Side by Side to Success: THCI and Siemens Foster Unique Partnership

The Heart Center of Indiana (THCI) calls itself the hospital of the future. And indeed, two years after opening its doors, the hospital ranks among the top 15 percent of U.S. hospitals for coronary interventional procedures and the treatment of heart attacks. THCI's partnership with Siemens Medical Solutions is part of the success.

By Lauralee Ortiz

THCI OPENED IN DECEMBER 2002, after only 18 months of planning, designing, building, and implementation. Quality up, cost down. It's a mantra that rings from boardroom to bedside and from pharmacy to post-op units at The Heart Center of Indiana in Indianapolis. "If you focus on quality as the number one driver, inherently you are going to become more efficient," says CEO John Stewart of THCI, the area's first freestanding, totally digital cardiovascular disease facility.

"High-quality care is low-cost care," echoes cardiologist and electrophysiology specialist Dr. Richard Fogel, vice chairman of THCI's hospital board, during a rare break between two electrophysiology sessions. "That's why the number one philosophy of this hospital is the quality of patient care. High-quality care means fewer complications and shorter length of stays."

Not surprisingly, Siemens Medical Solutions – THCI's single-source provider of top-rated medical equipment and information technology – shares this philosophy.

The result: A state-of-the-art heart hospital where machines work with humans to identify and intervene at earlier stages of disease progression, and where information technology brings the data together for faster, more efficient management. A hospital with a proactive team of world-renowned cardiologists, a physician-driven plan of action, highly educated and experienced nurses, and a hotel-like environment that offers its "guests" round-the-clock visiting hours and room service on demand.

Proven Outcomes

THCI's record of reduced medical errors, shorter length of stays, and improved medical outcomes is impressive. Compared to the Society of Thoracic Surgeons benchmarks for coronary bypasses, THCI has cut the length of the average patient stay from 8.8 days to 6.5 days and lowered the mortality rate from 2.4 percent to 0.9 percent. In percutaneous coronary intervention, the success rate is 97.9 percent, 6.5 percent better than the American College of Cardiology benchmark of 91.4 percent.

Patients also give THCI top scores, with more than 90 percent rating their care as "excellent." And HealthGrades, the leading independent healthcare quality company in the U.S., put THCI in the top 15 percent of hospitals in the nation for coronary interventional procedures and the treatment of heart attacks, while naming it the top facility in the Indianapolis area for overall cardiac services. Impressive, considering that the $60 million partnership between St. Vincent Health and the Care Group, a network of 130 physicians (80 of them cardiac specialists), supported by CorVasc, with its team of 33 surgeons, opened in December 2002 after only 18 months of planning, designing, building, and implementation.

All from a Single Source

CEO Stewart's vision was to create a paper- less and filmless electronic system that would integrate clinical, operational, and financial functions – and thanks to the partnership with Siemens, this was accomplished in record time. "They were able to install all of the IT, medical, and financial systems in just seven months," he says. The Heart Center opened as a completely electronic and filmless facility. "We are not yet completely paperless; but with support from Siemens, we will be in the near future," he adds. Mid-2003, the partners devised a further optimization plan that involved the creation of several quality improvement teams led by physicians and process leaders.

With Siemens' full cooperation and enthusiasm, says Stewart, the optimization was quick. "Siemens gave us a tremendous amount of consulting support and took all the steps we needed to optimize," he notes, listing the company's contributions in every- thing from information system enhancements to additions in

operational, financial, and clinical areas. “Siemens invested all the time, personnel, and resources needed to get the job done right. Certain products had to be upgraded.”

Fogel, one of four physicians to sit on the eight-member hospital board, was THCI’s first chairman. After his two-year term ended, he took over as vice chairman. He says his involvement thus far has included everything from helping to create the hospital’s concept and building design to selecting the vendor and hiring the CEO. Among his priorities, Fogel emphasizes, were to create a physician-driven facility that treats its nurses as assets and puts patient care above profit. “As a physician, I know this is the right thing to do,” he says. “Quality care is number one. Quality care is number two. Quality care is numbers three, four, five, and six. The next is patient satisfaction. Having the best physicians in the field and the ability to interface technologies make that possible. Provide all that and the financial results will be there.” The Care Group physicians, THCI staff, and Siemens technology have actually proven him right.

Fogel finds it “tremendously gratifying” to be a part of THCI and its efforts to help some 6 000 people a year. “Because of the Heart Center, there are people alive today who otherwise would not be,” he says proudly.

Besides pride of ownership, Richard Fogel says his involvement in THCI as both a doctor and a board member stems from his personal passion to “take care of people” above all else. Described by colleagues as a workaholic, Fogel doesn’t disagree. “I spend 90 percent of my time on clinical care and 30 percent on administration,” he jokes. Then, turning serious, he adds that he hopes by working hard to raise the bar in cardiac care, other hospitals will be inspired to follow suit, thus providing better care for everybody. Insurance companies might soon add incentive with “pay for performance” policies. Both Fogel and Stewart note that some carriers have pilot projects under way to reward hospitals for improved outcomes.

