

Legacy Health System Leverages Portal-based Solution to Connect Docs to Data

Pete Mardesich and Marilyn Black, for HealthLeaders News, June 25, 2007

Many vendors' web portal technologies offer the promise of enhanced productivity and improved patient care through centralized clinical data access and streamlined physician workflow. Unfortunately, the harsh reality is that numerous technical and workflow challenges can frustrate or even prevent actual deployment of such technologies, or if implemented, never achieve user acceptance of the product.

Today's complex environment of heterogeneous clinical information systems presents numerous data integration challenges. The pursuit of a secure "whenever and wherever" data connectivity platform that integrates a multiplicity of applications at the user interface level understandably looks daunting at the outset.

Legacy Health System, the largest not-for-profit healthcare organization based in Oregon, is comprised of five hospitals, 70 clinics, and a large medical staff of employed and affiliated physicians. Like many healthcare organizations, Legacy's patient data is stored in a number of clinical systems, each requiring separate user names and passwords, creating a void for physicians attempting to access the disparate applications for patient care purposes. In spite of electronic medical record systems, no one system displays the patient's complete record. Access to a PACS system is required to view radiology results, GE Muse for non-invasive cardiology, OBLINK for fetal heart tracings, and T-Systems for Emergency Department visits. As more niche systems are introduced into healthcare, access to all of these systems is needed for the complete picture of a patient's clinical record.

Prior to the portal deployment at Legacy, of the 900 physicians who could access the EMR remotely most could only access the then sole EMR, GE/IDX LastWord. Access to this single application prevented physicians' ability to view critical patient information in other systems. This technology also did not provide tools such as clinical knowledge bases, secure e-mail, practice guidelines, and other resources useful for physicians. It was clear that an improved tool would foster cohesion and communication between Legacy and its providers.

A single vision

In late 2003, Legacy Health System took the first step to address this growing problem with a plan to create a portal-based, unified physician workflow solution. This new portal would provide physicians with seamless access to complete, accurate, real-time patient information, enabling improved clinical decision-making and contributing to high quality patient care.

IT projects of this scope would stress any organization. However, by proactively and consistently communicating the organization's strategic goals, which tied to the tactical project level, the organization helped to ensure the Legacy physician portal's deployment and adoption success.

Beginning January 2004, the project team spent four months developing a 24-page "Discovery Document" to serve as the project's primary roadmap through project completion. The document outlined the following:

Project vision: To provide an easy to use, web-based single entry point for physicians to gain access to patient information across multiple applications. Such a system will enhance clinical practice and patient care management, and simplify physicians' access to knowledge bases, medical staff websites, fillable consent forms, secure e-mail, etc.

Business challenges: Legacy's employed and affiliated physicians needed simplified remote access--anywhere, anytime--to a wider range and depth of patient information than was currently possible. They also wanted access to clinical knowledge bases, schedules, practice guidelines, and other information. At the same time, HIPAA concerns and the need to protect patient privacy

and PHI must be addressed. The local healthcare market is competitive, with physician loyalty a valued and sought after asset.

Project Goals:

- Enable remote web access to real-time patient data in the native applications
- Ensure security and privacy of patient data
- Improve physician productivity and satisfaction and enhance patient care
- Achieve high physician acceptance and usage

Strategy: Using the Discovery Document, review and evaluate all available products to find the best match for Legacy. Select the ones that best fit the project vision, goal statement and Discovery Document requirements for in-depth review. Engage physicians, key stakeholders and project team members in the product selection process. Interview other healthcare and non-healthcare organizations with successful portals to better understand the realities of developing and implementing this type of technology.

- *Solution:* When no single product met Legacy's needs, the project team decided upon a best-of-breed "knowledge-centric" portal approach. In May 2004, the team evaluated many different portal solutions to determine which vendors' products could be combined to achieve the project goals. After extensive testing, vendor demonstrations and discussions, Legacy chose to combine Fusion from Carefx, a Patient Information Aggregation Platform (PIAP) that provides patient context management, BEA/Plumtree's Corporate Portal, and Novell's single sign-on (SSO) authentication and identity management (IDM) software.

