For many years, organizations across a variety of industries have embraced self-service technology to create better customer experiences and expand service capacity. The use of the technology in healthcare has been slower to catch on, but that is quickly changing as consumer expectations rise and budgets tighten.

More and more healthcare organizations are implementing self service as a way to complement traditional patient service approaches. Hospitals, clinics and physician offices are offering convenient, easy-to-use self-service technologies to register patients, increase throughput and improve revenue cycle management capabilities, while advancing the concept of consumer-directed healthcare.

**Widely used convenience**

Banking, transportation, entertainment, retail and food service are just a few of the industries that have fully embraced self service and made it part of consumers’ everyday transactions and interactions. Studies have shown that consumers most appreciate the convenience, shorter wait times and ability to take charge of their own interactions and data. As a result, self-service usage has become widely accepted by the general population, with the technology proving its feasibility and convenience many times over.

**Why should healthcare be an exception?**

As self service gradually gains acceptance in healthcare, lingering doubts are common, and adoption has been slower than anticipated for several reasons. Healthcare self service requires complex integration and process reengineering considerations not seen in other markets where self service is prevalent. Because of this complexity, the healthcare market requires better education of self-service solutions and assurance that patients’ private information will not be compromised. In the past, technology vendors have not been able to fully educate, resulting in misaligned expectations and best practices. To many organizations, the unproven return on investment due to a relatively low number of deployments is concerning. Finally, technology vendors have executed poor awareness and communications strategies, resulting in suboptimal adoption.

Though these obstacles are specific to healthcare, each and every industry that has adopted self-service technology has had to overcome hurdles. The objections to self-service technology were especially frequent in the banking industry more than 20 years ago, but now automated teller machines (ATMs) are everywhere because consumers have accepted and embraced them. They have become a part of everyday life.
Overcoming self-service technology doubts

With other industries laying the groundwork, self service has evolved from an experimental technology for early adopters to a mainstream, proven option. Objections to self service in other industries were gradually overcome and the same is expected for healthcare. It is important to remember that patient self service does not replace staff or a personal touch. It enhances the patient experience and allows staff to spend more time helping people with questions and special needs, not patients who want to quickly check in.

Self service in the healthcare setting

Patient self-service solutions streamline and integrate patient information with existing systems at a healthcare organization, and typically feature touch-screen workflows that can be used for a number of patient-centered applications, including:

- Automated registration and check-in
- Insurance validation
- Onscreen consents, documents and questionnaires (including e-signature capture)
- Secure payment of fees and outstanding account balances
- Foundation donations
- Way-finding and directory services
- Staff notification of patient check-in status

Benefits of self service

Successful self-service solutions drive patient engagement by providing choice, privacy, and improved patient information accuracy. Self-service users are more likely to provide information honestly and catch errors, resulting in better data quality and a positive patient experience. With proper planning and incorporation of proven processes, self-service technology promises a wide range of benefits for patients, healthcare staff and healthcare organizations.

- Patients—self-service technology offers convenience by systemizing tasks. Patients can use the kiosks to complete a variety of routine processes quickly, efficiently and securely instead of waiting in line for the next available staff member. Self service developed and deployed correctly adapts to the user’s transaction needs (for example, it presents only the details necessary for that user-specific encounter). The result is a reduction in check-in and wait times, greater data accuracy, improved customer satisfaction and increased autonomy and privacy for the patient.

- Organization—systemizing data input and information workflow results in greater accuracy of patient and insurance records, timely revenue cycle management and improvements in patient satisfaction. In a strategic deployment, cost savings and greater efficiency result when patients have the ability to help themselves and solve their own issues. Kiosks offer the benefits of shorter lines, faster registrations and increased throughput by expanding customer service options and resources. Instead of waiting in line for the next available staff member, they can choose to use a kiosk. Wait times for patients who require personal attention are reduced because there are fewer patients who require one-on-one attention. Self service offers cost savings through staff re-allocation and more timely revenue cycle management due to the collection of fee payments upfront instead of billing to collect payment at a later date.

- Staff—self-service technology is designed to complement staff, not replace them. Automating and streamlining certain processes will increase staff productivity. They will spend less time assisting patients with routine tasks they can complete at kiosks, resulting in more time that can be spent on higher value tasks and quality interactions with patients who need more personal attention. Because kiosks can collect payments, employees will have fewer discussions with patients about fees and outstanding balances. As the check-in experience is streamlined, patient satisfaction improves and the time pressure on staff decreases. Ensuring staff know the benefits of self service for both patients and themselves fosters acceptance and support internally, which in turn helps promote greater adoption among patients.

