

# Charting Nursing's Future

A Publication of the Robert Wood Johnson Foundation

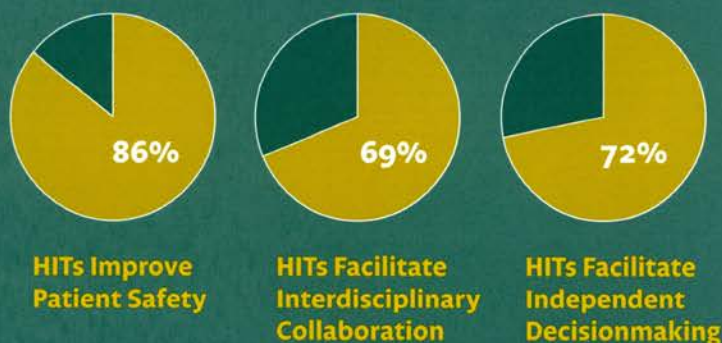
Reports on Policies That  
Can Transform Patient Care

## Addressing the Quality and Safety Gap—Part II: How Nurses Are Shaping, and Being Shaped by, Health Information Technologies

Quality and safety gaps in the health care arena, the focus of several reports published by the Institute of Medicine in the past decade, have spurred many changes in the way services are being delivered, documented, financed, and evaluated. Technology is at the center of many of these reforms. Health care professionals—eager for better tools to manage clinical data, communicate with each other, stay up to date about the latest research concerning evidence-

based care, and educate and supervise staff—have been actively engaged in shepherding the industry into the digital age. The value of health information technologies (HITs), in particular, is now widely acknowledged by nurses (see figure 1). This issue of *Charting Nursing's Future*, the second in a miniseries on quality and safety, examines the role of nurses in designing, implementing, and educating clinicians to use HITs.

Figure 1 Acute Care Nurses' Perceptions of the Value of Health Information Technologies (HITs)



Source: Survey of 1,760 nurses conducted by the Healthcare Information and Management Systems Society's Nursing Informatics Task Force and Partners Healthcare, 2005.

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## The Value of Nursing



The "high-touch" profession of nursing is becoming increasingly high tech, as hospitals, nursing homes, doctors' offices, home health care agencies, retail health clinics, and public health agencies equip nurses with computers, personal digital assistants, and other electronic tools to enhance quality of care and improve safety. In fact, nursing administrators across settings expect nurses with baccalaureate degrees to be proficient in the use of technology to access and retrieve electronic data, communicate with other health care professionals, and solve patient care problems, according to a survey conducted in 2004 by Queen Utley-Smith, RN, EdD, associate clinical professor and chair of the master's program at the Duke University School of Nursing.

In addition to using these technologies, nurses are becoming more involved in shaping them. Dozens of hospitals, for example, have conducted nurse-led "technology drill downs" using an evaluative process developed by the American Academy of Nursing, with support from the Robert Wood Johnson Foundation, to identify solutions that keep patients safe and enhance quality on medical-surgical units.

# Improving the Quality and Safety of Nursing Care through HITs

**H**ITs are fundamentally changing what nurses do and how they do it, leading some nursing leaders to view them, collectively, as the stethoscope for the 21st century. New tools for storing, processing, retrieving, and sharing data are transforming the way patient care is planned, delivered, documented, and evaluated. This transformation goes beyond hardware and software to incorporate modifications in workflow, organizational culture, and even architecture. Together, these components of work process redesign have the potential to remove barriers to patient safety and increase access to care.

Nurses play a major role in determining whether this potential is, in fact, realized. At the executive level, chief nursing officers define the scope and scale of the organization's use of technology by setting goals and allocating resources, and they influence organizational culture through their own attitudes about technology and change. "Committed leadership supports nurses in the difficult time of transitioning to new technologies," explains Rita Zielstorff,

RN, MS, FAAN, FACMI, former Digital Health Community group manager for PriceWaterhouseCoopers, LLC, and now a HITs consultant.

