



Proven Outcomes in Improving Clinical Processes with INVISION Browser-Enabled Plan of Care

Baptist Health System, Inc. Case Study

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Baptist Health System (Baptist) is located in Birmingham, Alabama. The system comprises four separate facilities, including Princeton Baptist Medical Center (Princeton), Shelby Baptist Medical Center (Shelby), Citizens Baptist Medical Center (Citizens), and Walker Baptist Medical Center (Walker). One of the state's largest employers, Baptist boasts more than 4,500 employees and 520 physicians. The network includes 1,770 hospital beds.

Baptist is committed to ministries that enhance the health, dignity, and wholeness of those it serves, through integrity, compassion, advocacy, resourcefulness, and excellence.

Background/Challenge

Baptist began its relationship with Siemens in 1989 with the financial business application Independence. In 1992, Baptist converted to Siemens INVISION for both clinical and financial functions. Today, the healthcare system also uses *syngo*® Workflow, which integrates data between the INVISION, Radiology Information System, and the Picture Archiving and Communication System. While Baptist has continually embraced the use of technology to improve efficiencies throughout its facilities, it recognized the need for more automation within its organization, in particular its clinical documentation processes, which were still manual.

With a completely paper-based clinical documentation process, Baptist recognized that it could improve efficiency, accuracy, and consistency by implementing technology in the form of online Patient Care Documentation (PCD). This strategy includes online assessments, vital signs, progress notes, and intake and output (I&O) as well as plans of care. Baptist Health System's Phyllis Grant, Vice President of Clinical Informatics, remarked, "Baptist's processes were almost exclusively manual. We needed to conceive a better way to do things." Baptist especially needed an efficient, streamlined way in which to communicate with the pharmacy. Grant remarked, "The communication channel we had set up with our pharmacy staff members was very inefficient. We were doing everything short of sending them smoke signals."

In addition to its paper-based processes, the overall clinical workflow at Baptist was poorly integrated across the various disciplines, and no one outside of nursing reviewed or managed plans of care. Progress notes, which were not standardized or coordinated, added to the problem of inefficient communication between departments and created a pressing need for more efficient interdisciplinary communication.

Therefore, Baptist set out to achieve more consistent, accurate, and timely clinical documentation that would be available to all disciplines simultaneously, resulting in a much more efficient workflow and improved patient safety. A primary motivator for the project was the need for practice standardization, as well as an opportunity to improve system-wide efficiencies and cross-departmental communications.

The first step for Baptist was to replace its paper-based clinical documentation processes by implementing online PCD, starting with assessments, vital signs, and I&O. Baptist then recognized it could take this system one step further by working with Siemens to implement INVISION Browser-enabled Plan of Care. Baptist viewed online PCD, including Browser-enabled Plan of Care, as critical steps in its ultimate strategic objective of creating a comprehensive Electronic Medical Records system. Beginning with bedside clinicians, the healthcare system drove the initiative from the top down with the goal of achieving much-needed collaboration across facilities and disciplines.

In correlation with its implementation of PCD, Baptist also recognized that implementation of Browser-enabled Plan of Care would help positively position the system in its quest to be recognized as a Magnet Organization for Excellence in Nursing Service. Therefore, using an interdisciplinary, top-down approach, the Baptist team predicated its clinical framework design on the Forces of Magnetism — standards of excellence established by the American Nurses Credentialing Center to designate a health system as a Magnet environment.

Implementation Strategy

Baptist began initial discussions and planning for online PCD in 2004 and officially began the project in January 2005. Baptist formed a clinical analysis and design team consisting of one staff RN from each facility who would be allocated full-time to the project. The team members assisted in researching best-practice guidelines as well as accreditation and regulatory requirements in the clinical arena. They also considered the variations in complexity and special requirements of all four facilities. Based upon this research, recommendations were made for the ultimate design, guidelines for use, and strategies for implementation.

Grant recalled, “Even though each facility had the same standards of practice, each did things differently, so we had a lot of homework to do upfront. The team reviewed existing standards of practice and identified process improvements that would be implemented in the design. Together, we all agreed on where we would head as an organization from a clinical leadership perspective.”

Once this step was complete, Baptist initiated a design validation phase, during which additional facility-based representatives from all disciplines were engaged. Throughout the preparation and subsequent implementation, the clinical leadership team provided oversight for the project and served as the driver for every major decision and process. The team evaluated and updated policies and procedures as needed and then worked to implement any changes. The hands-on approach of the team and its commitment to the design and management of the project would later be credited as a critical factor in the implementation’s success.

During the initial PCD design phase, questions arose regarding how to best document patients’ plans of care. As Siemens and Baptist continued to work closely together, Siemens informed Baptist that it was enhancing its INVISION Plan of Care pathway to be browser-enabled and would be looking for a beta site within a few short months. The teams at Baptist and Siemens came together to discuss the beta program and Baptist expressed strong interest in participating. In the fall of 2005, Baptist was selected to serve as the Siemens beta site for INVISION Browser-enabled Plan of Care.



