



Featured Article

# Integrating QSEN and Technology to Address Rural Health Care: Initial Outcomes

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## KEYWORDS

diffusion of innovation;  
QSEN;  
rural nursing education;  
simulation;  
technology;  
telehealth

**Abstract:** Innovative educational approaches are needed to meet the growing technology demands of our health care system and the expectation for integration of Quality and Safety Education for Nurses (QSEN) competencies in undergraduate curricula. Preparing baccalaureate nursing students to deliver health care services in rural environments requires awareness of multiple factors, including rural nursing practice challenges and rural culture. Nursing faculty at a Midwestern public university located in a predominantly rural state designed an integrated approach to address these needs through technology-focused and QSEN-based simulation scenarios. This manuscript presents the activities and outcomes from the 1st year of the project.

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Nursing care has undergone significant changes in recent years as the technology-driven demands of our health care system have grown exponentially. These health system changes must be addressed by nurse educators who are challenged to prepare future nurses to provide care across diverse environmental contexts (Benner, Sutphen, Leonard, & Day, 2010), including rural areas. Over the past several years, there has been an additional focus on the need to prepare graduates who ensure patient safety while providing quality nursing care. In response, the Robert Wood Johnson Foundation funded a national nursing education initiative called Quality and Safety Education for Nurses (QSEN). Activities of the QSEN initiative led to the adoption of

a set of health competencies first identified by the Institute of Medicine (2003). Safety was highlighted by the QSEN team as an essential addition to the Institute of Medicine competencies (quality improvement, informatics, patient-centered care, teamwork and collaboration, and evidence-based practice). These six QSEN competencies were then enhanced with related sets of knowledge, skills, and attitudes developed for use in nursing prelicensure programs. Adoption of the QSEN competencies reflects nursing education's focused approach to improved patient care quality and safety (Cronewett et al., 2007). The purpose of this manuscript is to describe the 1st-year processes and outcomes of an innovative program designed to address rural health care challenges by integrating QSEN competencies and technology-based teaching and learning in a baccalaureate nursing program. The Nursing Education,

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### Key Points

- Innovative educational approaches are needed to match growing use of technology.
- Delivering health care in rural environments presents unique challenges.
- QSEN-based simulation scenarios combine technology and rural focus for prelicensure students.

### Background Information and Literature Review

South Dakota is a predominantly rural state with numerous medically underserved areas, facts that ultimately affect population health needs and health care (South Dakota Department of Health, n.d.). For people living in rural areas, extensive travel is required to reach clinics

and hospitals, contributing to a high incidence of acute and chronic health problems that may go untreated (Bushy, 2009). Rural populations experience barriers to health care due to distance, terrain, and a harsh climate, in addition to challenges in accessing care for chronic disease due to transportation issues, social isolation, and financial constraints (Goins, Williams, Carter, Spencer, & Solovieva, 2005). Nurses who practice in rural environments need to understand the context of rural health, common rural health issues, rural culture, and health care challenges (Williams & Cutchin, 2002). Another emerging challenge is adequate preparation to practice within an environment that is expanding its technology applications through remote patient monitoring to improve both patient care and remote access to specialized services. Distance monitoring strategies range from homecare telehealth transmission of chronic disease parameters, to eICU<sup>®</sup> units, where multidisciplinary teams of specialists located at a central hub provide triage and consultation for patients in remotely located intensive care units through telecommunication equipment. This long-distance care uses telecommunication equipment to transmit real-time patient data from the rural site to eICU<sup>®</sup> caregivers, who communicate with on-site caregivers through dedicated telephone lines.

Nursing education programs that prepare graduates for employment in rural settings must provide learning opportunities reflecting the unique issues and challenges faced by rural nurses (Booth, 2006; Effken & Abbott, 2009; Sevean, Dampier, Spadoni, Strickland, & Pilatzke, 2008). Table 1 provides a summary of these rural challenges and unique issues.

Descriptions of innovative educational approaches to meeting both the technology demands of our health care

**Table 1** Rural Health Issues and Challenges for Nursing Education

Rural Health Issues and Challenges	Examples
Rural environment	Distance to health care Weather
Rural health risks and problems	Farm injury Motor vehicle injury Sun exposure Health literacy
Rural health care services	Limited health care services Limited access to primary care providers Telehealth services
Rural nursing practice challenges	Professional boundaries Lack of resources Expert generalist role Confidentiality challenges
Rural culture	Delays in seeking treatment Strong social networks and connectedness Service orientation Valuing of work and productivity Insider–outsider differentiation

system and the expectation for QSEN competency integration into nursing curricula are becoming more evident in the professional literature. Brady (2011) describes course redesign that uses a range of active learning modalities, including simulation cases, to implement QSEN competencies. A strategy for planning simulation-based learning that is based on the knowledge, skills, and attitudes (KSAs) of the QSEN competencies is described by Jarzemyk, McCarthy, and Ellis (2010). Informatics competencies and PDAs are integrated into the curriculum at Ohio State University (Curran, 2008), where a deliberate process for phased-in adoption of electronic health records (EHRs) and PDAs allowed faculty to gain expertise prior to introducing the technology into the teaching milieu. This article builds on these innovations by providing an overview of the application of teaching and learning technologies for the improvement of rural nursing education.

### The Simulation Informatics Technology Enhancement Project

The Simulation Informatics Technology Enhancement (SITE) Project is designed to prepare baccalaureate students from three statewide campus sites to practice in a quality- and safety-driven rural health care environment. The project emphasizes expanded use of human patient simulation (HPS) with embedded point-of-care technologies (such as digital stethoscopes), informatics resources (such as decision support in an electronic patient record),

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