HITs education, meanwhile, is carried out in clinical settings by nurses with specialized knowledge and skills (see "What Is a Nurse Informaticist?" below) and in academic institutions by nurse educators, many of whom recognize the value of technology as both a clinical and a pedagogical tool (see "Bringing Nurse Educators Online," page 7). Implementation, of course, depends on frontline nurses charged with creating, updating, and reviewing patient records electronically, scanning medication bar codes and patient wrist bands prior to administering drugs, and obtaining vital signs over a telephone line from home health care patients (see "Nursing-Related HITs," pages 3-6).

Beyond the walls of their own institutions, nurses can ensure that public policy is grounded in good nursing practice by exerting influence, through formal or informal channels, on legislation, regulations, and standards (see "Engaging Nurses in HITs Policymaking," page 8). "Nurses work in a broad array of settings, and have a good sense of the impact of technology on patient-centered care and interdisciplinary communication," says Bonnie Westra, RN, PhD, assistant professor of nursing at the University of Minnesota. "It's important for us to be at the table, along with the other stakeholders."

"Nurses work in a broad array of settings, and have a good sense of the impact of technology on patient-centered care and interdisciplinary communication. It's important for us to be at the table, along with the other stakeholders."

Bonnie Westra, RN, PhD, assistant professor of nursing at the University of Minnesota



## What Is a Nurse Informaticist?

Nurse informaticists (also known as nursing informatics specialists or informatics nurses) develop, customize, support, and evaluate health information technologies designed to help nurses plan, deliver, document, and review patient care (see figure 2). Many work in large hospitals or health systems, where they serve as liaisons between nursing and information technology departments, or for companies that develop HITs. They make sure that HITs support good nursing practice and that nurses are properly trained to use HITs. Certification for nurse informaticists is available through the American Nurses Credentialing Center (RN-BC) and the Healthcare Information and Management Systems Society (CPHIMS).

Figure 2

### Top Three Job Responsibilities of Nurse Informaticists

Systems Implementation	45%
Systems Development	41%
Liaison/Communication	32%

Source: 2007 HIMSS Nursing Informatics Survey, sponsored by McKesson.

#### For More Information

- Alliance for Nursing Informatics: [www.allianceni.org](http://www.allianceni.org)
- American Medical Informatics Association: [www.amia.org](http://www.amia.org)
- American Nurses Credentialing Center: [www.nursecredentialing.org/NurseSpecialties/Informatics.aspx](http://www.nursecredentialing.org/NurseSpecialties/Informatics.aspx)
- Healthcare Information and Management Systems Society: [www.himss.org/ASP/topics\\_nursingInformatics.asp](http://www.himss.org/ASP/topics_nursingInformatics.asp)
- *Nursing Informatics: Scope and Standards of Practice*, American Nursing Association (2008)

"I have nurses, pharmacists, social workers, and physicians on my team which focuses on emerging technologies and innovations. We're doing interesting things, pulling clinicians together to tell us what they want their systems to be able to do for them 10 years out. We try to get them to think beyond their current needs."

Linda Fischetti, RN, MS, chief health informatics officer, Veterans Health Administration



Photo: Courtesy of the Department of Veterans Affairs



## Nursing-Related HITs: Electronic Health Records

Thick manila folders, stuffed with test results, medical histories, clinical notes, and other patient information are headed for extinction. Many large hospitals and health care systems are already using electronic health records (EHRs), and others are in various stages of converting from paper to pixels. Clinical nurses in these settings are learning new ways of entering, storing, and retrieving data using keyboards, handheld devices, and touch-screen monitors. Some are also serving as “nurse champions,” encouraging adoption of the new technology among their colleagues and providing information technology (IT) professionals with feedback to fix glitches and enhance usability.

Behind the scenes, meanwhile, efforts are under way to ensure that EHRs are interoperable, meaning that they can be shared across systems or platforms. Interoperability is critical to continuity of care; when patients move, switch health care providers, or transition from one health care setting to another, their EHRs offer a vehicle for orienting professionals charged with their care. Unfortunately, getting different EHR systems to talk to each other is not a trivial task. The Office of the National Coordinator for Health Information Technology (ONC) was created by executive order in 2004 to “provide leadership for the development and nationwide implementation of an interoperable health information technology infrastructure” so that all Americans can have EHRs by 2014.