Focus on Efficient, Patient- Centered Care

When THCI’s visionaries – who included both Stewart and Fogel as well as a number of other administrative and clinical experts – put their ideas for a unique heart hospital in motion, they agreed that it had to be spectacular. “It had to be different from the traditional hospital model,” says Stewart, who first worked as THCI’s planning consultant.

“The question we asked ourselves was: ’If you build it from scratch, can you build something unique and more efficient?’” Initial plans included a one-stop information system that would allow staff from every corner of the 160 000-square-foot, four-story building to do their jobs more efficiently. Everything from the design of the building and the placement of ER, catheterization lab, and “guest suites” to the development of a universal bed concept and the structure of the hospital hierarchy was done with careful consideration. “We wanted to create a culture that focused more on processes and teamwork than on individual turf,” Stewart explains. For example, THCI created disease-specific teams – each led by a physician and a process leader – to ensure that benchmarks are monitored and improved upon.

“This is not your typical hospital scenario,” declares Project Manager and Team Leader of Clinical Information Systems Julie Clark. “From the bed concept to the nursing concept to calling our patients ’guests,’ we are very patient-focused.” For example, she explains, the universal bed concept brings care to the patient, rather than the patient to care. “Typically, a patient will go to one bed and stay there throughout this entire stay,” she says, adding that nurses are cross-trained and rooms are equipped with all the necessary tools to handle any situation. This eliminates the hassle, the paperwork, and the risks involved with shifting guests from unit to unit, depending on the level and type of care they need. Should a patient require testing outside the “guest suite,” his motorized bed (another efficient tool that eliminates the need for hospital transporters) and the equipment that monitors his vitals travel with him?

Clark points out that even the routes that take patients from place to place were laid out in the patients’ best interests. John Stewart describes the concept: “The ER is adjacent to the cath lab, which is adjacent to OR, which is adjacent to imaging. You don’t have to go to two or three different floors to get what you need.” THCI has five surgery suites, five cath/EP labs, a 120-bed capacity, and a cardiovascular evaluation unit, all easily accessible via efficiency elevators located at the center of the facility.

Physician Input Critical to Partnership

From an operational standpoint, THCI wanted a single-source provider of both medical and IT technology. “If you look at most hospitals’ organizational structures, you find too many silos,” says Stewart, observing that in-house competition coupled with outside vendors pushing the latest, greatest technology causes discord in an operation.

“A lot of vendors are salespeople,” Fogel adds. “That doesn’t work for us. We don’t want technology for the sake of technology.

Technology is only an enabler – it must always improve processes, speed up workflow, and increase patient care.” Besides that, he says, truly integrating systems from separate vendors is virtually impossible. “With a single- source provider, everything ideally should integrate, not just interface. The operation should be

seamless."
Fogel says the best vendors are those who go out and see how physicians work, and who look at a particular facility's processes. "Most physicians like the way they do things," he says. For THCI, that meant finding experts who were willing to create systems based on clinical need rather than their own agendas.
Douglas Segar, M.D., a cardiologist who contributed ideas on improving workflow for the facility, explains further: "Ask any physician the most important aspect of his day – he'll say time. Anything that decreases my time somewhere else gives me more for my patients." With efficient medical systems that not only improve quality of care but speed up the delivery of that care, doctors can provide the "best possible care" for patients, says Segar. "We are committed as a group to being the first to offer top-notch technological advancements while providing the best in patient care. The only reason we can do it is because of our relationship with Siemens. Our partnership with them allows us to remain cutting edge."
Fogel agrees: "We felt we could get a broader depth of solutions with Siemens. They offered both the IT support and the medical equipment."
Benefits of the partnership are evident every- where. Segar reports, for example, that digital technology in echo cardiology equipment has improved workflow immensely. "Using any PC linked to the network, I can get access to the images I need immediately," he says. More conventional methods, which relied on video-tapes and VCRs, used to take up to a week to view and report results to patients. "Previously, patients had the examination and went home, only to get a call to come back two to seven days later," he relates. "Now, the turnaround time from exam to results is mere minutes."
Segar is pleased at how the Electronic Health Record also puts pertinent historical and medical information at the fingertips of doctors and nurses. "Sitting in my office or at any computer workstation in the hospital, I can instantly review X-rays, MRIs, and cardiac caths," he says. "I can get lab results, vital signs, and clinical tests anytime from any PC. All the information I need is available on a computer. I don't have to waste time finding a patient's chart."
Of course, he emphasizes, there is always room for improvement. "We're now looking at ways of fine-tuning so we don't have to click in and out of separate systems. In time, we will become more and more seamless. Of course, that's easier to talk about than to do."

