

Preparing to Work in an Informatics-Based World

By Cathleen M. Shultz



A growing number of clinical experiences place students in settings with electronic health records (EHRs). The nursing work world expects graduates to be proficient with informatics as part of nursing practice. This may not be easy because there is a substantive gap between the national health reform efforts and the attempt of nursing programs to engage students in expanding work practices. Although nursing informatics competencies have been defined by several organizations, the introduction of these competencies into nursing education has been slow (The TIGER Initiative, 2008). This is due to such factors as finances, faculty shortages, and limited training and education in the informatics field.

What is Informatics?

Informatics is a quickly emerging national trend pushed by: the federal initiative to adopt EHRs in all health-care institutions by 2014; the growing consumer movement to interact electronically with healthcare professionals; the Institute of Medicine's (IOM) efforts to address the quality of health-care in the United States. In 2001, the American Nurses Association (ANA) defined informatics as "a specialty that integrates nursing science, computer science and information science to manage and communicate data knowledge and nursing practice (2001)." The Robert Wood Johnson Foundation Quality and Safety Education for Nurses (QSEN) initiative further defined informatics as the use of information and technology to communicate, manage knowledge, mitigate error, and support decision-making (Cronewett, et al, 2007). IOM has delineated six competencies needed by healthcare workers and one of them is informatics. Clearly, informatics is more than computer competence and its use demands that nurses use technology as easily as critical thinking in practice.

The National League for Nursing (NLN) published guidelines for computers in nursing education (1987) and soon after that, the term "nursing informatics" began appearing in the literature (Graves & Corcoran, 1989). In less than a 20-year span, not only does every nurse face altered practice due to informatics, but also the field of informatics has become a specialty in nursing. Data information systems have grown increasingly more useful in their complexity and ability to com-



municate with each other. Nursing remains the only caregiver that touches every clinical system of a healthcare organization, and informatics engineers view nurses as key agents for change.

What Nurses Need to Know

At all levels, you are expected to address safety and quality practice issues. Use of informatics will be part of your nursing practice regardless of your role. There are numerous career paths open to nurses and each has its own informatics skills and competencies.

Staff nurses make evidence-based judgments and informatics assists in making decisions between competing information. Although nurses rely on standardized care plans and written procedures, informatics experience ranges from software applications such as Microsoft Office to deep understanding of clinical information systems. In addition, nursing terminologies and classification systems such as North American Nursing Diagnosis Association (NANDA and NANDA International, 2005), Nursing Outcomes Classification (NOC; Moorhead, Johnson & Maas, 2004) and

Nursing Interventions Classification (NIC; 2004) are increasingly being used. These systems were designed to provide access to data, information, and knowledge for use by nurses. They are among 13 systems recognized by ANA that support nursing practice (2006). Software applications, decision-making systems and nursing classification systems are part of the day-to-day world of the nurse providing direct care. Many nurses lack information technology skills and the ability to use online evidence that supports their work (TIGER Initiative, 2005; Pravikoff et al, 2005). Nurses who increase their informatics competencies will realize career advantages.

Nurse administrators, in addition to knowing staff information and applications, enhance their leadership abilities by mastering business and financial information technology systems. These systems support administrative and economic decisions. Accumulated evidence has related higher levels of nurse staffing (both in quantity and experience) to lower rates of adverse patient outcomes that affect the quality and safety of care (Hyun et al, 2008). Competency

Position Statement by the National League for Nursing Urges Technology-Rich Environment in Education

In May 2008, the Board of Governors of the National League for Nursing (NLN) released a position statement acknowledging the recommendations of several authors and organizations that healthcare professionals become skilled in computer literacy, information literacy and information technologies. Federal initiatives are pushing the adoption of electronic health records (EHRs) throughout all healthcare institutions by 2014, which will dramatically change how nursing is practiced. NLN's intent is to "support the reform of nursing education to promote quality education that prepares a workforce capable of practicing in a health care environment where technology continues to increase in amount and sophistication." Highlighted as catalysts to integrating communication technologies throughout healthcare are the Institute of Medicine, the Office of the National Coordinator of Health Information Technology, the TIGER Initiative, and the Robert Wood Johnson Foundation-funded Quality and Safety Education for Nurses (QSEN) Initiative.

The following is an excerpt of recommendations by NLN for faculty, administrators and NLN itself:

- Nursing Faculty – Participate in faculty development programs to achieve competency in informatics.
- Nursing Faculty – Incorporate informatics into the curriculum. Incorporate ANA-recognized standard nursing language and technology into content.
- Nursing Faculty – Collaborate with clinical agencies to ensure that students have hands-on experience with informatics tools.
- Deans/Directors/Chairs – Allocate sufficient resources to support IT initiatives.
- Deans/Directors/Chairs – Ensure that all faculty members are competent in computer & information literacy and informatics.
- Deans/Directors/Chairs – Establish criteria to evaluate outcomes related to achieving informatics goals.

The entire position statement, with all of NLN's recommendations, can be found at www.nln.org/aboutnln/PositionStatements/index.htm.

reference

National League for Nursing (2008). *Preparing the Next Generation of Nurses to Practice in a Technology-Rich Environment: An Informatics Agenda*. New York: NLN Press.

with staffing software program applications linked to patient outcomes is critical. Further, a chief nursing officer may participate in crucial decisions such as clinical system selections and implementations.

Nurse informaticists are familiar with all aspects of computerization concerning nursing and healthcare. They require a comprehensive range of skills from data analysis, software design, and computer training to systems installation, management and change. Experience with sales and marketing, integrating systems into health organizations, as well as medical library science, complete the range of abilities for this multi-prepared nurse (Simpson, 2007).

Transitioning and Resources

Regardless of your preparation level, you will need to seek ways to improve your work-related informatics knowledge and skills, as well as your attitude toward informatics. Depending on your preferred learning style and personal circumstances, resources can be accessed to meet your learning needs. Informatics education is available through formal course work, professional organizations, and training in the clinical practice areas.

Many colleges and universities offer information technology courses. Masters and doctoral degrees are available in informatics. Our profession, through the American Nurses Credentialing Center, offers informatics certification programs. Peer groups are working together to offer solutions to preparation for the informatics drive. For example, the TIGER Team encourages informatics competencies in accreditation standards of practice environments and distributes this information to nursing organizations and other interested groups. Membership in the American Nursing Informatics Association (ANIA), a specialty organization, provides numerous informational and educational resources to those interested in furthering their competencies in informatics.

The Future of Nursing Informatics

While nurses face ever challenging practice situations, competency in nursing informatics promises to strengthen clinical decision-making. The growth toward a connected national health information network is imminent. The numbers of nursing informatics specialists continue to grow with over 500 ANIA members increasing at the rate of about 20 percent per year. The ANA has about 600 members with information technology-related titles or responsibilities and the Department of Health and Human Services has identified more than 8,000 nurses' titles that imply some type of information technology responsibility (Simpson, 2007). The NLN Board of Governors created a position statement that supports the next generation of nurses practicing in a technology-rich environment (NLN, 2008). The statement encourages all nurse educators and students to embrace informatics with its positive effect on nursing care and ultimately health outcomes (see side bar on page 38).

Future practice settings are sure to require some informatics competency and, certainly, nursing informatics specialist is a career in demand. I encourage you to plan your career path with informatics education and experiences. I believe that nurses should keep options open as they manage their careers. One way to do this is by following population changes, health patterns, and growing national and global trends. Nursing informatics is definitely one of the global trends. ☺

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