Process reengineering and broader deployment are necessary to realize quantifiable staff benefits, especially since affected staff members are often initially involved in convoluted overlapping processes. Success will be achieved with appropriate processes and self-service best practices adoption, but it will take more time to see direct measurable benefits to staff, as it did in every other industry that accepted self service.
SCENARIO A: Simple Check-in

Centralized Registration Process (Scheduled Appointments)

- Identify patient using driver’s license and security question
- Confirm appointment details
- Review and update patient demographic data (personal and insurance)
- Present, review and get signature on Notice of Privacy Practices and Consent to Treatment documents
- Complete the registration in the host ADT system
- Notify the treatment center of the patient’s arrival

SCENARIO B: Complete Check-in with Way-finding and Co-pay

Centralized Registration Process (Scheduled Appointments)

- Identify patient using driver’s license and security question
- Confirm appointment details
- Review and update demographic data with patient (personal, next of kin, emergency contact and insurance)
- Present, review and get signature on Notice of Privacy Practices and Consent to Treatment documents
- Verify if the patient gets Medicare coverage
  - If yes, present, review and get signature on Important Message from Medicare document
- Verify if the patient has co-pay for visit
  - If yes, present, review and take payment for co-pay amount
- Complete the registration in the host ADT system
- File printed registration forms and consents with the patient record
- Notify the treatment center of the patient’s arrival
  - Print patient armband prior to patient arriving in treatment area

METRICS: Manual vs. Kiosk-enabled Registration

- Average time (minutes) for session:
  - Manual: 3.30
  - Kiosk: 7.00
- Registrations per hour:
  - Manual: 17
  - Kiosk: 19.5
- Registrations per day:
  - Manual: 51
  - Kiosk: 156
- Registrations per year:
  - Manual: 13,260
  - Kiosk: 48,672

Manually  Kiosk
Setting goals for success

Many factors can make the difference between a successful implementation and one that does not live up to its full potential. Establishing goals before beginning a self-service project is critical, and there are a number of questions to ask to understand the motivation behind investing in the technology to help establish these goals. The answers to these questions can be used to gain internal buy-in for the project and throughout planning and deployment activities to ensure the solution will best address organizational and patient needs.

1. What service issues should be addressed with self service?
It is important to identify, document and communicate the key factors driving the deployment of self service. For example, an organization might target areas for service improvements that include: reducing wait times; reducing registration time; improving the revenue cycle by collecting co-payments upfront; providing a reliable, consistent registration process; improving customer satisfaction; and increasing privacy. Also, it is important to determine the kinds of patient interactions that will be serviced by the kiosks and which interactions should be left to the trained staff. By addressing routine tasks with kiosks and quality interactions or issues with employees, the organization will see the greatest impact on productivity and efficiency.

2. Which metrics, statistics or scores can be improved, and how can the changes be measured?
Metrics to measure the success of the self-service program need to be determined, with baseline measurements of the current-state processes taken for before-and-after comparisons. Metrics could include: average wait time; average registration time; registration throughput; self-service utilization statistics; self-service usage breakdown; payment collection percentages; overall self-service user-experience ratings; and customer satisfaction scores (e.g., Press Ganey, JD Power before and after). Results of before-and-after comparisons will provide quantifiable evidence of the success of the program and prove its benefits. (How much did the length of wait and registration times decrease? What was the impact on customer satisfaction scores? On a scale of 1 to 5, describe the acceptance level among staff.)

3. How should the self-service technology features be prioritized?
Based on benefit to patients, staff and the organization, building a prioritized list of features and capabilities to offer using self service will aid in planning and implementation—determining what is most important and why. The priority may not dictate the order in which features are deployed due to other reasons; however, it helps shape overall goals and planning for deployment. Features offered need to be appropriate to the self-service modality or communication channel being used (Web, kiosk, smartphone, etc.).

4. Which departments, appointment types and patient populations should be targeted?
To drive adoption, self service should be targeted to the groups most likely to use and benefit from them. The program could begin with departments that have a high volume of recurring patients followed by departments with a high volume of daily scheduled appointments. For co-payments and co-insurance collections, departments with the lowest number of Medicare/Medicaid patients would be optimal.