Paperless Charting Benefits Nurses

Nurses now have bedside Infinity® Explorer monitors that provide them with instant access to a particular guest's medical information. This technology is possible through Siemens' partnership with Dräger Medical, one of the world's leading manufacturers of medical technology for the acute point right the moment of care. INVISION® ChartAssist® combines leading INVISION health information system, extending their power into the critical care environment. "No longer do I have a lot of small pieces of paper in my pockets with numbers scribbled on them," says Kris Fuller, an RN and clinical informatics specialist. "I can do the documentation I need right at the patient's bedside, right the moment I do it."
Fuller, who also trains staff on how to use the Infinity Explorer critical care workstation, says the system is "very interactive, allowing me to change procedures easily." In addition, it gives her access to other guests' vitals

Groundbreaking Clinical and IT Applications

Among the information she can see are heart rate, pressures, respiratory rate, and oxygen saturation. In fact, the Infinity Explorer coupled with Infinity ChartAssist can display up to 32 vital sign traces of information. It can also be used for orders, notification, and documentation and can print without any- one having to leave the guest's bedside. Special security codes protect each patient's privacy. "It's a great time-saver," says Fuller. Similar praises are being sung about other Siemens technology. The cardiac MRI, for example, has been "absolutely outstanding" in taking care of adults with adult congenital heart disease, Segar says.
Says Ronald Razmi, THCI cardiologist, "The new Siemens SOMATOM Sensation® Cardiac 64-slice CT scanner is the holy grail of imaging for looking at arteries without going to invasive catheterization."
Designed specifically for cardiac, thoracic, and vascular imaging, it captures 64 slices of high-resolution data in one-third of a second. In a 20-second breath- hold, the CT can visualize even the smallest coronary artery.
THCI is also using Siemens' Medication Administration Check (MAK) system, which utilizes barcode technology to administer some 40 000 to 50 000 doses of drugs each month. Brian Peters, the pharmacy process leader, points out that it includes checking the "five rights – dose, route, time, drug, guest," that reduce medication administration errors. "This matches dose to route to time to drug to patient," he says, explaining that both doctors and nurses have individualized access to their guests' medication profiles depending on their role. The system scans each medication and the guest's ID bracelet and alerts nurses in real time to potential administration errors. Clinical checks for allergies and drug

interactions can also be performed. “And while there is no such thing as zero errors, we are finding that the MAK is reducing actual medication errors and increasing reports of near misses,” Peters says, likening the process improvements to Swiss cheese. “Every slice represents a factor – policy, nursing education, safety systems, and common sense – but the layers still have holes. If the order makes it through the first hole, it might get stopped at the second or third. Those are near misses. This tightens up the whole process.”

Getting the system up and running was challenging, Peters admits. Some products have no barcodes, while others have barcodes that are incompatible with MAK. “One of the greatest limiting steps was the absence of barcode standards in the industry,” he recalls, explaining that one drug could have 10 different codes, depending on where it originated.

To resolve the problem, THCI took on the daunting task of creating an in-house barcode system. That meant coding or recoding over 50 percent of drugs the pharmacy carries. After extensive training of staff and a pilot launch in the spring, the system was ready for full operation in July. It helped, says Peters, that Siemens had consultants on hand 24/7. “It’s a testament to our planning and a testament to the software,” he declares. “It does what it says it can do.“

Peters said MAK’s contributions to the positive workflow became increasingly apparent when a recent problem with the hardware caused system downtime. “The user interfaces went down at intervals,” Peters explains. “Nurses had to temporarily go back to the paper documentation system. They didn’t realize how ‘second nature’ it had become to use the MAK,“ he says. “We got a lot of thanks and gratitude for getting it back up.”

To further ensure a smooth operation at THCI, Siemens has three executives on site to handle IT issues, revenue cycle systems, and medical equipment. “By outsourcing these functions, the hospital gets access to the best training and the best resources to help maintain it,” says Alec Williams, THCI CIO and site executive. While Williams is a Siemens employee, he says his first loyalty is to THCI. “I’d say 75 to 85 percent of my time is spent in ensuring that THCI’s best interests are looked after. I see this as a true partnership.”

THCI has also outsourced their entire business office/revenue cycle management to Siemens, patient registration also being handled by Siemens employees. The INVISION patient accounting system at THCI operates as an ASP (Application Service Provider) model, where all data is stored in Siemens Medical’s data center in Malvern, PA. Staff at the data centers performs all the back-office patient accounting functions: they bill the payers and also collect the payment.

“Thus, if Siemens’ personnel and systems do a good job of registering a patient with complete information, THCI can provide the required patient care and accomplish timely coding,” Williams continues. Only then can the back-office personnel raise timely and accurate bills on the payers. This speeds up the collection and helps THCI to maintain a healthy financial situation. The success of THCI and Siemens is thus dependent on each other’s daily performance.

Having just celebrated its second year with a comfortable profit margin, THCI is not resting on its laurels. “Quality improvement is continuous,” explains Dr. Fogel. “We are always striving to be better. Just because we surpassed a certain benchmark doesn’t mean we can’t do better. I say we can.”

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