The ONC staff includes Alicia A. Morton, MS, RN-BC, a nurse informatics specialist and a commander with the U.S. Public Health Service, whose deployment to New Orleans

after Hurricane Katrina strengthened her conviction about the value of EHRs for nurses. “It would have been very helpful, as people were getting off the buses, to have had even a little bit of medical history about them, and to have been able to document what I did with them during the few hours they were in my care,” she explains.

### Continuity of Care

When Take Care Health Systems was launched, the Walgreens subsidiary equipped each of its pharmacy-based health clinics with an EHR system. This major capital investment reflected the company’s belief in technology’s potential for enhancing efficiency, quality, and continuity of care, and for differentiating “convenient care” from other health care delivery models.

Unfortunately, the system, purchased from an outside vendor, proved not to be very user-friendly, according to the nurse practitioners (NPs) running these clinics. In response, the company took the bold step of building a new one, in-house, with significant input from the nursing staff. “Our nurses love the system now,” says Sandra F. Ryan, CPNP, chief nurse practitioner officer. “It’s very thorough and easy to navigate.”

Because the system is homegrown, enhancements and modifications

can be made as needed. The IT team works closely with a group of nurses, known as the NP Council, to identify problems and come up with solutions. For example, a new feature was recently added so that personalized narratives could be inserted into patient records without having to launch a separate word-processing program. The expectation is that this will reduce the time NPs spend on documentation while increasing accuracy and thoroughness.

In addition to its popularity with NPs, the EHR system is valued by the company’s leadership. Ryan notes that it facilitates the tracking and monitoring of trends in patient satisfaction, HEDIS scores for appropriate antibiotic prescribing, and other quality measures. An added bonus is a built-in feature that allows NP files to be reviewed electronically by peers and physicians, ensuring that care is being appropriately delivered and properly documented.

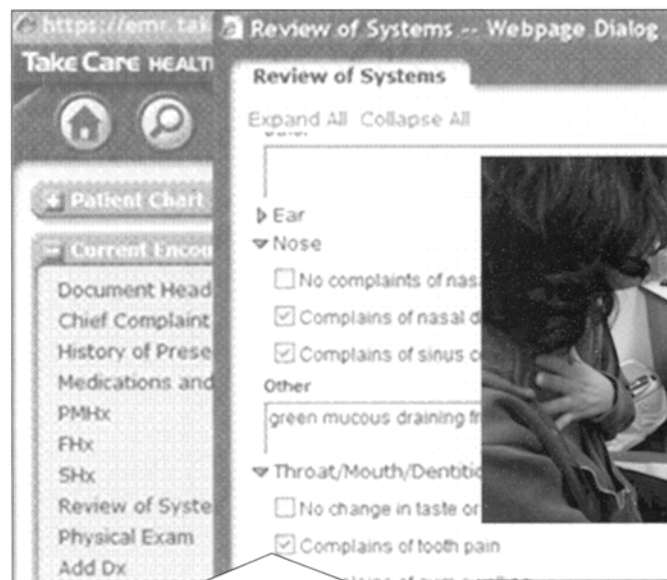
*continued on page 4*

### Key Term: Interoperability

The ability of different information technology systems and software applications to communicate; to exchange data accurately, effectively, and consistently; and to use the information that has been exchanged.

Source: National Alliance for Health Information Technology ([www.nahit.org/images/pdfs/NAHITInteroperabilityDefinition0505v.pdf](http://www.nahit.org/images/pdfs/NAHITInteroperabilityDefinition0505v.pdf)).

Take Care Health Systems’ electronic health record (EHR) was designed with significant input from nurse practitioners who run the company’s pharmacy-based clinics. The technology supports good nursing practice by prompting clinicians to perform a thorough physical exam and ask dozens of questions relating to the patient’s chief complaint, past medical history, social history, and other factors that affect quality of health.



