

Bold New World

Technology should ease nurses' jobs, not create a greater workload.

In 1899, Charles H. Duell, a commissioner for the United States Office of Patents, reportedly said: "Everything that can be invented has been invented." He obviously was wrong.

Technology continues to change, often with dizzying speed, and no industry is immune.

For decades, the ANA has viewed technology as having a crucial role in health care, one that could greatly benefit nurses and patients if implemented wisely. Most recently, the ANA's House of Delegates approved a resolution stating that technology should be used to augment, not replace, RNs' decision making when determining patient safety practices.

The resolution also calls for RNs to be integrally involved in the research, development, evaluation, and purchase of technological systems aimed at improving the safety and quality of patient care, and that these systems don't create an undue burden on nurses who already are struggling to provide direct care to their patients.

"You can't just shove technology at people and expect that all the problems that led to staffing shortages will go away," says Susan Newbold, MS, RN, BC, FAAN, cochairperson of a state-commissioned workgroup that looked at ways that workplace technology could ease the nursing shortage in Maryland. "Trouble may be just starting if the wrong technology is introduced."

And there are cases when the technology is good but it's implemented poorly, says Dana

Womack, MS, RN, a health care technology expert.

"To this day nurses don't have the input they should when computerized systems and other technology are selected," says Newbold, a Maryland Nurses Association member. "We really need to be at the table when those decisions are being made."

Besides RN involvement at the unit level, Womack says that more nurses need to take staff positions within their hospitals' information technology department. There, they can raise a red flag when a new type of technology could adversely affect nurses or patient care.

"Technology should really work for nurses, make their daily lives easier," says Womack, co-author with Newbold of the workgroup's 2004 report *Technology's Role in Addressing Maryland's Nursing Shortage: Innovations and Examples* (available online at <http://maryland.nursetech.com/F/NT/MD/NursingInnovations2004.pdf>). "And I've found that what's good for nurses tends to be good for patients."

TECHNOLOGY IN ACTION

One innovation that nurses at a Kansas hospital have embraced is motorized, ceiling-mounted patient lifts, which are available in patient rooms throughout most of the medical center.

The lifting system, which slides along ceiling tracks and uses slings of various sizes, allows nursing staff at Salina Regional Health Center to lift, transfer, and reposition patients weighing up to 1,000 lbs. Furthermore, nurses can walk patients, whose weight is supported by the lift system, in the halls, says Esther Carlson, MSN,

ARNP, BC, chairperson of the hospital's patient safety and performance improvement committees and a Kansas State Nurses Association (KSNA) member.

A hospital study of the lift system's effectiveness completed in 2003 showed that patient-handling injuries decreased by 30% (from 30 in 2001 to 21 in 2003), the severity of injuries decreased dramatically, and institutional costs associated with worker injuries decreased by about 96%.

Aside from eliminating harmful manual lifting, this technology has been successful because nurses participated in selecting the equipment and were trained extensively in its use.

A committee that included nurses and other direct-care staff evaluated six different systems. Then nursing staff on high-injury units, such as the ICU, piloted three of the preferred systems. The selected system was installed on other units in November 2002.

Clearly defined lift policies and protocols also were developed to help direct-care staff determine when a lifting device was required, which helped bolster the system's use.

Furthermore, all nursing staff participated in a comprehensive training program, which encouraged nurses to ride in a lift so they could describe the experience to their patients accurately, as well as ease fears, says Stephanie Moore, ARNP, CNS, advanced practice nurse, medical-surgical, and a KSNA member.

Meanwhile, ICU nurses at Avera Queen of Peace Hospital in Mitchell, South Dakota, have the assistance of critical care

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physicians and nurses at all hours at an “electronic” ICU 75 miles away in Sioux Falls.

Physicians at the Sioux Falls unit can access all patient charts and cardiac monitors, as well as radiology and lab reports, to help on-site nurses determine emergent care. Physicians also can turn on audio-visual equipment to communicate and view patients—even to the point of assessing their pupils—and participate in family and on-site physician conferences, says Rochelle Reider, MS, RN, the ICU director at Avera Queen of Peace.

The remote ICU system went live in September 2004, and the hospital began using its services a month later.

Leading up to its use, clinical and technical teams from the Avera Health System met with company representatives to determine their needs. Three ICU

nurses from Avera Queen of Peace then were trained as “super-users” so they could train the rest of the ICU staff and serve as resources for on-site physicians, says Reider, a South Dakota Nurses Association member.

“We’re just beginning to see some of the benefits of this technology, which have been reported in other facilities,” she says. They include decreased patient morbidity and mortality and increased job satisfaction among nurses.

GO AHEAD, PRACTICE

Anxiety often runs high among new nurses, particularly when they confront situations that require a quick response. To alleviate that anxiety, Dartmouth–Hitchcock Medical Center (DHMC) in New Hampshire launched a program in June 2004 to build new graduates’ confidence and competence by using

human simulation technology. Participants in DHMC’s nurse residency programs practice on mannequins that can be programmed with a range of human responses so that nurses can perfect routine skills and actions required in potentially life-threatening emergencies.

The patient simulators can talk, breathe, and have heart and lung sounds. They can be catheterized, have chest tubes inserted, be shocked with automated external defibrillators, die—and come back to life.

“We can create any complication,” says Suzanne Beyea, PhD, RN, FAAN, codirector of DHMC nurse simulation programs, member of the New Hampshire Nurses Association, and chairperson of the ANA’s Committee on Nursing Practice Information Infrastructure. “Every nurse is drilled on how to

respond if a patient arrests. In this program, nurse residents learn to recognize and manage high-risk, low-frequency problems that can lead to failure-to-rescue events.”

For example, nurses learn how to respond when a “patient” seizes after being administered too high a dose of meperidine (Demerol). They must call the physician, be as assertive as necessary (a nurse colleague plays the role of a “difficult” physician), and work with other members of their team effectively to create a positive outcome. And it’s all done in a safe learning environment.

Before patient simulators were introduced, the length of time new nurses spent in orientation varied—with some never feeling ready to practice independently. Now most nurses say they feel ready to practice after

completing the 15-week residency, and unit managers report these new nurses are more clinically proficient sooner.

Although experienced nurses on some units are already using the simulators to practice skills, Beyea expects this technology’s use will only increase.

Nurses who work at Veterans Affairs facilities have been the pioneers of a technological advance that’s been promoted by the Institute of Medicine and the Food and Drug Administration.

It’s called the Barcode Medication Administration system, and the process works like this: A physician enters medication orders electronically. Once verified by a pharmacist, the orders then appear on patients’ electronic medication administration records.

When it’s time for the medications to be given, such as those at

8 AM, the nurse takes the medication cart along with a wireless computer to the patient’s room and calls up his medication record. The nurse then scans the barcode on the patient’s wristband and the barcode on the unit-dosed medication. Once scanned, the computer records that the drug was given unless the nurse documents otherwise.

Although medications may take longer to distribute, the majority of nurses like the system because they recognize its benefits, says Marianne Harrington, RN, who oversees the BCMA system at Central Arkansas Veterans Healthcare System in Little Rock.

“Since it was instituted in 2000, we’ve seen a significant decrease in medication errors,” she says. “This system accurately identifies the patient, the medication, the dosage, and the time frame.” ▼