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Part II: Blueprint for Success

More than just bricks and mortar, hospital construction requires intense collaboration among leadership, every step of the way

by Kate Huvane Gamble

For successful hospital-based organizations, the days of IT and facility planning existing in silos are long-gone. As health systems expand by building new facilities, constructing new wings and taking over other hospitals, forward-thinking leaders are finding that involving multiple departments, from start to finish, is the key to thriving.

Healthcare Informatics spoke to leaders from four organizations that have recently expanded, and found that implementing cutting-edge technologies, improving workflow, and creating a more patient-friendly environment were common goals. And in all four cases, the facility and IT departments worked in close collaboration (along with biomed) throughout the process, in order to ensure success.



## El Camino Hospital: Getting practical on infrastructure issues

*In with the old and in with the new - how one organization built a new facility and reopened another within months.*



Greg Walton

El Camino Hospital had a busy year in 2009. The organization, which serves California's Silicon Valley, reopened its 143-bed Los Gatos facility in July, and unveiled its 399-bed, state-of-the-art Mountain View campus in November. For CIO Greg Walton, who came on board two years ago during the midst of the planning, the experience has been interesting. "There is quite a contrast in what it's like to participate in a design versus a move-in to a facility that's already constructed," he recalls.

First on the docket was the Los Gatos campus, which El Camino acquired, renovated and reopened in about 90 days. "We didn't want the community to go without care very long, and we felt it would be detrimental if it dragged out," says Walton.

The organization moved quickly by extending its existing computer systems to the new facility. However, because the prior owner hadn't invested much in the network infrastructure, Walton and his colleagues had to replace most of the cabling and install an upgraded network. In addition, El Camino lent several staff members to help train and support workers in the new facility.

Walton's team also purchased new networking cabinetry, switches and routers; replaced numerous devices, including desktops; and installed a wireless network that runs on access points. While he may not have planned to buy new devices, Walton believes the investment was necessary, particularly since much of the equipment wasn't able to support El Camino's applications. "If you're not staying current with the technology out there, you're living with equipment that isn't portable to other situations," he says, "and it basically becomes a boat anchor."

While overseeing the Los Gatos overhaul, Walton was also putting in time at the Mountain View campus, where he provided input on design as well as on IT acquisitions. His first priority was to install a distributed antenna system and a medical-grade network that would support extensive use of wireless technology throughout the facility.

In mapping out a wireless strategy, however, it was vital that Walton and his team consider the how design principles such as maximum use of natural light and larger rooms might affect IT implementation. "I had to think about the fact that it's a bigger building, which meant a higher demand for wireless," says Walton, along with the fact that the use of glass as a building material might restrict radio frequency. "You have to think about these things."

Another area of concern in new construction is power and cooling, he adds, noting that it's common for hospitals to underestimate the levels of electricity and environmental control required to support wireless technology.

Finally, organizations like El Camino need to anticipate data growth. "We have 238 applications here, almost one for every two beds," notes Walton. "And that number is growing as people figure out more and more ways to automate different aspects of healthcare. We're always putting more on the system."

## **Dublin Methodist Hospital: a focus on paperlessness**

*From the nursing station to admissions, IT plans can play a significant role in a hospital's design.*



Cheryl Herbert

After years of planning, Dublin (Ohio) Methodist Hospital - part of the eight-hospital OhioHealth system - opened its doors in January of 2008. Spearheading the design, construction and opening efforts was Cheryl Herbert, R.N., the hospital's president. Herbert had participated in significant renovation projects in the past, but this was her first opportunity to build a facility from the ground up. And although it was hard work, she says being able to "start in a greenfield location with something that's never existed before" was a "unique and awesome experience."

In designing the new Dublin, a 94-bed facility that can expand to 300 beds, the leadership team's top priority was to create an infrastructure that could support wireless technologies and enable the organization to be as paperless as possible. It meant mapping out everything from how many wireless access points were needed to which applications would be used to support patient care. "That was one of our guiding principles," adds Herbert. "And on the facility design side, knowing that really allowed us to do some different things."

For instance, because Dublin's team was deploying an EMR system that could be accessed from anywhere within the facility, it meant they didn't have to waste valuable real estate on a medical records storage room. It also meant they could implement a distributed system of work areas equipped with laptops, rather than having one centralized nursing station with tethered PCs. "This way, we were able to put our staff closer to the patients," says Herbert. "That was a very nice piece."

Another upshot of going all-digital from the start, she notes, is that there was no need to design a traditional admissions area. Patients can register at kiosks (greeters are available in case they require assistance) or at the point of service, using handheld devices.

For Dublin Methodist, starting fresh with a new building meant adopting a new way of thinking and completely

redesigning processes. It required a great deal of planning and a willingness to think outside the box, but in the end, says Herbert, it was all worth it.