Screenshot: Take Care Health Systems



Photo: Kristien Petersen/Petersen Fotografie

The company is in the process of developing a “continuity of care record” that will enable information from the EHR to be shared electronically with other platforms, such as Google Health and Microsoft Health. For now, patients can choose to take a hard copy of their EHR with them or have the health record faxed directly to their primary care doctor or another health care provider. “We recognize how important it is for patients’ records to follow them wherever they go,” says Ryan.

“Smart” Rooms: Bringing EHRs to the Bedside

As part of a pilot study, the University of Pittsburgh Medical Center (UPMC) has equipped 22 rooms in one of its acute care facilities with technology designed to improve patient safety, increase customer satisfaction, and help nurses and other health care professionals deliver “the right care at the right time, every time,” explains David Sharbaugh, senior director of UPMC’s Donald D. Wolff Jr. Center for Quality Improvement and Innovation.

When nurses enter one of these “smart” rooms, their presence is detected by a sensor, and nursing-relevant information from the patient’s EHR is automatically displayed on a bedside monitor, including the patient’s allergies, whether he/she is at risk for a fall, and the time, dose, and method of administration for each prescribed medication. “We are trying to give nurses instant access to the information they need, when they need it, so they can take care of their patients,” says Lucy Thompson, RN, a former ICU nurse and member of the smart rooms design team. “A lot of thought has gone into what not to put on the screen,” she explains.

The smart room concept was born from an incident involving a nurse who wore latex gloves while caring for a patient with a documented allergy to natural rubber. Sharbaugh hypothesized that human errors could be avoided if important data was prominently displayed rather than buried in patients’ charts. Had UPMC still been relying on paper files, making this data accessible at the bedside would have

been a major undertaking. With electronic records already in place, the focus has been on enhancing, rather than overhauling or replacing, the existing informational infrastructure. Feedback from nurses and other end users has been a critical component. “Our guiding principle is that this has to make nurses’ jobs easier, not harder,” Thompson says.

Given the scale of the pilot, it will take some time to collect enough outcome data to determine its impact on quality and safety. In the meantime, team members are working on a major redesign of information and workflow processes to capitalize on the bedside technology. For example, they just rolled out a new feature that shows patients what tests or procedures they are scheduled to have and what they can expect to happen before and after each one. This information could enhance communication with patients by allowing nurses to focus on specific questions or concerns.

When a nurse enters a “smart” room at the University of Pittsburgh Medical Center, nursing-relevant information from the patient’s EHR is automatically displayed on a monitor, including the patient’s allergies, whether he/she is at risk for a fall, and the time, dose, and method of administration for each prescribed medication.



“We are trying to give nurses instant access to the information they need, when they need it, so they can take care of their patients. A lot of thought has gone into what not to put on the screen.”

Lucy Thompson, RN, improvement specialist, University of Pittsburgh Medical Center’s Center for Quality Improvement and Innovation

