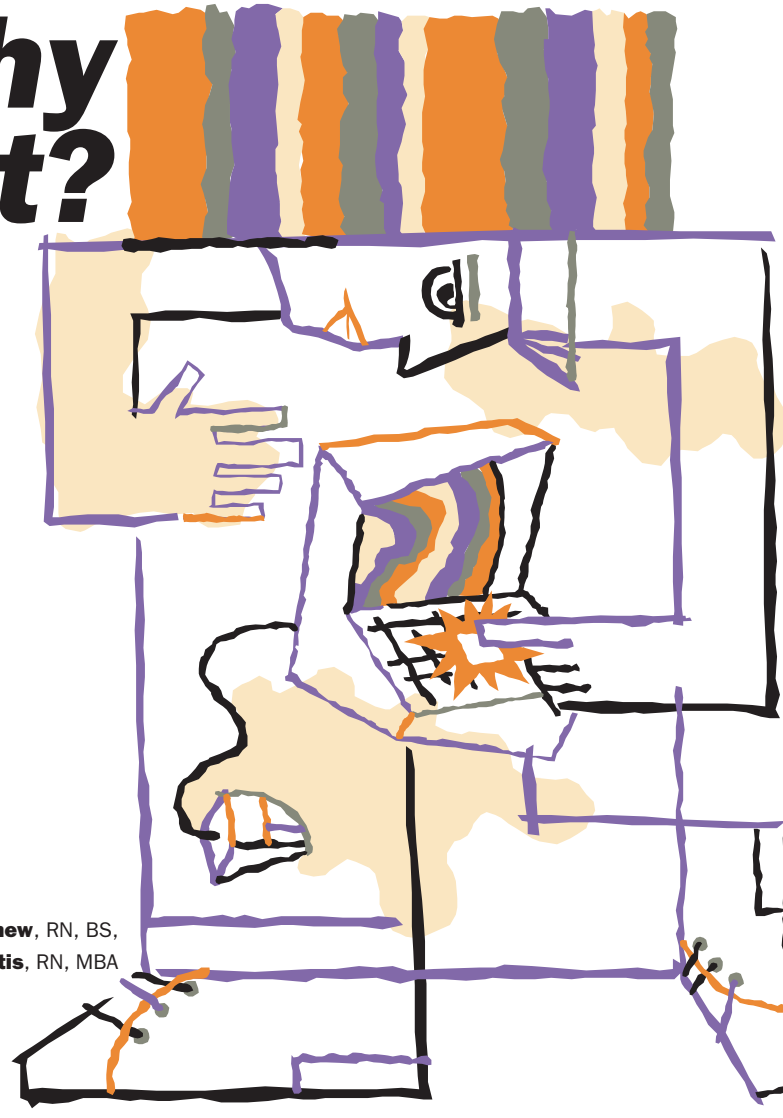
High-tech, high-touch: Why wait?



As information technology transforms countless industries, it's time for healthcare to explore this viable solution.

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Abstract: Heighten your awareness of untapped information technology resources.
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Nursing remains under the ever-pressing demand to do more with less. Yet, our profession only sparingly implements incredible technologic advances that have streamlined other industries. Why haven't we capitalized on these phenomenal resources?

A typical day?

Imagine this:

Sally Jensen arrives at the med-surg unit where she's worked for the last ten years and slides the wireless phone over her head. Thoughtfully, she sips her coffee as she pulls up the daily assignments on the computer. Today, Jensen will be the primary care nurse for five patients, plus the first admit.

Methodically, she performs patient rounds and assessments while entering patient information into her personal digital assistant (PDA). She verifies that all

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of the patients have her wireless number. Her first patient's care plan indicates she's met all current goals, but still requires medications and a dressing change before discharge. Since the dressing change was integrated into the care plan, the unit robot already delivered the necessary supplies to the patient's room.

The bar-coding system on Jensen's PDA verifies that the patient care technician pulled all of the medications and that they're ready to administer. However, the display shows a red flag next to the patient's name. Jensen clicks on the alert and notes that although the patient is on 80 mg of furosemide (Lasix) daily, no one has drawn a potassium level in more than 48 hours. Quickly, Jensen initiates an order request via e-mail to the healthcare provider so that the patient's discharge won't be delayed. With a few keystrokes, Jensen retrieves the original orders, clarifies the correct time, and e-mails the pharmacy.