"We opened our building uneventfully. We went live with 168 separate computer applications and had no major problems, which is really a testament to all the folks who worked so hard for so long to make sure that happened," she notes. "I would definitely do it the same way again. I would spend as many hours and involve as many people as we did."

## **Meridian Health: capacity crunch**

*For healthcare organizations in heavily populated areas, the planning - and renovating - never stops.*



Rebecca Weber

Meridian Health (Neptune, N.J.) is a five-hospital system serving residents in central and southern New Jersey, an area rapidly growing in population. In 2009, its flagship hospital, Jersey Shore University Medical Center, completed a large-scale renovation that included a new emergency department (ED) trauma center designed to accommodate 100,000 annual visits.

"We were overwhelmed all the time," says Rebecca Weber, senior vice president and CIO. "With more people moving to the area and changes in technology, we needed to keep pace and to make sure that we met our mission, which is to provide the best care."

However, it wasn't just capacity issues that motivated Meridian to expand. According to Weber, there was also a need for more operating rooms (ORs) and technically-advanced OR suites. To that end, Jersey Shore's \$300 million expansion also included three new nursing units - each with 36 private rooms, an additional floor for future capacity needs, and a new diagnostic and treatment building that holds six new surgery suites.

However, as is the case with many large organizations, the construction never seems to stop. Meridian (which totals more than 1,200 beds) recently took over Southern Ocean County Hospital, and Weber says an ED renovation is already being planned. "We always have at least one large construction project going on at any given time," she notes. "We do upgrades at each hospital, putting up new buildings, adding beds, improving ICUs, things like that."

And when there is a need in the community for more ED space, as Meridian's leadership accurately surmised in Jersey Shore's case, the organization is willing to expand. In fact, Meridian may have even underestimated, according to Weber, as the new building was at capacity in just a few weeks. But she believes that through technology implementations, including the Atlanta-based Eclipsys' Sunrise Bed management and the MedHost (Addison, Texas) EDIS, the organization will be able to make the most out of the space. "It wasn't just about adding space," says Weber. "It was a change on how we provide care, and embedding that in each thought process and piece of the construction as well."

Weber credits the "visionary" attitude of Meridian's administration and board with enabling the organization to maintain its strategy while continuing to grow. "Our belief is if you're not moving forward, you're going to move backwards," she says. "It all comes back to the fact that we really are here for our community. We have to keep an eye on what our community needs, and change to meet those needs."

## **Virginia Commonwealth University Health System: changing plans**

*Going digital means getting all the right pieces in place - and getting the right people involved.*



Rich Pollack

Based in Richmond, Va., Virginia Commonwealth University Health System includes VCU Medical Center, a 779-bed regional referral center that serves as the area's only Level I Trauma Center. In the fall of 2008, VCU opened a 225-bed critical care tower with all private rooms - an initiative designed to provide more flexibility in patient admissions and offer a better care environment, according vice president and CIO Rich Pollack.

The problem, he says, is that IT hadn't played a big role in the planning or budgeting of the new facility. Before Pollack came on board in December of 2005, the plan had been to move equipment from the older units into the new facility. But the idea didn't seem practical to Pollack, who moved quickly to replace most of the PCs while also installing new network gear.

However, he soon found a bigger problem - wireless technology had not been factored at all into the tower's \$180 million budget. Pollack convinced the board that in order to build a digital hospital, with what he calls "a paper-light environment and aggressive use of electronic records," VCU had to invest in an infrastructure. The organization listened, allotting \$4 million for wireless. According to Pollack, VCU installed a distributed antenna system from Richardson, Texas-based InnerWireless that provided ubiquitous coverage for the entire spectrum of technologies, including pagers and smartphones, tablets and computers on wheels, telemetry, wireless portable X-ray units and VoIP phones integrated with nurse call systems and patient alarms.

But, as is often the case with new building construction, Pollack found he was being spread too thin. "The more I got into it, the more obvious it was to me that this was going to require a significant footprint of IT involvement every step of the way, and I just didn't have the time to be as fully engaged as we needed," he says. So he hired David Gardea, an IT project manager specializing in technology infrastructure for new hospitals, and brought Jaime Trull, a nurse informaticist, into the fold.

Trull and Gardea worked with clinicians to select devices that would best suit their workflow needs and help deliver care more efficiently, notes Pollack. "Jaime understood the clinical environment, so the two of them partnered up, and they were tremendous at engaging the staff. They really were the secret sauce to our success."

With Trull and Gardea focused on the IT process, Pollack was able to help the organization maintain its strategic direction. And even though VCU had some hiccups in the beginning, he believes the organization was able to get on track fairly quickly. "It's about setting a vision and educating the organization and your executive colleagues about what is the vision," he says. "It's having the right, talented people to help facilitate that and basically looking first and foremost at clinical workflow, before you prescribe anything." Finally, it requires "sitting down with the people that are actually going to live in that space and talking them through current and future state, and trying to understand what kind of technology needs to be put in place to support that workflow."

## **CONTINUE THE CONVERSATION**

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