# FACULTY AND ORGANIZATIONAL CHARACTERISTICS ASSOCIATED WITH INFORMATICS/HEALTH INFORMATION TECHNOLOGY ADOPTION IN DNP PROGRAMS

CATHY R. FULTON, DNP, RN, ANP-BC,FNP-BC\*,†, JULIE A. MEEK, PhD, RN, CNS‡, AND PATRICIA HINTON WALKER, PhD, RN, FAAN, PCC§'||

Nursing informatics/health information technology are key components of graduate nursing education and an accreditation requirement, yet little is known about the extent to which doctor of nursing practice (DNP) curricula include these content domains. The purpose of this descriptive study was to elicit perceptions of DNP program directors relative to (a) whether and how the American Association of Colleges of Nursing's (AACN's) Essential IV standard has been met in their DNP programs; (b) whether the Technology Informatics Guiding Educational Reform Initiative Foundation's Phase II competencies have been integrated in their programs; and (c) the faculty and organizational characteristics associated with the adoption of the AACN's Essential IV. In 2011, an electronic survey was sent to all 138 DNP program directors identified on the AACN Web site with an 81.2% response rate. Findings include variation in whether and how programs have integrated informatics/health information technology content, a lack of informatics-certified and/or master's-prepared faculty, and a perceived lack of faculty awareness of informatics curricular guidelines. DNP program director and dean awareness and support of faculty informatics education, use of informatics competency guidelines, and national policy and stimulus funding support are recommended to promote curricular inclusion and the engagement of nurses in strong informatics practices. (Index words: Doctor of nursing practice; Essential IV; TIGER; Nursing informatics; Health information technology) | Prof Nurs 30:292-299, 2014. © 2014 Elsevier Inc. All rights reserved.

**S** TICHLER, FIELDS, KIM, and Brown (2011) describe the many skills that practicing nurses will need in the future, including important abilities to access, under-

Address correspondence to Dr. Fulton: 1111 Middle Drive, NU 433, Indianapolis, Indiana 46202. E-mail: catrsmit@indiana.edu 8755-7223

stand, and manage a vast array of clinical information sources. These authors assert that the challenge is daunting for nursing educators because the rapid advance of informatics and technology involves much more than access to clinical information systems to support practice. Health information technology (HIT) is rapidly changing how nurses and other health professionals need to be educated for the future, requiring knowledge and skills relative to, for example, genetics and personalized medicine, social media and virtual communities, consumer mobile health applications, meaningful use requirements under accountable care, algorithms and data analytics embedded in electronic health records (EHRs), and access to clinical information through personal health records, EHRs, and patient portals.

<sup>\*</sup>Clinical Assistant Professor, Indiana University School of Nursing, Indianapolis, Indiana.

<sup>†</sup>Nurse Practitioner, Indiana University Health Center (Bloomington), Bloomington, Indiana.

<sup>‡</sup>Clinical Associate Professor, Indiana University School of Nursing, Indianapolis, Indiana.

<sup>§</sup> Vice President for Policy and Strategic Initiatives and Professor of Nursing, Uniformed Services University of the Health Sciences, Bethesda, Maryland. ||Senior Advisor, TIGER Initiative Foundation.

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Two current "disruptive innovations" (Christensen, Baumann, Ruggles, & Sadtler, 2006; Christensen, Grossman, & Hwang, 2009) impacted by these challenges are doctorate of nursing practice (DNP) programs and the inclusion of informatics and HIT in the preparation of future DNP nursing leaders. The need for these changes has been discussed in the national policy arena, not only in relation to education reform for nurses (Institute of Medicine [IOM], 1997, 2001) but also by changes in national accreditation standards. In this article, the federal HIT mandates, the Technology Informatics Guiding Educational Reform (TIGER) Initiative Foundation, and the American Association of Colleges of Nursing (AACN) accreditation standard calling for informatics education are first described as part of the milieu driving the need for informatics/HIT curricular inclusion in DNP education.

