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Educational Changes to Support Advanced Practice Nursing Education

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ABSTRACT

Educational factors limit the number of advanced practice registered nurse (APRN) graduates to meet the growing workforce demands. Healthcare dynamics are necessitating a shift in how nursing education envisions, creates, and implements clinical learning opportunities. The current clinical education model in APRN programs continues to be the same as it was 45 years ago when the student numbers were much smaller. New approaches in graduate nursing education are needed to address the shortage of APRNs in primary and acute care areas. Determining competency based on the number of clinical hours can be inefficient, ineffective, and costly and limits the ability to increase capacity. Little research exists in graduate nursing education to support the effectiveness and efficiency of current hours of clinical required for nurse practitioner students. Simulation and academic-practice partnership models can offer innovative approaches to nurse practitioner education for clinical training, with the goal of producing graduates who can provide safe, quality care within the complex practice-based environment of the nation's evolving healthcare system.

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Meeting the expected increasing workforce demands for advanced practice nurses is challenging current education models and fostering innovative changes in education. Healthcare dynamics are also driving a shift in how nursing education envisions, creates, and implements clinical learning. The current education model (credits, clinical hours, and one-to-one apprenticeship) in advanced practice registered nurse (APRN) programs is essentially unchanged from 45 years ago when student numbers were much smaller.^{1,2} Other identified challenges to preparing the expected numbers of APRNs include an aging workforce, an aging faculty, faculty shortages, faculty salaries that cannot compete with clinical salaries, issues of tenure and workload, competition for clinical learning opportunities, interprofessional education and team-based care expectations, and varying degrees of experienced, available preceptors for students in clinical environments.^{1–3} Some believe that financial compensation for preceptors could help ease the shortage.⁴ This is one of the issues being explored in the Graduate Nursing Education Demonstration Program.⁵ In a 2013 Clinical Training Site Survey, only 4% of nurse practitioner programs reported paying a fee for students at 1 or more clinical sites.⁶

If no changes are made in the way that APRNs are educated, the United States is expected to experience a severe shortage of APRNs, leaving many without adequate access to healthcare.⁷ This article focuses on clinical education and the potential for competency-based curricula, clinical simulation, and academic-practice partnerships to enhance quality and build necessary capacity in advanced practice education.

Realities of the healthcare delivery system have intensified the challenges of access to clinical learning opportunities for students in hospitals and community sites, regardless of the instructional model, that is, an academically based faculty instructor or preceptor

apprenticeship model. Factors such as the Affordable Care Act and the aging population are increasing the demand for APRNs. At the same time, external and internal healthcare systems' regulatory bodies have created barriers to certain clinical learning opportunities by limiting access to certain patients and/or procedural opportunities or requirements that severely limit the student's experience. The Institute of Medicine Future of Nursing report⁷ challenged educators to develop competency-based approaches to nursing education to better prepare nurses to lead in an evolving healthcare environment. Competency-based education could move advanced practice nursing education away from the standard of numbers of credits, didactic hours, and clinical practice hours to competency assessment/mastery and offer one approach to address limitations of the current clinical education model; however, no standard assessments yet exist across advanced practice nursing specialties.^{1,2}

The current preceptor apprenticeship model is no longer sufficient to meet the growing demands for primary and/or acute care nurse practitioners. Developing or expanding the use of technologies, learning activities, and projects could promote innovation in the education of APRN students. Technologies such as simulation, which includes mannequin-based simulators, screen-based simulators, and virtual patients, standardized patients, and case studies can support competency-based education and offer possible alternatives to preceptor supervised clinical practice hours.^{1,2} Enhanced distance technology and pedagogies may also have a role in preparing nurse practitioner students.

Simulated clinical experiences could support clinical learning and shift dependency on traditional patient care clinical situations. Patient type and experience vary in traditional clinical learning situations, resulting in inconsistent experience and quality of learning. Conversely, clinically based simulated learning activities can be targeted to specific learning needs, standardized, and used as both training and assessment tools. In addition, hours spent in clinical simulation activities could be used to reduce the total number of contact hours of clinical instruction in a competency-based model.

Given the variability in learning opportunities at a clinical site, there is no guarantee that each learner will be exposed to the specific desired clinical experiences. This is often referred to as "learning by random opportunity."⁸ Clinical hours may be spent on routine tasks that do not contribute to progressive development of the learner's clinical reasoning skills.² As such, the use of simulated clinical scenarios in APRN programs has increased.¹ This approach allows students to practice to a level of confidence and educators to present information and evaluate student knowledge and skill

competency in specific areas, even when patient care opportunities may be inadequate or nonexistent. As a learning and assessment strategy, simulation has the ability to ensure that each student is exposed to a predetermined set of clinical encounters until a desired level of competency is demonstrated. Simulation provides students with opportunities for deliberate practice (pattern recognition), which leads to more timely decision making throughout their program of study.⁸⁻¹⁰

To provide competent neonatal nurse practitioner graduates, ample opportunities must be available for each student to intentionally experience meaningful encounters that include the opportunity to apply and expand knowledge and skills in "hands-on" clinical settings. Underpinning this assumption are the experiential learning theories developed by Rogers, Dewey, and especially Kolb, who explicated the importance of combining experience, perception, cognition, and behavior.⁹⁻¹¹ Experiential learning necessary to prepare competent new graduate neonatal nurse practitioners is a combination of simulation laboratory-based experiences and directed and preceptor-supervised clinical learning opportunities.

