

Position *Statement*

PREPARING THE NEXT GENERATION OF NURSES TO PRACTICE IN A TECHNOLOGY-RICH ENVIRONMENT: AN INFORMATICS AGENDA

**Board of Governors
May 9, 2008**

Since the 1970s, several authors and organizations recommended that health care professionals develop knowledge and skills in computer literacy, information literacy, and the use of information technologies. In addition, it has been recommended that these competencies be integrated into nursing curricula (Anderson, Gremy, & Pages, 1974; Ronald & Skiba, 1987; Staggers, Gassert, & Curran, 2001; Staggers, Gassert, & Curran 2002). Though 30 years have passed, there is minimal implementation of these recommendations despite the fact that ours is an increasingly technological society, health care technology has expanded, and the amount of access to information continues to grow at a phenomenal rate.

Federal initiatives are pushing the adoption of electronic health records (EHRs) throughout all health care institutions by the year 2014, an initiative that will dramatically change how nursing is practiced. It is imperative that graduates of today's nursing programs know how to interact with these important informatics tools to ensure safe and quality care. In addition, there is a growing consumer movement wanting to interact with health care professionals through personal health records and various electronic communication devices. It is important that nurses acquire the necessary "21st century knowledge and skills for practice in a complex, emerging technologically sophisticated, consumer-centric, global environment" (Warren & Connors, 2007, p. 58).

The Voice for Nursing Education



**National League
for Nursing**

A CALL FOR REFORM

The intent of this position paper 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. The NLN, as a leader in the preparation of a diverse workforce, advocates for support of faculty development initiatives and innovative educational programs that address informatics preparation. This call for reform is relevant to all prelicensure and graduate nursing education programs as the informatics revolution will impact all of nursing practice.

Numerous forces are catalysts to incorporating information and communication technologies throughout the health care delivery system. These include:

- Reports and recommendations from the Institute of Medicine
- Creation of the Office of the National Coordinator of Health Information Technology and its federal mandates
- The Technology Informatics Guiding Educational Reform (TIGER) Initiative
- The Robert Wood Johnson Foundation-funded Quality and Safety Education for Nurses (QSEN) Initiative

Institute of Medicine

Since 2000, interdisciplinary teams of scientists, practitioners, and administrations convened by the Institute of Medicine have advocated the use of health information technologies, including electronic health records, as one solution for ensuring safe, quality health care. In *Health Professions Education: A Bridge to Quality*, Greiner and Knebel (2003) summarized the problem with health professions' education: "Clinical education simply has not kept pace with or been responsive enough to shifting patient demographics and desires, changing health system expectations, evolving practice requirements and staffing arrangements, new information, a focus on improving quality or new technologies" (p. 1).

Decade of Health Information Technology

Another driving factor is the establishment of the Office of the National Coordinator of Health Information Technology and the *Decade of Health Information Technology* in 2004. The agenda included a strategic plan that set four major goals to be accomplished by 2014:

- Encourage the widespread adoption of electronic health records.
- Interconnect clinicians so that data and information can be more easily shared.
- Personalize care through the use of personal health records and telehealth.
- Improve public health through accessible information.

In response, the American Health Information Management Association and the American Medical Informatics Association held summits that focused on building a workforce for health information transformation. Numerous recommendations were posed, including the following which are most pertinent to academic institutions:

- Collaborate to ensure that standardized informatics educational competencies are embedded in a variety of relevant curricula.
- Promote faculty professional development in electronic information technologies.
- Support the passage of legislation to strengthen programs and increase funding for health informatics education programs, student recruitment and retention, and faculty development.

Technology Informatics Guiding Education Reform (TIGER) Initiative

The TIGER Initiative responded to the lack of nursing involvement in meeting federal initiatives by convening more than 40 nursing professional organizations to create a vision and a three-year action plan. The TIGER Initiative “aims to enable practicing nurses and nursing students to fully engage in the unfolding digital era of health care” (The TIGER Initiative, 2007). To reach its goals, TIGER established the following recommendations for schools of nursing:

- Adopt informatics competencies for all levels of nursing education (undergraduate/graduate) and practice (generalist/specialist).
- Encourage faculty to participate in development programs in informatics.
- Develop a task force or committee at each school to examine the integration of informatics throughout the curriculum.
- Encourage the Health Services Resources Administration's (HRSA) Division of Nursing to continue and expand its support for informatics specialty programs and faculty development.
- Measure changes from baseline in informatics knowledge among nursing educators and students and among the full range of clinicians seeking continuing education.
- Collaborate with industry and service partners to support faculty creativity in the design, acceptance, and adoption of informatics technology.
- Develop strategies to recruit, retain, and educate current and future nurses in the areas of informatics education, practice, and research.

Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation (RWJ) funded several initiatives related to health care delivery transformation, workforce, and patient safety and quality. The Quality and Safety Education for Nurses (QSEN) project's goal is to “reshape professional identity formation in nursing to include commitment to quality and safety competencies recommended by the Institute of Medicine” (QSEN, 2007). To accomplish this goal, six competencies were defined - the IOM's five (patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, and informatics) plus safety. And the knowledge, skills, and attitudes that needed to be developed in nursing pre-licensure programs for each of the above competencies were created (Cronenwett et al., 2007). Pilot schools are integrating them in their nursing programs and sharing the work on the QSEN website (www.qsen.org).