Jensen then moves on to her next patient and collects a single drop of blood. Using point-of-care technology, she determines the necessary potassium level in less than a minute. Suddenly, a yellow light flashes on the PDA. The patient's glucose level is more than 300. Behind the scenes, the system has already alerted the provider and pharmacist of this elevated level. The provider enters corrective orders from his office, and the pharmacist reviews and adjusts the orders. As Jensen leaves to administer the insulin, the provider calls her on the wireless phone to discuss care plan adjustments. Just then, an orange flag highlights the screen next to another patient's name. As Jensen enters this patient's room, she sees him wrestling with the bed covers and trying to rise. After settling him back in bed, Jensen updates his medical record, indicating increased restlessness. The blinking falls-alert flag notifies the patient care technician and the main hub of the change in patient status.

By 9:30 a.m., the patient in 950 is ready for discharge. As Jensen starts the discharge tutorial on the portable computer, the patient excitedly talks about going home to her husband of 52 years. When Jensen enters the expected time of discharge into the PDA, an automatic alert goes to transport and the outpatient pharmacy.

No sooner is the bed in 950 cleaned than Jensen's in-box on the nursing profile screen indicates she'll be receiving a transfer from another hospital's emergency department. She's relieved when the patient arrives with a smart card. With just a quick swipe, the system transfers the patient's medication record and automatically updates any documentation. Per protocol, the hospital's on-call provider automatically receives notice of the patient's arrival, via an e-mail on his PDA. Jensen knows that he will arrive shortly to write admission orders.

Jensen then sits down at the patient hub and begins her own documentation. She chooses the Braden scale calculation for pressure ulcers, since the newest patient's history shows he'd been on strict bedrest and is underweight. The system

will flash an orange light on the patient care technician's PDA screen every two hours as a reminder that the patient requires turning. Satisfied with her plan of care, Jensen moves on to room 948 to meet with her new patient.

The year? 2004. All of this technology is available now.

Clearly, a widening gap exists between the use of technology in nursing and its use in other industries.

A look at what's out there

Technology to streamline productivity has served as a resource in other industries for years. But this isn't true in nursing, where these technologies are still uncommon.

Grocery and retail stores use bar coding for checkout, inventory maintenance, and accounting. The parcel delivery services track millions of packages daily through the use of various electronic devices. Electronic signatures are commonly used for credit card purchases. Construction workers use hands-free wireless phones for easy communication with their team.

The U.S. military uses smart cards to support easy access to services and employee identification; each card stores photo ID, demographic data, and an electronic signature. Many professionals carry PDAs for scheduling and contact information. Automatic teller machines clearly revolutionized the banking industry, and their number continues to grow, from 18,500 in 1980 to 324,000 in 2001.[1] Airline passengers can purchase tickets online, and global positioning systems can track the location of any individual on the planet accurately to within six feet. Clearly, a widening gap exists between the use of technology in nursing and its use in other industries.

Playing catch-up

Why is healthcare seemingly left behind? First, hospitals have invested little in the adoption of information technology (IT) and other supportive resources. IT expenditures last year decreased to an all time low of 2.3%.[2] Typically, hospitals are just beginning to invest in and implement these solutions.

Unable to fund a wide range of technologies, hospitals mainly choose a single product, with plans to invest in other technologies "in the future." The Improving Operational Efficiency Through Elimination of Waste and Redundancy Work Group (2002) reported that clinical information systems are the most important application in healthcare, but also noted that applications specifically supporting the work of nursing are lacking.[3]

Second, nursing's been unable to show a positive return on investment in the use of these products. Although these technologies demonstrate the ability to offer soft benefits related to patient safety, care provider communication, and process-

behind relates to the products themselves. Those designed for one industry don't necessarily translate to a clinical setting without modifications. Also, many of the products designed for healthcare were designed specifically to aid the physician community.

aged the development of physician-focused software.

Typically, manufacturers haven't designed clinical systems for entering and reviewing patient information to support nurses' workflow.[5] Vendors haven't dedicated sufficient time to

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ing time, few studies to date uncover the hard benefits of dollars saved or a decrease in care hours related to their use. Unfortunately, sometimes hospital executives don't believe that nursing-specific technology will yield cost savings.[4]

Another reason healthcare lags

This is especially true of clinical information systems. The call for increased patient safety, following the release of the Institute of Medicine's report on medical errors, stimulated groups such as Leapfrog to push for computerized provider order entry and primarily encour-

research and analyze software needed to support nursing practice. Therefore, nursing hasn't had a sufficiently active role in product development. Nurses haven't had the resources to support new technologies because of the ever-increasing demand to reduce nursing hours.