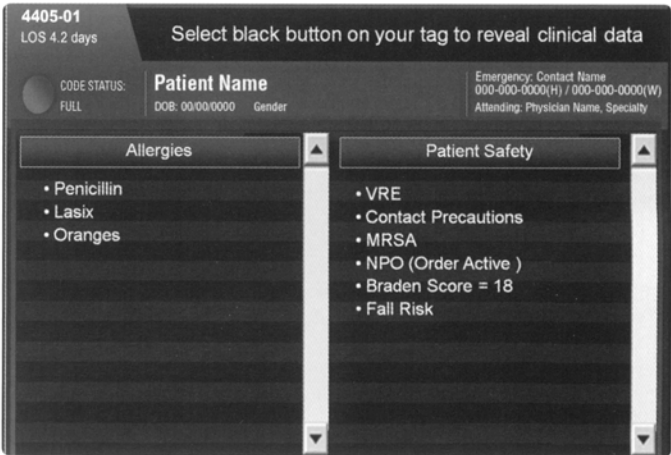


Photo and Screenshot: UPMC Health Systems

## Nursing-Related HITs: Bar Code Medication Administration

The “five rights” of medication administration—giving the right patient the right drug in the right dose by the right route at the right time—are emphasized in nursing education. Mistakes, however, still occur, even among experienced practitioners. At least 1.5 million preventable adverse drug events occur in the U.S. every year, according to a report of a committee of the Institute of Medicine co-chaired by Linda R. Cronenwett, PhD, RN, FAAN, nursing dean at the University of North Carolina at Chapel Hill. While doctors and pharmacists share responsibility, nurses play a critical role in keeping patients safe. Obstacles often cited by nurses include illegible physician orders, similar-sounding drug names, and labels that look alike.

The idea that bar code technology, developed decades ago for the retail industry, could help bypass some of these obstacles is gaining acceptance among health care providers. A successful pilot project—proposed, notably, by a nurse at the Colmery-O’Neil Veterans Affairs (VA) Medical Center in the 1990s (see figure 3)—convinced the VA to begin adopting bar code medication administration (BCMA) technology systemwide in 1999. Nurses continue to be actively involved in implementation and continuous improvement efforts. In addition to serving on BCMA committees at inpatient facilities across the country, nurses have tested different

interfaces to identify elements that catch their attention so that important information is not overlooked. They have also used the data collected from the scanning devices to advocate for workflow changes. For example, nurses at one hospital demonstrated that Sunday evening is a bad time for BCMA system upgrades because medications need to be ordered for all of the presurgical admissions scheduled for Monday morning. In response, the IT staff rescheduled downtimes from Sunday to Saturday. The nurses also used BCMA data to bring about a change in the pharmacy cart schedule to ensure that units had the freshest supplies of medications when they needed them.

“Nurses see IT as a way to make health care safer, higher quality, and more efficient, in that order,” says Linda Fischetti, RN, MS, chief health informatics officer for the Veterans Health Administration, who pulls clinicians together for long-range IT planning. “As soon as nurses have that ‘aha’ moment of realizing, ‘oops, I was about to make a mistake and the system prevented me from doing it,’ that’s when you get their buy in.”

Today, approximately 25 percent of all U.S. hospitals equip nurses with handheld devices for scanning bar coded drug labels and patients’ wristbands to ensure medications are administered properly.

According to the Agency for Healthcare Research and Quality, which supports BCMA adoption through a grant program, hospitals that invest heavily in training nurses and redesign workflow to incorporate the new technology reduce medication errors more quickly.

While BCMA’s potential for improving safety is widely acknowledged, it has become clear that successful implementation depends on several factors, such as adequate training for nurses and appropriate workflow redesigns. There is also recognition that BCMA represents only one component of a comprehensive strategy to prevent, detect, and correct medication-related errors.

### The Value of Nursing



Photo: Courtesy of the Department of Veterans Affairs

The Veterans Health Administration’s bar code medication administration system—which uses scanning technology to improve safety and quality—was, notably, the brain-child of a nurse.

Ascension Health, for example, the largest Catholic nonprofit health care system in the nation, has embarked on a major initiative to help its 67 sites implement a “closed loop” medication delivery system (CLMDS) that goes beyond BCMA to address all aspects of drug safety. “We are looking at every step of the process, from when the drug arrives on the dock to how it is packaged, divided into unit doses, bar coded, placed in cabinets, ordered, verified by a nurse, and, finally, properly administered to the patient,” explains Ann Hendrich, RN, MSN, FAAN, vice president, Clinical Excellence Operations at Ascension Health and executive cosponsor of the project, along with Larry J. Koesterer, MBA, RPh, senior director, pharmacy, group purchasing and support services. An “adhocracy” representing all of

Figure 3  
Impact of BCMA on Medication Error Rates in VA Hospitals, 1993–2001

Error Type	Reduction in Errors
Wrong Medication	75.47%
Wrong Dose	61.97%
Wrong Patient	93.48%
Wrong Time	87.41%
Omission	70.34%

Source: Adapted from Johnson, C. L., R. A. Carlson, C. L. Tucker, and C. Willette. Using BCMA software to improve patient safety in Veterans Administration Medical Centers. *Journal of Healthcare Information Management* 16:46–51.

the disciplines—pharmacy, nursing, IT, finance, and supply chains—has been charged with coming up with goals to help the CEOs make good investments that pay off in the long run. “We intend to eliminate the ‘Swiss cheese’ risks of purchasing components that don’t connect,” says Hendrich. To ensure successful adoption of new technologies, the CLMDS will address behavioral changes too.