Technical & Clinical Considerations:

- Identify scope and requirements for SSO and patient context management functionality
- Evaluate current IT applications, network and infrastructure to ensure that new technologies and architecture can be supported
- Identify work station and application deployment requirements including possible need for client software installations for both internal and external users

Portal deployment

The vendors and the Legacy deployment team collaborated closely to launch the portal according to the scheduled timeframe. After thorough testing by the project team, a pilot group of 13 physicians began using the new portal in August 2004. After minor modifications suggested by the pilot group, the portal rollout was expanded to all Legacy physicians in December 2004. During the second year, additional clinical applications were made accessible via the portal: PICIS Chart+, T-System EV, GE OBLink, Cerner RadNet Case Sign Out, and GE MUSE EKG Editing.

The Legacy physician portal provides single sign-on and patient context management into Legacy's four core applications: GE/IDX LastWord, Cerner PowerChart Office, Fuji Synapse PACS and GE MUSE- EKG Waveform. With the portal, a physician can review all patient data in real time and in the native applications. Patient context management was designed so that when a physician activates a patient in one of the four applications, the other applications quickly tune to the respective patient, saving the physician the agony and time of searching for this patient in other applications.

Assembling an effective portal deployment team, including vendor representatives, is critical to a project's success and helps to ensure on-time completion and ongoing interoperability of network administration, servers and desktop deployments. The project's executive sponsor and physician

champion played crucial roles in securing administrative and physician buy-in. Legacy's programming and marketing departments contributed to the success of the deployment, and the organization's legal and risk management departments were consulted to ensure that the portal presented no litigation potential and that PHI was protected.

Lessons learned

Here are few of the critical take-home messages:

- Spend adequate time researching and identifying the "must have" features of the portal or desktop solution; define checkpoints to ensure the scope and planned deliverables are on track.
- Insist that vendors demonstrate their technologies and obtain assurances that they can accomplish the job as promised and on time.
- Develop usage scenarios early to ensure optimum physician workflow; utilize the usage scenarios as a blueprint for vendors and for developing test scripts.
- Understand and prepare for ongoing support requirements, which may include the impact of application password changes made outside of the portal and SSO, differences when accessing the portal from internal workstations versus via the Internet, and PCs versus Macs.
- Ensure the scalability of systems for future concurrent users and additional applications.
- Understand and plan the process of enrolling hundreds of users.

Now in its third year, the portal is fully deployed, operational and accessed by nearly 350 physicians each day for fast, single point of entry and SSO access to the aggregated patient-centric view of data--whether from the office, hospital or home. The portal requires no formal training, although assistance is provided to synchronize each user's network, portal and SSO applications the first time. Physician response is overwhelmingly positive. Approximately 1,500 physicians have active portal accounts today. For physicians, it's all about speed, timeliness and ease of use. The benefits of such a system are enhanced patient care and safety, improved efficiency, increased physician satisfaction and productivity.

A recent article in Legacy's "Oncology Matters" physician newsletter quotes Katherine Morris, M.D., surgical oncologist and medical director of Legacy Cancer Research: "I use the portal nearly every day to check on my patients' vital signs, their labs, and any X-ray studies that have been performed. It is such an advantage to be able to see these results from home so I can prepare for my day, review operative notes, check in on weekends, and also see information on patients immediately when called for consult. In addition, of special importance for oncology, it allows me the freedom to check for pathology results frequently, leading to calling patients with these anxiously awaited results more quickly."

Physicians working in the ED, NICU, Neurosciences and other departments are creating their own communities within the portal to better communicate and access needed applications and information specific to their specialty. Legacy also plans to develop a self enrollment and password management process to ease new user authentication.

Legacy's portal deployment is a success story on many levels. Overall, it succeeded in giving physicians a versatile web tool that truly aggregates data and resources to help them deliver optimal patient care.

Pete Mardesich and **Marilyn Black** are senior analysts at Legacy Health System in Portland, Oregon. Pete can be reached at PMardesi@LHS.ORG, and Marilyn can be reached at MBlack@LHS.ORG.
Back