We see a way to increase compliance for initiating a patient plan of care at admission by 26%

Rollout

As a first step in the design for Browser-enabled Plan of Care, the INVISION team reviewed many of the less complicated diagnoses found within each of Baptist's hospitals and then examined the complexity of diagnosis-related groups. Based on guidelines established by the Joint Commission, the team identified six potential problem areas to be addressed on every patient plan of care: activity, fear/anxiety, education, pain, nutrition, and safety. The plan-of-care function also included a generic category that encompassed all six problem areas.

The staff identified more than 100 problems and more than 300 outcomes in the INVISION Clinical Standards Masterfile and then developed 80 diagnosis-based standard plans of care in categories including diabetes, psychiatric, neurological, and general medicine. Grant added, "The Siemens beta Browser-enabled Plan of Care team offered excellent support and was helpful in shaping decisions and formulating metrics."

In collaboration with its PCD and Browser-enabled Plan of Care implementations, Baptist also developed an Interdisciplinary Patient Education Record (IPER) to meet the Joint Commission requirements for interdisciplinary patient education documentation. Baptist now documents the following key items: learner, learning preferences and barriers, readiness to learn, education topic, method of teaching, and evaluation. Prior to installing Siemens Net Access, Baptist used different printed versions with similar formats across its facilities. Whenever any care provider performs patient education, that step must be documented on the IPER. The IPER was not automated as part of the initial PCD rollout because of its relationship to care plans. However, during the Browser-enabled Plan of Care implementation, Baptist realized the importance of incorporating patient education documentation into the online care planning process. Baptist decided to develop a focused IPER assessment that would be accessed from the Browser-enabled Plan of Care and the assessment pathways.

In February 2006, Baptist went live with PCD at Walker in the ICU, GYN, Ortho, and One Day Surgery Units. This enabled Baptist to document online allergies, vital signs, I&O, assessments, and progress notes at the point of care. Baptist had not yet completed the Browser-enabled Plan of Care beta implementation, and therefore managed the two projects simultaneously.

Baptist completed its facility-wide PCD rollout at Walker in March 2006. Browser-enabled Plan of Care then went live on the IMC unit in April and facility-wide in May 2006.

As a result of the successful implementation of both PCD and Browser-enabled Plans of Care at Walker, the decision was made to include both components as a "package" for the remaining hospitals. It was clear that Browser-enabled Plans of Care provided an essential and important complement to the assessment pathways by facilitating clinical processes and workflow. Implementation of the package occurred at the second hospital, Citizens, on October 8, 2006.

Prior to implementation at its third hospital, Princeton, Baptist Health System participated in the beta test of another plan-of-care software solution with Siemens. This time it tested an enhancement that provides integration between assessments and plans of care. The enhancement provides the ability to outline suggested plan-of-care problems based on assessment values entered by the clinician. The clinician can then select problems that can then be posted to the patient's plan of care. Baptist considered this functionality to be key to completing an effective clinical workflow and determined that it would include it in the "package" of software solutions provided to its remaining hospitals, Princeton and Shelby. The first phase of implementing patient care documentation at Princeton went live on pilot units in February 2007. When the pilot is considered complete, the integration of assessments with care-plan enhancement will be added to Walker and Citizens as well.

It is anticipated that the fourth hospital, Shelby Baptist Medical Center, will go live August 2007.

In addition to this activity, Baptist is in the process of converting from an Internal Computing Option (ICO) environment to Remote Computing Option (RCO). The target date for the conversion is September 2007; however, it is anticipated that the PCD/Browser-enabled Plans of Care implementation should be concluded in all four hospitals by then.

During the implementation at Citizens, a new twist was inserted into the plans. The medical staff was included by providing a display-only view into Net Access. In addition, it was structured to allow physicians remote access to the information. This strategy has proven to be a monumental success with respect to engaging physicians in the use of technology as well as improving efficient access to patient information.

Training

Baptist's clinicians faced a sizable learning curve in the transition from a manual system to an online fully electronic one that not only enabled the efficient capture of information, but also served as the basis for overall plan-of-care monitoring and management. "Moving from a paper environment to an online environment was a huge change for us. Not only in how we did things, but also because we had to address a cultural change," recalled Grant. Baptist's facilities quickly identified "super users" across departments and disciplines and worked to ensure that each department and discipline received representation during the implementation and training processes. The INVISION design team offered extensive training to the super users, who then trained staff members in their respective departments and disciplines throughout all of Baptist's facilities.

