



HIGH TECH, HIGH TOUCH

STRATEGIES FOR MANAGING TECHNOLOGY IN HEALING ENVIRONMENTS

BY MIKE FIRLIK

Every business deals with technological change, but perhaps no industry feels its impact more than healthcare. Technology permeates the healthcare organization. From electronic records to digital imagery to direct physician order entry, healthcare providers must not only use technology effectively, they have to make it work on a personal level for both staff and patients.

TECHNOLOGY CHALLENGES HEALTHCARE EVERYWHERE:

- Wireless and mobile technology offer the potential to reduce paperwork and save money, as well reduce errors and speed up care, but healthcare providers often can't afford to put computers everywhere they're needed.
- The hub of a hospital floor, the nurses' station, must offer the latest technology yet support some traditional print-based systems and offer flexibility to change in the future – which always arrives ahead of schedule.
- The huge increase in the average number of images from even routine diagnostic procedures presents access, display, storage, and privacy issues.

Healthcare functions on a very personal level, and technology isn't always a natural fit in the provider-patient relationship. The key is to integrate technology into the work processes of doctors, nurses, and other healthcare providers – a task that comes with built-in challenges:

- **technology support** providing current technology and the infrastructure it demands
- **leveraging technology** making it work for staff, patients and families, and provide the most value

- **flexible technology** providing the right technology now while planning for continuing technological change

A quick look at how healthcare providers deal with these issues in actual applications reveals new, innovative ways to manage high tech in a high touch environment.

A key strategy for some hospital planners is to build nursing stations with systems furniture. These stations support critical medical technology with high capacity wiring and cabling schematics that can be changed easily, something that's expensive and time-consuming with built-in stations.



SUPPORTING TECHNOLOGY AT THE NURSE'S STATION

Many hospitals face technology and facilities issues around their nurse's stations. Most stations are built-ins, which makes them hard to adapt to changing technology and work processes, and practically impossible to move when a unit relocates or renovates.

Systems furniture-based nursing stations provide customized support for the myriad workstyles and tech requirements of a modern patient care unit: individual keyboard entry, print-based chart storage and access, collaboration between staff members, unit secretary coordination, visits by outside professionals and visitors, and easy access to electronic records, email, phones and other tools.



Many of these stations do without the bumper guards traditionally added to built-in nursing stations. The furniture is durable and stable without the guards, saves precious corridor space, and allows for the addition of a handy low-tech tool: dry erase markerboards that can be used to display information.

Finally, the option to easily move, change or reconfigure the stations at any time is a huge advantage over built-ins.

MAKING TECHNOLOGY WORK FOR PEOPLE

Rather than interfere in the provider-patient relationship, technology actually can improve patient satisfaction when it's used properly. For example, one hospital is testing an electronic kiosk – similar to an airport ticket kiosk – designed to speed patient check-in. Business Week reports some hospitals provide pocket-size

computers that doctors can carry into patient rooms to speed charting. They discovered that it's best “to let doctors interact with patients first, and then enter information into PCs placed outside patients’ rooms.”

Another rapidly spreading technology is the flat screen monitor. Healthcare professionals can now show patients highly detailed digital x-ray images, test results, and other health information on large, high resolution monitors, but exam rooms and consultation areas often are not set up to make a monitor readily viewable by both patients and staff.

Articulating monitor arms are simple, effective means to give everyone a clear picture. Details monitor arms used in exam and patient rooms help improve the communication process by making medical information easier for everyone to view and understand.



Height-adjustable workstation by Details features an articulating monitor arm

**FLAT SCREEN
MONITORS USED
IN EXAM AND
PATIENT ROOMS
HELP IMPROVE
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TION PROCESS**





Walk-and-Talk™ interactive whiteboard by PolyVision

THE POLYVISION
FLAT SCREEN
MODULE MAKES ANY
PLASMA OR LCD AN
INTERACTIVE DISPLAY

Interactive displays are the next step in leveraging monitors. In a typical consultation with a patient, a doctor or nurse may review test results or an x-ray. There's frequently a lot of pointing and talking, sometimes a crude drawing made on small piece of paper. To dramatically improve patient understanding, a PolyVision interactive whiteboard with a CopyCam records the information, and the patient can receive a printed document with all the details of the discussion.

To make that interaction even more powerful, the PolyVision Flat Screen Module makes any plasma or LCD an interactive display. Using a stylus, a healthcare provider can instantly access files, run applications, highlight key points and capture new thoughts. For example, a doctor can clearly and easily illustrate for a patient exactly how a joint was repaired.