5. How do patient grouping and language considerations affect self-service technology delivery?
Once the departments in which self service will be implemented have been identified and prioritized, the organization must study the demographics of its patient population. A close look at demographics is critical to the success of a self-service program, and a key aspect of strategic implementation. Based on the demographics of anticipated users, a healthcare organization can choose an offering that best fits its needs. If there is a significant population of kiosk users who speak a language other than English, organizations should consider offering a translated version of the kiosk screens to improve the user experience. If there are physical limitations that affect the majority of users—such as elderly patients who may be frail, or patients in wheelchairs or on crutches—desktop kiosks can be more easily used while seated.

Self-service technology is designed to complement staff, not replace them.
6. How will self service be integrated with the registration process and systems?
Self-service technology deployed according to best practices will improve patient identification, authentication and privacy, and the accuracy of data. Deployment will evolve into seamless automated integration with multiple data and system sources. Critical to the success of the solution is examining current registration processes and process path determination—how the revised, kiosk-enabled processes will work and how staff receiving the patient are made aware and provided with key indicators as to the status of the patient’s situation (transaction) as they arrive for the next step in the process. This can be accomplished by gathering input from staff, documenting gaps and building the high-level plan that will take the organization from current-state to future-state processes. One such area of integration that drives benefit for the organization is facilitating downstream workflow processes from completed check-in events at the kiosk, including:

- Automatically feeding signed and indexed consent documents into the organization’s document imaging system to save the time and cost of staff-driven print-and-scan processes
- Printing patient armbands at the destination clinics serviced by the kiosk so that staff are alerted and waiting to complete the mandatory patient-identification steps for regulatory compliance when the patient arrives at the desk
- Triaging patients who respond positively to standard infection-control surveys by sending them to a separate waiting area and notifying staff to wipe down the kiosk

7. How will the kiosks ensure patient privacy and confidentiality?
Privacy and security is by far the biggest concern among patients. Not all self-service solutions are built the same, and improperly designed and implemented self service may actually decrease patient privacy.

Properly designed self service requires patients to identify and verify themselves with a security question during check-in, does not store patient information and has a privacy screen that ensures information can only be viewed by the patient standing directly in front of the kiosk. In secure self service, all information entered flows securely to back-end systems and complies with the Payment Card Industry Data Security Standard (PCI DSS). This standard consists of 12 periodically updated requirements representing best practices that govern the cardholder data environment to help organizations secure cardholder data. Finally, a privacy filter should be built in to help ensure HIPAA compliance.

8. Who will ensure effective service and support of self service?
After investing time and resources in establishing a self-service solution, the organization’s deployment plan must include a program for ensuring the ongoing operational success of the kiosks and other solution components. Organizations should look for self-service solutions that include “self-monitoring” capabilities so that the devices can notify administrators when problems, such as network connectivity issues, occur. Better still, some kiosks can take themselves offline when these problems occur, then bring themselves back online automatically when they detect the problem has been resolved.

In addition to these automated service aids, organizations should seek to integrate their own information technology (IT) support services with the proactive monitoring and support capabilities of their solution provider or a third-party services organization. This combination of built-in system diagnostics and notification, along with efficient and proactive real-time support will deliver the best results for the organization. Also, supportability of self service, including parts sourcing, field services, repair and software updates, must be considered as part of deployment best practices.

The most critical element for long-term success of any technology or process change is the organization’s staff—the team who works with the solution daily and interacts directly with the end users of the system. Time invested up front in explaining the benefits and goals of the system with the project team, involved staff members and customer advocates will pay off after deployment by increasing adoption, usage and integration. Through both quantitative metrics and qualitative feedback, everyone will know how successful the program is. If introduced and deployed as advised, metrics will show adoption is increasing, wait times are decreasing and customers are providing their own feedback to staff members.
Choosing the right kiosk

Not all self-service devices are the same, and part of a successful deployment and implementation involves identifying the type that is right for the organization, why it is ideal and how it will work in the setting.

• The right type—there are four types of self-service kiosk devices: upright freestanding, pedestal, desktop and mobile (tablet). As part of a strategic implementation, facility layout, desired system features and the patient populations to be served should be taken into consideration to identify the right kiosk type for the job. Upright or pedestal kiosks are ideal for hallways, lobbies and registration areas because they are floor mounted or wall mounted. Desktop kiosks can be mounted on tabletops with seating, ideal for lobbies and registration areas. For organizations that want to "sign out" self-service devices to patients in waiting areas, mobile kiosks are the more suitable choice.