It takes time and money to investigate, research, acquire, pilot, train, implement, and support the use of new technology. Many organizations are surprised to learn that staffing costs for implementation and training are more than the cost of the actual products. Without the ability to document financial benefit, it's almost impossible for nurses to obtain the financial backing needed to launch these projects.

Perhaps most disheartening, however, is nurses' resistance to new technology. Why have we, as a profession, historically supported adoption of technology that benefits patients but not pushed forward technology that helps nurses? We're well aware that the average nurse is 44 years old. This directly impacts technology usage: Older nurses have long-established practice patterns and habits and may often view new technology as a distraction, something that takes their attention *away* from the patient. Their experience, for example, with computerized charting was that it took longer to do than paper charting. And in the past, they were correct: Instead of charting by exception, many systems were initially designed so that every single field needed completion, requiring *more* time. One expert reports that nursing resistance alone has caused the death of numerous IT initiatives.[6] Ironically, while we demand new technology, we actively resist it.

According to studies conducted at Clarian Health System during the mid-1990s, nurses provide less than one hour of direct care to their patients in a 12-hour period. The remaining time is spent "managing and coordinating communication to other departments, physicians, or members of the healthcare team."[7] IT provides a much-needed facelift to the nursing profession, allowing nurses to practice and focus on knowledge rather than on tasks.

Nursing's role

Your role is critical. To promote technologies that support nursing care, consider tackling the following initiatives:

♦ **Be a technology leader.** During staff meetings, promote use of small and innovative technologies used in other hospitals. Then, elicit feedback to determine interest, opinions, and feelings of your staff. Marketing IT to your staff is the first step. If you can't sell it to your staff, no project will succeed. And one of the best selling tools is time. With rising acuities and decreasing staff, nurses want more time with their patients. Market the technology by asking staff, "What technology could we use that will allow us to spend more time at the bedside?" Do a survey. Ask staff to list the tasks that are repetitive, time consuming, and nonvalue-added. Invite a nurse informaticist to speak at your next staff meeting, and continually look for additional opportunities to educate yourself and your staff in technology.

♦ **Trial new technology.** Start with a small project that you know you can accomplish and build to larger projects. Begin with a unit-based Web site or pilot a new online staffing schedule. Offer to trial nursing documentation on portable devices. Achieve successful workforce participation by involving staff members from the start; solicit input and buy-in during the project selection, planning, and implementation phases. Remember to honor staff members for participating, and make sure they're recognized in hospital newsletters and other communications.

Volunteer for a proof-of-concept project. If you're interested in piloting technologies that haven't been tried in the clinical setting, this is a good way to be on the cutting edge. These projects have increased vendor support, and often the vendor will cover all of the initial expenses—including the cost of an external project manager. You'll still need to provide the resources to implement and document outcomes.

♦ **Learn from others' experience.** Visit other hospitals that use technology in innovative ways. Solicit advice about what to do and ask about the lessons they learned on the road to implementation. Share information in professional groups and newsletters. Then, form a clinical information and communications technology group by collaborating with interested managers.

Check for technology-related presentations when evaluating which seminars or conferences to attend. While at conferences, spend time investigating emerging products and request case studies on the use of these products. Don't forget to talk to the vendors' clinical staff.

♦ **Budget for IT.** Even if financial resources are shrinking, continue to request that money be designated in the hospital budget for new IT projects. Simply asking will raise awareness and push technology to a position of greater visibility in your organization.

♦ **Seek specialists.** Hire and encourage nurse informaticists in your organizations. These nurses have a background in project management and system implementation. An informatics specialist can be a tremendous resource. One expert even recommends creating the position of chief nursing information officer to support implementations.[7]

Once you've established a reputation in your organization for innovation, other projects will find their way to your doorstep. Understanding why nursing has waited is the first step to harnessing technology's power and thriving. NM

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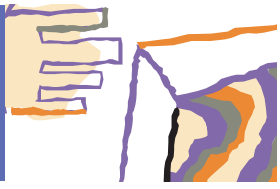

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