During the training and implementation period, the design team met every day with clinical leadership to address any system or process issues and dealt with them accordingly. The team carefully managed change surrounding implementation. An email distribution list was set up to facilitate the efficient reporting of any user or system issues. The design team then presented any questions or concerns to the clinical leadership team. In addition, the training manual as well as policies and procedures were all linked in NetAccess and available online to users.



Princeton Baptist
Medical Center

Results

In compliance with its professional practice philosophy, Baptist required that a relevant plan of care be initiated upon admitting a patient to the hospital. When Baptist used paper-based plans of care, its ability to comply was greatly compromised. However, the INVISION Browser-enabled Plan of Care provided a means to easily initiate an online patient plan of care, which allowed the hospital to better monitor compliance.

Thirty days after the Browser-enabled Plan of Care implementation, care plans were initiated on admission 100 percent of the time — a 26 percent improvement. Baptist directly attributes the increase to the ease of access to online plans of care and the integration of the function into the clinicians' online workflow.

Included in the expected workflow surrounding the plan of care is validation that the plan of care is reviewed at frequencies established by the hospital. The time-consuming task of reviewing paper-based plans of care meant that clinicians performed the task sporadically and faced difficulty in monitoring compliance. With the Browser-enabled Plan of Care implementation, however, Baptist was able to document an improvement in compliance with its hospital plan-of-care review policy.

Chart reviews indicated that the clinicians always or frequently reviewed or updated paper-based plans of care for their appropriateness based on the patient's condition 26 percent of the time. After the Browser-enabled Plan of Care implementation, that statistic improved to 80 percent — an increase of 54 percent.

All clinicians reported another important outcome of the implementation of Browser-enabled Plans of Care: the ability to tie progress notes documentation to plans of care. The time-saving efficiency also proved easy to use and succeeded in maintaining the integrity of the interdisciplinary process. In addition, the online IPER allowed education documentation to be performed with a single click by any discipline providing patient education. The education topics can be documented simultaneously (e.g., education on morphine in the Medication section along with the morphine pump in the

Equipment section). Grant recalled, "Immediately after implementation, we saw a positive improvement in compliance and success with patient education. It is so easy for the clinician to document education materials and for us to report on the data."

The INVISION Browser-enabled Plan of Care has helped Baptist to meet its objectives across the facility. The system experienced interdisciplinary, accurate, and timely documentation that was available simultaneously to multiple clinicians. The implementation also improved the ability to monitor and track important quality indicators, such as those required for the Joint Commission and the Centers for Medicare & Medicaid Services. In addition, Baptist continues to move forward with its Magnet initiative. Grant commented, "INVISION clinical applications is helping us support our Magnet initiative. We are able to promote and support bedside documentation and capture information almost concurrently at the point of collection. We were able to structure pathways and processes that support accreditation and regulatory requirements, enabling clinicians to easily input, collect, and extract information. The use of the INVISION application has been a powerful tool in helping all clinicians in their workflow as we are moving toward the achievement of Magnet status."

Baptist attributed many of the Browser-enabled Plan of Care successes to the involvement of clinicians in the design process. In addition, preformatted PCD progress notes proved highly useful to clinicians in documenting against the Browser-enabled Plan of Care. The notes allowed clinicians to predefine 10 interventions and 10 evaluations for each problem from which they could select those appropriate to the patient and therefore individualize the progress note for their patients. They could enter free-text interventions and evaluations in conjunction with the preformatted notes, which would be displayed along with other patient progress notes.

Grant remarked, "The enhanced INVISION system is wonderful and has resulted in a marked improvement in the ease of communication. A pharmacist was able to pull thorough lab results and pain assessments from a clinician's INVISION notes. Clinicians say it is quicker and more efficient. What once took days now only takes a couple of hours."



We see a way to increase clinician compliance for the regular review of the plan of care by 54%



Walker Baptist
Medical Center

Conclusion/Future

Baptist has realized the impact of INVISION PCD and Browser-enabled Plan of Care across disciplines and now functions with an accelerated and interdisciplinary system. Siemens technology helped Baptist to standardize and streamline its documentation of patient care which has resulted in positive reinforcement of clinical standards of practice, interdisciplinary clinical practice behavior and workflow, and enhanced ability to positively impact patient outcomes through clear and timely documentation of information.

Grant commented, "There have been measurable changes in workflow since the day Browser-enabled Plan of Care went live, and there are marked improvements in tracking patient safety and quality measures. Siemens INVISION facilitated data retrieval and the production of reports."

While Baptist plans to continue PCD implementations at its three remaining hospitals, the healthcare system is also preparing to implement Siemens Lifetime Clinical Record® and incorporate Rules Engine into its INVISION clinical functions. Baptist also plans to continue working with medical staffs at all its hospitals to enable access to Net Access and continue the success enjoyed by the experience at Citizens.

Proven Outcomes.

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