• Layout considerations—the physical environment and facility layout are important factors in device selection. These aspects should be analyzed to determine why one type of kiosk would be better than another. Desktop and wall-mount kiosks may appear to take up less space than freestanding devices. However, mounting units on desktops can require as much or more space, due to the required table areas or privacy enclosures. Wall mounting may save on floor space, but with more than one unit in an area, the uninterrupted wall space needed and areas reserved for standing/queuing can be substantial. If presenting informational and branding content is desired, freestanding kiosks are the most noticeable type.

• Making the decision—in a strategic deployment, all environmental factors are weighed against kiosk features to determine the best self-service device type for any situation. Additionally, patient preferences and habits must be taken into consideration when making the decision to augment use and acceptance.

Plan to succeed

Several key activities can help meet goals for the project after the solution goes live. However, the planning required to deliver on these activities needs to take place during the project kickoff and deployment stages so organizational and patient needs are thoroughly addressed from the start of the project.

• Signage and messaging—signs direct patients to the kiosks and provide some high-level description of what the kiosks can do so patients can easily find the devices and quickly understand the benefits of using them.

• Upper-screen media presentation capabilities—freestanding, upright kiosks that have a dedicated upper screen for presenting informational videos and content can help patients understand the services the kiosks provide, and basic usage instructions to help foster adoption. The screens can also be used to show branding messages and other important organizational content.

• Limited-time incentives for using the kiosk—contests or giveaways can incent initial kiosk usage. Patients who use a kiosk once and realize the benefits and ease of use firsthand are more likely to continue to use the kiosks.

• Greeter—staff and volunteers can introduce patients to the system, encourage use and answer questions during the initial rollout. As patients are introduced to this new technology, having a greeter will help them become comfortable with self service, and adoption will likely be greater in a shorter amount of time.

• Project team communications—after launch, the project team should still be involved in team meetings, on-site observations and fine tuning processes needed to ensure the program continues to meet patient and organizational needs.

Deploying the solution

Kiosks offer a relatively straightforward, low-cost implementation when compared to many other service-improvement offerings, such as Computerized Physician Order Entry (CPOE), Electronic Records Management (ERM), and e-prescribing. Following best practices during the deployment phase can help ensure a straightforward implementation. The best recommendation is to start simple, perhaps by launching way-finding and foundation donation workflows to get the kiosks into production use as soon as possible. Subsequent phases can be deployed to expand the services offered and build on early success. A long-term plan might include multiple workflows, facilities and host-system integrations, but taking a phased approach reduces implementation complexity and time requirements, and increases the chances for successful deployment.
Choosing the right partner

Creating a successful self-service system requires choosing the right technology and vendor to help achieve self-service goals. The technology behind the solution should integrate and scale easily into a single facility or large healthcare enterprise, regardless of the host systems involved. Also, the solution should be built with future-ready technology to ensure it can change and grow as needs evolve. Kiosk workflow design should deliver cost savings and enhance the patient experience. The right partner should also have extensive self-service experience to address any doubts and verify best practices are followed. Plus, professional services should ensure a smooth installation and provide ongoing support.

Diebold Healthcare

World-renowned for more than 150 years in the financial services industry, Diebold is leveraging its extensive experience in self-service solutions to become an essential partner in the healthcare field. Diebold solutions protect patient privacy, ensure the safety of healthcare facilities and their assets and simplify transactions for improved efficiency and patient satisfaction.

Systemize the routine, humanize the exception

Self service is a matter of choice, and the key to its success is to make that choice better than the alternative in a given situation. There are a few additional strategic recommendations that can help establish core policies and procedures for kiosk use. Patients with important questions may still need human interaction, with the kiosks serving as an express option for those who are comfortable with self service and who desire the convenience and privacy. The majority of patients will fall into the standard, systemized registration process flow without any intervention needed. For the exceptions, the kiosk can triage the patients by directing them to the appropriate staff member while also letting the staff member know the reason the patient is coming to them.

Security and privacy considerations

Self-service technology puts the patient in control by verifying and reviewing consent forms, and collecting potentially sensitive information, privately. Kiosks should be designed for secure capture, storage and transfer of all Protected Health Information (PHI) and any other sensitive data, such as cardholder information related to electronic payment processing. Organizations must ensure that the kiosk system they deploy includes the appropriate measures that have been appropriately configured to safeguard this critical information at rest and in motion. These measures must include a high level of physical security on the kiosk device itself to ensure that unauthorized users cannot get easy access to the organization’s network and infrastructure through open ports, exposed connections or other gaps. All organizations need to place a high priority on kiosk solution security and ensure that the kiosk vendor understands and addresses all concerns in this area.