**COMPUTERS AT HAND:
MAKING TECHNOLOGY FLEX**

As technology evolves and multiplies, healthcare settings must be ready to respond. The systems furniture used to build Foote Hospital's (Jackson, MI) ER nursing stations (Pathways Technology Wall) provides unsurpassed power and data capacity, with access points anywhere on the walls of the station. There's room for 600 category 6 cables within a 66" high frame, providing additional capacity whenever it's needed.

Another major tech issue in healthcare is electronic patient record-keeping. Linked patient databases have the potential to significantly improve patient care by, for example, reducing unplanned drug interactions. But the system won't come together easily. Obstacles include cost, privacy, software capabilities, interoperability of software applications, and the

complexity of the healthcare provider system. Currently, the industry invests only about 2% of its revenues in information technology, compared with 10% for other information-intensive industries, reports The Economist. Among U.S. doctor's offices, 95% of small practices still use only pen and paper, while in Britain 30% of general practitioners claim to be paperless.

As one of just 5% of all North American hospitals with full electronic patient charting, Saint Mary's Health Care, Grand Rapids, MI is ahead of the curve. Their Lacks Cancer Center demonstrates how to effectively merge technology into patient-centered design. The 180,000-square-foot, five-story cancer hospital opened in January, 2005 and features oncology specialists, the latest protocols, state-of-the-art technology and a unique model of holistic care that treats the spirit as well as the body.

Patient rooms feature 30-inch flat screen LCD monitors to display television or the internet. The monitor, room lighting, even the window shades, can be controlled by the patient via remote control. Wireless laptops are available to patients, too. Comforting furnishings include carpeting, a visitor chair that converts into a guest bed, a dining table and chairs and coordinated linens and china. Technology and furniture are part



Saint Mary's Health Care, Grand Rapids, MI

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of the integrated interior design that leverages both high tech and high touch strategies.

Computer workstations, function as decentralized nursing stations, are located between each two inpatient rooms so nurses can chart more often yet stay close to patients. "We also know that nurses need to discuss issues and bounce ideas back and forth, to talk over issues with doctors, pharmacists and other staff," says Kenda Klotz, clinical services director for the Lacks Center. "But we also wanted to get away from the 'fish bowl' feeling of the traditional nurse's station: tons of people, a chaotic atmosphere, and the potential that confidential discussions could be overheard. So we created a separate, multipurpose room that gives the staff a place to collaborate, make phone calls, hold a meeting, and do other work."

The multipurpose room features multiple computer stations, storage furniture, and spaces for discussion and collaboration. Mobile desk chairs and lightweight stools, called Crushed Cans move easily between computer stations and desks. "Sometimes a physician will come over from the main hospital and say, 'where is everyone?' because the traditional nurse's station and that hub of activity, is gone. It's a different way of thinking about hospitals, and what people expect to see."

When technology moves closer to patient care areas, charting happens faster, errors are reduced, and the entire administrative process is improved. Nevertheless, computers are expensive, and the technology changes so quickly that many hospitals can't afford as many computers as they'd like. Business Week reports that average profit margins for the 5,670 hospitals in the U.S. have fallen for the last eight years, and hospital have financial concerns and other budget demands besides technology.

One low-cost solution: COWs (computers on wheels). Many hospitals, including Saint Mary's, use these to make computers more accessible. The Details Mobile Computing Cart incorporates features important to nurses and other staff: a pneumatic height-adjustable worksurface that moves from seated to standing height, an armature to hold a flat screen, a shelf to secure a CPU or battery, lockable casters, even a recessed top so pens and other tools don't roll off. The cart can support a server-based monitor, laptop, or a desktop computer, depending on the needs and applications of the healthcare facility.

COWs are prime examples of how furniture helps technology adapt to the very fluid work processes of the healthcare industry. Tech must



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be user friendly or it won't be used. It must also be integrated with the architecture and furniture of the healthcare environment, if it's to help lower costs and contribute to better patient care.

"We spent years figuring out the concepts and the technology and furniture and how it all works together to improve patient care," says Klotz. "But you really don't know until it opens whether patients and families will feel comfortable in the space, if they'll use the monitors, or the computers in the library, etc."

"The day we moved, I'll never forget it. Our patients are very sick – we're not talking about patients who are up and walking around a lot. They kept saying, 'I can't believe this! Is this really for patients?' Some of them got choked up about this new hospital, all the technology, the services. They were really made to feel important."