NURSING EDUCATION AND INFORMATICS

With multiple initiatives from the federal government and various public and private organizations, the question arises about where nursing education is in preparing nurses to practice in this new health care environment. Specifically, are nurse educators preparing technology-savvy nurses who can use informatics tools to provide safe, patient-centered, quality care based upon evidence? The simple answer is no.

In March 2006, the NLN's Informatics Competencies Task Group of the Educational Technology and Information Management Council (ETIMAC) sent separate but similar email surveys to NLN member and non-member faculty and nursing education administrators. The emails solicited input about how the nursing education community is preparing the next generation of nurses to practice in an ever-increasing informatics-rich health care environment, and asked respondents to identify both exemplars and gaps in the curricula. Five hundred forty deans/directors and 1,557 faculty responded. Results revealed that approximately 60 percent of programs had a computer literacy requirement and 40 percent had an information literacy requirement. Only 50 to 60 percent of respondents said that informatics was integrated into the

curriculum and that clinical experience with information systems was provided during clinical experiences. Informatics was more likely to be included in baccalaureate and higher degree nursing programs. Several themes emerged from the data:

- Information literacy exercises (e.g., finding and evaluating information on the web) seem to be the predominant example of informatics integration into courses.
- Informatics content related to issues (privacy, confidentiality, security, and impact) as well as the availability of informatics tools, (e.g., EHR, clinical documentation systems, and bar code medication administration systems) appear to be covered in pre-licensure course work.
- Many consider that online courses are equal to informatics educational preparation.
- Personal digital assistants (PDAs), software for care plans, and clinical information systems were the least likely to be incorporated into courses. This finding suggests that little clinical informatics content or learning experiences are included in pre-licensure practical nurse or registered nurse programs.

The most disturbing findings of this survey were found in comments made by respondents. Faculty and administrators fail to distinguish between educational technology and practice technology, as evidenced by responses like “all courses are web-enhanced.” It was clear that many equated taking online courses with knowledge and skills in informatics. Additionally, many could not differentiate computer and information literacy from informatics. Since more than 80 percent of faculty said that they were self-taught, this is not surprising.

The critical conclusion is that while most schools of nursing focused on computer and information literacy, there was considerable confusion as to what nursing informatics entails and what constitutes the necessary knowledge to practice in an informatics-rich environment. There are no other recent studies that document either similar or different findings. When this information was presented at conferences and meetings, the audience of nurse educators was not surprised.

It is, therefore, imperative that we call for action to prepare the next generation of nurses with the necessary informatics competencies to provide safe and quality care. As McBride (2005, p. 188) states,

Information technology (IT) is not a panacea, and will not fulfill its promise unless it is harnessed in support of foundational values. That is why every nurse cannot afford to be unconnected to this transformation, but must take an active role in ensuring that IT is used in service to our profession's values. After all, we are knowledge workers.

RECOMMENDATIONS

The National League for Nursing recommends the following for faculty, administrators, and its own leaders and members:

For Nurse Faculty

- Participate in faculty development programs to achieve competency in informatics.
- Designate an informatics champion in every school of nursing to: (a) help faculty distinguish between using instructional technologies to teach vs. using informatics to guide, document, analyze, and inform nursing practice, and (b) translate state-of-the-art practices in technology and informatics that need to be integrated into the curriculum.
- Incorporate informatics into the curriculum.
- Incorporate ANA-recognized standard nursing language and terminology into content.

- Identify clinical informatics exemplars, those drawn from clinical agencies and the community or from other nursing education programs, to serve as examples for the integration of informatics into the curriculum.
- Achieve competency through participation in faculty development programs.
- Partner with clinicians and informatics people at clinical agencies to help faculty and students develop competence in informatics.
- Collaborate with clinical agencies to ensure that students have hands-on experience with informatics tools.
- Collaborate with clinical agencies to demonstrate transformations in clinical practice produced by informatics.
- Establish criteria to evaluate informatics goals for faculty.

For Deans/Directors/Chairs

- Provide leadership in planning for necessary IT infrastructure that will ensure education that prepares graduates for 21st-century practice roles and responsibilities.
- Allocate sufficient resources to support IT initiatives.
- Ensure that all faculty members have competence in computer literacy, information literacy, and informatics.
- Provide opportunities for faculty development in informatics.
- Urge clinical agencies to provide hands-on informatics experiences for students.
- Encourage nurse-managed clinics to incorporate clinical informatics exemplars that have transformed nursing practice to provide safe quality care.
- Advocate that all students graduate with up-to-date knowledge and skills in each of the three critical areas: computer literacy, information literacy, and informatics.
- Establish criteria to evaluate outcomes related to achieving informatics goals.

For the National League for Nursing

- Disseminate this position statement widely.
- Seek external funding and allocate internal resources to convene a think tank to reach consensus on definitions of informatics, competencies for faculty and students, and program outcomes that include informatics.
- Participate actively in organizations that focus on education in nursing informatics to ensure that recommendations from those organizations are congruent with the NLN's positions on curriculum.
- Use ETIMAC and its task groups to: (a) develop programs for faculty, showcasing exemplar programs, and (b) disseminate outcomes from the think tank.
- Encourage and facilitate accrediting bodies, regulatory agencies, and certifying bodies to reach consensus on definitions related to informatics and minimal informatics competencies for practice in the 21st century.

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