

Integrate **CVIS** with Hospital **Web Portal**

Heartlab Helps St. Luke's Episcopal Hospital and Texas Heart Institute Implement the Elusive EMR

BACKGROUND

St. Luke's Episcopal Health System in Houston, Texas, is a non-profit organization consisting of multiple hospitals and freestanding clinics, including the 949-bed St. Luke's Episcopal Hospital. St. Luke's is also a teaching facility, training residents from Baylor College of Medicine and The University of Texas Medical School.

St. Luke's is known throughout the healthcare industry as an innovator and has the accolades to prove it. It has consistently been designated by the American Hospital Association's Hospitals and Health Networks publication as one of the Most Wired Hospitals. It has also been named as a Top 50 Hospital by the American Association of Retired Persons and a Magnet Hospital for Excellence in Patient Care by the American Nurses Credentialing Center.

St. Luke's is the home of the state-of-the-art Texas Heart Institute (THI). Since its founding in 1962, physicians at THI have performed more than 100,000 open heart procedures, 200,000 cardiac catheterizations, and 35,000 cardiology procedures. The hospital manages and archives its annual volume of approximately 12,000 cath cases from 13 digital cath labs using Heartlab's Encompass. In the near future, St. Luke's will add echocardiology to the Heartlab archiving installation, and after that will implement Heartlab reporting, first in its echo department and then in its cath labs.

St. Luke's and THI have made headlines with such milestones as the first successful heart transplant in a human in the United States, the first artificial heart implant, and the first laser angioplasty procedure in the Southwest. In 2004, for the fourteenth consecutive year, St. Luke's and THI were selected by U.S. News & World Report as one of America's best heart centers.

The hospital owes these honors in part to its vision of improving patient care by embracing electronic data management and archiving with the objective of becoming a "paperless hospital." Like many hospitals with the vision of creating an all-encompassing patient record, St. Luke's was faced with a number of technology options. Here's a look at how one of the most wired hospitals in the U.S. is achieving its goal.



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Proven Innovation

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STRATEGY

Developing an Integrated System with a Best-of-Breed Technology

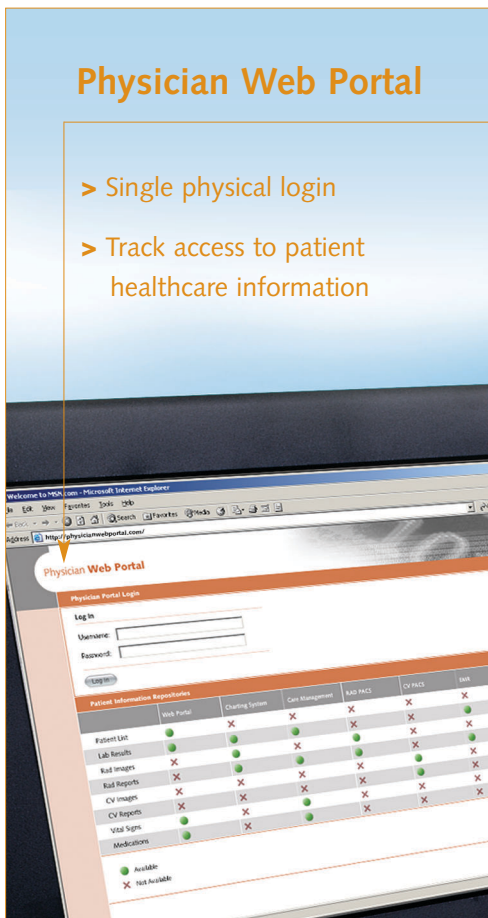
“Our goal has always been for the physician to be able to review everything that’s pertinent to a given patient from a single location,” says Noe Salinas, lead analyst at THI. “We want the patient’s entire record, including treatment notes, lab and procedure orders, radiology images, and cardiology images, to be available from any workstation on the hospital’s network.”

Rather than working with a single vendor that would provide all solution components, the hospital decided on a best-of-breed technology strategy and developed a corresponding process for identifying those technologies. “As far back as the mid-nineties, our request for proposals (RFPs) described our vision of an integrated system for reviewing and storing patient information,” Salinas continues. “Even though we didn’t have a concrete plan about how we were going to do it back then, we wanted all of our vendors to share this vision and cooperate to make it happen. If they weren’t going in our same direction, they weren’t a player,” he adds.

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Physician Web Portal

- > Single physical login
- > Track access to patient healthcare information



Web-Based Physician's Portal: The Cornerstone of a Paperless Hospital

St. Luke's opted for a strategy in which a web-based physician portal controls multiple best-of-breed enterprise systems and third-party applications, such as Heartlab Encompass, via the hospital's enterprise network. The hospital implemented McKesson's physician portal, a patient-focused hub that centralizes a variety of disparate data management applications with a single login.

The physician portal serves as a gateway to many enterprise applications that were chosen because they were the best fit for St. Luke's. The portal manages the navigational aspects of choosing the patient record, but still allows the end user to view and manipulate the data using the functionality and toolsets of the underlying applications. “Our strategy provides us the benefits of completely integrated access to patient data,” says Salinas. “The web portal pulls it all together.”