Mannequin-based simulators represent a well-established educational approach and provide a vital infrastructure for healthcare education.^{12,13} Although full-scale computer-driven mannequin simulators currently dominate simulation-based training in healthcare, training programs that rely exclusively on this technology are expensive to develop, implement, and maintain. In addition, currently available mannequin-based simulators have a limited capacity to support advanced training such as that required for nurse practitioners and physicians. While these mannequins can model human cardiorespiratory physiology quite adequately, they model many aspects of human anatomy only nominally. Also, because mannequins are unable to display attitudes or emotions, these experiences must be simulated by voice-overs from technicians or instructors. Advances in virtual environment technology are making computer screen-based simulators an attractive complement to mannequin simulator training. Many of these screen-based virtual environment simulators can now operate within Web browsers. An example of a Web simulation program that can be used to teach procedural skills to nurse practitioner students is clinical vr (mySmartHealthcare, Saratoga Springs, New York). Shadow Health (Gainesville, Florida) has developed a program that provides digital clinical experiences online in which students interview and examine virtual patients as part of an advanced assessment course of study. Virtual environment simulators can also operate without the need for an instructor to be present, allowing students to participate in training at a time

and place of their choosing. Preliminary evidence suggests that virtual reality simulators are effective training devices.¹⁴

Simulation can also support interprofessional education. Upon graduation, APRNs practice as members of multidisciplinary and interprofessional teams. Nursing education must evolve in the preparation of advanced practice nurses as both collaborators and leaders of multidisciplinary teams in complex healthcare delivery systems.^{1,2,7} The ability of APRN students to develop interprofessional skills as identified in the Core Competencies for Interprofessional Collaborative Practice is hindered by the current silo approach to education.¹⁰ Being able to function within a team with the requisite knowledge and skills that include knowledge of roles, teamwork, communication, and ethics is essential to the safety and quality of patient care. Finding opportunities for interprofessional education can be challenging, especially for nursing education programs in universities without medical or other professional schools. Simulation provides an ideal opportunity to develop nursing students' competence in participating as the nursing member of an interprofessional team. Advanced nursing education students and other health occupation trainees engaged in shared simulated clinical learning opportunities can develop competency in technologically supported interprofessional practice. Scenarios can be developed for a variety of patient situations that require the input of different team members, such as the discharge of an infant with multiple congenital anomalies who will require follow-up care and resources.

Expediting and optimizing the clinical learning curve to ensure both competency and quality of clinicians are a major goal of APRN curricula. There is literature to support the notion that the determination of the number of clinical hours in nursing curricula is more a function of ritual, tradition, convenience, and availability than it is evidence-based.^{7,15} In addition, data are lacking to demonstrate a correlation between the number of hours spent in direct patient hours and success as determined by first-time pass rates on national certification examinations. Inconsistencies exist between the number of hours required by universities and certifying bodies.^{7,16} Determining competency based on the number of clinical hours seems to be inefficient, ineffective, and costly and limits the ability to increase capacity. Little research exists in graduate nursing education to support the effectiveness and efficiency of current hours of clinical required for nurse practitioner students. Nursing research into the proportion of clinical hours that could be transferred to simulated experiences without sacrificing desired student outcomes is lacking for advanced practice nursing students,² but a national simulation study by

the National Council of State Boards of Nursing on replacing clinical hours with simulation in prelicensure nursing education concluded that up to half of traditional clinical hours could be substituted with high-quality simulation experiences and yield comparable end-of-program educational outcomes.¹² Well-designed educational research into the evaluation of student competency is needed to move forward in comparing traditional versus simulated clinical experiences for advanced practice students. To influence change, an approach such as that taken by the APRN Consensus Work Group and the National Council of State Boards of Nursing APRN Advisory Committee that resulted in the APRN Consensus Model should be considered.¹⁷ This includes bringing all stakeholders to the table, including educators, practice partners, practicing nurse practitioners, certifying bodies, and regulatory bodies.

Academic-practice partnership models for clinical training offer additional opportunities for innovation in clinical education with the goal of providing safe, quality care within the complex practice-based healthcare environment.^{1,7} Partnerships between schools of nursing and healthcare agencies can provide access to preceptors for students, facilitate faculty practice, establish and achieve mutual goals, and connect employers with future graduates. However, precepting places additional demands on providers' time and energy and can negatively affect productivity measures that can concern employers. Possible partner incentives for preceptors include library access, research support, adjunct faculty appointments, continuing education credits, and/or academic credit toward a program of study. Academic-practice partnerships can facilitate the exchange of information to identify the needs of specific populations and the clinical workforce. Incorporating this information into academic curricula and clinical training would help shape the experiential training of advanced practice nurses to better prepare graduates for the specific needs of populations. Partnerships between academic institutions and practice sites can promote APRN students' readiness to practice upon graduation by improving training and competencies for both students and preceptors.

Many challenges have been identified in this article to APRN education as it relates to the needs of the healthcare communities and some suggested resolutions have been offered. However, the solutions are quite large in scope and involve multiple players. A change of this magnitude will require the support of national leaders. Ideally, the National Council of State Boards of Nursing and other national organizations will see the need and facilitate solutions.

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