What makes bedside nurses effective—and what attracts many people to the field—is that they are hands-on, employing all of their senses, along with their clinical judgment and skills, to assess patients, develop and implement care plans, and monitor progress. Yet the proximity from which care is delivered is also a constraint. Bedside nurses can attend to only one patient at a time and must travel among rooms, units, facilities, schools, clinics, or homes or make patients travel to them—a hardship for patients who are disabled or weak, lack reliable transportation, or live far away. Between visits, meanwhile, problems that arise can go undetected, leaving patients at risk.

Telenursing—the delivery of care across space and time, using telephone lines, cable modems, and other telecommunications technologies, in conjunction with electronic monitoring equipment—offers opportunities to support bedside nursing by enhancing quality, safety, and access to care. Several studies suggest that telenursing can reduce the frequency and/or length of hospital stays for home health patients, a finding that has convinced several states to offer Medicaid reimbursement for these services.

Despite its benefits, only 17.1 percent of home care agencies have

telehealth systems, according to a 2008 survey cosponsored by Philips Electronics, the National Association for Home Care and Hospice, and Fazzi Associates. Utilization is expected to increase, however, as costs come down, consumers and professionals become more technologically proficient, and issues related to privacy, interstate licensure, and other policy concerns are addressed by legislative bodies, regulatory agencies, or the courts. The needs of older, more chronically ill patients, coupled with widespread labor shortages, could also prompt providers to reevaluate traditional methods of delivering services.

### Remote Monitoring for Home Health Care Patients

The Visiting Nurse Association of Hudson Valley's telehealth program in New York, launched in 2003, provides an extra layer of monitoring for home care patients at high risk for rehospitalization. Maria M. Roemer, RN,

### The Value of Nursing



Photos: VNA of Hudson Valley

Telenurses work collaboratively with other health care professionals to assess patients, develop treatment plans, address threats to patient safety, and deliver high-quality care, all from a distance. Here, a telenurse uses an electronic stethoscope to listen to a home care patient's heart during a "virtual visit" that complements regular home visits from the field nurses.

BSN, the agency's telenurse, conducts Webcam-enabled "virtual visits" and reviews vital signs transmitted electronically from special pulse oximeters, stethoscopes, blood pressure cuffs, and scales installed in patients' homes.

"My CEO saw a demonstration of the technology at a conference and thought it was phenomenal," recalls Rae Szymanski, BSN, MS, CHCE, executive vice president and chief operating officer. To set up the program, the agency engaged a "nurse champion" from the field to help develop policies and procedures and arranged for another nurse, employed by the vendor that supplied the telehealth equip-

## HITs Research: Automated Telenursing

Using technology to improve the management of serious chronic conditions is a major research thrust for Jill Quinn, PhD, RN, CS-ANP, FAHA, FNAP, assistant professor of nursing at the University of Rochester and a scholar in the school's interdisciplinary Center for Future Health. Frequent monitoring by home health nurses reduces the number of hospitalizations, she explains, but it's costly and the staff can't be there 24 hours a day. As a result, nurses end up being reactive, responding only when patients

call with a problem, and by then, the symptoms are often severe. "We need a more proactive approach," says Quinn.

With funding from the Robert Wood Johnson Foundation's Project Health Design program, along with grants from the American Heart Association and the National Institutes of Health, she is helping develop an automated "conversational assistant" that functions at the same level as a nurse practitioner, checking in with patients over the phone, asking them questions, and making decisions about

their care. The extent to which these decisions are consistent with those made by real nurse practitioners will be tested on a group of patients or patient actors. "This technology could have benefits for inpatient, outpatient, and home health settings, and also facilitate the transitions among these settings," Quinn says. "We expect to be able to translate it to other chronic conditions and even, eventually, to a personal wellness model, where people can track their own information and keep themselves healthy."



ment, to provide training for the staff. "This has been a nursing-led initiative from the start," says Syzmanski.