IMPLEMENTATION

Integrating the Web Portal and Sub-component Applications

While not all of the hospital's systems are integrated into the portal yet, St. Luke's integration team is working towards that goal. Initially, the portal provided physicians with access to lab data and the ability to issue lab orders. Next they added nurses' notes and medications, followed by procedure orders for radiology studies and access to radiology images and reports. Most recently, they added access to the cath images archived in the Heartlab system, and the hospital is now in the process of adding echo images and echo and cath reporting, also through the Heartlab system. In time, they will tackle cardiology procedure ordering, nuclear medicine images, ECG, and Holter monitor studies.

The portal provides secure, audited access to patient data. Physicians use a secure login to enter the portal, and all of the data that's accessed through the portal is logged for audit purposes. When patient information is accessed, the portal uses URLs that correspond to the location of the relevant patient data that's managed by the sub-component

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systems and applications. The portal opens the sub-component system or application, which accesses and presents the data, along with its particular tool set for managing the data. “The portal provides access to the patient data, but it doesn’t have to know what to do with it,” explains Salinas. “For example, in the case of cath studies, we still use all the Heartlab tools for zooming in, presenting images with a certain hanging protocol, or the analysis and reporting tools.”

“We’re streaming all of the patient information in from isolated subsystems,” Salinas continues. “We don’t try to transfer the data from a vendor’s system into a larger system. But using the portal, we do have access to the data on other web servers from our single portal interface.”

Integration Challenges: HIPAA

The biggest challenge in integrating multiple systems with the physician portal was meeting HIPAA requirements, according to Salinas. “Once we met HIPAA standards, we had pretty much handled everything else,” he says.

St. Luke’s system was designed so that the portal has primary responsibility for security, managing overall user identification and authorization. While each subcomponent system has its own separate authorization scheme, St. Luke’s uses only that secondary capability as a backup in case the portal is down.

In addition to authorization requirements, St. Luke’s must log and track access to every patient record. The portal logs user activity and tracks all requests for patient data.” If a user reviews a cardiology study, the Heartlab system launches to provide review tools for only that one patient’s study or studies,” explains Salinas. “But the portal logs the access and activity.”

This approach enables St. Luke’s to manage access and audit information from a single system and minimizes the overhead of HIPAA compliance.



ENCOMPASS

Web-enabled Encompass Technology for Cardiovascular images and reports



KEYS TO SUCCESS

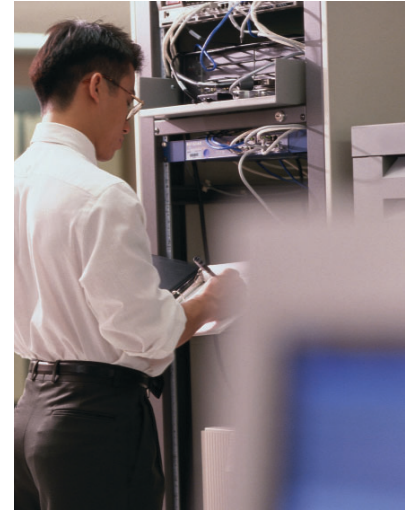
Focused Personnel

Salinas advises hospitals interested in pursuing the same strategy not to scrimp on integration resources. “There should be a person or team whose sole job is to integrate systems,” he says. “Managing integration isn’t successful unless someone can focus on it full time.”

Because it’s such a large facility, St. Luke’s has an interface team consisting of eight IT people-but for an average 220-bed hospital, Salinas thinks the job could be managed by one or two FTEs.

Supportive Administrative Policies

Salinas says that getting end users accustomed to electronic workflow is another major challenge. For example, St. Luke’s created a strict policy that a physician can’t print information from the patient’s electronic record and make notes on it. “As we move towards being paperless, the chances of getting a piece of paper into the medical record are pretty slim,” he continues. “Our administration doesn’t want a doctor’s terrific insight into a patient’s diagnosis to be lost, so we just don’t allow paper.”



Sufficient Training

Besides integrating systems, St. Luke’s interface team also focuses on training physicians to use the portal and other systems. “User training should do more than simply show physicians how to log in and find and review patient information,” Salinas adds. “They should also be taught to be wise consumers of the information.”

Cooperative Vendors

A final challenge lies in vendor and product selection. “We hold our vendors’ feet to the fire because we expect them to meet the guarantees made in their proposals,” Salinas says. “We don’t spend foolishly, but at the same time, we don’t try to buy a bargain system that won’t meet our needs.”

Most vendors are willing to work with a hospital on a system integration strategy, but Salinas recommends that a hospital’s integration staff get a written guarantee. “For some vendors, providing integration simply means that they’re willing to integrate their own systems,” he says. “We made sure that our RFPs specified that they integrate their system with those of other vendors as well.”

Salinas thinks that the most important factor in choosing a portal is a hospital’s relationship with the vendor. “It’s important that you get to know each other and that the vendor understands your environment, workflow, and goals,” he says.

CONCLUSION

St. Luke’s is developing integrated patient record access by using a strategy in which a web portal manages a variety of best-of-breed enterprise systems and third-party applications from multiple vendors. This approach has enhanced patient care by improving workflow at the hospital using a single access point for all electronic patient data. “Ultimately, we chose this solution because it allows us to provide the best possible patient care,” says Salinas.