In response to this rapidly changing milieu, in 2011, a descriptive electronic survey was sent to all 138 DNP program directors identified on the AACN Web site to elicit perceptions of DNP program directors relative to (a) whether and how the AACN's Essential IV standard has been met in their DNP programs; (b) whether the TIGER Initiative Foundation's Phase II competencies have been integrated in their programs; and (c) the faculty and organizational characteristics associated with the adoption of the AACN's Essential IV. The program directors were also asked to specify how informatics/HIT content was incorporated in their curriculum, for example, required courses versus integrated content throughout, and to provide organizational and faculty characteristics such as size of faculty, the year of DNP program start-up, and others. This article reports the study findings with implications for the future of nursing informatics/HIT curricular inclusion in DNP programs.

### **Background**

# Professional and Federal Mandates Drive Adoption of Informatics/HIT Competencies

In recent years, there have been many recommendations that health care professionals develop knowledge and skills in computer literacy, information literacy, and use of information technology. For example, as early as 1997, the IOM (1997) released The Computer-Based Patient Record: An Essential Technology for Health Care. Within the IOM report were recommendations that called for professional schools, programs, societies, and organizations to support educational programs that would prepare students in the use of computer-based systems of care. In 2001, the IOM released another report, Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century (IOM, 2001), that also called for informatics/ HIT competency development. In 2007, Jenkins, Wilson, and Ozbolt observed that, despite the recommendations by these IOM reports, informatics had not been well integrated into the curricula of most of the nursing schools, although the authors note that it is likely that the situation has evolved since then.

Federal policy initiatives have also played a significant role in encouraging adoption of EHRs. In 2004, President Bush set a goal that every American would have an EHR by 2014 in the American Recovery & Reinvestment Act, 2009. President Obama continued to focus on the 2014 goal, defining the systems requirements and financial incentives to encourage HIT adoption (Public Law 115- 5- American Recovery and Reinvestment Act of 2009; United States Cong. Senate, 2009). These laws have pushed informatics/HIT to the forefront with regulatory requirements and incentives promoting "meaningful use" of EHRs.

# TIGER Creates Informatics Competencies and Urges Inclusion in Accreditation Standards

One of the challenges of implementing ARRA's meaningful use requirements involves preparing the health care workforce, including staff nurses, nursing faculty, and future graduate nurses, to use informatics/HIT to provide and improve the delivery of care. In 2004, a grassroots group of nursing leaders formed the TIGER Initiative to enable leaders, practicing nurses, and nursing students to fully engage in the unfolding digital electronic era in health care (The TIGER Initiative, 2009). Subsequently, an invitational symposium was held in 2006 to engage practice, education, industry, and organizational and federal stakeholders to create a common vision of HIT-enabled nursing practice, education, research, and policy (The TIGER Initiative, 2007). Those attending the symposium recognized that, in order to accomplish this vision, nursing professionals must master a minimum set of informatics competencies including computer and information literacy and information management competencies (Table 1).

In addition to making recommendations for educating students, the TIGER Education and Faculty Development Collaborative also recommended that accrediting agencies such as the AACN and the National League for Nursing (NLN) formally require informatics competences as part of their accreditation standards (The TIGER Initiative, 2009). Coinciding with TIGER's efforts, in May 2008, the NLN released a critical position statement "in support for reform of nursing education to promote quality education that prepares a workforce capable of practicing in a healthcare environment where technology continues to increase in amount and sophistication" (p.2; NLN, 2008). Soon after these initial position statements, the AACN included the use of informatics technologies as Essential IV in its DNP curriculum recommendations (AACN, 2006) and provided guidelines for their implementation.

### The DNP Emerges as the Terminal Practice Degree, With Informatics as a Required Essential Competency

In 2004, the AACN characterized all Doctor of Nursing Science degrees as research Doctor of Philosophy (PhD) degrees, and the DNP degree was recommended as the terminal degree for nurses who wished to stay in practice rather than academic roles (Chism, 2009a). The DNP

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