Roemer says she develops very strong bonds with her patients, despite the fact that she works remotely. She emphasizes, however, that she is an adjunct to, not a replacement for, the field nurses. "I can see if there's edema in the lower extremities but I can't touch it to measure or assess its characteristics," she explains. "I can listen to their heart rate but I can't palpate their pulse to assess if it's bounding, thready, or absent."

### **Virtual ICU**

At Sentara Healthcare, about 100 intensive care patients are monitored from an offsite central command station by an "eICU" team that supplements care delivered by bedside

nurses back on the units. Information is transmitted electronically from cameras, microphones, monitors, and computers installed in patients' rooms. Nurses at both ends share responsibility for ensuring patient safety.

Sarah Darwin, RN, MSN, director of critical care for Sentara Healthcare, explains that eICU nurses need strong critical thinking and interpersonal skills to function effectively. In addition to fielding questions from critical care staff and reviewing patient care plans, eICU nurses must respond promptly to alerts triggered by sensors that monitor patients' heart rate, blood pressure, and urine output. "They need to be able to make quick, good assessments, using the information available, and work with the unit staff to make sure appropriate care is delivered," says Darwin.

Sentara's eICU, the first in the nation, has had a significant impact on patient outcomes. Benefits include shorter lengths of stay for critical care patients and reductions in the ventilator-associated pneumonia rate and blood strain infection rate. In addition, the technology has led to more standardization of safety protocols in units at hospitals across Sentara's system. The eICU has also proved popular with the staff. "What this has done is give bedside nurses access to more experienced nurses and intensivists who are available all the time, have knowledge about their patients, and can react within seconds," says Darwin. "As soon as nurses figured this out, they said, 'How soon can we get this?'"

## **Bringing Nurse Educators Online: Faculty Development Efforts**

As nursing practice becomes increasingly high tech, nursing education needs to evolve too. A survey conducted by the National League for Nursing in 2006 revealed limited coverage of HITs in nursing programs and, even more problematic, an inability among many nursing educators to distinguish HITs from other kinds of technologies, such as online teaching tools.

To address these deficiencies, the Health Resources and Services Administration's Bureau of Health Professions has awarded six cooperative agreements, totaling \$1,746,357 for fiscal year 2008, to university-led collaboratives that are educating hundreds of nursing faculty across the country to incorporate HITs into their curricula.

The University of Kansas (KU), one of the grantees, has partnered with the University of Colorado at Denver, Indiana University at Indianapolis, and the National League for Nursing to train more than 200 nursing faculty

over a five-year period. Participants attend a three-day workshop, complete six learning modules online (covering e-learning, informatics, telehealth, simulation, and other topics), and develop, implement, and evaluate a HITs-related course or curriculum component back at their own institutions. The first round, which ended in December, included 48 professors from 27 nursing programs across the country, selected from a pool of 520 applicants who responded to the call for scholars. Cerner Corporation, a HITs supplier headquartered in Kansas City, Missouri, is providing significant local support for the project, serving on the planning committee and hosting field trips for scholars. Simulation lab directors from two local community colleges are also involved.

"We're using the Quality and Safety Education for Nurses competencies [developed with support from the Robert Wood Johnson Foundation] as our framework," explains Helen R. Connors, PhD, RN, FAAN, executive

director of the KU Center for Healthcare Informatics and project director of the HITs grant. She says evaluation of the project will be based on scholars' perceptions of the value of, and their ability to teach, these competencies; attainment of their goals; and a "diffusion of innovation index"—the extent to which the innovation is integrated into their curriculum and/or the larger community.

