According to Dr. Lennox Hoyte, Chief Medical Information Officer at University of South Florida Morsani College of Medicine, tablet computers are far better than desktop computers in the exam room or at the patient’s bedside. Desktop PCs force physicians to look away from patients as they enter data, making patients feel like their doctors are not paying attention. That’s why, according to Dr. Hoyte, USF is “moving toward 95 percent of physician activity going away from the desktop.”

In addition, using mobile technology to take advantage of tools such as voice dictation, handwriting recognition, annotations on diagrams and biometric signatures can improve the capture of structured and unstructured information. Furthermore, preferred workflow can be easily set up and data capture and presentation can be customized to a provider’s preferences. This can minimize clinician fatigue and facilitate patient engagement in important applications such as informed consents, clinician documentation and discharge instructions.

Electronic Informed Consents Promote Physician-Patient Dialogue

“Informed consent is more than simply getting a patient to sign a written consent form. It is a process of communication between a patient and physician that results in the patient’s authorization or agreement to undergo a specific medical intervention.”

Automating the informed consent process with tablet computers can not only eliminate the expense and hassle of managing printed forms, but also foster a dialogue and education experience that helps patients make better decisions and be more confident about their healthcare.

A mobile-based informed consent allows the patient and physician to review information together on a tablet computer, whether at the doctor’s office or at the bedside point of care. At the most basic level, paper consent forms are converted to procedure-aware electronic forms, and the tablet computer enables the physician and the patient to discuss the procedure, after which the consent can be signed electronically with a copy immediately sent to the EHR. This ensures that information is not lost or misplaced and that these critical documents are instantly available to operating room staff, reducing expensive operating room delays or cancellations. Patients prefer them too. A recent study of VA Health System urology patients found that 96 percent preferred the electronic process to a traditional paper-based informed consent.

There are also more sophisticated informed consent features available that can further enhance patient understanding and satisfaction. By integrating video, anatomical diagrams, pictographs, charts and procedure-specific content, the education process can be improved so that patients better understand their options and the care they are about to receive. For example, a physician can use a stylus to annotate anatomical diagrams to better describe a procedure, and graphs and charts can better communicate risks. This helps promote an interactive dialogue in which physician and patient can come together to make shared decisions.
Eight Essentials for Paper-Free Registration and Informed Consent Solutions

Paper-free, data-smart registration and informed consent solutions can improve the patient experience and can have a profound effect throughout the enterprise. However, not all solutions are created equal. These eight key elements are essential to success:

1. **Anywhere, Any-Device Mobile Data Capture**: This allows the organization to easily collect and share information at any point in the healthcare process: at registration, in the examining room or at the bedside.

2. **Context-Aware Forms**: The required forms and consents vary depending on the patient and his or her coverage or procedure. Context-aware forms will automatically present the right fields and guide the user through the process based on the patient type, insurance coverage and/or procedures.

3. **Proven Interoperability**: Interfaces to hospital systems should automatically populate documents with correct demographic information—reducing data entry and improving accuracy.

4. **Data Validation**: As forms are completed, data needs to be validated to ensure proper values are entered and that there is no missing or incomplete information.

5. **Electronic Signature**: Easy-to-use digital signature technology is essential for automating the consent and approval process.

6. **User-Friendly Interface**: The user interface should be easy to navigate and highlight required fields to ensure that all mandatory data and signatures are completed.

7. **Integration of Support Technology**: The solution should be able to integrate technology such as voice, handwriting recognition, annotations, video and other types of content to support documentation and learning requirements.

8. **Real-Time Information Distribution**: Capture it one time and send it where it needs to go. Interfaces to downstream systems such as EHR, coding and billing.

Conclusion

Improving the patient experience is gaining momentum throughout the healthcare industry. Healthcare consumers are now choosing healthcare providers because of, among other things, patient satisfaction scores, and Medicare bonus payments are now tied to satisfaction survey scores. At the same time, patient expectations are growing based on their experiences outside of the healthcare industry.

Using portable tablet computers to capture discrete data at admission and registration is a cost effective way to improve the patient experience from the start. It decreases repetitive data entry, instills confidence that the hospital will not lose patient information, and increases the amount of time staff can spend with patients by eliminating the routing and managing of paper documents. It also helps provide operational efficiencies by delivering information to other departments almost instantaneously and decreasing the potential for lost revenue by capturing better data earlier in the process.

Augmenting the informed consent process is another vital area that can be greatly enhanced with the right mobile automation solution. By integrating mobile data capture, electronic signature and interactive educational content, a physician can use a tablet computer to capture consent signatures electronically, improve the physician-patient dialogue and create a positive environment where the patient can make better decisions about his or her health care.
References

2. PC Outlook Falls As Market Increasingly Looks to Tablets, IDC, May 28, 2013.

About Bottomline Technologies

Bottomline Technologies (NASDAQ: EPAY) provides cloud-based payment, invoice and document automation solutions to corporations, financial institutions and banks around the world. The company’s solutions are used to streamline, automate and manage processes involving payments, global cash management, transactional documents and invoice approval. Organizations trust these solutions to meet their needs for cost reduction, competitive differentiation and optimization of working capital. Headquartered in the United States, Bottomline also maintains offices in Europe and Asia-Pacific. For more information, visit www.bottomline.com.