### **For More Information**

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#### **• Informatics in Accreditation** American Association of Colleges of Nursing

[www.aacn.nche.edu/Education/pdf/BaccEssentials\\_08.pdf](http://www.aacn.nche.edu/Education/pdf/BaccEssentials_08.pdf)

National League for Nursing Accrediting Commission  
[www.nlnac.org/home.htm](http://www.nlnac.org/home.htm)

#### **• Quality and Safety Education for Nurses**

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The Technology Informatics Guiding Education Reform (TIGER) project was launched in 2004 by a diverse group of nursing leaders—representing educational institutions, health care providers, technology firms, and government agencies—to give nurses a stronger voice in shaping policies around electronic health records (EHRs) and other HITs. Despite its name, the project's scope extends beyond informatics to include the impact of technology on the broader nursing community, emphasizes its director, Donna DuLong, RN, BSN.

With grants from two dozen organizations, including the Agency for Healthcare Research and Quality, the Alliance for Nursing Informatics, and the Robert Wood Johnson Foundation (RWJF), TIGER convened a summit to articulate a vision and develop an action plan for “transforming nursing practice and education to better prepare nurses to practice in an increasingly automated, informatics-rich, and consumer-driven health care environment.” Action items were subsequently grouped into

nine key areas around which collaborative teams were formed. Led by industry experts, these teams have relied heavily on technology—exchanging e-mails, holding conference calls, and creating “wikis”—to facilitate communication among volunteer members as they carry out their work.

The standards and interoperability team, for example, has focused on building awareness about what standards mean, who manages them, how they are developed, and how nurses can help shape them. They have held Web-based seminars (“Webinars”) to walk nurses through use cases, the scenarios developed by standards organizations to identify what information needs to be shared by nurses and other health care professionals, and in what format. “This is one way to engage practicing nurses in policy,” explains DuLong. “Nurses work collaboratively with other members of the health care team and know where communication gaps exist. Who better to say to the standards people, ‘have you thought about this?’”

The educational curriculum team, meanwhile, was involved in drafting the National League for Nursing's position statement on informatics. The team also provided input for the American Association of Colleges of Nursing's revised Essentials of Baccalaureate Education, which includes “information management and application of patient care technology” as one of nine expected competencies for nursing program graduates.

The teams' work will be published on TIGER's Web site this year, accompanied by press releases, journal articles, and conference presentations. The main vehicle for dissemination, however, will be the 1,200 individuals participating in the grassroots effort. “We want them to take the information back to their organizations,” explains DuLong.

#### For More Information

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## Minnesota's E-health Advisory Committee

State senator Linda Berglin, chair of the committee that oversees Minnesota's health and human services budget, was instrumental in creating an e-health advisory committee and grant and loan programs to promote adoption of EHRs for the purpose of improving efficiency and quality. Minnesota is now in a position to require all health care providers who do business with the state to use EHRs by 2015. “We are finding that providers that have EHRs are way ahead, in terms of meeting standards of care, of those that do not,” says Berglin.

Representing nurses on the e-health advisory committee is Bonnie Westra, RN, PhD, assistant professor at the University of Minnesota's School of Nursing and a former RWJF Executive Nurse Fellow. She tries to bring the consumer's perspective to the discussion, emphasizing that EHRs should help nurses capture data without interfering with their ability “to look at the patient, talk to the patient, touch the patient, and be present for the patient.” She also feels the technology should support both structured interviewing and more narrative storytelling by including a

“Providers that have EHRs are way ahead, in terms of meeting standards of care, of those that do not.”

State senator Linda Berglin  
(Minnesota, DFL-District 61)



Photo: David Oaks

combination of drop-down boxes and free text areas. “Ultimately, our goal is for patient information to be available anytime, anywhere, with the appropriate access, so we can deliver effective care and look at the impact of what we're doing on population health,” she says.

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Design: Rob Henning Design, for Spann Communications, LLC

Acknowledgments: Assistance in obtaining data and images was provided by Lauren Malone, Visiting Nurses Association of Hudson Valley; Christopher Hogan and Daniel Spring, Take Care Health Systems; Wendy Zellner, UPMC Health Systems; and Sharon Gilles, Veterans Health Administration.



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